

PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **LDS 1V-314**

Surface Location: LDS 5N65W1U Pad Sec.1-T5N-R65W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

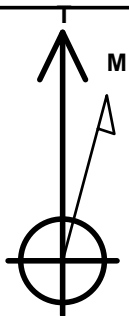
Ground Elevation: 4638.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1402128.96	3249661.65	40.433780	-104.603120	

Original Well Elev WELL @ 4653.0ft (Original Well Elev)

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 488'FNL & 389'FEL, Sec.1	1.0	0.0	0.0	Point
BHL 861'FNL & 2145'FEL, Sec.2	6793.0	-366.9	-7059.9	Point



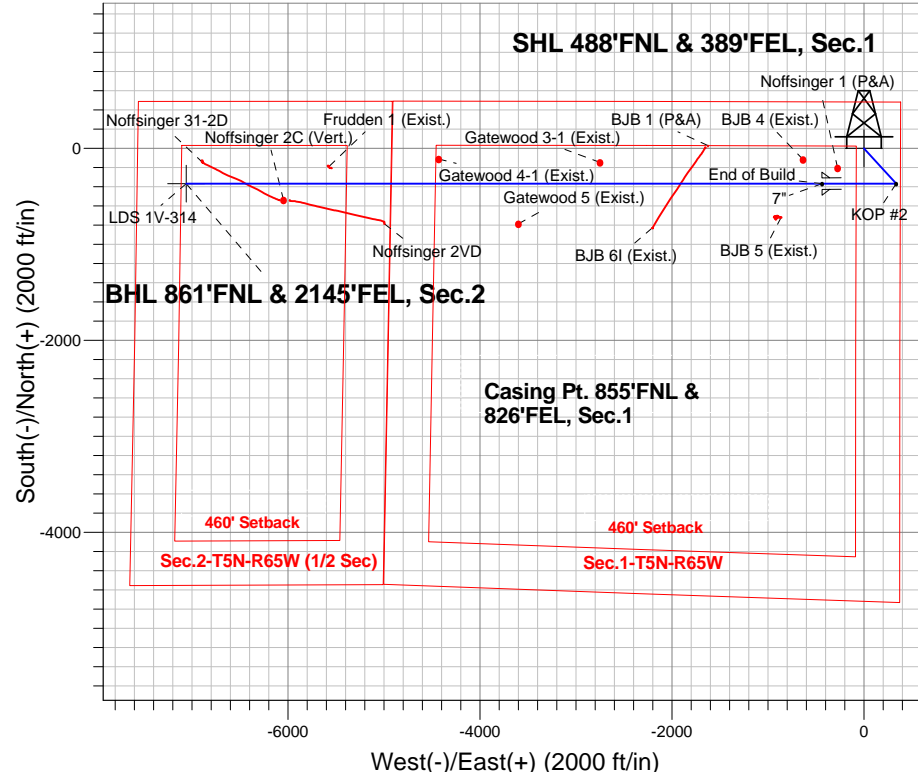
Azimuths to True North
Magnetic North: 8.35°

Magnetic Field
Strength: 52827.8srT
Dip Angle: 66.99°
Date: 9/4/2014
Model: IGRF2010

LDS 5N65W1U Pad Sec.1-T5N-R65W
LDS 1V-314
Plan #1 (9-4-14)

ANNOTATIONS

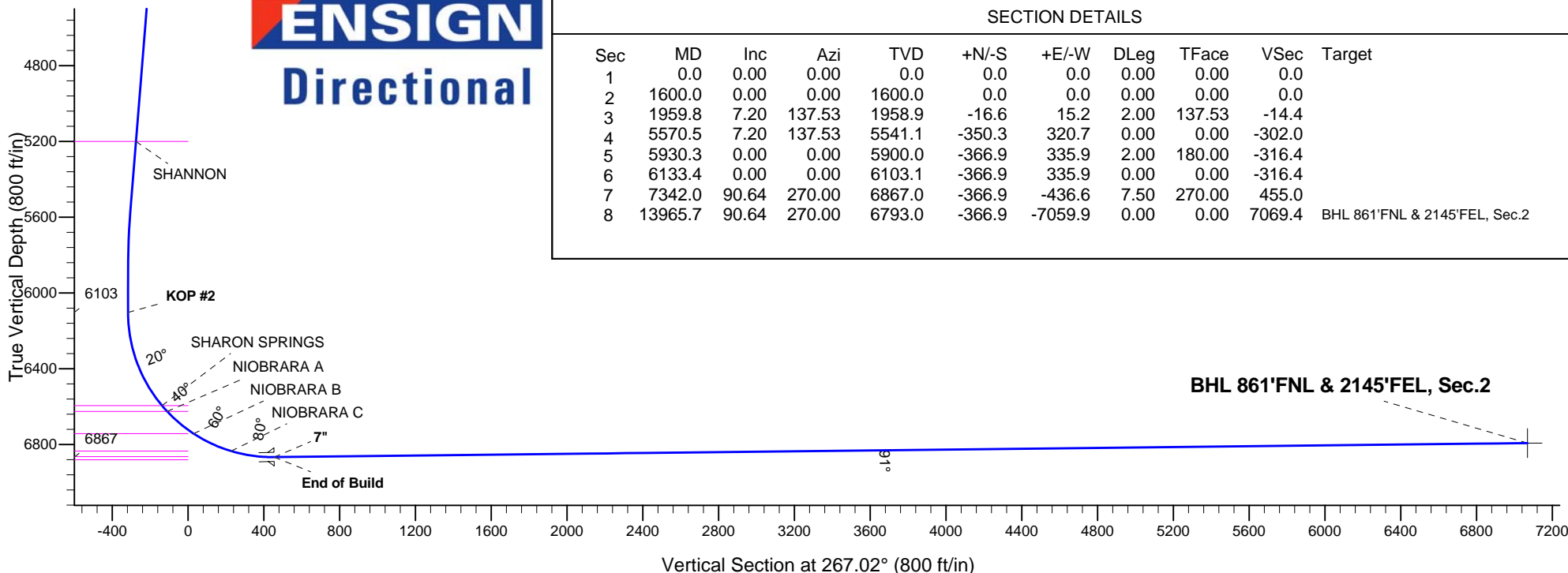
TVD	MD	Annotation
1600.0	1600.0	KOP #1
6103.1	6133.4	KOP #2
6867.0	7342.0	End of Build



ENSIGN
Directional

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1600.0	0.00	0.00	1600.0	0.0	0.0	0.00	0.00	0.0	
3	1959.8	7.20	137.53	1958.9	-16.6	15.2	2.00	137.53	-14.4	
4	5570.5	7.20	137.53	5541.1	-350.3	320.7	0.00	0.00	-302.0	
5	5930.3	0.00	0.00	5900.0	-366.9	335.9	2.00	180.00	-316.4	
6	6133.4	0.00	0.00	6103.1	-366.9	335.9	0.00	0.00	-316.4	
7	7342.0	90.64	270.00	6867.0	-366.9	-436.6	7.50	270.00	455.0	
8	13965.7	90.64	270.00	6793.0	-366.9	-7059.9	0.00	0.00	7069.4	BHL 861'FNL & 2145'FEL, Sec.2





PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.1-T5N-R65W

LDS 5N65W1U Pad Sec.1-T5N-R65W

LDS 1V-314

Wellbore #1

Plan: Plan #1 (9-4-14)

Standard Planning Report

18 September, 2014

Database:	landmark	Local Co-ordinate Reference:	Well LDS 1V-314
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4653.0ft (Original Well Elev)
Project:	SEC.1-T5N-R65W	MD Reference:	WELL @ 4653.0ft (Original Well Elev)
Site:	LDS 5N65W1U Pad Sec.1-T5N-R65W	North Reference:	True
Well:	LDS 1V-314	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (9-4-14)		

Project	SEC.1-T5N-R65W, Weld County, CO		
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	LDS 5N65W1U Pad Sec.1-T5N-R65W		
Site Position:		Northing:	1,402,064.02 ft
From:	Lat/Long	Easting:	3,249,723.55 ft
Position Uncertainty:	0.0 ft	Slot Radius:	"
		Latitude:	40.433600
		Longitude:	-104.602900
		Grid Convergence:	0.58 °

Well	LDS 1V-314		
Well Position	+N/-S	65.6 ft	Northing:
	+E/-W	-61.2 ft	Easting:
Position Uncertainty		0.0 ft	Wellhead Elevation:
			ft
			Latitude:
			40.433780
			Longitude:
			-104.603120
			Ground Level:
			4,638.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	9/4/2014	8.35	66.99	52,828

Design	Plan #1 (9-4-14)			
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	267.02

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	
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,959.8	7.20	137.53	1,958.9	-16.6	15.2	2.00	2.00	0.00	137.53	
5,570.5	7.20	137.53	5,541.1	-350.3	320.7	0.00	0.00	0.00	0.00	
5,930.3	0.00	0.00	5,900.0	-366.9	335.9	2.00	-2.00	0.00	180.00	
6,133.4	0.00	0.00	6,103.1	-366.9	335.9	0.00	0.00	0.00	0.00	
7,342.0	90.64	270.00	6,867.0	-366.9	-436.6	7.50	7.50	0.00	270.00	
13,965.7	90.64	270.00	6,793.0	-366.9	-7,059.9	0.00	0.00	0.00	0.00	BHL 861'FNL & 214

Database:	landmark	Local Co-ordinate Reference:	Well LDS 1V-314
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4653.0ft (Original Well Elev)
Project:	SEC.1-T5N-R65W	MD Reference:	WELL @ 4653.0ft (Original Well Elev)
Site:	LDS 5N65W1U Pad Sec.1-T5N-R65W	North Reference:	True
Well:	LDS 1V-314	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (9-4-14)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP #1									
1,700.0	2.00	137.53	1,700.0	-1.3	1.2	-1.1	2.00	2.00	0.00
1,800.0	4.00	137.53	1,799.8	-5.1	4.7	-4.4	2.00	2.00	0.00
1,900.0	6.00	137.53	1,899.5	-11.6	10.6	-10.0	2.00	2.00	0.00
1,959.8	7.20	137.53	1,958.9	-16.6	15.2	-14.4	2.00	2.00	0.00
2,000.0	7.20	137.53	1,998.7	-20.4	18.6	-17.6	0.00	0.00	0.00
2,100.0	7.20	137.53	2,098.0	-29.6	27.1	-25.5	0.00	0.00	0.00
2,200.0	7.20	137.53	2,197.2	-38.8	35.6	-33.5	0.00	0.00	0.00
2,300.0	7.20	137.53	2,296.4	-48.1	44.0	-41.5	0.00	0.00	0.00
2,400.0	7.20	137.53	2,395.6	-57.3	52.5	-49.4	0.00	0.00	0.00
2,500.0	7.20	137.53	2,494.8	-66.6	60.9	-57.4	0.00	0.00	0.00
2,600.0	7.20	137.53	2,594.0	-75.8	69.4	-65.4	0.00	0.00	0.00
2,700.0	7.20	137.53	2,693.2	-85.0	77.8	-73.3	0.00	0.00	0.00
2,800.0	7.20	137.53	2,792.4	-94.3	86.3	-81.3	0.00	0.00	0.00
2,900.0	7.20	137.53	2,891.6	-103.5	94.8	-89.3	0.00	0.00	0.00
3,000.0	7.20	137.53	2,990.9	-112.8	103.2	-97.2	0.00	0.00	0.00
3,100.0	7.20	137.53	3,090.1	-122.0	111.7	-105.2	0.00	0.00	0.00
3,200.0	7.20	137.53	3,189.3	-131.2	120.1	-113.2	0.00	0.00	0.00
3,300.0	7.20	137.53	3,288.5	-140.5	128.6	-121.1	0.00	0.00	0.00
3,400.0	7.20	137.53	3,387.7	-149.7	137.1	-129.1	0.00	0.00	0.00
3,499.1	7.20	137.53	3,486.0	-158.9	145.4	-137.0	0.00	0.00	0.00
PARKMAN									
3,500.0	7.20	137.53	3,486.9	-159.0	145.5	-137.1	0.00	0.00	0.00
3,600.0	7.20	137.53	3,586.1	-168.2	154.0	-145.0	0.00	0.00	0.00
3,700.0	7.20	137.53	3,685.3	-177.4	162.4	-153.0	0.00	0.00	0.00
3,800.0	7.20	137.53	3,784.6	-186.7	170.9	-161.0	0.00	0.00	0.00
3,900.0	7.20	137.53	3,883.8	-195.9	179.4	-168.9	0.00	0.00	0.00
4,000.0	7.20	137.53	3,983.0	-205.2	187.8	-176.9	0.00	0.00	0.00
4,100.0	7.20	137.53	4,082.2	-214.4	196.3	-184.9	0.00	0.00	0.00
4,200.0	7.20	137.53	4,181.4	-223.7	204.7	-192.8	0.00	0.00	0.00
4,263.1	7.20	137.53	4,244.0	-229.5	210.1	-197.9	0.00	0.00	0.00
SUSSEX									
4,300.0	7.20	137.53	4,280.6	-232.9	213.2	-200.8	0.00	0.00	0.00
4,400.0	7.20	137.53	4,379.8	-242.1	221.6	-208.8	0.00	0.00	0.00
4,500.0	7.20	137.53	4,479.0	-251.4	230.1	-216.8	0.00	0.00	0.00
4,600.0	7.20	137.53	4,578.3	-260.6	238.6	-224.7	0.00	0.00	0.00

