

PETROLEUM DEVELOPMENT CORP Weld County CO

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

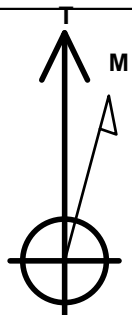
Surface Location: Chesnut 27G-HZ Pad Sec.27-T5N-R64W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 4619.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1379553.06	3266474.79	40.371330	-104.543600	

Ensign 121 RKB - 13.5' WELL @ 4632.5ft (Ensign 121 RKB - 13.5')

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 2235'FNL & 438'FWL, Sec.27	1.0	0.0	0.0	Point
BHL 500'FSL & 130'FWL, Sec.34	6582.0	-7796.2	-295.5	Point



Azimuths to True North
Magnetic North: 8.33°

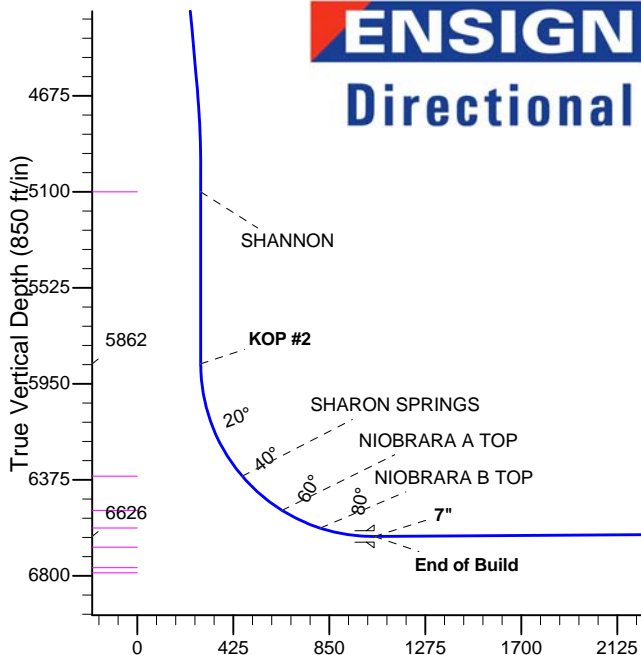
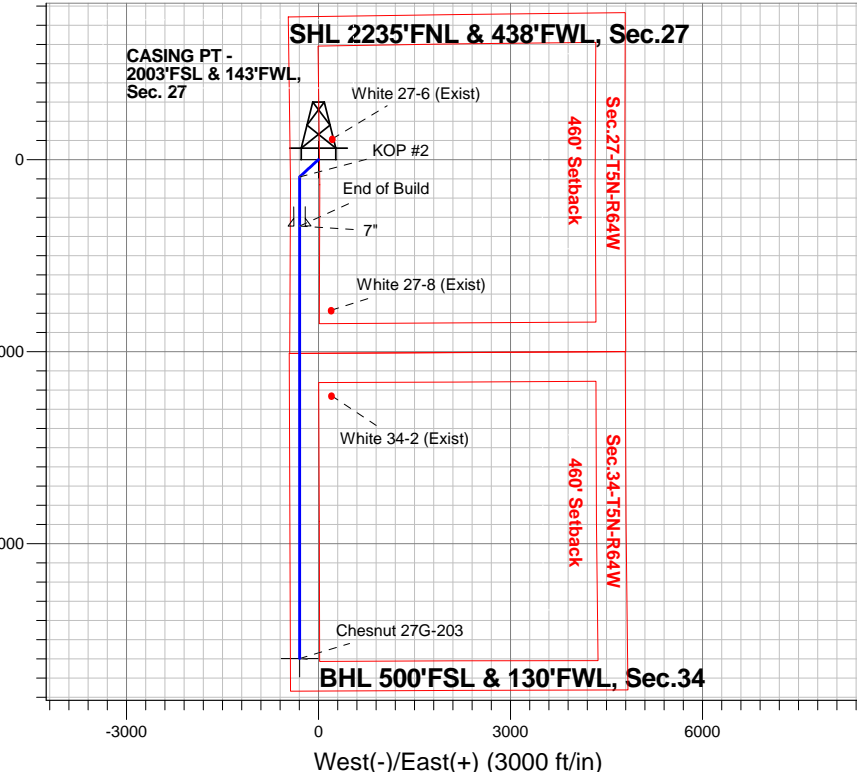
Magnetic Field
Strength: 52818.3nT
Dip Angle: 66.96°
Date: 7/8/2014
Model: IGRF2010

Chesnut 27G-HZ Pad Sec.27-T5N-R64W
Chesnut 27G-203
Plan #2 (7-08-14)
10:30, July 08 2014

ANNOTATIONS

TVD	MD	Annotation
1400.0	1400.0	KOP #1
5861.7	5885.4	KOP #2
6625.6	7090.3	End of Build

South(-)/North(+) (3000 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	1400.0	0.00	0.00	1400.0	0.0	0.0	0.00	0.00	0.0	
3	1751.2	7.02	227.58	1750.4	-14.5	-15.9	2.00	227.58	15.1	
4	4672.4	7.02	227.58	4649.6	-255.5	-279.6	0.00	0.00	265.9	
5	5023.7	0.00	0.00	5000.0	-270.0	-295.5	2.00	180.00	281.0	
6	5885.4	0.00	0.00	5861.7	-270.0	-295.5	0.00	0.00	281.0	
7	7090.3	90.37	180.00	6625.6	-1038.9	-295.5	7.50	180.00	1049.3	
8	13847.8	90.37	180.00	6582.0	-7796.2	-295.5	0.00	0.00	7801.8	BHL 500'FSL & 130'FWL, Sec.34

BHL 500'FSL & 130'FWL, Sec.34

Vertical Section at 182.17° (850 ft/in)



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.27-T5N-R64W

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

Chesnut 27G-203

Wellbore #1

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

Standard Planning Report

08 July, 2014

Database:	landmark	Local Co-ordinate Reference:	Well Chesnut 27G-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 27G-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 27G-203		
Well Position	+N/-S	-29.2 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	182.17

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	
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,751.2	7.02	227.58	1,750.4	-14.5	-15.9	2.00	2.00	0.00	227.58	
4,672.4	7.02	227.58	4,649.6	-255.5	-279.6	0.00	0.00	0.00	0.00	
5,023.7	0.00	0.00	5,000.0	-270.0	-295.5	2.00	-2.00	0.00	180.00	
5,885.4	0.00	0.00	5,861.7	-270.0	-295.5	0.00	0.00	0.00	0.00	
7,090.3	90.37	180.00	6,625.6	-1,038.9	-295.5	7.50	7.50	0.00	180.00	
13,847.8	90.37	180.00	6,582.0	-7,796.2	-295.5	0.00	0.00	0.00	0.00	BHL 500'FSL & 13C

Database:	landmark	Local Co-ordinate Reference:	Well Chesnut 27G-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 27G-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
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP #1									
1,500.0	2.00	227.58	1,500.0	-1.2	-1.3	1.2	2.00	2.00	0.00
1,600.0	4.00	227.58	1,599.8	-4.7	-5.2	4.9	2.00	2.00	0.00
1,700.0	6.00	227.58	1,699.5	-10.6	-11.6	11.0	2.00	2.00	0.00
1,751.2	7.02	227.58	1,750.4	-14.5	-15.9	15.1	2.00	2.00	0.00
1,800.0	7.02	227.58	1,798.8	-18.5	-20.3	19.3	0.00	0.00	0.00
1,900.0	7.02	227.58	1,898.0	-26.8	-29.3	27.9	0.00	0.00	0.00
2,000.0	7.02	227.58	1,997.3	-35.0	-38.3	36.5	0.00	0.00	0.00
2,100.0	7.02	227.58	2,096.5	-43.3	-47.4	45.0	0.00	0.00	0.00
2,200.0	7.02	227.58	2,195.8	-51.5	-56.4	53.6	0.00	0.00	0.00
2,300.0	7.02	227.58	2,295.0	-59.8	-65.4	62.2	0.00	0.00	0.00
2,400.0	7.02	227.58	2,394.3	-68.0	-74.5	70.8	0.00	0.00	0.00
2,500.0	7.02	227.58	2,493.5	-76.3	-83.5	79.4	0.00	0.00	0.00
2,600.0	7.02	227.58	2,592.7	-84.5	-92.5	88.0	0.00	0.00	0.00
2,700.0	7.02	227.58	2,692.0	-92.8	-101.5	96.6	0.00	0.00	0.00
2,800.0	7.02	227.58	2,791.2	-101.0	-110.6	105.1	0.00	0.00	0.00
2,900.0	7.02	227.58	2,890.5	-109.3	-119.6	113.7	0.00	0.00	0.00
3,000.0	7.02	227.58	2,989.7	-117.5	-128.6	122.3	0.00	0.00	0.00
3,100.0	7.02	227.58	3,089.0	-125.8	-137.7	130.9	0.00	0.00	0.00
3,200.0	7.02	227.58	3,188.2	-134.0	-146.7	139.5	0.00	0.00	0.00
3,300.0	7.02	227.58	3,287.5	-142.3	-155.7	148.1	0.00	0.00	0.00
3,400.0	7.02	227.58	3,386.7	-150.5	-164.7	156.7	0.00	0.00	0.00
3,443.6	7.02	227.58	3,430.0	-154.1	-168.7	160.4	0.00	0.00	0.00
PARKMAN									
3,500.0	7.02	227.58	3,486.0	-158.8	-173.8	165.2	0.00	0.00	0.00
3,600.0	7.02	227.58	3,585.2	-167.0	-182.8	173.8	0.00	0.00	0.00
3,700.0	7.02	227.58	3,684.5	-175.3	-191.8	182.4	0.00	0.00	0.00
3,800.0	7.02	227.58	3,783.7	-183.5	-200.9	191.0	0.00	0.00	0.00
3,900.0	7.02	227.58	3,883.0	-191.8	-209.9	199.6	0.00	0.00	0.00
4,000.0	7.02	227.58	3,982.2	-200.0	-218.9	208.2	0.00	0.00	0.00
4,100.0	7.02	227.58	4,081.5	-208.3	-227.9	216.8	0.00	0.00	0.00
4,169.0	7.02	227.58	4,150.0	-214.0	-234.2	222.7	0.00	0.00	0.00
SUSSEX									
4,200.0	7.02	227.58	4,180.7	-216.5	-237.0	225.3	0.00	0.00	0.00
4,300.0	7.02	227.58	4,280.0	-224.8	-246.0	233.9	0.00	0.00	0.00
4,400.0	7.02	227.58	4,379.2	-233.0	-255.0	242.5	0.00	0.00	0.00
4,500.0	7.02	227.58	4,478.5	-241.3	-264.1	251.1	0.00	0.00	0.00
4,600.0	7.02	227.58	4,577.7	-249.5	-273.1	259.7	0.00	0.00	0.00

Database:	landmark	Local Co-ordinate Reference:	Well Chesnut 27G-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 27G-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)
4,672.4	7.02	227.58	4,649.6	-255.5	-279.6	265.9	0.00	0.00	0.00
4,700.0	6.47	227.58	4,677.0	-257.7	-282.0	268.2	2.00	-2.00	0.00
4,800.0	4.47	227.58	4,776.5	-264.1	-289.1	274.9	2.00	-2.00	0.00
4,900.0	2.47	227.58	4,876.4	-268.2	-293.5	279.1	2.00	-2.00	0.00
5,000.0	0.47	227.58	4,976.3	-269.9	-295.4	280.9	2.00	-2.00	0.00
5,023.7	0.00	0.00	5,000.0	-270.0	-295.5	281.0	2.00	-2.00	0.00
5,100.0	0.00	0.00	5,076.3	-270.0	-295.5	281.0	0.00	0.00	0.00
5,123.7	0.00	0.00	5,100.0	-270.0	-295.5	281.0	0.00	0.00	0.00
SHANNON									
5,200.0	0.00	0.00	5,176.3	-270.0	-295.5	281.0	0.00	0.00	0.00
5,300.0	0.00	0.00	5,276.3	-270.0	-295.5	281.0	0.00	0.00	0.00
5,400.0	0.00	0.00	5,376.3	-270.0	-295.5	281.0	0.00	0.00	0.00
5,500.0	0.00	0.00	5,476.3	-270.0	-295.5	281.0	0.00	0.00	0.00
5,600.0	0.00	0.00	5,576.3	-270.0	-295.5	281.0	0.00	0.00	0.00
5,700.0	0.00	0.00	5,676.3	-270.0	-295.5	281.0	0.00	0.00	0.00
5,800.0	0.00	0.00	5,776.3	-270.0	-295.5	281.0	0.00	0.00	0.00
5,885.4	0.00	0.00	5,861.7	-270.0	-295.5	281.0	0.00	0.00	0.00
KOP #2									
5,900.0	1.10	180.00	5,876.3	-270.1	-295.5	281.1	7.50	7.50	0.00
6,000.0	8.60	180.00	5,975.9	-278.6	-295.5	289.6	7.50	7.50	0.00
6,100.0	16.10	180.00	6,073.5	-299.9	-295.5	310.9	7.50	7.50	0.00
6,200.0	23.60	180.00	6,167.5	-333.9	-295.5	344.8	7.50	7.50	0.00
6,300.0	31.10	180.00	6,256.3	-379.8	-295.5	390.7	7.50	7.50	0.00
6,400.0	38.60	180.00	6,338.3	-436.9	-295.5	447.7	7.50	7.50	0.00
6,426.9	40.61	180.00	6,359.0	-454.0	-295.5	464.9	7.50	7.50	0.00
SHARON SPRINGS									
6,500.0	46.10	180.00	6,412.1	-504.2	-295.5	515.0	7.50	7.50	0.00
6,600.0	53.60	180.00	6,476.6	-580.6	-295.5	591.3	7.50	7.50	0.00
6,659.5	58.06	180.00	6,510.0	-629.8	-295.5	640.5	7.50	7.50	0.00
NIOBRARA A TOP									
6,700.0	61.10	180.00	6,530.5	-664.7	-295.5	675.4	7.50	7.50	0.00
6,800.0	68.60	180.00	6,573.0	-755.1	-295.5	765.8	7.50	7.50	0.00
6,847.8	72.18	180.00	6,589.0	-800.2	-295.5	810.8	7.50	7.50	0.00
NIOBRARA B TOP									
6,900.0	76.10	180.00	6,603.3	-850.4	-295.5	860.9	7.50	7.50	0.00
7,000.0	83.60	180.00	6,620.9	-948.7	-295.5	959.2	7.50	7.50	0.00
7,090.3	90.37	180.00	6,625.6	-1,038.8	-295.5	1,049.3	7.50	7.50	0.00
End of Build - 7"									
7,100.0	90.37	180.00	6,625.6	-1,048.5	-295.5	1,059.0	0.02	0.02	0.00
7,200.0	90.37	180.00	6,624.9	-1,148.5	-295.5	1,158.9	0.00	0.00	0.00
7,300.0	90.37	180.00	6,624.3	-1,248.5	-295.5	1,258.8	0.00	0.00	0.00
7,400.0	90.37	180.00	6,623.6	-1,348.5	-295.5	1,358.8	0.00	0.00	0.00
7,500.0	90.37	180.00	6,623.0	-1,448.5	-295.5	1,458.7	0.00	0.00	0.00
7,600.0	90.37	180.00	6,622.3	-1,548.5	-295.5	1,558.6	0.00	0.00	0.00
7,700.0	90.37	180.00	6,621.7	-1,648.5	-295.5	1,658.5	0.00	0.00	0.00
7,800.0	90.37	180.00	6,621.1	-1,748.5	-295.5	1,758.5	0.00	0.00	0.00
7,900.0	90.37	180.00	6,620.4	-1,848.5	-295.5	1,858.4	0.00	0.00	0.00
8,000.0	90.37	180.00	6,619.8	-1,948.5	-295.5	1,958.3	0.00	0.00	0.00
8,100.0	90.37	180.00	6,619.1	-2,048.5	-295.5	2,058.2	0.00	0.00	0.00
8,200.0	90.37	180.00	6,618.5	-2,148.5	-295.5	2,158.2	0.00	0.00	0.00
8,300.0	90.37	180.00	6,617.8	-2,248.5	-295.5	2,258.1	0.00	0.00	0.00
8,400.0	90.37	180.00	6,617.2	-2,348.5	-295.5	2,358.0	0.00	0.00	0.00