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Site:	LDS 5N65W1U Pad Sec.1-T5N-R65W	North Reference:	True
Well:	LDS 1V-314	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (9-4-14)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,700.0	7.20	137.53	4,677.5	-269.9	247.0	-232.7	0.00	0.00	0.00
4,800.0	7.20	137.53	4,776.7	-279.1	255.5	-240.7	0.00	0.00	0.00
4,900.0	7.20	137.53	4,875.9	-288.3	263.9	-248.6	0.00	0.00	0.00
5,000.0	7.20	137.53	4,975.1	-297.6	272.4	-256.6	0.00	0.00	0.00
5,100.0	7.20	137.53	5,074.3	-306.8	280.9	-264.6	0.00	0.00	0.00
5,200.0	7.20	137.53	5,173.5	-316.1	289.3	-272.5	0.00	0.00	0.00
5,226.7	7.20	137.53	5,200.0	-318.5	291.6	-274.7	0.00	0.00	0.00
SHANNON									
5,300.0	7.20	137.53	5,272.7	-325.3	297.8	-280.5	0.00	0.00	0.00
5,400.0	7.20	137.53	5,372.0	-334.5	306.2	-288.5	0.00	0.00	0.00
5,500.0	7.20	137.53	5,471.2	-343.8	314.7	-296.4	0.00	0.00	0.00
5,570.5	7.20	137.53	5,541.1	-350.3	320.7	-302.0	0.00	0.00	0.00
5,600.0	6.61	137.53	5,570.4	-352.9	323.1	-304.3	2.00	-2.00	0.00
5,700.0	4.61	137.53	5,669.9	-360.1	329.7	-310.5	2.00	-2.00	0.00
5,800.0	2.61	137.53	5,769.7	-364.8	333.9	-314.5	2.00	-2.00	0.00
5,900.0	0.61	137.53	5,869.7	-366.8	335.8	-316.3	2.00	-2.00	0.00
5,930.3	0.00	0.00	5,900.0	-366.9	335.9	-316.4	2.00	-2.00	0.00
6,000.0	0.00	0.00	5,969.7	-366.9	335.9	-316.4	0.00	0.00	0.00
6,100.0	0.00	0.00	6,069.7	-366.9	335.9	-316.4	0.00	0.00	0.00
6,133.4	0.00	0.00	6,103.1	-366.9	335.9	-316.4	0.00	0.00	0.00
KOP #2									
6,200.0	4.99	270.00	6,169.6	-366.9	333.0	-313.5	7.50	7.50	0.00
6,300.0	12.49	270.00	6,268.3	-366.9	317.8	-298.3	7.50	7.50	0.00
6,400.0	19.99	270.00	6,364.3	-366.9	289.9	-270.4	7.50	7.50	0.00
6,500.0	27.49	270.00	6,455.8	-366.9	249.6	-230.2	7.50	7.50	0.00
6,600.0	34.99	270.00	6,541.2	-366.9	197.8	-178.5	7.50	7.50	0.00
6,667.9	40.08	270.00	6,595.0	-366.9	156.5	-137.2	7.50	7.50	0.00
SHARON SPRINGS									
6,700.0	42.49	270.00	6,619.1	-366.9	135.3	-116.0	7.50	7.50	0.00
6,709.4	43.20	270.00	6,626.0	-366.9	128.9	-109.7	7.50	7.50	0.00
NIOBRARA A									
6,800.0	49.99	270.00	6,688.2	-366.9	63.1	-43.9	7.50	7.50	0.00
6,892.0	56.89	270.00	6,743.0	-366.9	-10.8	29.8	7.50	7.50	0.00
NIOBRARA B									
6,900.0	57.49	270.00	6,747.3	-366.9	-17.5	36.5	7.50	7.50	0.00
7,000.0	64.99	270.00	6,795.4	-366.9	-105.1	124.0	7.50	7.50	0.00
7,100.0	72.49	270.00	6,831.6	-366.9	-198.2	217.0	7.50	7.50	0.00
7,111.4	73.35	270.00	6,835.0	-366.9	-209.1	227.9	7.50	7.50	0.00
NIOBRARA C									
7,200.0	79.99	270.00	6,855.4	-366.9	-295.3	313.9	7.50	7.50	0.00
7,265.3	84.89	270.00	6,864.0	-366.9	-360.0	378.6	7.50	7.50	0.00
FT HAYS									
7,300.0	87.49	270.00	6,866.3	-366.9	-394.6	413.1	7.50	7.50	0.00
7,342.0	90.64	270.00	6,867.0	-366.9	-436.6	455.1	7.49	7.49	0.00
End of Build - 7"									
7,400.0	90.64	270.00	6,866.3	-366.9	-494.6	513.0	0.00	0.00	0.00
7,500.0	90.64	270.00	6,865.2	-366.9	-594.6	612.9	0.00	0.00	0.00
7,600.0	90.64	270.00	6,864.1	-366.9	-694.6	712.7	0.00	0.00	0.00
7,700.0	90.64	270.00	6,863.0	-366.9	-794.6	812.6	0.00	0.00	0.00
7,800.0	90.64	270.00	6,861.9	-366.9	-894.6	912.4	0.00	0.00	0.00
7,900.0	90.64	270.00	6,860.8	-366.9	-994.6	1,012.3	0.00	0.00	0.00
8,000.0	90.64	270.00	6,859.6	-366.9	-1,094.6	1,112.1	0.00	0.00	0.00

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Project:	SEC.1-T5N-R65W	MD Reference:	WELL @ 4653.0ft (Original Well Elev)
Site:	LDS 5N65W1U Pad Sec.1-T5N-R65W	North Reference:	True
Well:	LDS 1V-314	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (9-4-14)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,100.0	90.64	270.00	6,858.5	-366.9	-1,194.6	1,212.0	0.00	0.00	0.00
8,200.0	90.64	270.00	6,857.4	-366.9	-1,294.6	1,311.9	0.00	0.00	0.00
8,300.0	90.64	270.00	6,856.3	-366.9	-1,394.6	1,411.7	0.00	0.00	0.00
8,400.0	90.64	270.00	6,855.2	-366.9	-1,494.6	1,511.6	0.00	0.00	0.00
8,500.0	90.64	270.00	6,854.1	-366.9	-1,594.5	1,611.4	0.00	0.00	0.00
8,600.0	90.64	270.00	6,852.9	-366.9	-1,694.5	1,711.3	0.00	0.00	0.00
8,700.0	90.64	270.00	6,851.8	-366.9	-1,794.5	1,811.2	0.00	0.00	0.00
8,800.0	90.64	270.00	6,850.7	-366.9	-1,894.5	1,911.0	0.00	0.00	0.00
8,900.0	90.64	270.00	6,849.6	-366.9	-1,994.5	2,010.9	0.00	0.00	0.00
9,000.0	90.64	270.00	6,848.5	-366.9	-2,094.5	2,110.7	0.00	0.00	0.00
9,100.0	90.64	270.00	6,847.3	-366.9	-2,194.5	2,210.6	0.00	0.00	0.00
9,200.0	90.64	270.00	6,846.2	-366.9	-2,294.5	2,310.5	0.00	0.00	0.00
9,300.0	90.64	270.00	6,845.1	-366.9	-2,394.5	2,410.3	0.00	0.00	0.00
9,400.0	90.64	270.00	6,844.0	-366.9	-2,494.5	2,510.2	0.00	0.00	0.00
9,500.0	90.64	270.00	6,842.9	-366.9	-2,594.5	2,610.0	0.00	0.00	0.00
9,600.0	90.64	270.00	6,841.8	-366.9	-2,694.5	2,709.9	0.00	0.00	0.00
9,700.0	90.64	270.00	6,840.6	-366.9	-2,794.5	2,809.8	0.00	0.00	0.00
9,800.0	90.64	270.00	6,839.5	-366.9	-2,894.5	2,909.6	0.00	0.00	0.00
9,900.0	90.64	270.00	6,838.4	-366.9	-2,994.5	3,009.5	0.00	0.00	0.00
10,000.0	90.64	270.00	6,837.3	-366.9	-3,094.5	3,109.3	0.00	0.00	0.00
10,100.0	90.64	270.00	6,836.2	-366.9	-3,194.4	3,209.2	0.00	0.00	0.00
10,200.0	90.64	270.00	6,835.1	-366.9	-3,294.4	3,309.0	0.00	0.00	0.00
10,300.0	90.64	270.00	6,833.9	-366.9	-3,394.4	3,408.9	0.00	0.00	0.00
10,400.0	90.64	270.00	6,832.8	-366.9	-3,494.4	3,508.8	0.00	0.00	0.00
10,500.0	90.64	270.00	6,831.7	-366.9	-3,594.4	3,608.6	0.00	0.00	0.00
10,600.0	90.64	270.00	6,830.6	-366.9	-3,694.4	3,708.5	0.00	0.00	0.00
10,700.0	90.64	270.00	6,829.5	-366.9	-3,794.4	3,808.3	0.00	0.00	0.00
10,800.0	90.64	270.00	6,828.4	-366.9	-3,894.4	3,908.2	0.00	0.00	0.00
10,900.0	90.64	270.00	6,827.2	-366.9	-3,994.4	4,008.1	0.00	0.00	0.00
11,000.0	90.64	270.00	6,826.1	-366.9	-4,094.4	4,107.9	0.00	0.00	0.00
11,100.0	90.64	270.00	6,825.0	-366.9	-4,194.4	4,207.8	0.00	0.00	0.00
11,200.0	90.64	270.00	6,823.9	-366.9	-4,294.4	4,307.6	0.00	0.00	0.00
11,300.0	90.64	270.00	6,822.8	-366.9	-4,394.4	4,407.5	0.00	0.00	0.00
11,400.0	90.64	270.00	6,821.7	-366.9	-4,494.4	4,507.4	0.00	0.00	0.00
11,500.0	90.64	270.00	6,820.5	-366.9	-4,594.4	4,607.2	0.00	0.00	0.00
11,600.0	90.64	270.00	6,819.4	-366.9	-4,694.4	4,707.1	0.00	0.00	0.00
11,700.0	90.64	270.00	6,818.3	-366.9	-4,794.3	4,806.9	0.00	0.00	0.00
11,800.0	90.64	270.00	6,817.2	-366.9	-4,894.3	4,906.8	0.00	0.00	0.00
11,900.0	90.64	270.00	6,816.1	-366.9	-4,994.3	5,006.6	0.00	0.00	0.00
12,000.0	90.64	270.00	6,815.0	-366.9	-5,094.3	5,106.5	0.00	0.00	0.00
12,100.0	90.64	270.00	6,813.8	-366.9	-5,194.3	5,206.4	0.00	0.00	0.00
12,200.0	90.64	270.00	6,812.7	-366.9	-5,294.3	5,306.2	0.00	0.00	0.00
12,300.0	90.64	270.00	6,811.6	-366.9	-5,394.3	5,406.1	0.00	0.00	0.00
12,400.0	90.64	270.00	6,810.5	-366.9	-5,494.3	5,505.9	0.00	0.00	0.00
12,500.0	90.64	270.00	6,809.4	-366.9	-5,594.3	5,605.8	0.00	0.00	0.00
12,600.0	90.64	270.00	6,808.3	-366.9	-5,694.3	5,705.7	0.00	0.00	0.00
12,700.0	90.64	270.00	6,807.1	-366.9	-5,794.3	5,805.5	0.00	0.00	0.00
12,800.0	90.64	270.00	6,806.0	-366.9	-5,894.3	5,905.4	0.00	0.00	0.00
12,900.0	90.64	270.00	6,804.9	-366.9	-5,994.3	6,005.2	0.00	0.00	0.00
13,000.0	90.64	270.00	6,803.8	-366.9	-6,094.3	6,105.1	0.00	0.00	0.00
13,100.0	90.64	270.00	6,802.7	-366.9	-6,194.3	6,205.0	0.00	0.00	0.00
13,200.0	90.64	270.00	6,801.6	-366.9	-6,294.3	6,304.8	0.00	0.00	0.00
13,300.0	90.64	270.00	6,800.4	-366.9	-6,394.2	6,404.7	0.00	0.00	0.00

Database:	landmark	Local Co-ordinate Reference:	Well LDS 1V-314
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4653.0ft (Original Well Elev)
Project:	SEC.1-T5N-R65W	MD Reference:	WELL @ 4653.0ft (Original Well Elev)
Site:	LDS 5N65W1U Pad Sec.1-T5N-R65W	North Reference:	True
Well:	LDS 1V-314	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (9-4-14)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
13,400.0	90.64	270.00	6,799.3	-366.9	-6,494.2	6,504.5	0.00	0.00	0.00
13,500.0	90.64	270.00	6,798.2	-366.9	-6,594.2	6,604.4	0.00	0.00	0.00
13,600.0	90.64	270.00	6,797.1	-366.9	-6,694.2	6,704.3	0.00	0.00	0.00
13,700.0	90.64	270.00	6,796.0	-366.9	-6,794.2	6,804.1	0.00	0.00	0.00
13,800.0	90.64	270.00	6,794.9	-366.9	-6,894.2	6,904.0	0.00	0.00	0.00
13,900.0	90.64	270.00	6,793.7	-366.9	-6,994.2	7,003.8	0.00	0.00	0.00
13,965.7	90.64	270.00	6,793.0	-366.9	-7,059.9	7,069.4	0.00	0.00	0.00

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
SHL 488'FNL & 389'F - plan hits target - Point	0.00	0.00	1.0	0.0	0.0	1,402,128.97	3,249,661.65	40.433780	-104.603120
BHL 861'FNL & 2145' - plan hits target - Point	0.00	0.00	6,793.0	-366.9	-7,059.9	1,401,690.65	3,242,606.11	40.432770	-104.628480

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,342.0	6,867.0	7"	7	7-1/2

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,499.1	3,486.0	PARKMAN		0.00	
4,263.1	4,244.0	SUSSEX		0.00	
5,226.7	5,200.0	SHANNON		0.00	
6,667.9	6,595.0	SHARON SPRINGS		0.00	
6,709.4	6,626.0	NIOBRARA A		0.00	
6,892.0	6,743.0	NIOBRARA B		0.00	
7,111.4	6,835.0	NIOBRARA C		0.00	
7,265.3	6,864.0	FT HAYS		0.00	
	6,881.0	CODELL		0.00	

Database:	landmark	Local Co-ordinate Reference:	Well LDS 1V-314
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4653.0ft (Original Well Elev)
Project:	SEC.1-T5N-R65W	MD Reference:	WELL @ 4653.0ft (Original Well Elev)
Site:	LDS 5N65W1U Pad Sec.1-T5N-R65W	North Reference:	True
Well:	LDS 1V-314	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (9-4-14)		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,600.0	1,600.0	0.0	0.0	KOP #1
6,133.4	6,103.1	-366.9	335.9	KOP #2
7,342.0	6,867.0	-366.9	-436.6	End of Build



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.1-T5N-R65W

LDS 5N65W1U Pad Sec.1-T5N-R65W

LDS 1V-314

Wellbore #1

Plan #1 (9-4-14)

Anticollision Report

18 September, 2014



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well LDS 1V-314
Project:	SEC.1-T5N-R65W	TVD Reference:	WELL @ 4653.0ft (Original Well Elev)
Reference Site:	LDS 5N65W1U Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4653.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (9-4-14)	Offset TVD Reference:	Offset Datum

Reference	Plan #1 (9-4-14)
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	9/18/2014		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	13,965.7	Plan #1 (9-4-14) (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						
Existing Wells Sec.1-T5N-R65W						
BJB 1 (P&A) - Wellbore #1 - Wellbore #1	8,528.4	6,839.7	396.1	207.9	2.104	CC, ES, SF
BJB 4 (Exist.) - Wellbore #1 - Wellbore #1	7,540.1	6,848.8	250.4	86.9	1.531	CC, ES, SF
BJB 5 (Exist.) - Wellbore #1 - Wellbore #1	7,770.8	6,851.0	353.5	308.8	7.919	CC, ES
BJB 5 (Exist.) - Wellbore #1 - Wellbore #1	7,800.0	6,850.2	354.7	309.3	7.822	SF
BJB 6I (Exist.) - Wellbore #1 - Wellbore #1	9,105.4	6,989.8	465.5	380.7	5.488	CC, ES
BJB 6I (Exist.) - Wellbore #1 - Wellbore #1	9,200.0	6,990.1	475.0	387.6	5.434	SF
Gatewood 3-1 (Exist.) - Wellbore #1 - Wellbore #1	9,656.0	6,823.1	221.4	2.7	1.012	Level 2, CC, ES, SF
Gatewood 4-1 (Exist.) - Wellbore #1 - Wellbore #1	11,334.7	6,810.4	254.4	-10.6	0.960	Level 1, CC, ES, SF
Gatewood 5 (Exist.) - Wellbore #1 - Wellbore #1	10,505.2	6,817.7	419.7	177.7	1.734	CC, ES, SF
Noffsinger 1 (P&A) - Wellbore #1 - Wellbore #1	7,177.1	6,882.1	162.9	6.0	1.038	Level 2, CC, ES, SF
Existing Wells Sec.2-T5N-R65W						
Frudden 1 (Exist.) - Wellbore #1 - Wellbore #1	12,479.6	6,806.8	184.2	-117.1	0.611	Level 1, CC, ES, SF
LDS 5N65W1U Pad Sec.1-T5N-R65W						
LDS 1U-234 - Wellbore #1 - Plan #1 (9-4-14)	1,600.0	1,601.0	28.8	21.8	4.128	CC, ES
LDS 1U-234 - Wellbore #1 - Plan #1 (9-4-14)	13,965.7	13,868.9	561.7	160.0	1.398	Level 3, SF
LDS 1U-304 - Wellbore #1 - Plan #1 (9-4-14)	1,580.5	1,582.7	59.6	52.8	8.671	CC
LDS 1U-304 - Wellbore #1 - Plan #1 (9-4-14)	1,600.0	1,602.1	59.6	52.7	8.565	ES
LDS 1U-304 - Wellbore #1 - Plan #1 (9-4-14)	13,000.0	12,953.6	760.4	412.0	2.182	SF
LDS 1V-204 - Wellbore #1 - Plan #1 (9-4-14)	400.0	400.0	60.5	58.9	38.425	CC
LDS 1V-204 - Wellbore #1 - Plan #1 (9-4-14)	13,965.7	13,893.5	253.4	-138.2	0.647	Level 1, ES, SF
LDS 1V-304 - Wellbore #1 - Plan #1 (9-4-14)	200.0	199.0	89.7	89.1	133.510	CC, ES
LDS 1V-304 - Wellbore #1 - Plan #1 (9-4-14)	13,965.7	13,979.9	612.1	206.9	1.511	SF
LDS 1V-414 - Wellbore #1 - Plan #1 (9-4-14)	1,000.0	1,000.0	29.3	25.0	6.857	CC
LDS 1V-414 - Wellbore #1 - Plan #1 (9-4-14)	12,800.0	12,803.6	154.0	-131.8	0.539	Level 1, ES, SF
Noffsinger Pad Sec.2-T5N-R65W						
Noffsinger 2C (Vert.) - Wellbore #1 - Design #1	12,951.2	6,811.3	171.5	-17.6	0.907	Level 1, CC, ES, SF
Noffsinger 2VD - Wellbore #1 - Wellbore #1	11,900.9	6,955.7	421.1	253.7	2.514	CC, ES, SF
Noffsinger 31-2D - Wellbore #1 - Wellbore #1	13,796.8	6,914.3	218.7	0.9	1.004	Level 2, CC
Noffsinger 31-2D - Wellbore #1 - Wellbore #1	13,800.0	6,914.1	218.7	0.8	1.004	Level 2, ES, SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well LDS 1V-314
Project:	SEC.1-T5N-R65W	TVD Reference:	WELL @ 4653.0ft (Original Well Elev)
Reference Site:	LDS 5N65W1U Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4653.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (9-4-14)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.1-T5N-R65W - BJB 1 (P&A) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 7040-UNKNOWN													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
7,700.0	6,863.0	6,849.0	6,849.0	30.3	137.0	91.34	29.2	-1,623.0	918.2	751.1	167.16	5.493		
7,800.0	6,861.9	6,847.9	6,847.9	32.7	137.0	91.18	29.2	-1,623.0	829.1	659.6	169.57	4.890		
7,900.0	6,860.8	6,846.8	6,846.8	35.2	136.9	91.02	29.2	-1,623.0	742.8	570.8	172.03	4.318		
8,000.0	6,859.6	6,845.6	6,845.6	37.7	136.9	90.85	29.2	-1,623.0	660.4	485.9	174.54	3.784		
8,100.0	6,858.5	6,844.5	6,844.5	40.3	136.9	90.69	29.2	-1,623.0	583.5	406.4	177.09	3.295		
8,200.0	6,857.4	6,843.4	6,843.4	42.9	136.9	90.53	29.2	-1,623.0	514.6	334.9	179.66	2.864		
8,300.0	6,856.3	6,842.3	6,842.3	45.5	136.8	90.37	29.2	-1,623.0	457.3	275.0	182.26	2.509		
8,400.0	6,855.2	6,841.2	6,841.2	48.1	136.8	90.21	29.2	-1,623.0	416.4	231.6	184.88	2.252		
8,500.0	6,854.1	6,840.1	6,840.1	50.8	136.8	90.05	29.2	-1,623.0	397.2	209.6	187.52	2.118		
8,528.4	6,853.7	6,839.7	6,839.7	51.6	136.8	90.00	29.2	-1,623.0	396.1	207.9	188.27	2.104 CC, ES, SF		
8,600.0	6,852.9	6,838.9	6,838.9	53.5	136.8	89.88	29.2	-1,623.0	402.6	212.4	190.17	2.117		
8,700.0	6,851.8	6,837.8	6,837.8	56.2	136.8	89.72	29.2	-1,623.0	431.7	238.9	192.83	2.239		
8,800.0	6,850.7	6,836.7	6,836.7	58.9	136.7	89.56	29.2	-1,623.0	480.3	284.8	195.50	2.457		
8,900.0	6,849.6	6,835.6	6,835.6	61.6	136.7	89.40	29.2	-1,623.0	543.1	344.9	198.18	2.740		
9,000.0	6,848.5	6,834.5	6,834.5	64.3	136.7	89.24	29.2	-1,623.0	615.9	415.0	200.87	3.066		
9,100.0	6,847.3	6,833.3	6,833.3	67.0	136.7	89.08	29.2	-1,623.0	695.4	491.8	203.56	3.416		
9,200.0	6,846.2	6,832.2	6,832.2	69.7	136.6	88.92	29.2	-1,623.0	779.7	573.4	206.26	3.780		
9,300.0	6,845.1	6,831.1	6,831.1	72.5	136.6	88.75	29.2	-1,623.0	867.3	658.3	208.96	4.150		
9,400.0	6,844.0	6,830.0	6,830.0	75.2	136.6	88.59	29.2	-1,623.0	957.3	745.7	211.67	4.523		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well LDS 1V-314
Project:	SEC.1-T5N-R65W	TVD Reference:	WELL @ 4653.0ft (Original Well Elev)
Reference Site:	LDS 5N65W1U Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4653.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (9-4-14)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.1-T5N-R65W - BJB 4 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 7064-UNKNOWN													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	-100.41	-116.6	-634.7	645.5					
100.0	100.0	84.0	84.0	0.1	1.7	-100.41	-116.6	-634.7	645.3	643.5	1.79	360.002		
200.0	200.0	184.0	184.0	0.3	3.7	-100.41	-116.6	-634.7	645.3	641.3	4.02	160.636		
300.0	300.0	284.0	284.0	0.6	5.7	-100.41	-116.6	-634.7	645.3	639.1	6.24	103.384		
400.0	400.0	384.0	384.0	0.8	7.7	-100.41	-116.6	-634.7	645.3	636.9	8.47	76.218		
500.0	500.0	484.0	484.0	1.0	9.7	-100.41	-116.6	-634.7	645.3	634.6	10.69	60.359		
600.0	600.0	584.0	584.0	1.2	11.7	-100.41	-116.6	-634.7	645.3	632.4	12.92	49.962		
700.0	700.0	684.0	684.0	1.5	13.7	-100.41	-116.6	-634.7	645.3	630.2	15.14	42.621		
800.0	800.0	784.0	784.0	1.7	15.7	-100.41	-116.6	-634.7	645.3	628.0	17.37	37.161		
900.0	900.0	884.0	884.0	1.9	17.7	-100.41	-116.6	-634.7	645.3	625.7	19.59	32.941		
1,000.0	1,000.0	984.0	984.0	2.1	19.7	-100.41	-116.6	-634.7	645.3	623.5	21.82	29.581		
1,100.0	1,100.0	1,084.0	1,084.0	2.4	21.7	-100.41	-116.6	-634.7	645.3	621.3	24.04	26.844		
1,200.0	1,200.0	1,184.0	1,184.0	2.6	23.7	-100.41	-116.6	-634.7	645.3	619.1	26.26	24.570		
1,300.0	1,300.0	1,284.0	1,284.0	2.8	25.7	-100.41	-116.6	-634.7	645.3	616.8	28.49	22.651		
1,400.0	1,400.0	1,384.0	1,384.0	3.0	27.7	-100.41	-116.6	-634.7	645.3	614.6	30.71	21.011		
1,500.0	1,500.0	1,484.0	1,484.0	3.3	29.7	-100.41	-116.6	-634.7	645.3	612.4	32.94	19.592		
1,600.0	1,600.0	1,584.0	1,584.0	3.5	31.7	-100.41	-116.6	-634.7	645.3	610.2	35.16	18.352		
1,700.0	1,700.0	1,684.0	1,684.0	3.7	33.7	122.18	-116.6	-634.7	646.3	608.9	37.36	17.300		
1,800.0	1,799.8	1,783.8	1,783.8	3.9	35.7	122.52	-116.6	-634.7	649.1	609.6	39.51	16.427		
1,900.0	1,899.5	1,883.5	1,883.5	4.1	37.7	123.09	-116.6	-634.7	653.8	612.1	41.65	15.696		
2,000.0	1,998.7	1,982.7	1,982.7	4.3	39.7	123.88	-116.6	-634.7	660.4	616.6	43.80	15.077		
2,100.0	2,098.0	2,082.0	2,082.0	4.5	41.6	124.77	-116.6	-634.7	667.5	621.5	45.99	14.515		
2,200.0	2,197.2	2,181.2	2,181.2	4.7	43.6	125.64	-116.6	-634.7	674.8	626.6	48.18	14.004		
2,300.0	2,296.4	2,280.4	2,280.4	5.0	45.6	126.49	-116.6	-634.7	682.2	631.8	50.39	13.538		
2,400.0	2,395.6	2,379.6	2,379.6	5.2	47.6	127.32	-116.6	-634.7	689.7	637.1	52.60	13.113		
2,500.0	2,494.8	2,478.8	2,478.8	5.5	49.6	128.14	-116.6	-634.7	697.4	642.6	54.81	12.724		
2,600.0	2,594.0	2,578.0	2,578.0	5.8	51.6	128.94	-116.6	-634.7	705.3	648.3	57.03	12.367		
2,700.0	2,693.2	2,677.2	2,677.2	6.1	53.5	129.71	-116.6	-634.7	713.3	654.0	59.25	12.038		
2,800.0	2,792.4	2,776.4	2,776.4	6.3	55.5	130.48	-116.6	-634.7	721.4	659.9	61.48	11.734		
2,900.0	2,891.6	2,875.6	2,875.6	6.6	57.5	131.22	-116.6	-634.7	729.6	665.9	63.70	11.453		
3,000.0	2,990.9	2,974.9	2,974.9	6.9	59.5	131.95	-116.6	-634.7	738.0	672.0	65.93	11.193		
3,100.0	3,090.1	3,074.1	3,074.1	7.2	61.5	132.66	-116.6	-634.7	746.4	678.3	68.16	10.951		
3,200.0	3,189.3	3,173.3	3,173.3	7.5	63.5	133.36	-116.6	-634.7	755.0	684.6	70.39	10.726		
3,300.0	3,288.5	3,272.5	3,272.5	7.8	65.5	134.04	-116.6	-634.7	763.7	691.1	72.62	10.517		
3,400.0	3,387.7	3,371.7	3,371.7	8.1	67.4	134.70	-116.6	-634.7	772.5	697.6	74.85	10.321		
3,500.0	3,486.9	3,470.9	3,470.9	8.4	69.4	135.35	-116.6	-634.7	781.4	704.3	77.07	10.138		
3,600.0	3,586.1	3,570.1	3,570.1	8.7	71.4	135.99	-116.6	-634.7	790.4	711.1	79.30	9.967		
3,700.0	3,685.3	3,669.3	3,669.3	9.0	73.4	136.61	-116.6	-634.7	799.5	717.9	81.53	9.806		
3,800.0	3,784.6	3,768.6	3,768.6	9.4	75.4	137.22	-116.6	-634.7	808.7	724.9	83.76	9.654		
3,900.0	3,883.8	3,867.8	3,867.8	9.7	77.4	137.81	-116.6	-634.7	817.9	731.9	85.99	9.512		
4,000.0	3,983.0	3,967.0	3,967.0	10.0	79.3	138.39	-116.6	-634.7	827.3	739.1	88.22	9.378		
4,100.0	4,082.2	4,066.2	4,066.2	10.3	81.3	138.96	-116.6	-634.7	836.7	746.3	90.44	9.251		
4,200.0	4,181.4	4,165.4	4,165.4	10.6	83.3	139.52	-116.6	-634.7	846.2	753.6	92.67	9.132		
4,300.0	4,280.6	4,264.6	4,264.6	10.9	85.3	140.06	-116.6	-634.7	855.8	761.0	94.90	9.019		
4,400.0	4,379.8	4,363.8	4,363.8	11.2	87.3	140.59	-116.6	-634.7	865.5	768.4	97.12	8.912		
4,500.0	4,479.0	4,463.0	4,463.0	11.6	89.3	141.11	-116.6	-634.7	875.3	775.9	99.35	8.810		
4,600.0	4,578.3	4,562.3	4,562.3	11.9	91.2	141.62	-116.6	-634.7	885.1	783.5	101.57	8.714		
4,700.0	4,677.5	4,661.5	4,661.5	12.2	93.2	142.11	-116.6	-634.7	895.0	791.2	103.79	8.623		
4,800.0	4,776.7	4,760.7	4,760.7	12.5	95.2	142.60	-116.6	-634.7	904.9	798.9	106.02	8.536		
4,900.0	4,875.9	4,859.9	4,859.9	12.8	97.2	143.07	-116.6	-634.7	914.9	806.7	108.24	8.453		
5,000.0	4,975.1	4,959.1	4,959.1	13.2	99.2	143.54	-116.6	-634.7	925.0	814.5	110.46	8.374		