Database:	landmark	Local Co-ordinate Reference:	Well Chesnut 27G-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 27G-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	90.37	180.00	6,616.5	-2,448.5	-295.5	2,458.0	0.00	0.00	0.00
8,600.0	90.37	180.00	6,615.9	-2,548.5	-295.5	2,557.9	0.00	0.00	0.00
8,700.0	90.37	180.00	6,615.2	-2,648.5	-295.5	2,657.8	0.00	0.00	0.00
8,800.0	90.37	180.00	6,614.6	-2,748.5	-295.5	2,757.7	0.00	0.00	0.00
8,900.0	90.37	180.00	6,614.0	-2,848.5	-295.5	2,857.7	0.00	0.00	0.00
9,000.0	90.37	180.00	6,613.3	-2,948.5	-295.5	2,957.6	0.00	0.00	0.00
9,100.0	90.37	180.00	6,612.7	-3,048.5	-295.5	3,057.5	0.00	0.00	0.00
9,200.0	90.37	180.00	6,612.0	-3,148.5	-295.5	3,157.4	0.00	0.00	0.00
9,300.0	90.37	180.00	6,611.4	-3,248.5	-295.5	3,257.4	0.00	0.00	0.00
9,400.0	90.37	180.00	6,610.7	-3,348.5	-295.5	3,357.3	0.00	0.00	0.00
9,500.0	90.37	180.00	6,610.1	-3,448.5	-295.5	3,457.2	0.00	0.00	0.00
9,600.0	90.37	180.00	6,609.4	-3,548.5	-295.5	3,557.1	0.00	0.00	0.00
9,700.0	90.37	180.00	6,608.8	-3,648.5	-295.5	3,657.1	0.00	0.00	0.00
9,800.0	90.37	180.00	6,608.1	-3,748.5	-295.5	3,757.0	0.00	0.00	0.00
9,900.0	90.37	180.00	6,607.5	-3,848.5	-295.5	3,856.9	0.00	0.00	0.00
10,000.0	90.37	180.00	6,606.8	-3,948.5	-295.5	3,956.8	0.00	0.00	0.00
10,100.0	90.37	180.00	6,606.2	-4,048.5	-295.5	4,056.8	0.00	0.00	0.00
10,200.0	90.37	180.00	6,605.6	-4,148.5	-295.5	4,156.7	0.00	0.00	0.00
10,300.0	90.37	180.00	6,604.9	-4,248.5	-295.5	4,256.6	0.00	0.00	0.00
10,400.0	90.37	180.00	6,604.3	-4,348.5	-295.5	4,356.5	0.00	0.00	0.00
10,500.0	90.37	180.00	6,603.6	-4,448.5	-295.5	4,456.5	0.00	0.00	0.00
10,600.0	90.37	180.00	6,603.0	-4,548.5	-295.5	4,556.4	0.00	0.00	0.00
10,700.0	90.37	180.00	6,602.3	-4,648.5	-295.5	4,656.3	0.00	0.00	0.00
10,800.0	90.37	180.00	6,601.7	-4,748.5	-295.5	4,756.3	0.00	0.00	0.00
10,900.0	90.37	180.00	6,601.0	-4,848.5	-295.5	4,856.2	0.00	0.00	0.00
11,000.0	90.37	180.00	6,600.4	-4,948.5	-295.5	4,956.1	0.00	0.00	0.00
11,100.0	90.37	180.00	6,599.7	-5,048.5	-295.5	5,056.0	0.00	0.00	0.00
11,200.0	90.37	180.00	6,599.1	-5,148.5	-295.5	5,156.0	0.00	0.00	0.00
11,300.0	90.37	180.00	6,598.5	-5,248.5	-295.5	5,255.9	0.00	0.00	0.00
11,400.0	90.37	180.00	6,597.8	-5,348.5	-295.5	5,355.8	0.00	0.00	0.00
11,500.0	90.37	180.00	6,597.2	-5,448.5	-295.5	5,455.7	0.00	0.00	0.00
11,600.0	90.37	180.00	6,596.5	-5,548.5	-295.5	5,555.7	0.00	0.00	0.00
11,700.0	90.37	180.00	6,595.9	-5,648.5	-295.5	5,655.6	0.00	0.00	0.00
11,800.0	90.37	180.00	6,595.2	-5,748.4	-295.5	5,755.5	0.00	0.00	0.00
11,900.0	90.37	180.00	6,594.6	-5,848.4	-295.5	5,855.4	0.00	0.00	0.00
12,000.0	90.37	180.00	6,593.9	-5,948.4	-295.5	5,955.4	0.00	0.00	0.00
12,100.0	90.37	180.00	6,593.3	-6,048.4	-295.5	6,055.3	0.00	0.00	0.00
12,200.0	90.37	180.00	6,592.6	-6,148.4	-295.5	6,155.2	0.00	0.00	0.00
12,300.0	90.37	180.00	6,592.0	-6,248.4	-295.5	6,255.1	0.00	0.00	0.00
12,400.0	90.37	180.00	6,591.3	-6,348.4	-295.5	6,355.1	0.00	0.00	0.00
12,500.0	90.37	180.00	6,590.7	-6,448.4	-295.5	6,455.0	0.00	0.00	0.00
12,600.0	90.37	180.00	6,590.1	-6,548.4	-295.5	6,554.9	0.00	0.00	0.00
12,700.0	90.37	180.00	6,589.4	-6,648.4	-295.5	6,654.8	0.00	0.00	0.00
12,800.0	90.37	180.00	6,588.8	-6,748.4	-295.5	6,754.8	0.00	0.00	0.00
12,900.0	90.37	180.00	6,588.1	-6,848.4	-295.5	6,854.7	0.00	0.00	0.00
13,000.0	90.37	180.00	6,587.5	-6,948.4	-295.5	6,954.6	0.00	0.00	0.00
13,100.0	90.37	180.00	6,586.8	-7,048.4	-295.5	7,054.6	0.00	0.00	0.00
13,200.0	90.37	180.00	6,586.2	-7,148.4	-295.5	7,154.5	0.00	0.00	0.00
13,300.0	90.37	180.00	6,585.5	-7,248.4	-295.5	7,254.4	0.00	0.00	0.00
13,400.0	90.37	180.00	6,584.9	-7,348.4	-295.5	7,354.3	0.00	0.00	0.00
13,500.0	90.37	180.00	6,584.2	-7,448.4	-295.5	7,454.3	0.00	0.00	0.00
13,600.0	90.37	180.00	6,583.6	-7,548.4	-295.5	7,554.2	0.00	0.00	0.00
13,700.0	90.37	180.00	6,583.0	-7,648.4	-295.5	7,654.1	0.00	0.00	0.00

Database:	landmark	Local Co-ordinate Reference:	Well Chesnut 27G-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 27G-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	90.37	180.00	6,582.3	-7,748.4	-295.5	7,754.0	0.00	0.00	0.00
13,847.8	90.37	180.00	6,582.0	-7,796.2	-295.5	7,801.8	0.00	0.00	0.00

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,090.3	6,625.6	7"	7	7-1/2

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,443.6	3,430.0	PARKMAN		0.00	
4,169.0	4,150.0	SUSSEX		0.00	
5,123.7	5,100.0	SHANNON		0.00	
6,426.9	6,359.0	SHARON SPRINGS		0.00	
6,659.5	6,510.0	NIOBRARA A TOP		0.00	
6,847.8	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)	
1,400.0	1,400.0	0.0	0.0	KOP #1
5,885.4	5,861.7	-270.0	-295.5	KOP #2
7,090.3	6,625.6	-1,038.8	-295.5	End of Build



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.27-T5N-R64W

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

Chesnut 27G-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 27G-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 27G-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	13,847.8	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-423 - Wellbore #1 - Plan #2 (7-08-14)	1,400.0	1,400.0	29.1	23.1	4.802	CC, ES
Chesnut 27G-423 - Wellbore #1 - Plan #2 (7-08-14)	13,847.8	13,987.2	396.8	127.6	1.474	Level 3, SF
Chesnut 27K-203 - Wellbore #1 - Plan #1 (4-22-14)	1,000.0	999.5	58.3	54.0	13.653	CC, ES
Chesnut 27K-203 - Wellbore #1 - Plan #1 (4-22-14)	13,847.8	13,886.3	989.5	690.7	3.312	SF
Chesnut 27K-343 - Wellbore #1 - Plan #1 (4-22-14)	1,166.2	1,167.7	29.1	24.1	5.805	CC
Chesnut 27K-343 - Wellbore #1 - Plan #1 (4-22-14)	1,200.0	1,201.5	29.1	24.0	5.634	ES
Chesnut 27K-343 - Wellbore #1 - Plan #1 (4-22-14)	13,847.8	13,932.9	661.6	363.7	2.221	SF
Chesnut 27GK-HZ Pad Sec.27-T5N-R64W						
Chesnut 27G-221 - Wellbore #1 - Plan #1 (4-23-14)	5,800.0	5,842.4	461.6	430.8	14.979	CC
Chesnut 27G-221 - Wellbore #1 - Plan #1 (4-23-14)	5,900.0	5,938.6	461.8	430.6	14.812	ES, SF
Chesnut 27G-301 - Wellbore #1 - Plan #1 (4-23-14)	3,831.4	3,934.0	321.5	298.3	13.816	CC
Chesnut 27G-301 - Wellbore #1 - Plan #1 (4-23-14)	3,900.0	4,001.6	321.8	297.8	13.436	ES
Chesnut 27G-301 - Wellbore #1 - Plan #1 (4-23-14)	5,900.0	5,997.3	387.5	349.2	10.137	SF
Chesnut 27K-341 - Wellbore #1 - Plan #1 (4-23-14)	3,184.0	3,254.9	630.8	616.1	42.905	CC
Chesnut 27K-341 - Wellbore #1 - Plan #1 (4-23-14)	3,300.0	3,369.5	631.1	615.7	41.187	ES
Chesnut 27K-341 - Wellbore #1 - Plan #1 (4-23-14)	6,000.0	5,995.2	691.0	663.0	24.681	SF
Chesnut 27K-401 - Wellbore #1 - Plan #1 (4-23-14)	1,400.0	1,399.5	674.1	668.1	111.103	CC, ES
Chesnut 27K-401 - Wellbore #1 - Plan #1 (4-23-14)	6,100.0	6,067.7	993.4	965.9	36.173	SF
Chesnut Existing Pad Sec.27-T5N-R64W						
White 27-6 (Exist) - Wellbore #1 - Wellbore #1	1,400.0	1,377.5	388.8	358.2	12.712	CC
White 27-6 (Exist) - Wellbore #1 - Wellbore #1	1,500.0	1,477.5	390.5	357.7	11.917	ES
White 27-6 (Exist) - Wellbore #1 - Wellbore #1	6,000.0	5,953.4	789.6	658.5	6.019	SF
White 27-8 (Exist) - Wellbore #1 - Wellbore #1	8,404.9	6,616.6	493.3	314.1	2.752	CC, ES, SF
White 34-2 (Exist) - Wellbore #1 - Wellbore #1	9,738.3	6,614.0	498.9	294.9	2.445	CC, ES, SF

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	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning			
Depth (ft)	Depth (ft)	Depth (ft)	Depth (ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)					
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	129.649				

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 27G-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 27G-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
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
200.0	200.0	200.0	200.0	0.3	0.3	0.00	0.00	29.1	0.0	29.1	28.5	0.67	43.216	
300.0	300.0	300.0	300.0	0.6	0.6	0.00	0.00	29.1	0.0	29.1	28.0	1.12	25.930	
400.0	400.0	400.0	400.0	0.8	0.8	0.00	0.00	29.1	0.0	29.1	27.6	1.57	18.521	
500.0	500.0	500.0	500.0	1.0	1.0	0.00	0.00	29.1	0.0	29.1	27.1	2.02	14.405	
600.0	600.0	600.0	600.0	1.2	1.2	0.00	0.00	29.1	0.0	29.1	26.7	2.47	11.786	
700.0	700.0	700.0	700.0	1.5	1.5	0.00	0.00	29.1	0.0	29.1	26.2	2.92	9.973	
800.0	800.0	800.0	800.0	1.7	1.7	0.00	0.00	29.1	0.0	29.1	25.8	3.37	8.643	
900.0	900.0	900.0	900.0	1.9	1.9	0.00	0.00	29.1	0.0	29.1	25.3	3.82	7.626	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	0.00	0.00	29.1	0.0	29.1	24.9	4.27	6.824	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	0.00	0.00	29.1	0.0	29.1	24.4	4.72	6.174	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	0.00	0.00	29.1	0.0	29.1	24.0	5.17	5.637	
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	0.00	0.00	29.1	0.0	29.1	23.5	5.62	5.186	
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	0.00	0.00	29.1	0.0	29.1	23.1	6.07	4.802 CC, ES	
1,500.0	1,500.0	1,500.0	1,500.0	3.2	3.3	134.83	134.83	29.1	0.0	30.3	23.9	6.49	4.673	
1,600.0	1,599.8	1,599.8	1,599.8	3.4	3.5	141.00	141.00	29.1	0.0	34.2	27.3	6.90	4.965	
1,700.0	1,699.5	1,699.5	1,699.5	3.6	3.7	148.54	148.54	29.1	0.0	41.4	34.1	7.30	5.670	
1,800.0	1,798.8	1,798.8	1,798.8	3.8	3.9	155.30	155.30	29.1	0.0	51.8	44.1	7.70	6.723	
1,900.0	1,898.0	1,898.0	1,898.0	4.1	4.2	159.94	159.94	29.1	0.0	63.1	55.0	8.12	7.771	
2,000.0	1,997.3	1,997.3	1,997.3	4.3	4.4	163.15	163.15	29.1	0.0	74.7	66.2	8.55	8.745	
2,100.0	2,096.5	2,096.5	2,096.5	4.6	4.6	166.33	166.33	27.5	0.3	85.3	76.4	8.95	9.536	
2,200.0	2,195.8	2,200.3	2,200.1	4.8	4.8	170.39	170.39	22.2	1.2	93.7	84.4	9.32	10.051	
2,300.0	2,295.0	2,301.9	2,301.4	5.1	4.9	175.36	175.36	13.5	2.8	100.3	90.6	9.71	10.331	
2,400.0	2,394.3	2,401.8	2,400.6	5.4	5.1	-179.26	-179.26	2.5	4.7	106.2	96.1	10.11	10.507	
2,500.0	2,493.5	2,501.1	2,499.3	5.6	5.3	-174.46	-174.46	-8.6	6.7	112.9	102.3	10.52	10.724	
2,600.0	2,592.7	2,600.5	2,598.0	5.9	5.5	-170.22	-170.22	-19.7	8.6	120.2	109.3	10.96	10.969	
2,700.0	2,692.0	2,699.8	2,696.7	6.2	5.8	-166.49	-166.49	-30.8	10.6	128.2	116.8	11.42	11.228	
2,800.0	2,791.2	2,799.2	2,795.4	6.5	6.0	-163.20	-163.20	-41.8	12.5	136.7	124.8	11.89	11.491	
2,900.0	2,890.5	2,898.5	2,894.2	6.8	6.2	-160.30	-160.30	-52.9	14.5	145.5	133.1	12.38	11.751	
3,000.0	2,989.7	2,997.9	2,992.9	7.1	6.5	-157.74	-157.74	-64.0	16.5	154.7	141.8	12.88	12.004	
3,100.0	3,089.0	3,097.2	3,091.6	7.4	6.7	-155.47	-155.47	-75.1	18.4	164.1	150.7	13.40	12.249	
3,200.0	3,188.2	3,196.6	3,190.3	7.7	7.0	-153.45	-153.45	-86.1	20.4	173.8	159.9	13.92	12.483	
3,300.0	3,287.5	3,296.0	3,289.0	8.0	7.2	-151.64	-151.64	-97.2	22.3	183.7	169.2	14.45	12.705	
3,400.0	3,386.7	3,395.3	3,387.7	8.3	7.5	-150.01	-150.01	-108.3	24.3	193.7	178.7	14.99	12.917	
3,500.0	3,486.0	3,494.7	3,486.5	8.7	7.8	-148.55	-148.55	-119.3	26.2	203.8	188.3	15.54	13.117	
3,600.0	3,585.2	3,594.0	3,585.2	9.0	8.0	-147.23	-147.23	-130.4	28.2	214.1	198.0	16.09	13.307	
3,700.0	3,684.5	3,693.4	3,683.9	9.3	8.3	-146.03	-146.03	-141.5	30.1	224.5	207.9	16.65	13.487	
3,800.0	3,783.7	3,792.7	3,782.6	9.6	8.6	-144.93	-144.93	-152.6	32.1	235.0	217.8	17.21	13.656	
3,900.0	3,883.0	3,892.1	3,881.3	9.9	8.9	-143.93	-143.93	-163.6	34.1	245.6	227.8	17.77	13.816	
4,000.0	3,982.2	3,991.4	3,980.0	10.2	9.1	-143.01	-143.01	-174.7	36.0	256.2	237.8	18.34	13.968	
4,100.0	4,081.5	4,090.8	4,078.7	10.5	9.4	-142.16	-142.16	-185.8	38.0	266.9	248.0	18.91	14.112	
4,200.0	4,180.7	4,190.1	4,177.5	10.9	9.7	-141.38	-141.38	-196.8	39.9	277.6	258.1	19.48	14.248	
4,300.0	4,280.0	4,289.5	4,276.2	11.2	10.0	-140.66	-140.66	-207.9	41.9	288.4	268.3	20.06	14.376	
4,400.0	4,379.2	4,388.8	4,374.9	11.5	10.3	-139.99	-139.99	-219.0	43.8	299.2	278.6	20.64	14.498	
4,500.0	4,478.5	4,488.2	4,473.6	11.8	10.6	-139.37	-139.37	-230.1	45.8	310.1	288.9	21.22	14.614	
4,600.0	4,577.7	4,587.5	4,572.3	12.1	10.9	-138.79	-138.79	-241.1	47.7	321.0	299.2	21.80	14.724	
4,700.0	4,677.0	4,686.9	4,671.0	12.4	11.1	-138.27	-138.27	-252.2	49.7	331.8	309.4	22.38	14.826	
4,800.0	4,776.5	4,786.3	4,772.0	12.7	11.4	-137.83	-137.83	-261.9	51.4	340.5	317.6	22.87	14.889	
4,900.0	4,876.4	4,890.3	4,873.7	12.9	11.6	-137.56	-137.56	-268.1	52.5	346.1	322.8	23.30	14.850	
5,000.0	4,976.3	4,992.4	4,975.8	13.0	11.8	-137.44	-137.44	-270.8	53.0	348.4	324.7	23.68	14.712	
5,100.0	5,076.3	5,092.9	5,076.3	13.2	12.0	90.14	90.14	-270.9	53.0	348.5	324.5	24.05	14.492	
5,200.0	5,176.3	5,192.9	5,176.3	13.4	12.2	90.14	90.14	-270.9	53.0	348.5	324.1	24.41	14.280	