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 LDS 1V-314
Project:	SEC.1-T5N-R65W	TVD Reference:	WELL @ 4653.0ft (Original Well Elev)
Reference Site:	LDS 5N65W1U Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4653.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (9-4-14)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.1-T5N-R65W - BJB 4 (Exist.) - Wellbore #1 - Wellbore #1												Offset Site Error: 0.0 ft	
Survey Program: 7064-UNKNOWN												Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)		
5,100.0	5,074.3	5,058.3	5,058.3	13.5	101.2	143.99	-116.6	-634.7	935.1	822.5	112.68	8.299	
5,200.0	5,173.5	5,157.5	5,157.5	13.8	103.2	144.44	-116.6	-634.7	945.3	830.4	114.90	8.227	
5,300.0	5,272.7	5,256.7	5,256.7	14.1	105.1	144.88	-116.6	-634.7	955.6	838.4	117.12	8.159	
5,400.0	5,372.0	5,356.0	5,356.0	14.5	107.1	145.30	-116.6	-634.7	965.9	846.5	119.34	8.093	
5,500.0	5,471.2	5,455.2	5,455.2	14.8	109.1	145.72	-116.6	-634.7	976.2	854.7	121.56	8.031	
5,600.0	5,570.4	5,554.4	5,554.4	15.1	111.1	146.16	-116.6	-634.7	986.5	862.6	123.86	7.964	
5,700.0	5,669.9	5,653.9	5,653.9	15.3	113.1	146.56	-116.6	-634.7	994.6	868.3	126.30	7.875	
5,800.0	5,769.7	5,753.7	5,753.7	15.5	115.1	146.82	-116.6	-634.7	999.9	871.3	128.64	7.773	
6,200.0	6,169.6	6,153.6	6,153.6	16.2	123.1	14.56	-116.6	-634.7	999.6	862.7	136.86	7.304	
6,300.0	6,268.3	6,252.3	6,252.3	16.2	125.0	15.07	-116.6	-634.7	984.9	848.5	136.34	7.224	
6,400.0	6,364.3	6,348.3	6,348.3	16.3	127.0	16.07	-116.6	-634.7	957.9	824.3	133.59	7.170	
6,500.0	6,455.8	6,439.8	6,439.8	16.2	128.8	17.70	-116.6	-634.7	919.1	790.3	128.78	7.137	
6,600.0	6,541.2	6,525.2	6,525.2	16.2	130.5	20.16	-116.6	-634.7	869.3	746.9	122.43	7.101	
6,700.0	6,619.1	6,603.1	6,603.1	16.2	132.1	23.80	-116.6	-634.7	809.7	694.0	115.63	7.002	
6,800.0	6,688.2	6,672.2	6,672.2	16.2	133.4	29.17	-116.6	-634.7	741.4	630.7	110.65	6.700	
6,900.0	6,747.3	6,731.3	6,731.3	16.3	134.6	37.05	-116.6	-634.7	666.1	554.7	111.38	5.980	
7,000.0	6,795.4	6,779.4	6,779.4	16.9	135.6	48.20	-116.6	-634.7	585.8	464.3	121.46	4.823	
7,100.0	6,831.6	6,815.6	6,815.6	18.1	136.3	62.33	-116.6	-634.7	503.2	364.8	138.36	3.637	
7,200.0	6,855.4	6,839.4	6,839.4	19.7	136.8	76.74	-116.6	-634.7	421.8	269.5	152.31	2.769	
7,300.0	6,866.3	6,850.3	6,850.3	21.5	137.0	87.60	-116.6	-634.7	346.9	188.6	158.31	2.191	
7,400.0	6,866.3	6,850.3	6,850.3	23.5	137.0	90.36	-116.6	-634.7	286.9	126.4	160.47	1.788	
7,500.0	6,865.2	6,849.2	6,849.2	25.7	137.0	90.10	-116.6	-634.7	253.6	91.0	162.59	1.560	
7,540.1	6,864.8	6,848.8	6,848.8	26.6	137.0	90.00	-116.6	-634.7	250.4	86.9	163.48	1.531 CC, ES, SF	
7,600.0	6,864.1	6,848.1	6,848.1	27.9	137.0	89.85	-116.6	-634.7	257.4	92.6	164.82	1.562	
7,700.0	6,863.0	6,847.0	6,847.0	30.3	136.9	89.59	-116.6	-634.7	297.1	129.9	167.14	1.777	
7,800.0	6,861.9	6,845.9	6,845.9	32.7	136.9	89.34	-116.6	-634.7	360.9	191.3	169.53	2.129	
7,900.0	6,860.8	6,844.8	6,844.8	35.2	136.9	89.08	-116.6	-634.7	438.4	266.4	171.97	2.549	
8,000.0	6,859.6	6,843.6	6,843.6	37.7	136.9	88.82	-116.6	-634.7	523.6	349.1	174.46	3.001	
8,100.0	6,858.5	6,842.5	6,842.5	40.3	136.9	88.57	-116.6	-634.7	613.3	436.3	176.98	3.465	
8,200.0	6,857.4	6,841.4	6,841.4	42.9	136.8	88.31	-116.6	-634.7	705.8	526.2	179.52	3.931	
8,300.0	6,856.3	6,840.3	6,840.3	45.5	136.8	88.06	-116.6	-634.7	800.0	617.9	182.09	4.394	
8,400.0	6,855.2	6,839.2	6,839.2	48.1	136.8	87.80	-116.6	-634.7	895.5	710.9	184.68	4.849	
8,500.0	6,854.1	6,838.1	6,838.1	50.8	136.8	87.55	-116.6	-634.7	991.9	804.7	187.28	5.297	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well LDS 1V-314
Project:	SEC.1-T5N-R65W	TVD Reference:	WELL @ 4653.0ft (Original Well Elev)
Reference Site:	LDS 5N65W1U Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4653.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (9-4-14)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.1-T5N-R65W - BJB 5 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS													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)			
6,800.0	6,688.2	6,690.9	6,689.4	16.2	12.3	-31.03	-720.5	-867.8	995.8	973.2	22.65	43.971		
6,900.0	6,747.3	6,748.8	6,747.2	16.3	12.5	-38.42	-720.4	-866.9	920.1	897.2	22.97	40.050		
7,000.0	6,795.4	6,795.6	6,794.0	16.9	12.6	-48.63	-720.4	-866.2	839.3	814.4	24.87	33.748		
7,100.0	6,831.6	6,830.4	6,828.8	18.1	12.7	-61.60	-720.4	-865.7	755.3	727.1	28.21	26.778		
7,200.0	6,855.4	6,852.7	6,851.1	19.7	12.7	-75.64	-720.4	-865.4	670.8	639.1	31.72	21.150		
7,300.0	6,866.3	6,862.1	6,860.5	21.5	12.7	-87.83	-720.4	-865.2	588.6	554.4	34.23	17.197		
7,400.0	6,866.3	6,860.7	6,859.1	23.5	12.7	-91.60	-720.4	-865.2	512.2	476.0	36.16	14.164		
7,500.0	6,865.2	6,858.1	6,856.4	25.7	12.7	-91.18	-720.4	-865.3	445.2	406.9	38.30	11.623		
7,600.0	6,864.1	6,855.4	6,853.8	27.9	12.7	-90.75	-720.4	-865.3	392.5	352.0	40.56	9.677		
7,700.0	6,863.0	6,852.8	6,851.2	30.3	12.7	-90.33	-720.4	-865.4	360.5	317.6	42.92	8.399		
7,770.8	6,862.2	6,851.0	6,849.4	32.0	12.7	-90.03	-720.4	-865.4	353.5	308.8	44.63	7.919 CC, ES		
7,800.0	6,861.9	6,850.2	6,848.6	32.7	12.7	-89.90	-720.4	-865.4	354.7	309.3	45.34	7.822 SF		
7,900.0	6,860.8	6,847.6	6,846.0	35.2	12.7	-89.48	-720.4	-865.4	376.3	328.5	47.82	7.870		
8,000.0	6,859.6	6,845.0	6,843.4	37.7	12.7	-89.06	-720.4	-865.5	421.2	370.9	50.34	8.367		
8,100.0	6,858.5	6,842.4	6,840.8	40.3	12.7	-88.63	-720.4	-865.5	482.9	430.0	52.90	9.130		
8,200.0	6,857.4	6,839.8	6,838.1	42.9	12.7	-88.21	-720.4	-865.6	555.9	500.4	55.48	10.020		
8,300.0	6,856.3	6,837.1	6,835.5	45.5	12.7	-87.79	-720.4	-865.6	636.2	578.1	58.09	10.953		
8,400.0	6,855.2	6,834.5	6,832.9	48.1	12.7	-87.36	-720.4	-865.6	721.5	660.8	60.71	11.885		
8,500.0	6,854.1	6,831.9	6,830.3	50.8	12.7	-86.94	-720.4	-865.7	810.1	746.8	63.34	12.790		
8,600.0	6,852.9	6,829.3	6,827.7	53.5	12.7	-86.52	-720.4	-865.7	901.1	835.1	65.99	13.656		
8,700.0	6,851.8	6,826.7	6,825.1	56.2	12.7	-86.10	-720.4	-865.8	993.9	925.2	68.64	14.479		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well LDS 1V-314
Project:	SEC.1-T5N-R65W	TVD Reference:	WELL @ 4653.0ft (Original Well Elev)
Reference Site:	LDS 5N65W1U Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4653.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (9-4-14)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.1-T5N-R65W - BJB 6I (Exist.) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 552-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,300.0	6,856.3	6,986.9	6,832.6	45.5	22.5	-89.67	-832.4	-2,199.9	930.2	867.1	63.17	14.726	
8,400.0	6,855.2	6,987.3	6,833.0	48.1	22.5	-89.72	-832.4	-2,199.9	845.1	779.3	65.81	12.842	
8,500.0	6,854.1	6,987.6	6,833.3	50.8	22.5	-89.76	-832.4	-2,199.9	763.7	695.2	68.47	11.153	
8,600.0	6,852.9	6,988.0	6,833.7	53.5	22.5	-89.81	-832.4	-2,199.9	687.1	616.0	71.14	9.658	
8,700.0	6,851.8	6,988.4	6,834.1	56.2	22.5	-89.85	-832.4	-2,199.9	617.3	543.4	73.83	8.361	
8,800.0	6,850.7	6,988.7	6,834.4	58.9	22.5	-89.89	-832.4	-2,199.9	556.7	480.2	76.53	7.275	
8,900.0	6,849.6	6,989.1	6,834.8	61.6	22.5	-89.94	-832.4	-2,199.9	508.8	429.6	79.24	6.421	
9,000.0	6,848.5	6,989.4	6,835.1	64.3	22.5	-89.98	-832.4	-2,199.9	477.3	395.3	81.95	5.824	
9,100.0	6,847.3	6,989.8	6,835.5	67.0	22.5	-90.02	-832.4	-2,199.9	465.5	380.9	84.68	5.498	
9,105.4	6,847.3	6,989.8	6,835.5	67.1	22.5	-90.03	-832.4	-2,199.9	465.5	380.7	84.82	5.488 CC, ES	
9,200.0	6,846.2	6,990.1	6,835.8	69.7	22.5	-90.07	-832.4	-2,199.9	475.0	387.6	87.41	5.434 SF	
9,300.0	6,845.1	6,990.5	6,836.2	72.5	22.5	-90.11	-832.4	-2,199.9	504.5	414.4	90.15	5.597	
9,400.0	6,844.0	6,990.8	6,836.5	75.2	22.5	-90.15	-832.4	-2,199.9	550.9	458.0	92.89	5.931	
9,500.0	6,842.9	6,991.2	6,836.9	78.0	22.5	-90.19	-832.4	-2,199.9	610.3	514.6	95.63	6.381	
9,600.0	6,841.8	6,991.5	6,837.2	80.7	22.5	-90.24	-832.4	-2,199.9	679.2	580.8	98.39	6.904	
9,700.0	6,840.6	6,991.8	6,837.5	83.5	22.5	-90.28	-832.4	-2,199.9	755.2	654.0	101.14	7.466	
9,800.0	6,839.5	6,992.2	6,837.9	86.2	22.5	-90.32	-832.4	-2,199.9	836.2	732.3	103.90	8.048	
9,900.0	6,838.4	6,992.5	6,838.2	89.0	22.5	-90.36	-832.4	-2,199.9	920.9	814.3	106.66	8.634	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well LDS 1V-314
Project:	SEC.1-T5N-R65W	TVD Reference:	WELL @ 4653.0ft (Original Well Elev)
Reference Site:	LDS 5N65W1U Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4653.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (9-4-14)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.1-T5N-R65W - Gatewood 3-1 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 7060-UNKNOWN													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
8,700.0	6,851.8	6,833.8	6,833.8	56.2	136.7	92.76	-145.6	-2,750.4	981.2	788.6	192.58	5.095		
8,800.0	6,850.7	6,832.7	6,832.7	58.9	136.7	92.47	-145.6	-2,750.4	884.1	688.8	195.29	4.527		
8,900.0	6,849.6	6,831.6	6,831.6	61.6	136.6	92.18	-145.6	-2,750.4	787.7	589.7	198.01	3.978		
9,000.0	6,848.5	6,830.5	6,830.5	64.3	136.6	91.90	-145.6	-2,750.4	692.3	491.5	200.73	3.449		
9,100.0	6,847.3	6,829.3	6,829.3	67.0	136.6	91.61	-145.6	-2,750.4	598.4	394.9	203.46	2.941		
9,200.0	6,846.2	6,828.2	6,828.2	69.7	136.6	91.32	-145.6	-2,750.4	506.8	300.6	206.19	2.458		
9,300.0	6,845.1	6,827.1	6,827.1	72.5	136.5	91.03	-145.6	-2,750.4	419.2	210.2	208.93	2.006		
9,400.0	6,844.0	6,826.0	6,826.0	75.2	136.5	90.74	-145.6	-2,750.4	338.4	126.7	211.66	1.599		
9,500.0	6,842.9	6,824.9	6,824.9	78.0	136.5	90.45	-145.6	-2,750.4	270.8	56.4	214.39	1.263	Level 3	
9,600.0	6,841.8	6,823.8	6,823.8	80.7	136.5	90.16	-145.6	-2,750.4	228.3	11.2	217.12	1.052	Level 2	
9,656.0	6,841.1	6,823.1	6,823.1	82.2	136.5	90.00	-145.6	-2,750.4	221.4	2.7	218.65	1.012	Level 2, CC, ES, SF	
9,700.0	6,840.6	6,822.6	6,822.6	83.5	136.5	89.87	-145.6	-2,750.4	225.7	5.8	219.85	1.027	Level 2	
9,800.0	6,839.5	6,821.5	6,821.5	86.2	136.4	89.58	-145.6	-2,750.4	264.1	41.5	222.58	1.187	Level 2	
9,900.0	6,838.4	6,820.4	6,820.4	89.0	136.4	89.29	-145.6	-2,750.4	329.5	104.2	225.31	1.462	Level 3	
10,000.0	6,837.3	6,819.3	6,819.3	91.7	136.4	89.01	-145.6	-2,750.4	409.1	181.1	228.03	1.794		
10,100.0	6,836.2	6,818.2	6,818.2	94.5	136.4	88.72	-145.6	-2,750.4	496.1	265.4	230.75	2.150		
10,200.0	6,835.1	6,817.1	6,817.1	97.3	136.3	88.43	-145.6	-2,750.4	587.3	353.8	233.47	2.516		
10,300.0	6,833.9	6,815.9	6,815.9	100.1	136.3	88.14	-145.6	-2,750.4	681.0	444.8	236.18	2.883		
10,400.0	6,832.8	6,814.8	6,814.8	102.8	136.3	87.85	-145.6	-2,750.4	776.2	537.3	238.89	3.249		
10,500.0	6,831.7	6,813.7	6,813.7	105.6	136.3	87.56	-145.6	-2,750.4	872.5	630.9	241.59	3.612		
10,600.0	6,830.6	6,812.6	6,812.6	108.4	136.3	87.27	-145.6	-2,750.4	969.6	725.3	244.29	3.969		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well LDS 1V-314
Project:	SEC.1-T5N-R65W	TVD Reference:	WELL @ 4653.0ft (Original Well Elev)
Reference Site:	LDS 5N65W1U Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4653.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (9-4-14)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.1-T5N-R65W - Gatewood 4-1 (Exist.) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 7045-UNKNOWN												Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,400.0	6,832.8	6,820.8	6,820.8	102.8	136.4	92.35	-112.5	-4,429.1	968.7	729.6	239.03	4.053	
10,500.0	6,831.7	6,819.7	6,819.7	105.6	136.4	92.10	-112.5	-4,429.1	872.6	630.8	241.81	3.608	
10,600.0	6,830.6	6,818.6	6,818.6	108.4	136.4	91.85	-112.5	-4,429.1	777.5	532.9	244.60	3.179	
10,700.0	6,829.5	6,817.5	6,817.5	111.2	136.3	91.60	-112.5	-4,429.1	683.8	436.4	247.39	2.764	
10,800.0	6,828.4	6,816.4	6,816.4	113.9	136.3	91.34	-112.5	-4,429.1	592.1	342.0	250.17	2.367	
10,900.0	6,827.2	6,815.2	6,815.2	116.7	136.3	91.09	-112.5	-4,429.1	503.7	250.7	252.95	1.991	
11,000.0	6,826.1	6,814.1	6,814.1	119.5	136.3	90.84	-112.5	-4,429.1	420.4	164.7	255.73	1.644	
11,100.0	6,825.0	6,813.0	6,813.0	122.3	136.3	90.59	-112.5	-4,429.1	346.1	87.6	258.50	1.339	Level 3
11,200.0	6,823.9	6,811.9	6,811.9	125.1	136.2	90.34	-112.5	-4,429.1	287.9	26.6	261.27	1.102	Level 2
11,300.0	6,822.8	6,810.8	6,810.8	127.9	136.2	90.09	-112.5	-4,429.1	256.8	-7.3	264.04	0.972	Level 1
11,334.7	6,822.4	6,810.4	6,810.4	128.8	136.2	90.00	-112.5	-4,429.1	254.4	-10.6	265.00	0.960	Level 1, CC, ES, SF
11,400.0	6,821.7	6,809.7	6,809.7	130.6	136.2	89.84	-112.5	-4,429.1	262.6	-4.2	266.80	0.984	Level 1
11,500.0	6,820.5	6,808.5	6,808.5	133.4	136.2	89.58	-112.5	-4,429.1	303.4	33.8	269.56	1.125	Level 2
11,600.0	6,819.4	6,807.4	6,807.4	136.2	136.1	89.33	-112.5	-4,429.1	367.5	95.2	272.31	1.350	Level 3
11,700.0	6,818.3	6,806.3	6,806.3	139.0	136.1	89.08	-112.5	-4,429.1	445.1	170.1	275.06	1.618	
11,800.0	6,817.2	6,805.2	6,805.2	141.8	136.1	88.83	-112.5	-4,429.1	530.3	252.5	277.81	1.909	
11,900.0	6,816.1	6,804.1	6,804.1	144.6	136.1	88.58	-112.5	-4,429.1	619.9	339.3	280.55	2.209	
12,000.0	6,815.0	6,803.0	6,803.0	147.4	136.1	88.33	-112.5	-4,429.1	712.2	428.9	283.28	2.514	
12,100.0	6,813.8	6,801.8	6,801.8	150.2	136.0	88.08	-112.5	-4,429.1	806.4	520.4	286.01	2.820	
12,200.0	6,812.7	6,800.7	6,800.7	153.0	136.0	87.82	-112.5	-4,429.1	901.9	613.1	288.74	3.123	
12,300.0	6,811.6	6,799.6	6,799.6	155.8	136.0	87.57	-112.5	-4,429.1	998.2	706.7	291.46	3.425	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well LDS 1V-314
Project:	SEC.1-T5N-R65W	TVD Reference:	WELL @ 4653.0ft (Original Well Elev)
Reference Site:	LDS 5N65W1U Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4653.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (9-4-14)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.1-T5N-R65W - Gatewood 5 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 7123-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	
9,600.0	6,841.8	6,827.8	6,827.8	80.7	136.6	-91.38	-786.7	-3,599.6	997.7	780.6	217.13	4.595		
9,700.0	6,840.6	6,826.6	6,826.6	83.5	136.5	-91.23	-786.7	-3,599.6	908.0	688.1	219.87	4.129		
9,800.0	6,839.5	6,825.5	6,825.5	86.2	136.5	-91.08	-786.7	-3,599.6	820.6	598.0	222.62	3.686		
9,900.0	6,838.4	6,824.4	6,824.4	89.0	136.5	-90.92	-786.7	-3,599.6	736.5	511.1	225.38	3.268		
10,000.0	6,837.3	6,823.3	6,823.3	91.7	136.5	-90.77	-786.7	-3,599.6	656.8	428.6	228.13	2.879		
10,100.0	6,836.2	6,822.2	6,822.2	94.5	136.4	-90.62	-786.7	-3,599.6	583.4	352.5	230.88	2.527		
10,200.0	6,835.1	6,821.1	6,821.1	97.3	136.4	-90.47	-786.7	-3,599.6	518.9	285.3	233.64	2.221		
10,300.0	6,833.9	6,819.9	6,819.9	100.1	136.4	-90.31	-786.7	-3,599.6	467.2	230.8	236.40	1.976		
10,400.0	6,832.8	6,818.8	6,818.8	102.8	136.4	-90.16	-786.7	-3,599.6	432.7	193.5	239.15	1.809		
10,500.0	6,831.7	6,817.7	6,817.7	105.6	136.4	-90.01	-786.7	-3,599.6	419.7	177.8	241.91	1.735		
10,505.2	6,831.7	6,817.7	6,817.7	105.7	136.4	-90.00	-786.7	-3,599.6	419.7	177.7	242.05	1.734 CC, ES, SF		
10,600.0	6,830.6	6,816.6	6,816.6	108.4	136.3	-89.86	-786.7	-3,599.6	430.3	185.6	244.67	1.759		
10,700.0	6,829.5	6,815.5	6,815.5	111.2	136.3	-89.70	-786.7	-3,599.6	462.7	215.3	247.42	1.870		
10,800.0	6,828.4	6,814.4	6,814.4	113.9	136.3	-89.55	-786.7	-3,599.6	512.9	262.7	250.18	2.050		
10,900.0	6,827.2	6,813.2	6,813.2	116.7	136.3	-89.40	-786.7	-3,599.6	576.2	323.3	252.93	2.278		
11,000.0	6,826.1	6,812.1	6,812.1	119.5	136.2	-89.25	-786.7	-3,599.6	648.8	393.1	255.69	2.538		
11,100.0	6,825.0	6,811.0	6,811.0	122.3	136.2	-89.09	-786.7	-3,599.6	728.0	469.5	258.44	2.817		
11,200.0	6,823.9	6,809.9	6,809.9	125.1	136.2	-88.94	-786.7	-3,599.6	811.7	550.5	261.20	3.108		
11,300.0	6,822.8	6,808.8	6,808.8	127.9	136.2	-88.79	-786.7	-3,599.6	898.8	634.8	263.95	3.405		
11,400.0	6,821.7	6,807.7	6,807.7	130.6	136.2	-88.64	-786.7	-3,599.6	988.3	721.6	266.70	3.706		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well LDS 1V-314
Project:	SEC.1-T5N-R65W	TVD Reference:	WELL @ 4653.0ft (Original Well Elev)
Reference Site:	LDS 5N65W1U Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4653.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (9-4-14)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.1-T5N-R65W - Noffsinger 1 (P&A) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 7140-UNKNOWN													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	31.0	31.0	0.0	0.6	-126.79	-126.79	-204.0	-272.8	340.7	340.0	0.62	549.284	
100.0	100.0	131.0	131.0	0.1	2.6	-126.79	-126.79	-204.0	-272.8	340.7	337.9	2.73	124.668	
200.0	200.0	231.0	231.0	0.3	4.6	-126.79	-126.79	-204.0	-272.8	340.7	335.7	4.96	68.719	
300.0	300.0	331.0	331.0	0.6	6.6	-126.79	-126.79	-204.0	-272.8	340.7	333.5	7.18	47.433	
400.0	400.0	431.0	431.0	0.8	8.6	-126.79	-126.79	-204.0	-272.8	340.7	331.3	9.41	36.215	
500.0	500.0	531.0	531.0	1.0	10.6	-126.79	-126.79	-204.0	-272.8	340.7	329.0	11.63	29.288	
600.0	600.0	631.0	631.0	1.2	12.6	-126.79	-126.79	-204.0	-272.8	340.7	326.8	13.86	24.585	
700.0	700.0	731.0	731.0	1.5	14.6	-126.79	-126.79	-204.0	-272.8	340.7	324.6	16.08	21.184	
800.0	800.0	831.0	831.0	1.7	16.6	-126.79	-126.79	-204.0	-272.8	340.7	322.4	18.31	18.610	
900.0	900.0	931.0	931.0	1.9	18.6	-126.79	-126.79	-204.0	-272.8	340.7	320.1	20.53	16.593	
1,000.0	1,000.0	1,031.0	1,031.0	2.1	20.6	-126.79	-126.79	-204.0	-272.8	340.7	317.9	22.76	14.971	
1,100.0	1,100.0	1,131.0	1,131.0	2.4	22.6	-126.79	-126.79	-204.0	-272.8	340.7	315.7	24.98	13.637	
1,200.0	1,200.0	1,231.0	1,231.0	2.6	24.6	-126.79	-126.79	-204.0	-272.8	340.7	313.5	27.20	12.522	
1,300.0	1,300.0	1,331.0	1,331.0	2.8	26.6	-126.79	-126.79	-204.0	-272.8	340.7	311.2	29.43	11.576	
1,400.0	1,400.0	1,431.0	1,431.0	3.0	28.6	-126.79	-126.79	-204.0	-272.8	340.7	309.0	31.65	10.762	
1,500.0	1,500.0	1,531.0	1,531.0	3.3	30.6	-126.79	-126.79	-204.0	-272.8	340.7	306.8	33.88	10.055	
1,600.0	1,600.0	1,631.0	1,631.0	3.5	32.6	-126.79	-126.79	-204.0	-272.8	340.7	304.6	36.10	9.436	
1,700.0	1,700.0	1,731.0	1,731.0	3.7	34.6	95.97	95.97	-204.0	-272.8	340.8	302.5	38.30	8.899	
1,800.0	1,799.8	1,830.8	1,830.8	3.9	36.6	96.83	96.83	-204.0	-272.8	341.4	300.9	40.48	8.435	
1,900.0	1,899.5	1,930.5	1,930.5	4.1	38.6	98.25	98.25	-204.0	-272.8	342.6	299.9	42.66	8.030	
2,000.0	1,998.7	2,029.7	2,029.7	4.3	40.6	100.18	100.18	-204.0	-272.8	344.5	299.6	44.85	7.681	
2,100.0	2,098.0	2,129.0	2,129.0	4.5	42.6	102.20	102.20	-204.0	-272.8	346.9	299.9	47.05	7.374	
2,200.0	2,197.2	2,228.2	2,228.2	4.7	44.6	104.19	104.19	-204.0	-272.8	349.8	300.6	49.26	7.102	
2,300.0	2,296.4	2,327.4	2,327.4	5.0	46.5	106.14	106.14	-204.0	-272.8	353.1	301.6	51.48	6.860	
2,400.0	2,395.6	2,426.6	2,426.6	5.2	48.5	108.06	108.06	-204.0	-272.8	356.8	303.1	53.70	6.645	
2,500.0	2,494.8	2,525.8	2,525.8	5.5	50.5	109.94	109.94	-204.0	-272.8	360.9	305.0	55.93	6.453	
2,600.0	2,594.0	2,625.0	2,625.0	5.8	52.5	111.77	111.77	-204.0	-272.8	365.4	307.3	58.16	6.283	
2,700.0	2,693.2	2,724.2	2,724.2	6.1	54.5	113.56	113.56	-204.0	-272.8	370.3	309.9	60.40	6.131	
2,800.0	2,792.4	2,823.4	2,823.4	6.3	56.5	115.30	115.30	-204.0	-272.8	375.5	312.9	62.63	5.995	
2,900.0	2,891.6	2,922.6	2,922.6	6.6	58.5	117.00	117.00	-204.0	-272.8	381.1	316.2	64.87	5.875	
3,000.0	2,990.9	3,021.9	3,021.9	6.9	60.4	118.64	118.64	-204.0	-272.8	387.0	319.9	67.10	5.767	
3,100.0	3,090.1	3,121.1	3,121.1	7.2	62.4	120.23	120.23	-204.0	-272.8	393.2	323.8	69.34	5.670	
3,200.0	3,189.3	3,220.3	3,220.3	7.5	64.4	121.78	121.78	-204.0	-272.8	399.6	328.1	71.57	5.584	
3,300.0	3,288.5	3,319.5	3,319.5	7.8	66.4	123.27	123.27	-204.0	-272.8	406.4	332.6	73.80	5.507	
3,400.0	3,387.7	3,418.7	3,418.7	8.1	68.4	124.71	124.71	-204.0	-272.8	413.5	337.4	76.03	5.438	
3,500.0	3,486.9	3,517.9	3,517.9	8.4	70.4	126.11	126.11	-204.0	-272.8	420.8	342.5	78.26	5.377	
3,600.0	3,586.1	3,617.1	3,617.1	8.7	72.3	127.46	127.46	-204.0	-272.8	428.3	347.8	80.48	5.322	
3,700.0	3,685.3	3,716.3	3,716.3	9.0	74.3	128.76	128.76	-204.0	-272.8	436.1	353.4	82.71	5.273	
3,800.0	3,784.6	3,815.6	3,815.6	9.4	76.3	130.01	130.01	-204.0	-272.8	444.1	359.1	84.93	5.229	
3,900.0	3,883.8	3,914.8	3,914.8	9.7	78.3	131.22	131.22	-204.0	-272.8	452.2	365.1	87.15	5.189	
4,000.0	3,983.0	4,014.0	4,014.0	10.0	80.3	132.39	132.39	-204.0	-272.8	460.6	371.3	89.37	5.154	
4,100.0	4,082.2	4,113.2	4,113.2	10.3	82.3	133.51	133.51	-204.0	-272.8	469.2	377.6	91.58	5.123	
4,200.0	4,181.4	4,212.4	4,212.4	10.6	84.2	134.60	134.60	-204.0	-272.8	478.0	384.2	93.80	5.096	
4,300.0	4,280.6	4,311.6	4,311.6	10.9	86.2	135.64	135.64	-204.0	-272.8	486.9	390.9	96.01	5.071	
4,400.0	4,379.8	4,410.8	4,410.8	11.2	88.2	136.65	136.65	-204.0	-272.8	495.9	397.7	98.22	5.049	
4,500.0	4,479.0	4,510.0	4,510.0	11.6	90.2	137.62	137.62	-204.0	-272.8	505.2	404.7	100.44	5.030	
4,600.0	4,578.3	4,609.3	4,609.3	11.9	92.2	138.56	138.56	-204.0	-272.8	514.5	411.9	102.65	5.012	
4,700.0	4,677.5	4,708.5	4,708.5	12.2	94.2	139.47	139.47	-204.0	-272.8	524.0	419.1	104.85	4.997	
4,800.0	4,776.7	4,807.7	4,807.7	12.5	96.2	140.34	140.34	-204.0	-272.8	533.6	426.5	107.06	4.984	
4,900.0	4,875.9	4,906.9	4,906.9	12.8	98.1	141.18	141.18	-204.0	-272.8	543.3	434.1	109.27	4.973	
5,000.0	4,975.1	5,006.1	5,006.1	13.2	100.1	141.99	141.99	-204.0	-272.8	553.2	441.7	111.48	4.962	