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 27G-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 27G-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
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside	Offset Wellbore Centre	Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning
				(ft)	(ft)	(ft)	Tooface (")	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)	
5,300.0	5,276.3	5,292.9	5,276.3	13.5	12.4	90.14		-270.9	53.0	348.5	323.7	24.77	14.072
5,400.0	5,376.3	5,392.9	5,376.3	13.7	12.5	90.14		-270.9	53.0	348.5	323.4	25.13	13.869
5,500.0	5,476.3	5,492.9	5,476.3	13.9	12.7	90.14		-270.9	53.0	348.5	323.0	25.49	13.670
5,600.0	5,576.3	5,592.9	5,576.3	14.0	12.9	90.14		-270.9	53.0	348.5	322.6	25.86	13.475
5,700.0	5,676.3	5,692.9	5,676.3	14.2	13.1	90.14		-270.9	53.0	348.5	322.3	26.23	13.284
5,800.0	5,776.3	5,792.9	5,776.3	14.4	13.3	90.14		-270.9	53.0	348.5	321.9	26.61	13.098
5,900.0	5,876.3	5,892.9	5,876.3	14.6	13.5	-89.88		-270.9	53.0	348.5	321.5	26.98	12.915
5,926.2	5,902.5	5,919.1	5,902.5	14.6	13.5	-90.04		-270.9	53.0	348.5	321.4	27.09	12.863
6,000.0	5,975.9	5,992.5	5,975.9	14.8	13.7	-91.25		-270.9	53.0	348.6	321.2	27.38	12.730
6,100.0	6,073.5	6,092.5	6,075.8	15.1	13.9	-94.23		-273.8	53.0	349.5	321.6	27.85	12.550
6,200.0	6,167.5	6,195.5	6,177.5	15.5	14.2	-97.28		-289.6	53.0	351.4	323.0	28.48	12.338
6,300.0	6,256.3	6,301.3	6,278.8	16.0	14.6	-100.22		-320.0	53.0	354.3	325.0	29.31	12.089
6,400.0	6,338.3	6,410.1	6,377.5	16.6	15.2	-102.97		-365.5	53.0	357.9	327.6	30.34	11.796
6,500.0	6,412.1	6,521.9	6,471.2	17.4	16.0	-105.48		-426.4	53.0	361.9	330.3	31.61	11.451
6,600.0	6,476.6	6,636.7	6,557.0	18.3	16.9	-107.70		-502.3	53.0	366.1	333.0	33.15	11.046
6,700.0	6,530.5	6,754.1	6,632.1	19.4	18.1	-109.57		-592.5	53.0	370.1	335.1	35.00	10.574
6,800.0	6,573.0	6,874.0	6,693.6	20.6	19.6	-111.05		-695.3	53.0	373.6	336.4	37.22	10.038
6,900.0	6,603.3	6,995.8	6,738.8	21.9	21.2	-112.13		-808.3	53.0	376.3	336.5	39.80	9.456
7,000.0	6,620.9	7,119.0	6,765.7	23.3	23.0	-112.76		-928.3	53.0	377.9	335.2	42.73	8.845
7,100.0	6,625.6	7,239.6	6,773.2	24.8	24.9	-112.95		-1,048.6	53.0	378.5	332.5	45.91	8.243
7,200.0	6,624.9	7,339.6	6,773.2	26.3	26.5	-113.04		-1,148.6	53.0	378.7	329.9	48.84	7.754
7,300.0	6,624.3	7,439.6	6,773.1	27.9	28.1	-113.13		-1,248.6	53.0	379.0	327.1	51.84	7.310
7,400.0	6,623.6	7,539.6	6,773.1	29.6	29.8	-113.22		-1,348.6	53.0	379.2	324.3	54.90	6.907
7,500.0	6,623.0	7,639.6	6,773.1	31.2	31.5	-113.30		-1,448.6	53.0	379.4	321.4	58.01	6.541
7,600.0	6,622.3	7,739.6	6,773.1	32.9	33.2	-113.39		-1,548.6	53.0	379.7	318.5	61.17	6.207
7,700.0	6,621.7	7,839.6	6,773.1	34.7	34.9	-113.48		-1,648.6	53.0	379.9	315.6	64.37	5.903
7,800.0	6,621.1	7,939.6	6,773.1	36.4	36.7	-113.57		-1,748.6	53.0	380.2	312.6	67.59	5.625
7,900.0	6,620.4	8,039.6	6,773.0	38.1	38.5	-113.65		-1,848.6	53.0	380.4	309.6	70.84	5.370
8,000.0	6,619.8	8,139.6	6,773.0	39.9	40.3	-113.74		-1,948.6	53.0	380.7	306.6	74.11	5.137
8,100.0	6,619.1	8,239.6	6,773.0	41.7	42.1	-113.83		-2,048.6	53.0	380.9	303.5	77.41	4.921
8,200.0	6,618.5	8,339.6	6,773.0	43.5	43.9	-113.91		-2,148.6	53.0	381.2	300.5	80.71	4.723
8,300.0	6,617.8	8,439.6	6,773.0	45.3	45.7	-114.00		-2,248.6	53.0	381.5	297.4	84.03	4.539
8,400.0	6,617.2	8,539.6	6,773.0	47.1	47.5	-114.08		-2,348.5	53.0	381.7	294.3	87.36	4.369
8,500.0	6,616.5	8,639.6	6,772.9	48.9	49.4	-114.17		-2,448.5	53.0	382.0	291.3	90.70	4.211
8,600.0	6,615.9	8,739.6	6,772.9	50.8	51.2	-114.26		-2,548.5	53.0	382.2	288.2	94.05	4.064
8,700.0	6,615.2	8,839.6	6,772.9	52.6	53.0	-114.34		-2,648.5	53.0	382.5	285.1	97.41	3.926
8,800.0	6,614.6	8,939.6	6,772.9	54.5	54.9	-114.43		-2,748.5	53.0	382.7	282.0	100.77	3.798
8,900.0	6,614.0	9,039.6	6,772.9	56.3	56.8	-114.51		-2,848.5	53.0	383.0	278.9	104.14	3.678
9,000.0	6,613.3	9,139.6	6,772.8	58.2	58.6	-114.60		-2,948.5	53.0	383.3	275.7	107.51	3.565
9,100.0	6,612.7	9,239.6	6,772.8	60.0	60.5	-114.68		-3,048.5	53.0	383.5	272.6	110.88	3.459
9,200.0	6,612.0	9,339.6	6,772.8	61.9	62.3	-114.77		-3,148.5	53.0	383.8	269.5	114.26	3.359
9,300.0	6,611.4	9,439.6	6,772.8	63.7	64.2	-114.86		-3,248.5	53.0	384.0	266.4	117.63	3.265
9,400.0	6,610.7	9,539.6	6,772.8	65.6	66.1	-114.94		-3,348.5	53.0	384.3	263.3	121.01	3.176
9,500.0	6,610.1	9,639.6	6,772.8	67.5	68.0	-115.03		-3,448.5	53.0	384.6	260.2	124.39	3.092
9,600.0	6,609.4	9,739.6	6,772.7	69.3	69.9	-115.11		-3,548.5	53.0	384.8	257.1	127.77	3.012
9,700.0	6,608.8	9,839.6	6,772.7	71.2	71.7	-115.20		-3,648.5	53.0	385.1	253.9	131.15	2.936
9,800.0	6,608.1	9,939.5	6,772.7	73.1	73.6	-115.28		-3,748.5	53.0	385.4	250.8	134.53	2.864
9,900.0	6,607.5	10,039.5	6,772.7	75.0	75.5	-115.36		-3,848.5	53.0	385.6	247.7	137.91	2.796
10,000.0	6,606.8	10,139.5	6,772.7	76.9	77.4	-115.45		-3,948.5	53.0	385.9	244.6	141.29	2.731
10,100.0	6,606.2	10,239.5	6,772.7	78.7	79.3	-115.53		-4,048.5	53.0	386.2	241.5	144.67	2.669
10,200.0	6,605.6	10,339.5	6,772.6	80.6	81.2	-115.62		-4,148.5	53.0	386.4	238.4	148.05	2.610

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 27G-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 27G-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
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
10,300.0	6,604.9	10,439.5	6,772.6	82.5	83.1	-115.70	-4,248.5	53.0	386.7	235.3	151.42	2.554		
10,400.0	6,604.3	10,539.5	6,772.6	84.4	85.0	-115.78	-4,348.5	53.0	387.0	232.2	154.79	2.500		
10,500.0	6,603.6	10,639.5	6,772.6	86.3	86.8	-115.87	-4,448.5	53.0	387.3	229.1	158.17	2.448		
10,600.0	6,603.0	10,739.5	6,772.6	88.2	88.7	-115.95	-4,548.5	53.0	387.5	226.0	161.53	2.399		
10,700.0	6,602.3	10,839.5	6,772.5	90.1	90.6	-116.04	-4,648.5	53.0	387.8	222.9	164.90	2.352		
10,800.0	6,601.7	10,939.5	6,772.5	92.0	92.5	-116.12	-4,748.5	53.0	388.1	219.8	168.27	2.306		
10,900.0	6,601.0	11,039.5	6,772.5	93.9	94.4	-116.20	-4,848.5	53.0	388.4	216.7	171.63	2.263		
11,000.0	6,600.4	11,139.5	6,772.5	95.8	96.3	-116.29	-4,948.5	53.0	388.6	213.6	174.99	2.221		
11,100.0	6,599.7	11,239.5	6,772.5	97.7	98.2	-116.37	-5,048.5	53.0	388.9	210.6	178.34	2.181		
11,200.0	6,599.1	11,339.5	6,772.5	99.6	100.1	-116.45	-5,148.5	53.0	389.2	207.5	181.70	2.142		
11,300.0	6,598.5	11,439.5	6,772.4	101.5	102.0	-116.53	-5,248.5	53.0	389.5	204.4	185.05	2.105		
11,400.0	6,597.8	11,539.5	6,772.4	103.4	103.9	-116.62	-5,348.5	53.0	389.7	201.3	188.40	2.069		
11,500.0	6,597.2	11,639.5	6,772.4	105.3	105.8	-116.70	-5,448.5	53.0	390.0	198.3	191.74	2.034		
11,600.0	6,596.5	11,739.5	6,772.4	107.2	107.7	-116.78	-5,548.5	53.0	390.3	195.2	195.09	2.001		
11,700.0	6,595.9	11,839.5	6,772.4	109.1	109.6	-116.86	-5,648.5	53.0	390.6	192.2	198.42	1.968		
11,800.0	6,595.2	11,939.5	6,772.4	111.0	111.5	-116.95	-5,748.5	53.0	390.9	189.1	201.76	1.937		
11,900.0	6,594.6	12,039.5	6,772.3	112.9	113.5	-117.03	-5,848.5	53.0	391.2	186.1	205.09	1.907		
12,000.0	6,593.9	12,139.5	6,772.3	114.8	115.4	-117.11	-5,948.5	53.0	391.4	183.0	208.42	1.878		
12,100.0	6,593.3	12,239.5	6,772.3	116.7	117.3	-117.19	-6,048.5	53.0	391.7	180.0	211.75	1.850		
12,200.0	6,592.6	12,339.5	6,772.3	118.6	119.2	-117.27	-6,148.5	53.0	392.0	176.9	215.07	1.823		
12,300.0	6,592.0	12,439.5	6,772.3	120.5	121.1	-117.36	-6,248.5	53.0	392.3	173.9	218.39	1.796		
12,400.0	6,591.3	12,539.5	6,772.3	122.4	123.0	-117.44	-6,348.5	53.0	392.6	170.9	221.70	1.771		
12,500.0	6,590.7	12,639.5	6,772.2	124.3	124.9	-117.52	-6,448.5	53.0	392.9	167.9	225.01	1.746		
12,600.0	6,590.1	12,739.5	6,772.2	126.2	126.8	-117.60	-6,548.5	53.0	393.2	164.8	228.32	1.722		
12,700.0	6,589.4	12,839.5	6,772.2	128.1	128.7	-117.68	-6,648.5	53.0	393.5	161.8	231.63	1.699		
12,800.0	6,588.8	12,939.5	6,772.2	130.0	130.6	-117.76	-6,748.5	53.0	393.8	158.8	234.93	1.676		
12,900.0	6,588.1	13,039.5	6,772.2	131.9	132.5	-117.84	-6,848.5	53.0	394.0	155.8	238.22	1.654		
13,000.0	6,587.5	13,139.5	6,772.1	133.8	134.4	-117.92	-6,948.5	53.0	394.3	152.8	241.52	1.633		
13,100.0	6,586.8	13,239.5	6,772.1	135.7	136.3	-118.01	-7,048.5	53.0	394.6	149.8	244.81	1.612		
13,200.0	6,586.2	13,339.5	6,772.1	137.6	138.3	-118.09	-7,148.5	53.0	394.9	146.8	248.09	1.592		
13,300.0	6,585.5	13,439.5	6,772.1	139.6	140.2	-118.17	-7,248.5	53.0	395.2	143.8	251.37	1.572		
13,400.0	6,584.9	13,539.5	6,772.1	141.5	142.1	-118.25	-7,348.4	53.0	395.5	140.9	254.65	1.553		
13,500.0	6,584.2	13,639.5	6,772.1	143.4	144.0	-118.33	-7,448.4	53.0	395.8	137.9	257.92	1.535		
13,600.0	6,583.6	13,739.5	6,772.0	145.3	145.9	-118.41	-7,548.4	53.0	396.1	134.9	261.19	1.517		
13,700.0	6,583.0	13,839.5	6,772.0	147.2	147.8	-118.49	-7,648.4	53.0	396.4	131.9	264.46	1.499 Level 3		
13,800.0	6,582.3	13,939.5	6,772.0	149.1	149.7	-118.57	-7,748.4	53.0	396.7	129.0	267.72	1.482 Level 3		
13,847.8	6,582.0	13,987.2	6,772.0	150.0	150.6	-118.60	-7,796.2	53.0	396.8	127.6	269.28	1.474 Level 3, SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27G-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 27G-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-203 - 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	
0.0	0.0	0.0	0.0	0.0	0.0	-180.00	-58.3	0.0	58.3					
100.0	100.0	99.5	99.5	0.1	0.1	-180.00	-58.3	0.0	58.3	58.1	0.22	259.984		
200.0	200.0	199.5	199.5	0.3	0.3	-180.00	-58.3	0.0	58.3	57.6	0.67	86.589		
300.0	300.0	299.5	299.5	0.6	0.6	-180.00	-58.3	0.0	58.3	57.2	1.12	51.919		
400.0	400.0	399.5	399.5	0.8	0.8	-180.00	-58.3	0.0	58.3	56.7	1.57	37.074		
500.0	500.0	499.5	499.5	1.0	1.0	-180.00	-58.3	0.0	58.3	56.3	2.02	28.831		
600.0	600.0	599.5	599.5	1.2	1.2	-180.00	-58.3	0.0	58.3	55.8	2.47	23.587		
700.0	700.0	699.5	699.5	1.5	1.5	-180.00	-58.3	0.0	58.3	55.4	2.92	19.957		
800.0	800.0	799.5	799.5	1.7	1.7	-180.00	-58.3	0.0	58.3	54.9	3.37	17.295		
900.0	900.0	899.5	899.5	1.9	1.9	-180.00	-58.3	0.0	58.3	54.5	3.82	15.259		
1,000.0	1,000.0	999.5	999.5	2.1	2.1	-180.00	-58.3	0.0	58.3	54.0	4.27	13.653 CC, ES		
1,100.0	1,100.0	1,098.9	1,098.9	2.4	2.3	178.41	-58.8	1.6	58.8	54.1	4.70	12.512		
1,200.0	1,200.0	1,198.0	1,197.9	2.6	2.5	173.80	-60.3	6.5	60.6	55.5	5.12	11.844		
1,300.0	1,300.0	1,296.7	1,296.2	2.8	2.7	166.82	-62.7	14.7	64.5	59.0	5.55	11.633		
1,400.0	1,400.0	1,394.6	1,393.4	3.0	3.0	158.56	-66.1	26.0	71.3	65.4	5.98	11.936		
1,500.0	1,500.0	1,491.6	1,489.2	3.2	3.2	-78.29	-70.5	40.3	81.5	75.0	6.43	12.676		
1,600.0	1,599.8	1,589.5	1,585.7	3.4	3.5	-87.99	-75.3	56.2	94.5	87.7	6.83	13.835		
1,700.0	1,699.5	1,686.9	1,681.7	3.6	3.8	-96.86	-80.1	72.0	110.1	102.8	7.23	15.222		
1,800.0	1,798.8	1,783.8	1,777.1	3.8	4.2	-104.79	-84.8	87.7	128.5	120.9	7.64	16.824		
1,900.0	1,898.0	1,880.5	1,872.5	4.1	4.5	-110.99	-89.6	103.5	149.0	140.9	8.06	18.488		
2,000.0	1,997.3	1,977.3	1,967.8	4.3	4.8	-115.68	-94.3	119.2	170.8	162.3	8.49	20.105		
2,100.0	2,096.5	2,074.0	2,063.2	4.6	5.2	-119.31	-99.1	134.9	193.4	184.5	8.94	21.628		
2,200.0	2,195.8	2,170.8	2,158.5	4.8	5.5	-122.17	-103.9	150.6	216.6	207.2	9.40	23.039		
2,300.0	2,295.0	2,267.5	2,253.9	5.1	5.9	-124.48	-108.6	166.3	240.3	230.4	9.87	24.337		
2,400.0	2,394.3	2,364.3	2,349.2	5.4	6.2	-126.38	-113.4	182.0	264.2	253.9	10.35	25.526		
2,500.0	2,493.5	2,461.0	2,444.6	5.6	6.6	-127.96	-118.1	197.7	288.4	277.6	10.84	26.614		
2,600.0	2,592.7	2,557.8	2,539.9	5.9	6.9	-129.30	-122.9	213.5	312.8	301.5	11.33	27.609		
2,700.0	2,692.0	2,654.5	2,635.2	6.2	7.3	-130.44	-127.6	229.2	337.3	325.5	11.83	28.521		
2,800.0	2,791.2	2,751.3	2,730.6	6.5	7.7	-131.43	-132.4	244.9	361.9	349.6	12.33	29.357		
2,900.0	2,890.5	2,848.0	2,825.9	6.8	8.0	-132.30	-137.2	260.6	386.6	373.7	12.83	30.126		
3,000.0	2,989.7	2,944.8	2,921.3	7.1	8.4	-133.06	-141.9	276.3	411.3	398.0	13.34	30.833		
3,100.0	3,089.0	3,041.5	3,016.6	7.4	8.8	-133.73	-146.7	292.0	436.2	422.3	13.85	31.487		
3,200.0	3,188.2	3,138.3	3,112.0	7.7	9.2	-134.34	-151.4	307.8	461.0	446.7	14.37	32.091		
3,300.0	3,287.5	3,235.0	3,207.3	8.0	9.5	-134.88	-156.2	323.5	486.0	471.1	14.88	32.651		
3,400.0	3,386.7	3,331.8	3,302.7	8.3	9.9	-135.36	-160.9	339.2	510.9	495.5	15.40	33.171		
3,500.0	3,486.0	3,428.5	3,398.0	8.7	10.3	-135.81	-165.7	354.9	535.9	520.0	15.92	33.655		
3,600.0	3,585.2	3,525.3	3,493.3	9.0	10.7	-136.21	-170.4	370.6	560.9	544.5	16.45	34.106		
3,700.0	3,684.5	3,622.0	3,588.7	9.3	11.0	-136.58	-175.2	386.3	586.0	569.0	16.97	34.528		
3,800.0	3,783.7	3,718.8	3,684.0	9.6	11.4	-136.92	-180.0	402.1	611.0	593.5	17.50	34.922		
3,900.0	3,883.0	3,815.5	3,779.4	9.9	11.8	-137.23	-184.7	417.8	636.1	618.1	18.02	35.293		
4,000.0	3,982.2	3,912.3	3,874.7	10.2	12.2	-137.52	-189.5	433.5	661.2	642.7	18.55	35.640		
4,100.0	4,081.5	4,009.0	3,970.1	10.5	12.5	-137.78	-194.2	449.2	686.3	667.2	19.08	35.967		
4,200.0	4,180.7	4,105.7	4,065.4	10.9	12.9	-138.03	-199.0	464.9	711.4	691.8	19.61	36.275		
4,300.0	4,280.0	4,202.5	4,160.8	11.2	13.3	-138.26	-203.7	480.6	736.6	716.4	20.14	36.566		
4,400.0	4,379.2	4,299.2	4,256.1	11.5	13.7	-138.48	-208.5	496.4	761.7	741.0	20.68	36.841		
4,500.0	4,478.5	4,396.0	4,351.4	11.8	14.1	-138.68	-213.2	512.1	786.9	765.7	21.21	37.101		
4,600.0	4,577.7	4,492.7	4,446.8	12.1	14.4	-138.87	-218.0	527.8	812.0	790.3	21.74	37.347		
4,700.0	4,677.0	4,589.5	4,542.2	12.4	14.8	-139.13	-222.8	543.5	837.1	814.8	22.29	37.559		
4,800.0	4,776.5	4,686.8	4,638.0	12.7	15.2	-139.49	-227.5	559.3	860.3	837.5	22.82	37.706		
4,900.0	4,876.4	4,784.6	4,734.4	12.9	15.6	-139.66	-232.3	575.2	880.9	857.6	23.32	37.779		
5,000.0	4,976.3	4,882.9	4,831.3	13.0	16.0	-139.65	-237.2	591.2	898.9	875.1	23.79	37.786		