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 LDS 1V-314
Project:	SEC.1-T5N-R65W	TVD Reference:	WELL @ 4653.0ft (Original Well Elev)
Reference Site:	LDS 5N65W1U Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4653.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (9-4-14)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.1-T5N-R65W - Noffsinger 1 (P&A) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 7140-UNKNOWN													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
5,100.0	5,074.3	5,105.3	5,105.3	13.5	102.1	142.77	-204.0	-272.8	563.1	449.5	113.68	4.954		
5,200.0	5,173.5	5,204.5	5,204.5	13.8	104.1	143.53	-204.0	-272.8	573.2	457.3	115.89	4.946		
5,300.0	5,272.7	5,303.7	5,303.7	14.1	106.1	144.26	-204.0	-272.8	583.3	465.3	118.09	4.940		
5,400.0	5,372.0	5,403.0	5,403.0	14.5	108.1	144.96	-204.0	-272.8	593.6	473.3	120.29	4.934		
5,500.0	5,471.2	5,502.2	5,502.2	14.8	110.0	145.64	-204.0	-272.8	603.9	481.4	122.50	4.930		
5,600.0	5,570.4	5,601.4	5,601.4	15.1	112.0	146.32	-204.0	-272.8	614.2	489.4	124.79	4.922		
5,700.0	5,669.9	5,700.9	5,700.9	15.3	114.0	146.91	-204.0	-272.8	622.4	495.1	127.22	4.892		
5,800.0	5,769.7	5,800.7	5,800.7	15.5	116.0	147.28	-204.0	-272.8	627.6	498.1	129.55	4.845		
5,900.0	5,869.7	5,900.7	5,900.7	15.7	118.0	147.45	-204.0	-272.8	630.0	498.2	131.79	4.780		
6,000.0	5,969.7	6,000.7	6,000.7	15.9	120.0	-75.02	-204.0	-272.8	630.1	495.1	135.09	4.665		
6,100.0	6,069.7	6,100.7	6,100.7	16.0	122.0	-75.02	-204.0	-272.8	630.1	492.9	137.26	4.591		
6,200.0	6,169.6	6,200.6	6,200.6	16.2	124.0	15.11	-204.0	-272.8	627.3	489.6	137.78	4.553		
6,300.0	6,268.3	6,299.3	6,299.3	16.2	126.0	15.78	-204.0	-272.8	612.7	475.4	137.25	4.464		
6,400.0	6,364.3	6,395.3	6,395.3	16.3	127.9	17.12	-204.0	-272.8	585.8	451.3	134.52	4.355		
6,500.0	6,455.8	6,486.8	6,486.8	16.2	129.7	19.37	-204.0	-272.8	547.3	417.4	129.86	4.214		
6,600.0	6,541.2	6,572.2	6,572.2	16.2	131.4	22.91	-204.0	-272.8	498.0	374.0	124.04	4.015		
6,700.0	6,619.1	6,650.1	6,650.1	16.2	133.0	28.43	-204.0	-272.8	439.4	320.5	118.91	3.695		
6,800.0	6,688.2	6,719.2	6,719.2	16.2	134.4	37.03	-204.0	-272.8	373.3	255.0	118.27	3.156		
6,900.0	6,747.3	6,778.3	6,778.3	16.3	135.6	49.90	-204.0	-272.8	302.9	175.9	126.95	2.386		
7,000.0	6,795.4	6,826.4	6,826.4	16.9	136.5	66.48	-204.0	-272.8	233.8	91.0	142.79	1.638		
7,100.0	6,831.6	6,862.6	6,862.6	18.1	137.3	82.16	-204.0	-272.8	179.2	25.2	153.94	1.164	Level 2	
7,177.1	6,851.1	6,882.1	6,882.1	19.3	137.6	90.00	-204.0	-272.8	162.9	6.0	156.95	1.038	Level 2, CC, ES, SF	
7,200.0	6,855.4	6,886.4	6,886.4	19.7	137.7	91.37	-204.0	-272.8	164.5	7.1	157.37	1.045	Level 2	
7,300.0	6,866.3	6,897.3	6,897.3	21.5	137.9	91.87	-204.0	-272.8	203.4	44.1	159.37	1.276	Level 3	
7,400.0	6,866.3	6,897.3	6,897.3	23.5	137.9	89.13	-204.0	-272.8	275.2	113.8	161.38	1.705		
7,500.0	6,865.2	6,896.2	6,896.2	25.7	137.9	88.74	-204.0	-272.8	360.7	197.2	163.47	2.206		
7,600.0	6,864.1	6,895.1	6,895.1	27.9	137.9	88.34	-204.0	-272.8	452.2	286.5	165.67	2.729		
7,700.0	6,863.0	6,894.0	6,894.0	30.3	137.9	87.95	-204.0	-272.8	546.6	378.7	167.95	3.255		
7,800.0	6,861.9	6,892.9	6,892.9	32.7	137.9	87.56	-204.0	-272.8	642.8	472.5	170.30	3.774		
7,900.0	6,860.8	6,891.8	6,891.8	35.2	137.8	87.17	-204.0	-272.8	739.9	567.2	172.70	4.285		
8,000.0	6,859.6	6,890.6	6,890.6	37.7	137.8	86.78	-204.0	-272.8	837.8	662.6	175.13	4.784		
8,100.0	6,858.5	6,889.5	6,889.5	40.3	137.8	86.38	-204.0	-272.8	936.0	758.4	177.59	5.271		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well LDS 1V-314
Project:	SEC.1-T5N-R65W	TVD Reference:	WELL @ 4653.0ft (Original Well Elev)
Reference Site:	LDS 5N65W1U Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4653.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (9-4-14)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.2-T5N-R65W - Frudden 1 (Exist.) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 100-UNKNOWN												Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
11,500.0	6,820.5	6,839.7	6,839.1	133.4	139.3	100.92	-183.2	-5,573.2	996.2	728.5	267.66	3.722	
11,600.0	6,819.4	6,836.5	6,835.9	136.2	139.4	99.97	-183.2	-5,573.2	898.2	626.8	271.35	3.310	
11,700.0	6,818.3	6,833.3	6,832.7	139.0	139.5	98.99	-183.2	-5,573.3	800.6	525.6	274.99	2.911	
11,800.0	6,817.2	6,830.0	6,829.4	141.8	139.6	98.00	-183.1	-5,573.4	703.7	425.1	278.59	2.526	
11,900.0	6,816.1	6,826.7	6,826.1	144.6	139.8	96.99	-183.1	-5,573.5	607.8	325.7	282.14	2.154	
12,000.0	6,815.0	6,823.4	6,822.8	147.4	139.9	95.96	-183.0	-5,573.5	513.5	227.9	285.62	1.798	
12,100.0	6,813.8	6,820.0	6,819.4	150.2	140.0	94.92	-183.0	-5,573.6	421.7	132.7	289.04	1.459 Level 3	
12,200.0	6,812.7	6,816.6	6,816.0	153.0	140.2	93.86	-182.9	-5,573.7	334.7	42.3	292.38	1.145 Level 2	
12,300.0	6,811.6	6,813.2	6,812.6	155.8	140.3	92.78	-182.9	-5,573.8	257.2	-38.5	295.64	0.870 Level 1	
12,400.0	6,810.5	6,809.6	6,809.0	158.6	140.5	91.69	-182.8	-5,573.9	200.6	-98.2	298.80	0.671 Level 1	
12,479.6	6,809.6	6,806.8	6,806.2	160.8	140.6	90.82	-182.8	-5,574.0	184.2	-117.1	301.25	0.611 Level 1, CC, ES, SF	
12,500.0	6,809.4	6,806.1	6,805.5	161.4	140.6	90.59	-182.8	-5,574.0	185.3	-116.6	301.87	0.614 Level 1	
12,600.0	6,808.3	6,802.5	6,801.9	164.2	140.7	89.47	-182.7	-5,574.1	220.0	-84.9	304.84	0.722 Level 1	
12,700.0	6,807.1	6,798.9	6,798.3	167.0	140.9	88.34	-182.7	-5,574.1	287.1	-20.6	307.69	0.933 Level 1	
12,800.0	6,806.0	6,795.2	6,794.7	169.7	141.0	87.22	-182.6	-5,574.2	369.4	58.9	310.43	1.190 Level 2	
12,900.0	6,804.9	6,791.6	6,791.1	172.5	141.2	86.11	-182.6	-5,574.3	458.7	145.6	313.05	1.465 Level 3	
13,000.0	6,803.8	6,788.1	6,787.5	175.3	141.3	85.00	-182.5	-5,574.4	551.7	236.1	315.55	1.748	
13,100.0	6,802.7	6,784.5	6,783.9	178.1	141.5	83.90	-182.5	-5,574.5	646.7	328.8	317.94	2.034	
13,200.0	6,801.6	6,780.9	6,780.3	180.9	141.6	82.81	-182.4	-5,574.6	743.1	422.9	320.20	2.321	
13,300.0	6,800.4	6,777.4	6,776.8	183.7	141.7	81.73	-182.4	-5,574.7	840.3	517.9	322.35	2.607	
13,400.0	6,799.3	6,773.8	6,773.2	186.5	141.9	80.66	-182.3	-5,574.8	938.0	613.6	324.39	2.892	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well LDS 1V-314
Project:	SEC.1-T5N-R65W	TVD Reference:	WELL @ 4653.0ft (Original Well Elev)
Reference Site:	LDS 5N65W1U Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4653.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (9-4-14)	Offset TVD Reference:	Offset Datum