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 27G-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 27G-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-203 - 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)					
5,100.0	5,076.3	4,981.5	4,928.4	13.2	16.4	88.22	-242.0	607.2	915.1	890.8	24.24	37.757			
5,200.0	5,176.3	5,080.0	5,025.5	13.4	16.8	88.56	-246.9	623.2	931.2	906.5	24.67	37.743			
5,300.0	5,276.3	5,178.5	5,122.7	13.5	17.1	88.88	-251.7	639.2	947.3	922.2	25.11	37.730			
5,400.0	5,376.3	5,280.0	5,222.6	13.7	17.5	89.20	-256.7	655.7	963.5	938.0	25.55	37.710			
5,500.0	5,476.3	5,426.3	5,367.4	13.9	17.9	89.57	-262.7	675.5	977.0	951.0	26.02	37.543			
5,600.0	5,576.3	5,574.4	5,514.9	14.0	18.2	89.80	-266.6	688.3	985.7	959.2	26.48	37.225			
5,700.0	5,676.3	5,723.5	5,663.9	14.2	18.5	89.90	-268.2	693.8	989.4	962.4	26.92	36.754			
5,800.0	5,776.3	5,835.4	5,775.8	14.4	18.6	89.90	-268.3	694.0	989.5	962.2	27.30	36.244			
5,856.3	5,832.6	5,891.7	5,832.1	14.5	18.7	-90.12	-268.3	694.0	989.5	962.0	27.51	35.972			
5,900.0	5,876.3	5,935.4	5,875.8	14.6	18.8	-90.10	-268.3	694.0	989.5	961.8	27.67	35.763			
6,000.0	5,975.9	6,035.7	5,975.7	14.8	18.9	-90.14	-276.2	694.0	989.5	961.4	28.13	35.171			
6,100.0	6,073.5	6,136.1	6,073.8	15.1	19.2	-90.17	-297.0	694.0	989.5	960.7	28.75	34.412			
6,200.0	6,167.5	6,236.5	6,168.4	15.5	19.5	-90.21	-330.6	694.0	989.5	960.0	29.55	33.483			
6,300.0	6,256.3	6,337.0	6,257.8	16.0	19.8	-90.23	-376.3	694.0	989.5	959.0	30.56	32.382			
6,400.0	6,338.3	6,437.6	6,340.5	16.6	20.3	-90.26	-433.4	694.0	989.5	957.7	31.81	31.109			
6,500.0	6,412.1	6,538.2	6,415.1	17.4	20.8	-90.28	-500.8	694.0	989.5	956.2	33.33	29.685			
6,600.0	6,476.6	6,638.8	6,480.1	18.3	21.5	-90.29	-577.5	694.0	989.5	954.4	35.16	28.146			
6,700.0	6,530.5	6,739.5	6,534.6	19.4	22.3	-90.30	-662.2	694.0	989.5	952.2	37.28	26.543			
6,800.0	6,573.0	6,840.2	6,577.4	20.6	23.2	-90.31	-753.2	694.0	989.5	949.8	39.69	24.934			
6,900.0	6,603.3	6,940.9	6,607.9	21.9	24.3	-90.31	-849.1	694.0	989.5	947.2	42.34	23.371			
7,000.0	6,620.9	7,041.6	6,625.5	23.3	25.5	-90.30	-948.1	694.0	989.5	944.3	45.19	21.895			
7,100.0	6,625.6	7,142.2	6,630.1	24.8	26.8	-90.29	-1,048.6	694.0	989.5	941.3	48.19	20.534			
7,200.0	6,624.9	7,242.2	6,629.4	26.3	28.2	-90.29	-1,148.6	694.0	989.5	938.2	51.29	19.292			
7,300.0	6,624.3	7,342.2	6,628.7	27.9	29.6	-90.28	-1,248.6	694.0	989.5	935.0	54.48	18.162			
7,400.0	6,623.6	7,442.2	6,628.0	29.6	31.1	-90.28	-1,348.6	694.0	989.5	931.8	57.75	17.134			
7,500.0	6,623.0	7,542.2	6,627.3	31.2	32.6	-90.28	-1,448.6	694.0	989.5	928.4	61.09	16.198			
7,600.0	6,622.3	7,642.2	6,626.6	32.9	34.1	-90.27	-1,548.6	694.0	989.5	925.0	64.48	15.345			
7,700.0	6,621.7	7,742.2	6,625.9	34.7	35.7	-90.27	-1,648.6	694.0	989.5	921.6	67.92	14.568			
7,800.0	6,621.1	7,842.2	6,625.2	36.4	37.4	-90.27	-1,748.6	694.0	989.5	918.1	71.40	13.858			
7,900.0	6,620.4	7,942.2	6,624.5	38.1	39.0	-90.27	-1,848.6	694.0	989.5	914.6	74.92	13.207			
8,000.0	6,619.8	8,042.2	6,623.8	39.9	40.7	-90.26	-1,948.6	694.0	989.5	911.0	78.47	12.610			
8,100.0	6,619.1	8,142.2	6,623.1	41.7	42.4	-90.26	-2,048.6	694.0	989.5	907.5	82.04	12.061			
8,200.0	6,618.5	8,242.2	6,622.4	43.5	44.1	-90.26	-2,148.6	694.0	989.5	903.9	85.64	11.554			
8,300.0	6,617.8	8,342.2	6,621.7	45.3	45.9	-90.25	-2,248.5	694.0	989.5	900.2	89.26	11.086			
8,400.0	6,617.2	8,442.2	6,621.0	47.1	47.6	-90.25	-2,348.5	694.0	989.5	896.6	92.89	10.652			
8,500.0	6,616.5	8,542.2	6,620.3	48.9	49.4	-90.25	-2,448.5	694.0	989.5	893.0	96.54	10.249			
8,600.0	6,615.9	8,642.2	6,619.6	50.8	51.1	-90.24	-2,548.5	694.0	989.5	889.3	100.21	9.874			
8,700.0	6,615.2	8,742.2	6,618.9	52.6	52.9	-90.24	-2,648.5	694.0	989.5	885.6	103.89	9.525			
8,800.0	6,614.6	8,842.2	6,618.2	54.5	54.7	-90.24	-2,748.5	694.0	989.5	881.9	107.58	9.198			
8,900.0	6,614.0	8,942.2	6,617.5	56.3	56.5	-90.24	-2,848.5	694.0	989.5	878.2	111.28	8.892			
9,000.0	6,613.3	9,042.2	6,616.8	58.2	58.3	-90.23	-2,948.5	694.0	989.5	874.5	114.99	8.605			
9,100.0	6,612.7	9,142.2	6,616.1	60.0	60.1	-90.23	-3,048.5	694.0	989.5	870.8	118.70	8.336			
9,200.0	6,612.0	9,242.2	6,615.4	61.9	62.0	-90.23	-3,148.5	694.0	989.5	867.1	122.43	8.082			
9,300.0	6,611.4	9,342.2	6,614.7	63.7	63.8	-90.22	-3,248.5	694.0	989.5	863.3	126.16	7.843			
9,400.0	6,610.7	9,442.2	6,614.0	65.6	65.6	-90.22	-3,348.5	694.0	989.5	859.6	129.90	7.617			
9,500.0	6,610.1	9,542.2	6,613.3	67.5	67.5	-90.22	-3,448.5	694.0	989.5	855.9	133.65	7.404			
9,600.0	6,609.4	9,642.2	6,612.6	69.3	69.3	-90.21	-3,548.5	694.0	989.5	852.1	137.40	7.202			
9,700.0	6,608.8	9,742.2	6,611.9	71.2	71.2	-90.21	-3,648.5	694.0	989.5	848.3	141.15	7.010			
9,800.0	6,608.1	9,842.2	6,611.2	73.1	73.0	-90.21	-3,748.5	694.0	989.5	844.6	144.91	6.828			
9,900.0	6,607.5	9,942.2	6,610.5	75.0	74.9	-90.21	-3,848.5	694.0	989.5	840.8	148.67	6.656			
10,000.0	6,606.8	10,042.2	6,609.8	76.9	76.7	-90.20	-3,948.5	694.0	989.5	837.1	152.44	6.491			

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 27G-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 27G-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-203 - 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)			
10,100.0	6,606.2	10,142.2	6,609.1	78.7	78.6	-90.20	-4,048.5	694.0	989.5	833.3	156.21	6.334		
10,200.0	6,605.6	10,242.2	6,608.4	80.6	80.4	-90.20	-4,148.5	694.0	989.5	829.5	159.99	6.185		
10,300.0	6,604.9	10,342.2	6,607.7	82.5	82.3	-90.19	-4,248.5	694.0	989.5	825.7	163.76	6.042		
10,400.0	6,604.3	10,442.2	6,607.0	84.4	84.2	-90.19	-4,348.5	694.0	989.5	822.0	167.54	5.906		
10,500.0	6,603.6	10,542.2	6,606.3	86.3	86.0	-90.19	-4,448.5	694.0	989.5	818.2	171.33	5.776		
10,600.0	6,603.0	10,642.2	6,605.6	88.2	87.9	-90.18	-4,548.5	694.0	989.5	814.4	175.11	5.651		
10,700.0	6,602.3	10,742.2	6,605.0	90.1	89.8	-90.18	-4,648.5	694.0	989.5	810.6	178.90	5.531		
10,800.0	6,601.7	10,842.2	6,604.3	92.0	91.7	-90.18	-4,748.5	694.0	989.5	806.8	182.69	5.416		
10,900.0	6,601.0	10,942.2	6,603.6	93.9	93.5	-90.17	-4,848.5	694.0	989.5	803.0	186.48	5.306		
11,000.0	6,600.4	11,042.2	6,602.9	95.8	95.4	-90.17	-4,948.5	694.0	989.5	799.2	190.28	5.200		
11,100.0	6,599.7	11,142.2	6,602.2	97.7	97.3	-90.17	-5,048.5	694.0	989.5	795.4	194.07	5.099		
11,200.0	6,599.1	11,242.2	6,601.5	99.6	99.2	-90.17	-5,148.5	694.0	989.5	791.6	197.87	5.001		
11,300.0	6,598.5	11,342.2	6,600.8	101.5	101.1	-90.16	-5,248.5	694.0	989.5	787.8	201.67	4.906		
11,400.0	6,597.8	11,442.2	6,600.1	103.4	103.0	-90.16	-5,348.5	694.0	989.5	784.0	205.47	4.816		
11,500.0	6,597.2	11,542.2	6,599.4	105.3	104.9	-90.16	-5,448.5	694.0	989.5	780.2	209.27	4.728		
11,600.0	6,596.5	11,642.2	6,598.7	107.2	106.7	-90.15	-5,548.5	694.0	989.5	776.4	213.08	4.644		
11,700.0	6,595.9	11,742.2	6,598.0	109.1	108.6	-90.15	-5,648.5	694.0	989.5	772.6	216.88	4.562		
11,800.0	6,595.2	11,842.2	6,597.3	111.0	110.5	-90.15	-5,748.5	694.0	989.5	768.8	220.69	4.484		
11,900.0	6,594.6	11,942.2	6,596.6	112.9	112.4	-90.14	-5,848.5	694.0	989.5	765.0	224.50	4.408		
12,000.0	6,593.9	12,042.2	6,595.9	114.8	114.3	-90.14	-5,948.5	694.0	989.5	761.2	228.31	4.334		
12,100.0	6,593.3	12,142.2	6,595.2	116.7	116.2	-90.14	-6,048.5	694.0	989.5	757.4	232.12	4.263		
12,200.0	6,592.6	12,242.2	6,594.5	118.6	118.1	-90.14	-6,148.5	694.0	989.5	753.6	235.93	4.194		
12,300.0	6,592.0	12,342.2	6,593.8	120.5	120.0	-90.13	-6,248.4	694.0	989.5	749.8	239.74	4.127		
12,400.0	6,591.3	12,442.2	6,593.1	122.4	121.9	-90.13	-6,348.4	694.0	989.5	745.9	243.55	4.063		
12,500.0	6,590.7	12,542.2	6,592.4	124.3	123.8	-90.13	-6,448.4	694.0	989.5	742.1	247.36	4.000		
12,600.0	6,590.1	12,642.2	6,591.7	126.2	125.7	-90.12	-6,548.4	694.0	989.5	738.3	251.18	3.939		
12,700.0	6,589.4	12,742.2	6,591.0	128.1	127.6	-90.12	-6,648.4	694.0	989.5	734.5	254.99	3.880		
12,800.0	6,588.8	12,842.2	6,590.3	130.0	129.5	-90.12	-6,748.4	694.0	989.5	730.7	258.81	3.823		
12,900.0	6,588.1	12,942.2	6,589.6	131.9	131.4	-90.11	-6,848.4	694.0	989.5	726.9	262.63	3.768		
13,000.0	6,587.5	13,042.2	6,588.9	133.8	133.3	-90.11	-6,948.4	694.0	989.5	723.0	266.45	3.714		
13,100.0	6,586.8	13,142.2	6,588.2	135.7	135.2	-90.11	-7,048.4	694.0	989.5	719.2	270.26	3.661		
13,200.0	6,586.2	13,242.2	6,587.5	137.6	137.1	-90.11	-7,148.4	694.0	989.5	715.4	274.08	3.610		
13,300.0	6,585.5	13,342.2	6,586.8	139.6	139.0	-90.10	-7,248.4	694.0	989.5	711.6	277.90	3.561		
13,400.0	6,584.9	13,442.2	6,586.1	141.5	140.9	-90.10	-7,348.4	694.0	989.5	707.8	281.72	3.512		
13,500.0	6,584.2	13,542.2	6,585.4	143.4	142.8	-90.10	-7,448.4	694.0	989.5	703.9	285.54	3.465		
13,600.0	6,583.6	13,642.2	6,584.7	145.3	144.7	-90.09	-7,548.4	694.0	989.5	700.1	289.36	3.420		
13,700.0	6,583.0	13,742.2	6,584.0	147.2	146.6	-90.09	-7,648.4	694.0	989.5	696.3	293.19	3.375		
13,800.0	6,582.3	13,842.2	6,583.3	149.1	148.5	-90.09	-7,748.4	694.0	989.5	692.5	297.01	3.332		
13,835.6	6,582.1	13,877.8	6,583.1	149.8	149.2	-90.09	-7,784.0	694.0	989.5	691.1	298.37	3.316		
13,847.8	6,582.0	13,886.3	6,583.0	150.0	149.3	-90.09	-7,792.6	694.0	989.5	690.7	298.76	3.312 SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27G-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 27G-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 #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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	1.5	1.5	0.0	0.0	-180.00	-180.00	-29.1	0.0	29.1	29.1	0.00	N/A	
100.0	100.0	101.5	101.5	0.1	0.1	-180.00	-180.00	-29.1	0.0	29.1	28.9	0.23	127.751	
200.0	200.0	201.5	201.5	0.3	0.3	-180.00	-180.00	-29.1	0.0	29.1	28.5	0.68	43.007	
300.0	300.0	301.5	301.5	0.6	0.6	-180.00	-180.00	-29.1	0.0	29.1	28.0	1.13	25.856	
400.0	400.0	401.5	401.5	0.8	0.8	-180.00	-180.00	-29.1	0.0	29.1	27.6	1.58	18.484	
500.0	500.0	501.5	501.5	1.0	1.0	-180.00	-180.00	-29.1	0.0	29.1	27.1	2.03	14.384	
600.0	600.0	601.5	601.5	1.2	1.2	-180.00	-180.00	-29.1	0.0	29.1	26.7	2.48	11.772	
700.0	700.0	701.5	701.5	1.5	1.5	-180.00	-180.00	-29.1	0.0	29.1	26.2	2.93	9.963	
800.0	800.0	801.5	801.5	1.7	1.7	-180.00	-180.00	-29.1	0.0	29.1	25.8	3.37	8.636	
900.0	900.0	901.5	901.5	1.9	1.9	-180.00	-180.00	-29.1	0.0	29.1	25.3	3.82	7.621	
1,000.0	1,000.0	1,001.5	1,001.5	2.1	2.1	-180.00	-180.00	-29.1	0.0	29.1	24.9	4.27	6.819	
1,100.0	1,100.0	1,101.5	1,101.5	2.4	2.4	-180.00	-180.00	-29.1	0.0	29.1	24.4	4.72	6.170	
1,166.2	1,166.2	1,167.7	1,167.7	2.5	2.5	-180.00	-180.00	-29.1	0.0	29.1	24.1	5.02	5.805 CC	
1,200.0	1,200.0	1,201.5	1,201.5	2.6	2.6	180.00	180.00	-29.1	0.0	29.1	24.0	5.17	5.634 ES	
1,300.0	1,300.0	1,300.9	1,300.9	2.8	2.8	177.19	177.19	-30.1	1.5	30.2	24.6	5.60	5.388	
1,400.0	1,400.0	1,400.0	1,399.8	3.0	3.0	170.00	170.00	-33.0	5.8	33.5	27.5	6.01	5.582	
1,500.0	1,500.0	1,498.7	1,498.1	3.2	3.2	-68.74	-68.74	-37.7	13.0	39.4	33.0	6.41	6.145	
1,600.0	1,599.8	1,596.9	1,595.7	3.4	3.4	-82.33	-82.33	-44.2	22.7	48.6	41.8	6.79	7.160	
1,700.0	1,699.5	1,695.5	1,693.4	3.6	3.6	-94.61	-94.61	-51.0	33.0	60.6	53.5	7.18	8.442	
1,800.0	1,798.8	1,793.6	1,790.8	3.8	3.9	-104.89	-104.89	-57.8	43.2	75.3	67.7	7.59	9.920	
1,900.0	1,898.0	1,891.7	1,888.1	4.1	4.1	-112.08	-112.08	-64.6	53.5	91.7	83.7	8.01	11.450	
2,000.0	1,997.3	1,989.8	1,985.5	4.3	4.4	-117.04	-117.04	-71.4	63.7	109.2	100.7	8.45	12.919	
2,100.0	2,096.5	2,087.9	2,082.8	4.6	4.7	-120.62	-120.62	-78.2	74.0	127.2	118.3	8.90	14.285	
2,200.0	2,195.8	2,186.0	2,180.1	4.8	5.0	-123.31	-123.31	-85.0	84.3	145.6	136.2	9.37	15.538	
2,300.0	2,295.0	2,284.1	2,277.4	5.1	5.3	-125.40	-125.40	-91.7	94.5	164.2	154.4	9.84	16.682	
2,400.0	2,394.3	2,382.2	2,374.7	5.4	5.5	-127.06	-127.06	-98.5	104.8	183.0	172.7	10.33	17.723	
2,500.0	2,493.5	2,480.3	2,472.1	5.6	5.8	-128.41	-128.41	-105.3	115.0	201.9	191.1	10.81	18.669	
2,600.0	2,592.7	2,578.4	2,569.4	5.9	6.1	-129.53	-129.53	-112.1	125.3	220.9	209.6	11.31	19.532	
2,700.0	2,692.0	2,676.5	2,666.7	6.2	6.4	-130.48	-130.48	-118.9	135.5	240.0	228.2	11.81	20.319	
2,800.0	2,791.2	2,774.6	2,764.0	6.5	6.7	-131.28	-131.28	-125.7	145.8	259.1	246.8	12.32	21.038	
2,900.0	2,890.5	2,872.6	2,861.3	6.8	7.0	-131.97	-131.97	-132.5	156.0	278.3	265.4	12.83	21.697	
3,000.0	2,989.7	2,970.7	2,958.7	7.1	7.4	-132.58	-132.58	-139.3	166.3	297.5	284.1	13.34	22.303	
3,100.0	3,089.0	3,068.8	3,056.0	7.4	7.7	-133.11	-133.11	-146.1	176.5	316.7	302.9	13.85	22.860	
3,200.0	3,188.2	3,166.9	3,153.3	7.7	8.0	-133.58	-133.58	-152.9	186.8	336.0	321.6	14.37	23.375	
3,300.0	3,287.5	3,265.0	3,250.6	8.0	8.3	-133.99	-133.99	-159.7	197.0	355.2	340.3	14.89	23.851	
3,400.0	3,386.7	3,363.1	3,347.9	8.3	8.6	-134.37	-134.37	-166.4	207.3	374.5	359.1	15.42	24.292	
3,500.0	3,486.0	3,461.2	3,445.3	8.7	8.9	-134.71	-134.71	-173.2	217.5	393.8	377.9	15.94	24.703	
3,600.0	3,585.2	3,559.3	3,542.6	9.0	9.2	-135.02	-135.02	-180.0	227.8	413.1	396.7	16.47	25.085	
3,700.0	3,684.5	3,657.4	3,639.9	9.3	9.5	-135.30	-135.30	-186.8	238.0	432.5	415.5	17.00	25.441	
3,800.0	3,783.7	3,755.5	3,737.2	9.6	9.8	-135.55	-135.55	-193.6	248.3	451.8	434.3	17.53	25.774	
3,900.0	3,883.0	3,853.6	3,834.5	9.9	10.2	-135.79	-135.79	-200.4	258.5	471.1	453.1	18.06	26.086	
4,000.0	3,982.2	3,951.7	3,931.9	10.2	10.5	-136.00	-136.00	-207.2	268.8	490.5	471.9	18.59	26.379	
4,100.0	4,081.5	4,049.8	4,029.2	10.5	10.8	-136.20	-136.20	-214.0	279.0	509.8	490.7	19.13	26.654	
4,200.0	4,180.7	4,147.9	4,126.5	10.9	11.1	-136.39	-136.39	-220.8	289.3	529.2	509.5	19.66	26.914	
4,300.0	4,280.0	4,246.0	4,223.8	11.2	11.4	-136.56	-136.56	-227.6	299.5	548.6	528.4	20.20	27.158	
4,400.0	4,379.2	4,344.1	4,321.1	11.5	11.7	-136.72	-136.72	-234.4	309.8	567.9	547.2	20.74	27.389	
4,500.0	4,478.5	4,442.2	4,418.5	11.8	12.1	-136.87	-136.87	-241.1	320.0	587.3	566.0	21.27	27.607	
4,600.0	4,577.7	4,540.2	4,515.8	12.1	12.4	-137.01	-137.01	-247.9	330.3	606.7	584.9	21.81	27.813	
4,700.0	4,677.0	4,638.4	4,613.1	12.4	12.7	-137.21	-137.21	-254.7	340.5	626.0	603.6	22.36	27.999	
4,800.0	4,776.5	4,753.0	4,727.0	12.7	13.0	-137.45	-137.45	-261.9	351.4	642.5	619.7	22.87	28.100	
4,900.0	4,876.4	4,875.5	4,849.2	12.9	13.3	-137.59	-137.59	-267.0	359.0	653.1	629.8	23.32	28.005	