Offset Design LDS 5N65W1U Pad Sec.1-T5N-R65W - LDS 1U-234 - Wellbore #1 - Plan #1 (9-4-14)													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
0.0	0.0	1.0	1.0	0.0	0.0	-50.72	-50.72	18.2	-22.3	28.8	28.8	0.00	N/A	
100.0	100.0	101.0	101.0	0.1	0.1	-50.72	-50.72	18.2	-22.3	28.8	28.5	0.23	126.739	
200.0	200.0	201.0	201.0	0.3	0.3	-50.72	-50.72	18.2	-22.3	28.8	28.1	0.68	42.527	
300.0	300.0	301.0	301.0	0.6	0.6	-50.72	-50.72	18.2	-22.3	28.8	27.6	1.13	25.550	
400.0	400.0	401.0	401.0	0.8	0.8	-50.72	-50.72	18.2	-22.3	28.8	27.2	1.58	18.260	
500.0	500.0	501.0	501.0	1.0	1.0	-50.72	-50.72	18.2	-22.3	28.8	26.7	2.03	14.207	
600.0	600.0	601.0	601.0	1.2	1.2	-50.72	-50.72	18.2	-22.3	28.8	26.3	2.47	11.626	
700.0	700.0	701.0	701.0	1.5	1.5	-50.72	-50.72	18.2	-22.3	28.8	25.8	2.92	9.839	
800.0	800.0	801.0	801.0	1.7	1.7	-50.72	-50.72	18.2	-22.3	28.8	25.4	3.37	8.528	
900.0	900.0	901.0	901.0	1.9	1.9	-50.72	-50.72	18.2	-22.3	28.8	24.9	3.82	7.525	
1,000.0	1,000.0	1,001.0	1,001.0	2.1	2.1	-50.72	-50.72	18.2	-22.3	28.8	24.5	4.27	6.734	
1,100.0	1,100.0	1,101.0	1,101.0	2.4	2.4	-50.72	-50.72	18.2	-22.3	28.8	24.0	4.72	6.093	
1,200.0	1,200.0	1,201.0	1,201.0	2.6	2.6	-50.72	-50.72	18.2	-22.3	28.8	23.6	5.17	5.563	
1,300.0	1,300.0	1,301.0	1,301.0	2.8	2.8	-50.72	-50.72	18.2	-22.3	28.8	23.1	5.62	5.118	
1,400.0	1,400.0	1,401.0	1,401.0	3.0	3.0	-50.72	-50.72	18.2	-22.3	28.8	22.7	6.07	4.739	
1,500.0	1,500.0	1,501.0	1,501.0	3.3	3.3	-50.72	-50.72	18.2	-22.3	28.8	22.3	6.52	4.412	
1,600.0	1,600.0	1,601.0	1,601.0	3.5	3.5	-50.72	-50.72	18.2	-22.3	28.8	21.8	6.97	4.128 CC, ES	
1,700.0	1,700.0	1,701.0	1,701.0	3.7	3.7	172.22	172.22	18.2	-22.3	30.5	23.1	7.39	4.126	
1,800.0	1,799.8	1,800.8	1,800.8	3.9	3.9	173.34	173.34	18.2	-22.3	35.7	27.9	7.78	4.585	
1,900.0	1,899.5	1,900.5	1,900.5	4.1	4.2	174.63	174.63	18.2	-22.3	44.4	36.2	8.17	5.427	
2,000.0	1,998.7	1,999.7	1,999.7	4.3	4.4	175.76	175.76	18.2	-22.3	56.2	47.7	8.57	6.562	
2,100.0	2,098.0	2,099.0	2,099.0	4.5	4.6	176.53	176.53	18.2	-22.3	68.7	59.7	8.98	7.650	
2,200.0	2,197.2	2,198.2	2,198.2	4.7	4.8	177.06	177.06	18.2	-22.3	81.2	71.8	9.40	8.639	
2,300.0	2,296.4	2,297.4	2,297.4	5.0	5.1	177.46	177.46	18.2	-22.3	93.7	83.9	9.83	9.539	
2,400.0	2,395.6	2,396.6	2,396.6	5.2	5.3	177.76	177.76	18.2	-22.3	106.3	96.0	10.25	10.362	
2,500.0	2,494.8	2,495.8	2,495.8	5.5	5.5	177.99	177.99	18.2	-22.3	118.8	108.1	10.69	11.117	
2,600.0	2,594.0	2,596.4	2,596.4	5.8	5.7	178.86	178.86	18.9	-20.8	130.8	119.7	11.11	11.769	
2,700.0	2,693.2	2,697.1	2,696.9	6.1	5.9	-179.04	-179.04	21.1	-16.1	141.8	130.3	11.54	12.291	
2,800.0	2,792.4	2,797.6	2,797.0	6.3	6.2	-175.97	-175.97	24.8	-8.3	152.2	140.2	11.97	12.709	
2,900.0	2,891.6	2,897.4	2,896.1	6.6	6.4	-172.13	-172.13	30.0	2.5	162.3	149.9	12.43	13.062	
3,000.0	2,990.9	2,996.2	2,994.1	6.9	6.6	-168.43	-168.43	35.5	14.2	173.0	160.1	12.90	13.413	
3,100.0	3,090.1	3,095.0	3,092.1	7.2	6.9	-165.17	-165.17	41.1	25.9	184.3	170.9	13.38	13.770	
3,200.0	3,189.3	3,193.9	3,190.1	7.5	7.1	-162.29	-162.29	46.6	37.6	196.1	182.2	13.88	14.126	
3,300.0	3,288.5	3,292.7	3,288.0	7.8	7.4	-159.73	-159.73	52.2	49.3	208.3	194.0	14.39	14.476	
3,400.0	3,387.7	3,391.6	3,386.0	8.1	7.6	-157.47	-157.47	57.7	61.0	221.0	206.1	14.91	14.816	
3,500.0	3,486.9	3,490.4	3,484.0	8.4	7.9	-155.45	-155.45	63.3	72.7	233.9	218.5	15.44	15.145	
3,600.0	3,586.1	3,589.2	3,582.0	8.7	8.2	-153.64	-153.64	68.8	84.4	247.1	231.1	15.98	15.461	
3,700.0	3,685.3	3,688.1	3,680.0	9.0	8.4	-152.02	-152.02	74.4	96.1	260.5	244.0	16.52	15.764	
3,800.0	3,784.6	3,786.9	3,778.0	9.4	8.7	-150.55	-150.55	79.9	107.8	274.1	257.0	17.07	16.053	
3,900.0	3,883.8	3,885.8	3,876.0	9.7	9.0	-149.23	-149.23	85.5	119.5	287.8	270.2	17.63	16.329	
4,000.0	3,983.0	3,984.6	3,974.0	10.0	9.3	-148.02	-148.02	91.0	131.2	301.7	283.5	18.18	16.593	
4,100.0	4,082.2	4,083.4	4,072.0	10.3	9.6	-146.92	-146.92	96.6	142.9	315.7	297.0	18.75	16.843	
4,200.0	4,181.4	4,182.3	4,169.9	10.6	9.9	-145.92	-145.92	102.1	154.6	329.9	310.5	19.31	17.082	
4,300.0	4,280.6	4,281.1	4,267.9	10.9	10.1	-144.99	-144.99	107.7	166.3	344.1	324.2	19.88	17.310	
4,400.0	4,379.8	4,380.0	4,365.9	11.2	10.4	-144.14	-144.14	113.2	178.0	358.3	337.9	20.45	17.526	
4,500.0	4,479.0	4,478.8	4,463.9	11.6	10.7	-143.36	-143.36	118.8	189.7	372.7	351.7	21.02	17.733	
4,600.0	4,578.3	4,577.6	4,561.9	11.9	11.0	-142.63	-142.63	124.3	201.4	387.1	365.5	21.59	17.930	
4,700.0	4,677.5	4,676.5	4,659.9	12.2	11.3	-141.96	-141.96	129.9	213.1	401.6	379.4	22.17	18.117	
4,800.0	4,776.7	4,775.3	4,757.9	12.5	11.6	-141.33	-141.33	135.4	224.8	416.1	393.4	22.74	18.296	
4,900.0	4,875.9	4,874.2	4,855.9	12.8	11.9	-140.74	-140.74	141.0	236.5	430.7	407.4	23.32	18.468	
5,000.0	4,975.1	4,973.0	4,953.8	13.2	12.2	-140.20	-140.20	146.5	248.2	445.3	421.4	23.90	18.631	