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 27G-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 27G-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 #1 (4-22-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,976.3	4,999.0	4,972.6	13.0	13.5	-137.65		-269.1	362.2	657.6	633.9	23.73	27.708	
5,100.0	5,076.3	5,104.2	5,077.8	13.2	13.6	89.93		-269.1	362.3	657.8	633.7	24.11	27.286	
5,200.0	5,176.3	5,204.2	5,177.8	13.4	13.8	89.93		-269.1	362.3	657.8	633.3	24.46	26.888	
5,300.0	5,276.3	5,304.2	5,277.8	13.5	14.0	89.93		-269.1	362.3	657.8	633.0	24.82	26.499	
5,400.0	5,376.3	5,404.2	5,377.8	13.7	14.1	89.93		-269.1	362.3	657.8	632.6	25.19	26.117	
5,500.0	5,476.3	5,504.2	5,477.8	13.9	14.3	89.93		-269.1	362.3	657.8	632.2	25.55	25.744	
5,600.0	5,576.3	5,604.2	5,577.8	14.0	14.5	89.93		-269.1	362.3	657.8	631.9	25.92	25.378	
5,700.0	5,676.3	5,704.2	5,677.8	14.2	14.6	89.93		-269.1	362.3	657.8	631.5	26.29	25.020	
5,800.0	5,776.3	5,804.2	5,777.8	14.4	14.8	89.93		-269.1	362.3	657.8	631.1	26.66	24.670	
5,861.4	5,837.7	5,865.6	5,839.2	14.5	14.9	-90.11		-269.1	362.3	657.8	630.9	26.90	24.458	
5,900.0	5,876.3	5,904.2	5,877.8	14.6	15.0	-90.09		-269.1	362.3	657.8	630.8	27.04	24.327	
6,000.0	5,975.9	6,004.2	5,977.8	14.8	15.2	-90.75		-269.9	362.3	657.9	630.4	27.48	23.938	
6,100.0	6,073.5	6,105.5	6,078.4	15.1	15.4	-91.65		-281.2	362.3	658.1	630.0	28.07	23.441	
6,200.0	6,167.5	6,208.2	6,178.0	15.5	15.7	-92.52		-306.1	362.3	658.4	629.6	28.85	22.824	
6,300.0	6,256.3	6,312.4	6,274.6	16.0	16.1	-93.36		-344.8	362.3	658.9	629.1	29.84	22.085	
6,400.0	6,338.3	6,418.0	6,366.3	16.6	16.7	-94.14		-397.0	362.3	659.5	628.5	31.07	21.225	
6,500.0	6,412.1	6,524.9	6,450.9	17.4	17.3	-94.86		-462.3	362.3	660.2	627.6	32.60	20.254	
6,600.0	6,476.6	6,633.1	6,526.4	18.3	18.2	-95.48		-539.7	362.3	660.8	626.4	34.43	19.193	
6,700.0	6,530.5	6,742.5	6,590.8	19.4	19.2	-96.01		-627.9	362.3	661.4	624.9	36.59	18.078	
6,800.0	6,573.0	6,852.7	6,642.3	20.6	20.4	-96.43		-725.3	362.3	662.0	622.9	39.06	16.946	
6,900.0	6,603.3	6,963.7	6,679.5	21.9	21.8	-96.72		-829.7	362.3	662.4	620.5	41.83	15.836	
7,000.0	6,620.9	7,075.1	6,701.3	23.3	23.3	-96.89		-938.9	362.3	662.6	617.8	44.82	14.784	
7,100.0	6,625.6	7,185.6	6,707.0	24.8	24.9	-96.93		-1,049.2	362.3	662.6	614.7	47.96	13.817	
7,200.0	6,624.9	7,285.6	6,706.2	26.3	26.4	-96.92		-1,149.2	362.3	662.6	611.5	51.08	12.973	
7,300.0	6,624.3	7,385.6	6,705.4	27.9	27.9	-96.90		-1,249.2	362.3	662.6	608.3	54.28	12.207	
7,400.0	6,623.6	7,485.6	6,704.6	29.6	29.5	-96.89		-1,349.2	362.3	662.6	605.0	57.56	11.511	
7,500.0	6,623.0	7,585.6	6,703.9	31.2	31.2	-96.88		-1,449.2	362.3	662.6	601.7	60.90	10.879	
7,600.0	6,622.3	7,685.6	6,703.1	32.9	32.9	-96.87		-1,549.2	362.3	662.6	598.3	64.30	10.304	
7,700.0	6,621.7	7,785.6	6,702.3	34.7	34.5	-96.86		-1,649.2	362.3	662.5	594.8	67.74	9.780	
7,800.0	6,621.1	7,885.6	6,701.5	36.4	36.3	-96.84		-1,749.1	362.3	662.5	591.3	71.22	9.302	
7,900.0	6,620.4	7,985.6	6,700.7	38.1	38.0	-96.83		-1,849.1	362.3	662.5	587.8	74.73	8.865	
8,000.0	6,619.8	8,085.6	6,699.9	39.9	39.7	-96.82		-1,949.1	362.3	662.5	584.2	78.28	8.463	
8,100.0	6,619.1	8,185.6	6,699.1	41.7	41.5	-96.81		-2,049.1	362.3	662.5	580.6	81.84	8.094	
8,200.0	6,618.5	8,285.6	6,698.4	43.5	43.3	-96.80		-2,149.1	362.3	662.5	577.0	85.43	7.754	
8,300.0	6,617.8	8,385.6	6,697.6	45.3	45.1	-96.78		-2,249.1	362.3	662.4	573.4	89.04	7.440	
8,400.0	6,617.2	8,485.6	6,696.8	47.1	46.9	-96.77		-2,349.1	362.3	662.4	569.8	92.67	7.148	
8,500.0	6,616.5	8,585.6	6,696.0	48.9	48.7	-96.76		-2,449.1	362.3	662.4	566.1	96.31	6.878	
8,600.0	6,615.9	8,685.6	6,695.2	50.8	50.5	-96.75		-2,549.1	362.3	662.4	562.4	99.96	6.626	
8,700.0	6,615.2	8,785.6	6,694.4	52.6	52.3	-96.74		-2,649.1	362.3	662.4	558.7	103.63	6.392	
8,800.0	6,614.6	8,885.6	6,693.6	54.5	54.2	-96.72		-2,749.1	362.3	662.4	555.0	107.30	6.173	
8,900.0	6,614.0	8,985.6	6,692.9	56.3	56.0	-96.71		-2,849.1	362.3	662.3	551.3	110.99	5.967	
9,000.0	6,613.3	9,085.6	6,692.1	58.2	57.9	-96.70		-2,949.1	362.3	662.3	547.6	114.69	5.775	
9,100.0	6,612.7	9,185.6	6,691.3	60.0	59.7	-96.69		-3,049.1	362.3	662.3	543.9	118.39	5.594	
9,200.0	6,612.0	9,285.6	6,690.5	61.9	61.6	-96.68		-3,149.1	362.3	662.3	540.2	122.10	5.424	
9,300.0	6,611.4	9,385.6	6,689.7	63.7	63.4	-96.66		-3,249.1	362.3	662.3	536.5	125.82	5.264	
9,400.0	6,610.7	9,485.6	6,688.9	65.6	65.3	-96.65		-3,349.1	362.3	662.3	532.7	129.55	5.112	
9,500.0	6,610.1	9,585.6	6,688.1	67.5	67.1	-96.64		-3,449.1	362.3	662.2	529.0	133.28	4.969	
9,600.0	6,609.4	9,685.6	6,687.4	69.3	69.0	-96.63		-3,549.1	362.3	662.2	525.2	137.01	4.833	
9,700.0	6,608.8	9,785.6	6,686.6	71.2	70.9	-96.62		-3,649.1	362.3	662.2	521.5	140.75	4.705	
9,800.0	6,608.1	9,885.6	6,685.8	73.1	72.8	-96.60		-3,749.1	362.3	662.2	517.7	144.50	4.583	
9,900.0	6,607.5	9,985.6	6,685.0	75.0	74.6	-96.59		-3,849.1	362.3	662.2	513.9	148.24	4.467	

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 27G-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 27G-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 #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)			
10,000.0	6,606.8	10,085.6	6,684.2	76.9	76.5	-96.58	-3,949.1	362.3	662.2	510.2	152.00	4.356		
10,100.0	6,606.2	10,185.6	6,683.4	78.7	78.4	-96.57	-4,049.1	362.3	662.1	506.4	155.75	4.251		
10,200.0	6,605.6	10,285.6	6,682.6	80.6	80.3	-96.56	-4,149.1	362.3	662.1	502.6	159.51	4.151		
10,300.0	6,604.9	10,385.6	6,681.9	82.5	82.2	-96.54	-4,249.1	362.3	662.1	498.8	163.27	4.055		
10,400.0	6,604.3	10,485.6	6,681.1	84.4	84.0	-96.53	-4,349.1	362.3	662.1	495.1	167.04	3.964		
10,500.0	6,603.6	10,585.6	6,680.3	86.3	85.9	-96.52	-4,449.1	362.3	662.1	491.3	170.81	3.876		
10,600.0	6,603.0	10,685.6	6,679.5	88.2	87.8	-96.51	-4,549.1	362.3	662.1	487.5	174.58	3.792		
10,700.0	6,602.3	10,785.6	6,678.7	90.1	89.7	-96.50	-4,649.1	362.3	662.0	483.7	178.35	3.712		
10,800.0	6,601.7	10,885.6	6,677.9	92.0	91.6	-96.48	-4,749.1	362.3	662.0	479.9	182.13	3.635		
10,900.0	6,601.0	10,985.6	6,677.1	93.9	93.5	-96.47	-4,849.0	362.3	662.0	476.1	185.90	3.561		
11,000.0	6,600.4	11,085.6	6,676.4	95.8	95.4	-96.46	-4,949.0	362.3	662.0	472.3	189.68	3.490		
11,100.0	6,599.7	11,185.6	6,675.6	97.7	97.3	-96.45	-5,049.0	362.3	662.0	468.5	193.46	3.422		
11,200.0	6,599.1	11,285.6	6,674.8	99.6	99.2	-96.44	-5,149.0	362.3	662.0	464.7	197.25	3.356		
11,300.0	6,598.5	11,385.6	6,674.0	101.5	101.1	-96.42	-5,249.0	362.3	662.0	460.9	201.03	3.293		
11,400.0	6,597.8	11,485.6	6,673.2	103.4	103.0	-96.41	-5,349.0	362.3	661.9	457.1	204.82	3.232		
11,500.0	6,597.2	11,585.6	6,672.4	105.3	104.9	-96.40	-5,449.0	362.3	661.9	453.3	208.61	3.173		
11,600.0	6,596.5	11,685.6	6,671.6	107.2	106.8	-96.39	-5,549.0	362.3	661.9	449.5	212.40	3.116		
11,700.0	6,595.9	11,785.6	6,670.9	109.1	108.7	-96.38	-5,649.0	362.3	661.9	445.7	216.19	3.062		
11,800.0	6,595.2	11,885.6	6,670.1	111.0	110.6	-96.36	-5,749.0	362.3	661.9	441.9	219.98	3.009		
11,900.0	6,594.6	11,985.6	6,669.3	112.9	112.5	-96.35	-5,849.0	362.3	661.9	438.1	223.77	2.958		
12,000.0	6,593.9	12,085.6	6,668.5	114.8	114.4	-96.34	-5,949.0	362.3	661.8	434.3	227.57	2.908		
12,100.0	6,593.3	12,185.6	6,667.7	116.7	116.3	-96.33	-6,049.0	362.3	661.8	430.5	231.36	2.861		
12,200.0	6,592.6	12,285.6	6,666.9	118.6	118.2	-96.32	-6,149.0	362.3	661.8	426.7	235.16	2.814		
12,300.0	6,592.0	12,385.6	6,666.2	120.5	120.1	-96.30	-6,249.0	362.3	661.8	422.8	238.96	2.770		
12,400.0	6,591.3	12,485.6	6,665.4	122.4	122.0	-96.29	-6,349.0	362.3	661.8	419.0	242.76	2.726		
12,500.0	6,590.7	12,585.6	6,664.6	124.3	123.9	-96.28	-6,449.0	362.3	661.8	415.2	246.56	2.684		
12,600.0	6,590.1	12,685.6	6,663.8	126.2	125.8	-96.27	-6,549.0	362.3	661.8	411.4	250.36	2.643		
12,700.0	6,589.4	12,785.6	6,663.0	128.1	127.7	-96.26	-6,649.0	362.3	661.7	407.6	254.16	2.604		
12,800.0	6,588.8	12,885.6	6,662.2	130.0	129.6	-96.24	-6,749.0	362.3	661.7	403.8	257.96	2.565		
12,900.0	6,588.1	12,985.6	6,661.4	131.9	131.5	-96.23	-6,849.0	362.3	661.7	399.9	261.76	2.528		
13,000.0	6,587.5	13,085.6	6,660.7	133.8	133.4	-96.22	-6,949.0	362.3	661.7	396.1	265.57	2.492		
13,100.0	6,586.8	13,185.6	6,659.9	135.7	135.3	-96.21	-7,049.0	362.3	661.7	392.3	269.37	2.456		
13,200.0	6,586.2	13,285.6	6,659.1	137.6	137.2	-96.20	-7,149.0	362.3	661.7	388.5	273.18	2.422		
13,300.0	6,585.5	13,385.6	6,658.3	139.6	139.1	-96.18	-7,249.0	362.3	661.6	384.7	276.99	2.389		
13,400.0	6,584.9	13,485.6	6,657.5	141.5	141.0	-96.17	-7,349.0	362.3	661.6	380.8	280.79	2.356		
13,500.0	6,584.2	13,585.6	6,656.7	143.4	142.9	-96.16	-7,449.0	362.3	661.6	377.0	284.60	2.325		
13,600.0	6,583.6	13,685.6	6,655.9	145.3	144.9	-96.15	-7,549.0	362.3	661.6	373.2	288.41	2.294		
13,700.0	6,583.0	13,785.6	6,655.2	147.2	146.8	-96.13	-7,649.0	362.3	661.6	369.4	292.22	2.264		
13,800.0	6,582.3	13,885.6	6,654.4	149.1	148.7	-96.12	-7,749.0	362.3	661.6	365.5	296.03	2.235		
13,835.6	6,582.1	13,921.2	6,654.1	149.8	149.4	-96.12	-7,784.5	362.3	661.6	364.2	297.38	2.225		
13,847.8	6,582.0	13,932.9	6,654.0	150.0	149.6	-96.12	-7,796.2	362.3	661.6	363.7	297.84	2.221 SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27G-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 27G-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								
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)				
0.0	0.0	0.0	0.0	0.0	0.0	94.82	-58.3	691.0	693.5						
100.0	100.0	99.5	99.5	0.1	0.1	94.82	-58.3	691.0	693.5	693.3	0.22	3,093.071			
200.0	200.0	199.5	199.5	0.3	0.3	94.82	-58.3	691.0	693.5	692.8	0.67	1,030.168			
300.0	300.0	299.5	299.5	0.6	0.6	94.82	-58.3	691.0	693.5	692.4	1.12	617.688			
400.0	400.0	399.5	399.5	0.8	0.8	94.82	-58.3	691.0	693.5	691.9	1.57	441.080			
500.0	500.0	499.5	499.5	1.0	1.0	94.82	-58.3	691.0	693.5	691.5	2.02	343.007			
600.0	600.0	599.5	599.5	1.2	1.2	94.82	-58.3	691.0	693.5	691.0	2.47	280.614			
700.0	700.0	699.5	699.5	1.5	1.5	94.82	-58.3	691.0	693.5	690.6	2.92	237.426			
800.0	800.0	799.5	799.5	1.7	1.7	94.82	-58.3	691.0	693.5	690.1	3.37	205.759			
900.0	900.0	899.5	899.5	1.9	1.9	94.82	-58.3	691.0	693.5	689.7	3.82	181.545			
1,000.0	1,000.0	999.5	999.5	2.1	2.1	94.82	-58.3	691.0	693.5	689.2	4.27	162.430			
1,100.0	1,100.0	1,130.7	1,130.7	2.4	2.4	94.78	-57.6	688.1	691.2	686.5	4.77	144.772			
1,200.0	1,200.0	1,261.6	1,261.2	2.6	2.7	94.68	-55.6	679.4	684.5	679.2	5.28	129.628			
1,300.0	1,300.0	1,391.4	1,390.2	2.8	3.0	94.49	-52.2	665.0	673.2	667.4	5.80	115.975			
1,400.0	1,400.0	1,519.5	1,516.7	3.0	3.4	94.22	-47.6	645.3	657.6	651.2	6.36	103.354			
1,500.0	1,500.0	1,621.1	1,616.5	3.2	3.7	-134.00	-43.3	627.0	640.5	633.8	6.72	95.257			
1,600.0	1,599.8	1,719.8	1,713.5	3.4	4.0	-134.83	-39.2	609.2	625.8	618.7	7.12	87.844			
1,700.0	1,699.5	1,818.6	1,810.6	3.6	4.4	-135.88	-35.0	591.4	613.7	606.2	7.54	81.419			
1,800.0	1,798.8	1,917.4	1,907.7	3.8	4.7	-137.06	-30.8	573.6	604.0	596.1	7.97	75.783			
1,900.0	1,898.0	2,016.2	2,004.8	4.1	5.1	-138.24	-26.7	555.8	594.9	586.5	8.43	70.608			
2,000.0	1,997.3	2,115.0	2,101.9	4.3	5.5	-139.45	-22.5	538.0	586.0	577.1	8.89	65.895			
2,100.0	2,096.5	2,213.8	2,199.0	4.6	5.8	-140.69	-18.3	520.2	577.4	568.0	9.37	61.606			
2,200.0	2,195.8	2,312.6	2,296.1	4.8	6.2	-141.98	-14.2	502.4	569.1	559.2	9.86	57.701			
2,300.0	2,295.0	2,411.5	2,393.2	5.1	6.6	-143.30	-10.0	484.6	561.0	550.7	10.36	54.143			
2,400.0	2,394.3	2,510.3	2,490.3	5.4	7.0	-144.65	-5.8	466.8	553.3	542.4	10.87	50.898			
2,500.0	2,493.5	2,609.1	2,587.4	5.6	7.4	-146.05	-1.7	449.0	545.9	534.5	11.39	47.934			
2,600.0	2,592.7	2,707.9	2,684.5	5.9	7.8	-147.48	2.5	431.2	538.8	526.9	11.92	45.222			
2,700.0	2,692.0	2,806.7	2,781.6	6.2	8.2	-148.94	6.6	413.4	532.1	519.7	12.45	42.738			
2,800.0	2,791.2	2,905.5	2,878.8	6.5	8.6	-150.44	10.8	395.6	525.8	512.8	13.00	40.459			
2,900.0	2,890.5	3,004.3	2,975.9	6.8	9.0	-151.98	15.0	377.8	519.8	506.3	13.55	38.364			
3,000.0	2,989.7	3,103.2	3,073.0	7.1	9.4	-153.55	19.1	360.0	514.2	500.1	14.11	36.438			
3,100.0	3,089.0	3,202.0	3,170.1	7.4	9.8	-155.15	23.3	342.2	509.0	494.4	14.69	34.664			
3,200.0	3,188.2	3,300.8	3,267.2	7.7	10.2	-156.79	27.5	324.4	504.3	489.0	15.27	33.028			
3,300.0	3,287.5	3,399.6	3,364.3	8.0	10.6	-158.45	31.6	306.6	499.9	484.1	15.86	31.519			
3,400.0	3,386.7	3,498.4	3,461.4	8.3	11.0	-160.14	35.8	288.8	496.0	479.5	16.46	30.126			
3,500.0	3,486.0	3,597.2	3,558.5	8.7	11.4	-161.86	39.9	271.0	492.6	475.5	17.08	28.839			
3,600.0	3,585.2	3,696.0	3,655.6	9.0	11.8	-163.60	44.1	253.2	489.6	471.8	17.70	27.651			
3,700.0	3,684.5	3,794.9	3,752.7	9.3	12.2	-165.35	48.3	235.4	487.0	468.7	18.34	26.553			
3,800.0	3,783.7	3,893.7	3,849.8	9.6	12.7	-167.13	52.4	217.6	484.9	466.0	18.99	25.539			
3,900.0	3,883.0	3,992.5	3,946.9	9.9	13.1	-168.91	56.6	199.8	483.4	463.7	19.65	24.602			
4,000.0	3,982.2	4,091.3	4,044.1	10.2	13.5	-170.71	60.8	181.9	482.3	461.9	20.32	23.737			
4,100.0	4,081.5	4,190.1	4,141.2	10.5	13.9	-172.51	64.9	164.1	481.6	460.7	21.00	22.938			
4,175.7	4,156.6	4,264.9	4,214.6	10.8	14.2	-173.87	68.1	150.7	481.5	460.0	21.52	22.375			
4,200.0	4,180.7	4,288.9	4,238.3	10.9	14.3	-174.31	69.1	146.3	481.5	459.8	21.69	22.202			
4,300.0	4,280.0	4,387.7	4,335.4	11.2	14.7	-176.12	73.3	128.5	481.9	459.5	22.39	21.523			
4,400.0	4,379.2	4,486.6	4,432.5	11.5	15.1	-177.92	77.4	110.7	482.7	459.6	23.10	20.898			
4,500.0	4,478.5	4,585.4	4,529.6	11.8	15.5	-179.71	81.6	92.9	484.1	460.3	23.82	20.322			
4,600.0	4,577.7	4,684.2	4,626.7	12.1	15.9	-178.51	85.7	75.1	485.9	461.3	24.55	19.793			
4,700.0	4,677.0	4,783.0	4,723.8	12.4	16.4	-176.75	89.9	57.3	488.1	462.8	25.29	19.295			
4,800.0	4,776.5	4,881.8	4,820.9	12.7	16.8	-174.97	94.1	39.5	488.1	462.1	26.04	18.745			
4,900.0	4,876.4	4,980.5	4,917.9	12.9	17.2	-173.14	98.2	21.7	485.2	458.4	26.77	18.127			

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 27G-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 27G-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)	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	4,976.3	5,075.9	5,011.7	13.0	17.6	171.32		102.2	4.8	479.5	452.1	27.43	17.478	
5,100.0	5,076.3	5,168.2	5,102.9	13.2	17.8	37.34		105.4	-9.0	473.0	445.0	28.01	16.886	
5,200.0	5,176.3	5,261.3	5,195.3	13.4	18.1	36.07		108.0	-20.1	468.1	439.5	28.54	16.402	
5,300.0	5,276.3	5,355.1	5,288.7	13.5	18.2	35.11		109.9	-28.4	464.6	435.6	29.01	16.016	
5,400.0	5,376.3	5,449.3	5,382.7	13.7	18.4	34.49		111.2	-33.6	462.5	433.1	29.42	15.718	
5,500.0	5,476.3	5,543.7	5,477.1	13.9	18.5	34.22		111.7	-35.9	461.6	431.8	29.78	15.499	
5,544.0	5,520.3	5,586.4	5,519.8	13.9	18.6	34.21		111.7	-36.0	461.6	431.7	29.93	15.422	
5,600.0	5,576.3	5,642.4	5,575.8	14.0	18.7	34.21		111.7	-36.0	461.6	431.5	30.12	15.324	
5,700.0	5,676.3	5,742.4	5,675.8	14.2	18.8	34.21		111.7	-36.0	461.6	431.1	30.47	15.150	
5,800.0	5,776.3	5,842.4	5,775.8	14.4	19.0	34.21		111.7	-36.0	461.6	430.8	30.82	14.979 CC	
5,861.5	5,837.8	5,903.9	5,837.3	14.5	19.1	-145.81		111.7	-36.0	461.9	430.8	31.04	14.879	
5,900.0	5,876.3	5,938.6	5,872.0	14.6	19.1	-145.79		111.8	-36.0	461.8	430.6	31.18	14.812 ES, SF	
6,000.0	5,975.9	6,000.0	5,933.3	14.8	19.2	-145.86		114.8	-36.0	473.2	441.8	31.38	15.079	
6,100.0	6,073.5	6,065.1	5,997.9	15.1	19.3	-146.08		123.5	-36.0	502.3	471.0	31.30	16.048	
6,200.0	6,167.5	6,118.3	6,049.8	15.5	19.4	-145.83		134.6	-36.0	548.2	517.3	30.88	17.752	
6,300.0	6,256.3	6,161.8	6,091.8	16.0	19.5	-144.65		146.3	-36.0	609.1	578.9	30.22	20.158	
6,400.0	6,338.3	6,200.0	6,127.9	16.6	19.6	-142.19		158.6	-36.0	682.6	653.1	29.53	23.113	
6,500.0	6,412.1	6,219.4	6,146.0	17.4	19.7	-136.45		165.5	-36.0	765.8	736.5	29.30	26.134	
6,600.0	6,476.6	6,234.8	6,160.3	18.3	19.7	-126.50		171.3	-36.0	855.8	825.5	30.28	28.260	
6,700.0	6,530.5	6,250.0	6,174.2	19.4	19.8	-110.22		177.4	-36.0	950.2	917.5	32.79	28.983	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27G-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 27G-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							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	90.29	-3.6	713.3	713.3								
100.0	100.0	99.5	99.5	0.1	0.1	90.29	-3.6	713.3	713.3	713.1	0.22	3,181.587					
200.0	200.0	199.5	199.5	0.3	0.3	90.29	-3.6	713.3	713.3	712.7	0.67	1,059.648					
300.0	300.0	299.5	299.5	0.6	0.6	90.29	-3.6	713.3	713.3	712.2	1.12	635.365					
400.0	400.0	399.5	399.5	0.8	0.8	90.29	-3.6	713.3	713.3	711.8	1.57	453.702					
500.0	500.0	532.2	532.2	1.0	1.1	90.27	-3.3	710.3	711.0	709.0	2.08	341.549					
600.0	600.0	664.5	664.1	1.2	1.4	90.20	-2.4	701.2	704.2	701.6	2.60	270.596					
700.0	700.0	795.7	794.4	1.5	1.7	90.08	-0.9	686.2	692.7	689.6	3.15	219.679					
800.0	800.0	925.2	922.3	1.7	2.1	89.90	1.1	665.5	676.8	673.0	3.75	180.260					
900.0	900.0	1,052.6	1,047.0	1.9	2.6	89.67	3.7	639.7	656.5	652.1	4.41	148.924					
1,000.0	1,000.0	1,150.9	1,142.7	2.1	3.1	89.45	5.9	617.5	633.9	628.9	5.00	126.766					
1,100.0	1,100.0	1,248.3	1,237.5	2.4	3.5	89.22	8.2	595.5	611.3	605.7	5.60	109.131					
1,200.0	1,200.0	1,345.6	1,332.4	2.6	3.9	88.97	10.4	573.4	588.7	582.5	6.21	94.741					
1,300.0	1,300.0	1,443.0	1,427.2	2.8	4.4	88.70	12.6	551.4	566.2	559.3	6.84	82.827					
1,400.0	1,400.0	1,540.4	1,522.0	3.0	4.9	88.40	14.8	529.4	543.6	536.1	7.46	72.829					
1,500.0	1,500.0	1,638.0	1,617.1	3.2	5.3	-139.90	17.0	507.3	522.4	515.4	7.02	74.406					
1,600.0	1,599.8	1,736.1	1,712.6	3.4	5.8	-140.88	19.2	485.2	503.8	496.3	7.47	67.443					
1,700.0	1,699.5	1,834.4	1,808.4	3.6	6.3	-142.13	21.4	463.0	488.0	480.1	7.93	61.509					
1,800.0	1,798.8	1,932.9	1,904.3	3.8	6.8	-143.56	23.6	440.7	474.9	466.5	8.42	56.408					
1,900.0	1,898.0	2,031.4	2,000.2	4.1	7.3	-145.00	25.8	418.4	462.4	453.4	8.92	51.811					
2,000.0	1,997.3	2,129.9	2,096.1	4.3	7.7	-146.52	28.1	396.2	450.2	440.7	9.45	47.650					
2,100.0	2,096.5	2,228.4	2,192.1	4.6	8.2	-148.13	30.3	373.9	438.3	428.3	9.99	43.881					
2,200.0	2,195.8	2,326.9	2,288.0	4.8	8.7	-149.82	32.5	351.6	426.8	416.2	10.55	40.461					
2,300.0	2,295.0	2,425.5	2,383.9	5.1	9.2	-151.60	34.8	329.4	415.7	404.6	11.13	37.357					
2,400.0	2,394.3	2,524.0	2,479.9	5.4	9.7	-153.48	37.0	307.1	405.0	393.3	11.73	34.534					
2,500.0	2,493.5	2,622.5	2,575.8	5.6	10.2	-155.45	39.2	284.8	394.8	382.4	12.35	31.965					
2,600.0	2,592.7	2,721.0	2,671.7	5.9	10.7	-157.53	41.4	262.6	385.0	372.1	13.00	29.626					
2,700.0	2,692.0	2,819.5	2,767.7	6.2	11.1	-159.70	43.7	240.3	375.9	362.2	13.67	27.496					
2,800.0	2,791.2	2,918.0	2,863.6	6.5	11.6	-161.98	45.9	218.0	367.2	352.9	14.37	25.557					
2,900.0	2,890.5	3,016.5	2,959.5	6.8	12.1	-164.36	48.1	195.8	359.2	344.1	15.10	23.793					
3,000.0	2,989.7	3,115.0	3,055.5	7.1	12.6	-166.85	50.3	173.5	351.9	336.1	15.86	22.191					
3,100.0	3,089.0	3,213.5	3,151.4	7.4	13.1	-169.43	52.6	151.2	345.3	328.6	16.65	20.739					
3,200.0	3,188.2	3,312.0	3,247.3	7.7	13.6	-172.10	54.8	129.0	339.4	321.9	17.47	19.427					
3,300.0	3,287.5	3,410.5	3,343.3	8.0	14.1	-174.86	57.0	106.7	334.3	316.0	18.32	18.245					
3,400.0	3,386.7	3,509.1	3,439.2	8.3	14.6	-177.70	59.2	84.4	330.0	310.8	19.20	17.185					
3,500.0	3,486.0	3,607.6	3,535.1	8.7	15.0	-179.40	61.5	62.2	326.6	306.4	20.11	16.238					
3,600.0	3,585.2	3,706.1	3,631.1	9.0	15.5	-176.44	63.7	39.9	324.0	302.9	21.04	15.397					
3,700.0	3,684.5	3,804.6	3,727.0	9.3	16.0	-173.45	65.9	17.6	322.3	300.3	22.00	14.655					
3,800.0	3,783.7	3,903.1	3,822.9	9.6	16.5	-170.44	68.1	-4.6	321.6	298.6	22.97	14.003					
3,831.4	3,814.9	3,934.0	3,853.1	9.7	16.7	-169.49	68.8	-11.6	321.5	298.3	23.27	13.816 CC					
3,900.0	3,883.0	4,001.6	3,918.9	9.9	17.0	-167.42	70.4	-26.9	321.8	297.8	23.95	13.436 ES					
4,000.0	3,982.2	4,100.1	4,014.8	10.2	17.5	-164.41	72.6	-49.2	322.8	297.9	24.94	12.946					
4,100.0	4,081.5	4,198.6	4,110.7	10.5	18.0	-161.43	74.8	-71.4	324.8	298.9	25.93	12.527					
4,200.0	4,180.7	4,297.1	4,206.7	10.9	18.5	-158.49	77.0	-93.7	327.7	300.8	26.92	12.173					
4,300.0	4,280.0	4,395.6	4,302.6	11.2	19.0	-155.62	79.3	-116.0	331.5	303.6	27.91	11.877					
4,400.0	4,379.2	4,494.1	4,398.5	11.5	19.5	-152.81	81.5	-138.2	336.1	307.2	28.89	11.635					
4,500.0	4,478.5	4,592.7	4,494.5	11.8	19.9	-150.08	83.7	-160.5	341.5	311.6	29.85	11.440					
4,600.0	4,577.7	4,691.2	4,590.4	12.1	20.4	-147.44	86.0	-182.8	347.7	316.9	30.80	11.288					
4,700.0	4,677.0	4,789.7	4,686.3	12.4	20.9	-144.90	88.2	-205.0	354.5	322.7	31.74	11.168					
4,800.0	4,776.5	4,888.1	4,782.2	12.7	21.4	-142.27	90.4	-227.3	359.9	327.3	32.65	11.024					
4,900.0	4,876.4	4,986.2	4,877.7	12.9	21.9	-139.37	92.6	-249.4	363.5	330.0	33.51	10.846					

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 27G-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 27G-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)	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	4,976.3	5,083.9	4,972.9	13.0	22.4	136.16	94.8	-271.5	365.6	331.2	34.32	10.650		
5,100.0	5,076.3	5,181.3	5,067.7	13.2	22.9	0.30	97.0	-293.5	367.1	332.0	35.08	10.466		
5,200.0	5,176.3	5,279.0	5,162.9	13.4	23.4	-3.11	99.2	-315.6	370.0	334.2	35.76	10.346		
5,300.0	5,276.3	5,379.3	5,261.0	13.5	23.7	-6.24	101.3	-336.1	373.8	337.5	36.27	10.306		
5,400.0	5,376.3	5,480.9	5,361.1	13.7	24.0	-8.81	103.0	-353.3	377.7	341.1	36.68	10.298		
5,500.0	5,476.3	5,583.6	5,462.9	13.9	24.3	-10.84	104.4	-367.2	381.4	344.4	37.04	10.297		
5,600.0	5,576.3	5,687.3	5,566.1	14.0	24.5	-12.32	105.4	-377.5	384.4	347.0	37.36	10.288		
5,700.0	5,676.3	5,791.6	5,670.1	14.2	24.7	-13.25	106.1	-384.0	386.4	348.7	37.66	10.259		
5,800.0	5,776.3	5,896.2	5,774.7	14.4	24.8	-13.65	106.4	-386.9	387.3	349.3	37.95	10.206		
5,862.5	5,838.8	5,959.8	5,838.3	14.5	24.9	166.35	106.4	-387.0	387.7	349.6	38.12	10.170		
5,900.0	5,876.3	5,997.3	5,875.8	14.6	24.9	166.34	106.4	-387.0	387.5	349.2	38.22	10.137 SF		
6,000.0	5,975.9	6,084.8	5,963.3	14.8	25.0	166.44	106.7	-387.0	396.2	358.1	38.12	10.393		
6,100.0	6,073.5	6,150.0	6,028.3	15.1	25.1	166.57	111.5	-387.0	423.9	386.4	37.46	11.316		
6,200.0	6,167.5	6,200.0	6,077.8	15.5	25.1	166.44	119.0	-387.0	470.5	434.3	36.24	12.983		
6,300.0	6,256.3	6,250.0	6,126.6	16.0	25.2	166.09	129.6	-387.0	533.4	498.9	34.52	15.451		
6,400.0	6,338.3	6,286.9	6,162.1	16.6	25.3	164.98	139.5	-387.0	609.5	577.1	32.34	18.845		
6,500.0	6,412.1	6,313.7	6,187.7	17.4	25.3	162.54	147.8	-387.0	695.4	665.6	29.84	23.308		
6,600.0	6,476.6	6,331.6	6,204.5	18.3	25.3	157.16	153.8	-387.0	788.3	760.9	27.38	28.787		
6,700.0	6,530.5	6,350.0	6,221.7	19.4	25.4	144.64	160.4	-387.0	885.5	859.0	26.54	33.373		
6,800.0	6,573.0	6,350.0	6,221.7	20.6	25.4	94.71	160.4	-387.0	984.7	949.5	35.22	27.956		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27G-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 27G-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
Reference		Offset		Semi Major Axis					Distance						Warning		
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					
(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	99.85	-116.6	671.5	681.6								
100.0	100.0	99.5	99.5	0.1	0.1	99.85	-116.6	671.5	681.6	681.3	0.22	3,039.933					
200.0	200.0	199.5	199.5	0.3	0.3	99.85	-116.6	671.5	681.6	680.9	0.67	1,012.470					
300.0	300.0	299.5	299.5	0.6	0.6	99.85	-116.6	671.5	681.6	680.4	1.12	607.076					
400.0	400.0	399.5	399.5	0.8	0.8	99.85	-116.6	671.5	681.6	680.0	1.57	433.502					
500.0	500.0	499.5	499.5	1.0	1.0	99.85	-116.6	671.5	681.6	679.5	2.02	337.115					
600.0	600.0	599.5	599.5	1.2	1.2	99.85	-116.6	671.5	681.6	679.1	2.47	275.793					
700.0	700.0	699.5	699.5	1.5	1.5	99.85	-116.6	671.5	681.6	678.6	2.92	233.347					
800.0	800.0	799.5	799.5	1.7	1.7	99.85	-116.6	671.5	681.6	678.2	3.37	202.224					
900.0	900.0	899.5	899.5	1.9	1.9	99.85	-116.6	671.5	681.6	677.7	3.82	178.426					
1,000.0	1,000.0	999.5	999.5	2.1	2.1	99.85	-116.6	671.5	681.6	677.3	4.27	159.639					
1,100.0	1,100.0	1,099.5	1,099.5	2.4	2.4	99.85	-116.6	671.5	681.6	676.8	4.72	144.432					
1,200.0	1,200.0	1,199.5	1,199.5	2.6	2.6	99.85	-116.6	671.5	681.6	676.4	5.17	131.870					
1,300.0	1,300.0	1,299.5	1,299.5	2.8	2.8	99.85	-116.6	671.5	681.6	676.0	5.62	121.318					
1,400.0	1,400.0	1,399.5	1,399.5	3.0	3.0	99.85	-116.6	671.5	681.6	675.5	6.07	112.330					
1,500.0	1,500.0	1,528.0	1,528.0	3.2	3.3	-127.98	-115.1	669.0	680.6	674.0	6.54	103.981					
1,600.0	1,599.8	1,656.2	1,655.9	3.4	3.6	-128.73	-110.8	661.6	677.5	670.5	7.00	96.850					
1,700.0	1,699.5	1,783.4	1,782.3	3.6	3.9	-129.98	-103.8	649.3	672.6	665.2	7.45	90.237					
1,800.0	1,798.8	1,888.1	1,885.9	3.8	4.2	-131.31	-96.3	636.5	667.2	659.3	7.88	84.629					
1,900.0	1,898.0	1,986.9	1,983.6	4.1	4.4	-132.58	-89.3	624.3	662.2	653.9	8.32	79.592					
2,000.0	1,997.3	2,085.6	2,081.4	4.3	4.7	-133.87	-82.2	612.1	657.6	648.8	8.77	74.980					
2,100.0	2,096.5	2,184.4	2,179.1	4.6	5.0	-135.18	-75.2	599.9	653.3	644.1	9.23	70.768					
2,200.0	2,195.8	2,283.1	2,276.9	4.8	5.3	-136.50	-68.1	587.7	649.4	639.7	9.70	66.923					
2,300.0	2,295.0	2,381.9	2,374.6	5.1	5.6	-137.84	-61.1	575.5	645.9	635.7	10.19	63.414					
2,400.0	2,394.3	2,480.7	2,472.4	5.4	5.9	-139.19	-54.0	563.3	642.7	632.0	10.67	60.213					
2,500.0	2,493.5	2,579.4	2,570.1	5.6	6.2	-140.55	-47.0	551.0	639.9	628.7	11.17	57.289					
2,600.0	2,592.7	2,678.2	2,667.9	5.9	6.5	-141.93	-39.9	538.8	637.4	625.7	11.67	54.617					
2,700.0	2,692.0	2,776.9	2,765.6	6.2	6.8	-143.31	-32.9	526.6	635.4	623.2	12.18	52.172					
2,800.0	2,791.2	2,875.7	2,863.4	6.5	7.1	-144.71	-25.8	514.4	633.7	621.0	12.69	49.932					
2,900.0	2,890.5	2,974.5	2,961.1	6.8	7.5	-146.10	-18.8	502.2	632.4	619.2	13.21	47.878					
3,000.0	2,989.7	3,073.2	3,058.9	7.1	7.8	-147.51	-11.7	490.0	631.5	617.7	13.73	45.991					
3,100.0	3,089.0	3,172.0	3,156.6	7.4	8.1	-148.91	-4.7	477.8	630.9	616.7	14.26	44.256					
3,184.0	3,172.4	3,254.9	3,238.7	7.7	8.4	-150.10	1.2	467.5	630.8	616.1	14.70	42.905 CC					
3,200.0	3,188.2	3,270.7	3,254.4	7.7	8.4	-150.32	2.4	465.6	630.8	616.0	14.79	42.658					
3,300.0	3,287.5	3,369.5	3,352.1	8.0	8.8	-151.73	9.4	453.4	631.1	615.7	15.32	41.187 ES					
3,400.0	3,386.7	3,468.3	3,449.9	8.3	9.1	-153.14	16.5	441.2	631.7	615.8	15.86	39.829					
3,500.0	3,486.0	3,567.0	3,547.6	8.7	9.4	-154.54	23.5	429.0	632.7	616.3	16.40	38.575					
3,600.0	3,585.2	3,665.8	3,645.4	9.0	9.8	-155.94	30.6	416.7	634.2	617.2	16.95	37.417					
3,700.0	3,684.5	3,764.5	3,743.1	9.3	10.1	-157.33	37.6	404.5	636.0	618.5	17.50	36.345					
3,800.0	3,783.7	3,863.3	3,840.9	9.6	10.4	-158.71	44.7	392.3	638.2	620.1	18.05	35.353					
3,900.0	3,883.0	3,962.1	3,938.6	9.9	10.8	-160.08	51.7	380.1	640.7	622.1	18.61	34.434					
4,000.0	3,982.2	4,060.8	4,036.4	10.2	11.1	-161.44	58.8	367.9	643.7	624.5	19.17	33.581					
4,100.0	4,081.5	4,159.6	4,134.1	10.5	11.4	-162.79	65.8	355.7	647.0	627.2	19.73	32.791					
4,200.0	4,180.7	4,258.3	4,231.9	10.9	11.8	-164.12	72.9	343.5	650.6	630.3	20.30	32.057					
4,300.0	4,280.0	4,357.1	4,329.6	11.2	12.1	-165.44	79.9	331.3	654.7	633.8	20.87	31.375					
4,400.0	4,379.2	4,455.9	4,427.4	11.5	12.4	-166.74	87.0	319.1	659.0	637.6	21.44	30.742					
4,500.0	4,478.5	4,554.6	4,525.1	11.8	12.8	-168.02	94.0	306.9	663.8	641.7	22.01	30.153					
4,600.0	4,577.7	4,650.2	4,619.7	12.1	13.1	-169.23	100.8	295.2	668.9	646.3	22.57	29.640					
4,700.0	4,677.0	4,739.3	4,708.3	12.4	13.3	-170.20	106.0	286.1	675.3	652.2	23.06	29.286					
4,800.0	4,776.5	4,829.1	4,797.7	12.7	13.5	-170.92	109.9	279.4	680.8	657.3	23.50	28.971					
4,900.0	4,876.4	4,919.3	4,887.7	12.9	13.7	-171.37	112.3	275.1	684.3	660.5	23.88	28.653					

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 27G-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 27G-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	4,976.3	5,009.7	4,978.1	13.0	13.8	-171.56		113.4	273.3	685.8	661.6	24.21	28.328	
5,100.0	5,076.3	5,107.4	5,075.8	13.2	14.0	56.01		113.4	273.2	685.9	661.3	24.56	27.930	
5,200.0	5,176.3	5,207.4	5,175.8	13.4	14.2	56.01		113.4	273.2	685.9	661.0	24.93	27.512	
5,300.0	5,276.3	5,307.4	5,275.8	13.5	14.3	56.01		113.4	273.2	685.9	660.6	25.31	27.103	
5,400.0	5,376.3	5,407.4	5,375.8	13.7	14.5	56.01		113.4	273.2	685.9	660.2	25.69	26.704	
5,500.0	5,476.3	5,507.4	5,475.8	13.9	14.7	56.01		113.4	273.2	685.9	659.8	26.07	26.314	
5,600.0	5,576.3	5,607.4	5,575.8	14.0	14.9	56.01		113.4	273.2	685.9	659.5	26.45	25.934	
5,700.0	5,676.3	5,707.4	5,675.8	14.2	15.1	56.01		113.4	273.2	685.9	659.1	26.83	25.562	
5,800.0	5,776.3	5,807.4	5,775.8	14.4	15.2	56.01		113.4	273.2	685.9	658.7	27.22	25.199	
5,861.0	5,837.3	5,868.4	5,836.8	14.5	15.4	-124.01		113.4	273.2	686.1	658.6	27.46	24.983	
5,900.0	5,876.3	5,907.4	5,875.8	14.6	15.4	-123.99		113.4	273.2	686.0	658.4	27.62	24.838	
6,000.0	5,975.9	5,995.2	5,963.6	14.8	15.6	-124.18		113.8	273.2	691.0	663.0	28.00	24.681 SF	
6,100.0	6,073.5	6,050.0	6,018.3	15.1	15.7	-124.15		117.4	273.2	707.5	679.3	28.24	25.056	
6,200.0	6,167.5	6,113.3	6,080.9	15.5	15.9	-124.26		126.4	273.2	736.7	708.2	28.46	25.884	
6,300.0	6,256.3	6,150.0	6,116.8	16.0	16.0	-122.92		134.0	273.2	778.9	750.3	28.65	27.187	
6,400.0	6,338.3	6,200.0	6,165.0	16.6	16.1	-121.51		147.2	273.2	833.3	804.3	29.02	28.711	
6,500.0	6,412.1	6,223.2	6,187.1	17.4	16.2	-117.41		154.3	273.2	898.6	868.8	29.77	30.183	
6,600.0	6,476.6	6,250.0	6,212.3	18.3	16.3	-111.95		163.4	273.2	972.9	941.8	31.04	31.343	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27G-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 27G-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	104.71	-171.2	652.0	674.1				
100.0	100.0	99.5	99.5	0.1	0.1	104.71	-171.2	652.0	674.1	673.9	0.22	3,006.742	
200.0	200.0	199.5	199.5	0.3	0.3	104.71	-171.2	652.0	674.1	673.5	0.67	1,001.415	
300.0	300.0	299.5	299.5	0.6	0.6	104.71	-171.2	652.0	674.1	673.0	1.12	600.448	
400.0	400.0	399.5	399.5	0.8	0.8	104.71	-171.2	652.0	674.1	672.6	1.57	428.769	
500.0	500.0	499.5	499.5	1.0	1.0	104.71	-171.2	652.0	674.1	672.1	2.02	333.434	
600.0	600.0	599.5	599.5	1.2	1.2	104.71	-171.2	652.0	674.1	671.7	2.47	272.782	
700.0	700.0	699.5	699.5	1.5	1.5	104.71	-171.2	652.0	674.1	671.2	2.92	230.799	
800.0	800.0	799.5	799.5	1.7	1.7	104.71	-171.2	652.0	674.1	670.8	3.37	200.016	
900.0	900.0	899.5	899.5	1.9	1.9	104.71	-171.2	652.0	674.1	670.3	3.82	176.478	
1,000.0	1,000.0	999.5	999.5	2.1	2.1	104.71	-171.2	652.0	674.1	669.9	4.27	157.896	
1,100.0	1,100.0	1,099.5	1,099.5	2.4	2.4	104.71	-171.2	652.0	674.1	669.4	4.72	142.855	
1,200.0	1,200.0	1,199.5	1,199.5	2.6	2.6	104.71	-171.2	652.0	674.1	669.0	5.17	130.430	
1,300.0	1,300.0	1,299.5	1,299.5	2.8	2.8	104.71	-171.2	652.0	674.1	668.5	5.62	119.994	
1,400.0	1,400.0	1,399.5	1,399.5	3.0	3.0	104.71	-171.2	652.0	674.1	668.1	6.07	111.103 CC, ES	
1,500.0	1,500.0	1,499.5	1,499.5	3.2	3.3	-122.98	-171.2	652.0	675.1	668.6	6.49	103.987	
1,600.0	1,599.8	1,599.3	1,599.3	3.4	3.5	-123.30	-171.2	652.0	677.9	671.0	6.90	98.321	
1,700.0	1,699.5	1,699.0	1,699.0	3.6	3.7	-123.83	-171.2	652.0	682.8	675.5	7.31	93.464	
1,800.0	1,798.8	1,798.3	1,798.3	3.8	3.9	-124.58	-171.2	652.0	689.4	681.7	7.73	89.201	
1,900.0	1,898.0	1,897.5	1,897.5	4.1	4.2	-125.41	-171.2	652.0	696.5	688.3	8.17	85.272	
2,000.0	1,997.3	1,996.8	1,996.8	4.3	4.4	-126.22	-171.2	652.0	703.7	695.0	8.62	81.669	
2,100.0	2,096.5	2,102.4	2,102.4	4.6	4.6	-127.16	-169.9	651.8	710.6	701.5	9.08	78.216	
2,200.0	2,195.8	2,207.7	2,207.6	4.8	4.9	-128.30	-165.6	651.1	716.8	707.2	9.56	75.005	
2,300.0	2,295.0	2,312.3	2,312.0	5.1	5.1	-129.63	-158.6	650.0	722.4	712.4	10.03	72.020	
2,400.0	2,394.3	2,416.0	2,415.2	5.4	5.3	-131.14	-148.9	648.4	727.6	717.1	10.51	69.244	
2,500.0	2,493.5	2,514.9	2,513.5	5.6	5.6	-132.69	-137.8	646.6	732.9	721.9	10.98	66.727	
2,600.0	2,592.7	2,612.8	2,610.7	5.9	5.8	-134.21	-126.8	644.8	738.7	727.3	11.46	64.441	
2,700.0	2,692.0	2,710.6	2,707.9	6.2	6.0	-135.70	-115.8	643.0	745.0	733.1	11.95	62.354	
2,800.0	2,791.2	2,808.4	2,805.1	6.5	6.3	-137.17	-104.8	641.2	751.9	739.4	12.44	60.450	
2,900.0	2,890.5	2,906.3	2,902.3	6.8	6.5	-138.61	-93.8	639.4	759.2	746.3	12.93	58.712	
3,000.0	2,989.7	3,004.1	2,999.5	7.1	6.8	-140.02	-82.8	637.6	767.1	753.6	13.43	57.126	
3,100.0	3,089.0	3,102.0	3,096.7	7.4	7.0	-141.41	-71.8	635.8	775.4	761.4	13.93	55.678	
3,200.0	3,188.2	3,199.8	3,193.9	7.7	7.3	-142.76	-60.8	634.0	784.1	769.7	14.43	54.356	
3,300.0	3,287.5	3,297.7	3,291.1	8.0	7.6	-144.09	-49.8	632.2	793.3	778.4	14.93	53.147	
3,400.0	3,386.7	3,395.5	3,388.3	8.3	7.8	-145.39	-38.8	630.4	802.9	787.5	15.43	52.042	
3,500.0	3,486.0	3,493.3	3,485.5	8.7	8.1	-146.65	-27.9	628.6	813.0	797.0	15.93	51.031	
3,600.0	3,585.2	3,591.2	3,582.7	9.0	8.4	-147.89	-16.9	626.8	823.4	807.0	16.43	50.105	
3,700.0	3,684.5	3,689.0	3,679.9	9.3	8.7	-149.09	-5.9	625.0	834.2	817.3	16.94	49.256	
3,800.0	3,783.7	3,786.9	3,777.1	9.6	8.9	-150.27	5.1	623.2	845.4	828.0	17.44	48.478	
3,900.0	3,883.0	3,884.7	3,874.3	9.9	9.2	-151.41	16.1	621.4	856.9	839.0	17.94	47.764	
4,000.0	3,982.2	3,982.6	3,971.5	10.2	9.5	-152.52	27.1	619.6	868.8	850.4	18.44	47.108	
4,100.0	4,081.5	4,080.4	4,068.8	10.5	9.8	-153.61	38.1	617.8	881.0	862.0	18.94	46.505	
4,200.0	4,180.7	4,178.2	4,166.0	10.9	10.0	-154.67	49.1	616.0	893.5	874.1	19.44	45.950	
4,300.0	4,280.0	4,276.1	4,263.2	11.2	10.3	-155.69	60.1	614.2	906.3	886.4	19.95	45.439	
4,400.0	4,379.2	4,373.9	4,360.4	11.5	10.6	-156.69	71.1	612.4	919.4	898.9	20.45	44.969	
4,500.0	4,478.5	4,471.8	4,457.6	11.8	10.9	-157.66	82.1	610.6	932.8	911.8	20.94	44.535	
4,600.0	4,577.7	4,569.6	4,554.8	12.1	11.2	-158.61	93.1	608.8	946.4	924.9	21.44	44.134	
4,700.0	4,677.0	4,672.7	4,657.3	12.4	11.4	-159.53	103.6	607.1	959.9	938.0	21.91	43.820	
4,800.0	4,776.5	4,777.6	4,761.9	12.7	11.6	-160.27	111.5	605.8	970.6	948.3	22.33	43.459	
4,900.0	4,876.4	4,883.5	4,867.7	12.9	11.8	-160.74	116.5	605.0	977.5	954.7	22.73	43.004	
5,000.0	4,976.3	4,990.0	4,974.2	13.0	12.0	-160.94	118.7	604.6	980.4	957.3	23.09	42.459	

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 27G-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 27G-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	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	5,076.3	5,091.7	5,075.8	13.2	12.2	66.64	118.8	604.6	980.5	957.0	23.46	41.796	
5,200.0	5,176.3	5,191.7	5,175.8	13.4	12.4	66.64	118.8	604.6	980.5	956.6	23.85	41.113	
5,300.0	5,276.3	5,291.7	5,275.8	13.5	12.6	66.64	118.8	604.6	980.5	956.3	24.24	40.445	
5,400.0	5,376.3	5,391.7	5,375.8	13.7	12.8	66.64	118.8	604.6	980.5	955.9	24.64	39.795	
5,500.0	5,476.3	5,491.7	5,475.8	13.9	13.0	66.64	118.8	604.6	980.5	955.5	25.04	39.164	
5,600.0	5,576.3	5,591.7	5,575.8	14.0	13.2	66.64	118.8	604.6	980.5	955.1	25.44	38.549	
5,700.0	5,676.3	5,691.7	5,675.8	14.2	13.4	66.64	118.8	604.6	980.5	954.7	25.84	37.951	
5,800.0	5,776.3	5,791.7	5,775.8	14.4	13.6	66.64	118.8	604.6	980.5	954.3	26.24	37.369	
5,861.0	5,837.3	5,852.6	5,836.8	14.5	13.7	-113.38	118.8	604.6	980.6	954.2	26.49	37.023	
5,900.0	5,876.3	5,891.6	5,875.8	14.6	13.8	-113.36	118.8	604.6	980.6	953.9	26.65	36.798	
6,000.0	5,975.9	5,991.2	5,975.4	14.8	14.0	-113.58	118.8	604.6	983.9	956.9	27.07	36.343	
6,100.0	6,073.5	6,067.7	6,051.8	15.1	14.2	-113.82	119.8	604.6	993.4	965.9	27.46	36.173 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27G-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 27G-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
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	33.49	324.2	214.6	389.4				
100.0	100.0	77.5	77.5	0.1	1.6	33.49	324.2	214.6	388.8	387.1	1.66	233.848	
200.0	200.0	177.5	177.5	0.3	3.6	33.49	324.2	214.6	388.8	384.9	3.89	100.015	
300.0	300.0	277.5	277.5	0.6	5.6	33.49	324.2	214.6	388.8	382.7	6.11	63.610	
400.0	400.0	377.5	377.5	0.8	7.6	33.49	324.2	214.6	388.8	380.5	8.34	46.635	
500.0	500.0	477.5	477.5	1.0	9.6	33.49	324.2	214.6	388.8	378.2	10.56	36.812	
600.0	600.0	577.5	577.5	1.2	11.6	33.49	324.2	214.6	388.8	376.0	12.79	30.407	
700.0	700.0	677.5	677.5	1.5	13.6	33.49	324.2	214.6	388.8	373.8	15.01	25.900	
800.0	800.0	777.5	777.5	1.7	15.6	33.49	324.2	214.6	388.8	371.6	17.24	22.557	
900.0	900.0	877.5	877.5	1.9	17.6	33.49	324.2	214.6	388.8	369.3	19.46	19.978	
1,000.0	1,000.0	977.5	977.5	2.1	19.6	33.49	324.2	214.6	388.8	367.1	21.69	17.929	
1,100.0	1,100.0	1,077.5	1,077.5	2.4	21.6	33.49	324.2	214.6	388.8	364.9	23.91	16.260	
1,200.0	1,200.0	1,177.5	1,177.5	2.6	23.6	33.49	324.2	214.6	388.8	362.7	26.13	14.876	
1,300.0	1,300.0	1,277.5	1,277.5	2.8	25.6	33.49	324.2	214.6	388.8	360.4	28.36	13.709	
1,400.0	1,400.0	1,377.5	1,377.5	3.0	27.6	33.49	324.2	214.6	388.8	358.2	30.58	12.712 CC	
1,500.0	1,500.0	1,477.5	1,477.5	3.2	29.5	165.97	324.2	214.6	390.5	357.7	32.77	11.917 ES	
1,600.0	1,599.8	1,577.3	1,577.3	3.4	31.5	166.12	324.2	214.6	395.6	360.7	34.89	11.339	
1,700.0	1,699.5	1,677.0	1,677.0	3.6	33.5	166.38	324.2	214.6	404.0	367.1	36.96	10.932	
1,800.0	1,798.8	1,776.3	1,776.3	3.8	35.5	166.74	324.2	214.6	415.5	376.4	39.05	10.639	
1,900.0	1,898.0	1,875.5	1,875.5	4.1	37.5	167.11	324.2	214.6	427.4	386.2	41.22	10.368	
2,000.0	1,997.3	1,974.8	1,974.8	4.3	39.5	167.47	324.2	214.6	439.3	395.9	43.40	10.124	
2,100.0	2,096.5	2,074.0	2,074.0	4.6	41.5	167.81	324.2	214.6	451.3	405.7	45.58	9.902	
2,200.0	2,195.8	2,173.3	2,173.3	4.8	43.5	168.13	324.2	214.6	463.3	415.5	47.76	9.700	
2,300.0	2,295.0	2,272.5	2,272.5	5.1	45.5	168.43	324.2	214.6	475.2	425.3	49.94	9.516	
2,400.0	2,394.3	2,371.8	2,371.8	5.4	47.4	168.72	324.2	214.6	487.2	435.1	52.13	9.347	
2,500.0	2,493.5	2,471.0	2,471.0	5.6	49.4	168.99	324.2	214.6	499.2	444.9	54.32	9.191	
2,600.0	2,592.7	2,570.2	2,570.2	5.9	51.4	169.25	324.2	214.6	511.2	454.7	56.51	9.047	
2,700.0	2,692.0	2,669.5	2,669.5	6.2	53.4	169.50	324.2	214.6	523.3	464.6	58.70	8.914	
2,800.0	2,791.2	2,768.7	2,768.7	6.5	55.4	169.74	324.2	214.6	535.3	474.4	60.89	8.791	
2,900.0	2,890.5	2,868.0	2,868.0	6.8	57.4	169.97	324.2	214.6	547.3	484.3	63.09	8.676	
3,000.0	2,989.7	2,967.2	2,967.2	7.1	59.3	170.19	324.2	214.6	559.4	494.1	65.29	8.568	
3,100.0	3,089.0	3,066.5	3,066.5	7.4	61.3	170.40	324.2	214.6	571.4	504.0	67.48	8.468	
3,200.0	3,188.2	3,165.7	3,165.7	7.7	63.3	170.60	324.2	214.6	583.5	513.8	69.68	8.374	
3,300.0	3,287.5	3,265.0	3,265.0	8.0	65.3	170.79	324.2	214.6	595.6	523.7	71.88	8.286	
3,400.0	3,386.7	3,364.2	3,364.2	8.3	67.3	170.97	324.2	214.6	607.7	533.6	74.08	8.203	
3,500.0	3,486.0	3,463.5	3,463.5	8.7	69.3	171.15	324.2	214.6	619.7	543.5	76.28	8.125	
3,600.0	3,585.2	3,562.7	3,562.7	9.0	71.3	171.32	324.2	214.6	631.8	553.4	78.48	8.051	
3,700.0	3,684.5	3,662.0	3,662.0	9.3	73.2	171.49	324.2	214.6	643.9	563.2	80.68	7.981	
3,800.0	3,783.7	3,761.2	3,761.2	9.6	75.2	171.64	324.2	214.6	656.0	573.1	82.88	7.915	
3,900.0	3,883.0	3,860.5	3,860.5	9.9	77.2	171.80	324.2	214.6	668.1	583.0	85.09	7.852	
4,000.0	3,982.2	3,959.7	3,959.7	10.2	79.2	171.94	324.2	214.6	680.2	593.0	87.29	7.793	
4,100.0	4,081.5	4,059.0	4,059.0	10.5	81.2	172.08	324.2	214.6	692.4	602.9	89.49	7.736	
4,200.0	4,180.7	4,158.2	4,158.2	10.9	83.2	172.22	324.2	214.6	704.5	612.8	91.70	7.683	
4,300.0	4,280.0	4,257.5	4,257.5	11.2	85.1	172.35	324.2	214.6	716.6	622.7	93.90	7.631	
4,400.0	4,379.2	4,356.7	4,356.7	11.5	87.1	172.48	324.2	214.6	728.7	632.6	96.11	7.582	
4,500.0	4,478.5	4,456.0	4,456.0	11.8	89.1	172.61	324.2	214.6	740.8	642.5	98.31	7.536	
4,600.0	4,577.7	4,555.2	4,555.2	12.1	91.1	172.73	324.2	214.6	753.0	652.5	100.51	7.491	
4,700.0	4,677.0	4,654.5	4,654.5	12.4	93.1	172.85	324.2	214.6	765.0	662.2	102.82	7.440	
4,800.0	4,776.5	4,754.0	4,754.0	12.7	95.1	172.96	324.2	214.6	774.4	669.1	105.32	7.353	
4,900.0	4,876.4	4,853.9	4,853.9	12.9	97.1	173.03	324.2	214.6	780.5	672.8	107.70	7.247	
5,000.0	4,976.3	4,953.8	4,953.8	13.0	99.1	173.06	324.2	214.6	783.0	673.1	109.96	7.121	

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 27G-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 27G-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							
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	
5,100.0	5,076.3	5,053.8	5,053.8	13.2	101.1	40.64	324.2	214.6	783.1	671.0	112.15	6.983		
5,200.0	5,176.3	5,153.8	5,153.8	13.4	103.1	40.64	324.2	214.6	783.1	668.8	114.35	6.849		
5,300.0	5,276.3	5,253.8	5,253.8	13.5	105.1	40.64	324.2	214.6	783.1	666.6	116.54	6.719		
5,400.0	5,376.3	5,353.8	5,353.8	13.7	107.1	40.64	324.2	214.6	783.1	664.4	118.74	6.595		
5,500.0	5,476.3	5,453.8	5,453.8	13.9	109.1	40.64	324.2	214.6	783.1	662.2	120.94	6.475		
5,600.0	5,576.3	5,553.8	5,553.8	14.0	111.1	40.64	324.2	214.6	783.1	660.0	123.14	6.359		
5,700.0	5,676.3	5,653.8	5,653.8	14.2	113.1	40.64	324.2	214.6	783.1	657.8	125.34	6.248		
5,800.0	5,776.3	5,753.8	5,753.8	14.4	115.1	40.64	324.2	214.6	783.1	655.6	127.54	6.140		
5,861.0	5,837.3	5,814.8	5,814.8	14.5	116.3	-139.37	324.2	214.6	783.4	654.5	128.89	6.078		
5,900.0	5,876.3	5,853.8	5,853.8	14.6	117.1	-139.36	324.2	214.6	783.2	653.5	129.74	6.037		
6,000.0	5,975.9	5,953.4	5,953.4	14.8	119.1	-139.45	324.2	214.6	789.6	658.5	131.18	6.019 SF		
6,100.0	6,073.5	6,051.0	6,051.0	15.1	121.0	-139.62	324.2	214.6	806.1	674.8	131.29	6.140		
6,200.0	6,167.5	6,145.0	6,145.0	15.5	122.9	-139.78	324.2	214.6	832.6	702.6	130.05	6.402		
6,300.0	6,256.3	6,233.8	6,233.8	16.0	124.7	-139.77	324.2	214.6	869.4	741.7	127.61	6.813		
6,400.0	6,338.3	6,315.8	6,315.8	16.6	126.3	-139.39	324.2	214.6	916.2	791.9	124.32	7.370		
6,500.0	6,412.1	6,389.6	6,389.6	17.4	127.8	-138.40	324.2	214.6	972.8	851.9	120.90	8.047		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27G-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 27G-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

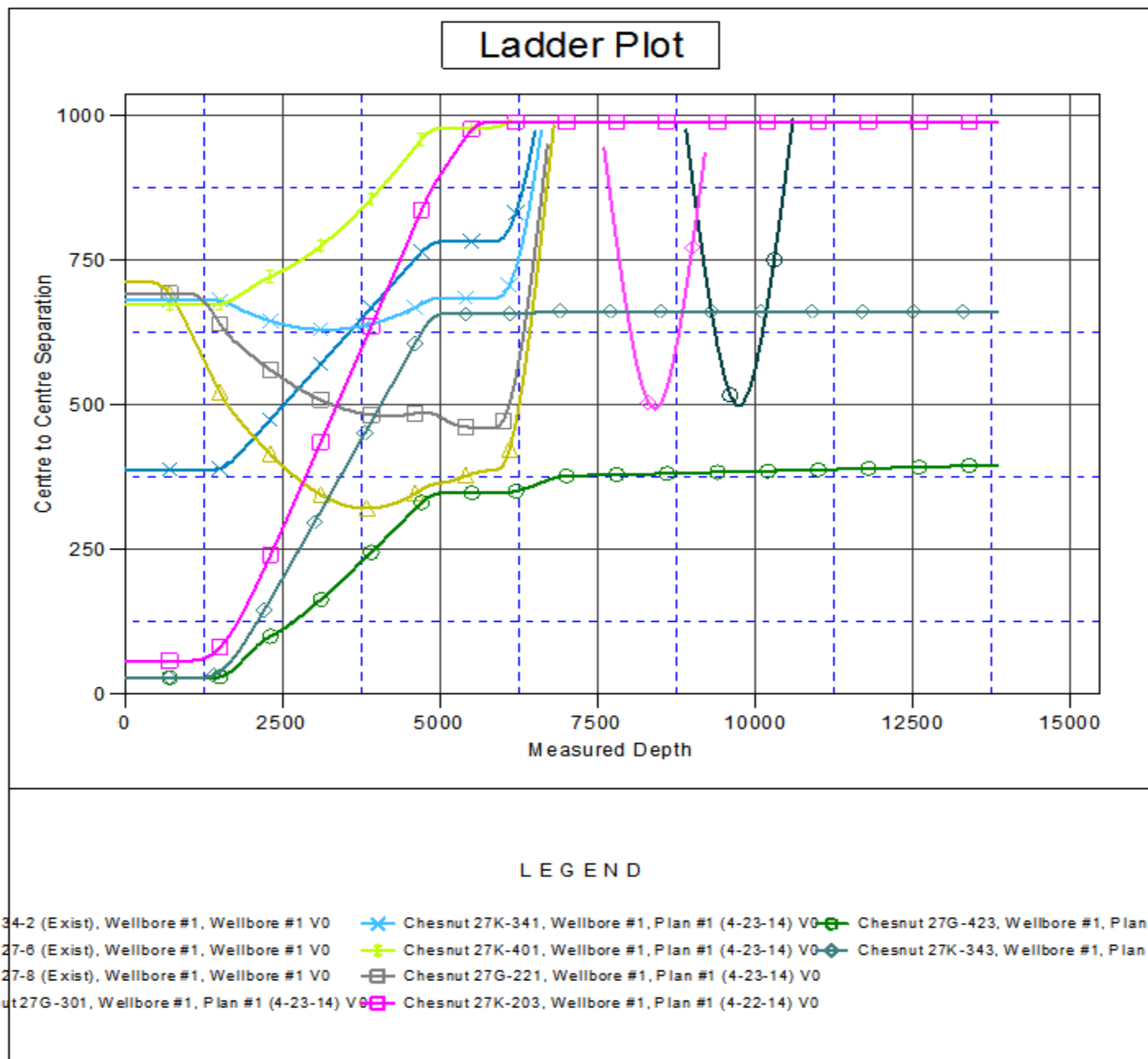
Offset Design Chesnut Existing Pad Sec.27-T5N-R64W - White 27-8 (Exist) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 6939-UNKNOWN												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	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	
7,600.0	6,622.3	6,621.8	6,621.8	32.9	132.4	-90.60	-2,353.4	197.9	944.1	779.1	164.96	5.723	
7,700.0	6,621.7	6,621.2	6,621.2	34.7	132.4	-90.53	-2,353.4	197.9	860.4	693.7	166.68	5.162	
7,800.0	6,621.1	6,620.6	6,620.6	36.4	132.4	-90.45	-2,353.4	197.9	780.6	612.2	168.43	4.635	
7,900.0	6,620.4	6,619.9	6,619.9	38.1	132.4	-90.38	-2,353.4	197.9	705.9	535.7	170.19	4.148	
8,000.0	6,619.8	6,619.3	6,619.3	39.9	132.4	-90.30	-2,353.4	197.9	638.2	466.3	171.96	3.712	
8,100.0	6,619.1	6,618.6	6,618.6	41.7	132.4	-90.23	-2,353.4	197.9	580.0	406.2	173.75	3.338	
8,200.0	6,618.5	6,618.0	6,618.0	43.5	132.4	-90.15	-2,353.4	197.9	534.2	358.7	175.54	3.043	
8,300.0	6,617.8	6,617.3	6,617.3	45.3	132.3	-90.08	-2,353.4	197.9	504.4	327.0	177.35	2.844	
8,400.0	6,617.2	6,616.7	6,616.7	47.1	132.3	-90.00	-2,353.4	197.9	493.4	314.2	179.16	2.754	
8,404.9	6,617.1	6,616.6	6,616.6	47.2	132.3	-90.00	-2,353.4	197.9	493.3	314.1	179.25	2.752 CC, ES, SF	
8,500.0	6,616.5	6,616.0	6,616.0	48.9	132.3	-89.93	-2,353.4	197.9	502.4	321.4	180.98	2.776	
8,600.0	6,615.9	6,615.4	6,615.4	50.8	132.3	-89.85	-2,353.4	197.9	530.5	347.7	182.80	2.902	
8,700.0	6,615.2	6,614.7	6,614.7	52.6	132.3	-89.78	-2,353.4	197.9	574.8	390.2	184.63	3.113	
8,800.0	6,614.6	6,614.1	6,614.1	54.5	132.3	-89.70	-2,353.4	197.9	632.0	445.6	186.47	3.389	
8,900.0	6,614.0	6,613.5	6,613.5	56.3	132.3	-89.63	-2,353.4	197.9	698.9	510.6	188.31	3.711	
9,000.0	6,613.3	6,612.8	6,612.8	58.2	132.3	-89.55	-2,353.4	197.9	773.0	582.8	190.15	4.065	
9,100.0	6,612.7	6,612.2	6,612.2	60.0	132.2	-89.48	-2,353.4	197.9	852.3	660.3	192.00	4.439	
9,200.0	6,612.0	6,611.5	6,611.5	61.9	132.2	-89.40	-2,353.4	197.9	935.7	741.8	193.85	4.827	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27G-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 27G-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
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
8,900.0	6,614.0	6,619.5	6,619.5	56.3	132.4	-90.62	-3,686.8	203.4	975.5	787.1	188.44	5.177		
9,000.0	6,613.3	6,618.8	6,618.8	58.2	132.4	-90.55	-3,686.8	203.4	891.1	700.8	190.29	4.683		
9,100.0	6,612.7	6,618.2	6,618.2	60.0	132.4	-90.47	-3,686.8	203.4	810.2	618.0	192.14	4.217		
9,200.0	6,612.0	6,617.5	6,617.5	61.9	132.4	-90.40	-3,686.8	203.4	734.0	540.0	193.99	3.783		
9,300.0	6,611.4	6,616.9	6,616.9	63.7	132.3	-90.33	-3,686.8	203.4	664.1	468.3	195.85	3.391		
9,400.0	6,610.7	6,616.2	6,616.2	65.6	132.3	-90.25	-3,686.8	203.4	602.8	405.1	197.71	3.049		
9,500.0	6,610.1	6,615.6	6,615.6	67.5	132.3	-90.18	-3,686.8	203.4	552.9	353.3	199.58	2.770		
9,600.0	6,609.4	6,614.9	6,614.9	69.3	132.3	-90.10	-3,686.8	203.4	517.7	316.3	201.44	2.570		
9,700.0	6,608.8	6,614.3	6,614.3	71.2	132.3	-90.03	-3,686.8	203.4	500.4	297.1	203.31	2.461		
9,738.3	6,608.5	6,614.0	6,614.0	71.9	132.3	-90.00	-3,686.8	203.4	498.9	294.9	204.02	2.445 CC, ES, SF		
9,800.0	6,608.1	6,613.6	6,613.6	73.1	132.3	-89.95	-3,686.8	203.4	502.7	297.5	205.18	2.450		
9,900.0	6,607.5	6,613.0	6,613.0	75.0	132.3	-89.88	-3,686.8	203.4	524.5	317.4	207.05	2.533		
10,000.0	6,606.8	6,612.3	6,612.3	76.9	132.2	-89.81	-3,686.8	203.4	563.4	354.5	208.92	2.697		
10,100.0	6,606.2	6,611.7	6,611.7	78.7	132.2	-89.73	-3,686.8	203.4	616.2	405.4	210.79	2.923		
10,200.0	6,605.6	6,611.1	6,611.1	80.6	132.2	-89.66	-3,686.8	203.4	679.7	467.1	212.67	3.196		
10,300.0	6,604.9	6,610.4	6,610.4	82.5	132.2	-89.58	-3,686.8	203.4	751.3	536.7	214.54	3.502		
10,400.0	6,604.3	6,609.8	6,609.8	84.4	132.2	-89.51	-3,686.8	203.4	828.7	612.3	216.42	3.829		
10,500.0	6,603.6	6,609.1	6,609.1	86.3	132.2	-89.44	-3,686.8	203.4	910.5	692.2	218.29	4.171		
10,600.0	6,603.0	6,608.5	6,608.5	88.2	132.2	-89.36	-3,686.8	203.4	995.7	775.5	220.17	4.522		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Chesnut 27G-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 27G-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 27G-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 27G-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 27G-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 27G-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°