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 LDS 1V-314
Project:	SEC.1-T5N-R65W	TVD Reference:	WELL @ 4653.0ft (Original Well Elev)
Reference Site:	LDS 5N65W1U Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4653.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (9-4-14)	Offset TVD Reference:	Offset Datum

Offset Design LDS 5N65W1U Pad Sec.1-T5N-R65W - LDS 1U-234 - Wellbore #1 - Plan #1 (9-4-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,074.3	5,071.8	5,051.8	13.5	12.6	-139.69		152.1	259.9	460.0	435.5	24.48	18.787	
5,200.0	5,173.5	5,170.7	5,149.8	13.8	12.9	-139.21		157.6	271.6	474.7	449.6	25.07	18.937	
5,300.0	5,272.7	5,269.5	5,247.8	14.1	13.2	-138.75		163.2	283.3	489.4	463.7	25.65	19.080	
5,400.0	5,372.0	5,368.3	5,345.8	14.5	13.5	-138.33		168.7	295.0	504.1	477.9	26.23	19.217	
5,500.0	5,471.2	5,467.2	5,443.8	14.8	13.8	-137.93		174.3	306.7	518.9	492.1	26.82	19.349	
5,600.0	5,570.4	5,567.5	5,543.2	15.1	14.1	-137.59		179.9	318.5	533.6	506.2	27.40	19.470	
5,700.0	5,669.9	5,675.4	5,650.6	15.3	14.4	-137.41		184.8	328.8	545.3	517.4	27.91	19.539	
5,800.0	5,769.7	5,784.1	5,759.0	15.5	14.6	-137.30		188.0	335.5	552.8	524.5	28.35	19.504	
5,900.0	5,869.7	5,893.2	5,868.0	15.7	14.8	-137.25		189.4	338.5	556.2	527.5	28.73	19.361	
6,000.0	5,969.7	5,995.9	5,970.7	15.9	14.9	0.28		189.5	338.6	556.4	528.3	28.14	19.775	
6,100.0	6,069.7	6,096.0	6,070.7	16.0	15.1	0.08		189.5	336.7	556.4	527.9	28.50	19.519	
6,109.9	6,079.6	6,105.8	6,080.6	16.0	15.1	90.01		189.5	335.9	556.4	526.9	29.45	18.893	
6,200.0	6,169.6	6,194.8	6,168.6	16.2	15.2	88.99		189.5	323.3	556.5	526.8	29.64	18.777	
6,300.0	6,268.3	6,292.2	6,262.6	16.2	15.2	87.85		189.5	297.9	556.8	527.1	29.71	18.739	
6,400.0	6,364.3	6,388.3	6,351.4	16.3	15.2	86.75		189.5	261.4	557.3	527.6	29.71	18.759	
6,500.0	6,455.8	6,483.2	6,433.9	16.2	15.2	85.72		189.5	214.6	558.0	528.3	29.70	18.786	
6,600.0	6,541.2	6,577.0	6,509.1	16.2	15.3	84.76		189.5	158.6	558.8	529.0	29.80	18.749	
6,700.0	6,619.1	6,669.9	6,576.3	16.2	15.4	83.89		189.5	94.6	559.6	529.5	30.15	18.563	
6,800.0	6,688.2	6,761.9	6,634.7	16.2	15.8	83.12		189.5	23.6	560.5	529.6	30.88	18.153	
6,900.0	6,747.3	6,853.3	6,683.8	16.3	16.5	82.46		189.5	-53.4	561.3	529.2	32.11	17.479	
7,000.0	6,795.4	6,944.0	6,723.2	16.9	17.4	81.92		189.5	-135.1	562.1	528.1	33.95	16.556	
7,100.0	6,831.6	7,034.3	6,752.5	18.1	18.7	81.50		189.5	-220.5	562.6	526.3	36.38	15.467	
7,200.0	6,855.4	7,124.3	6,771.5	19.7	20.1	81.22		189.5	-308.4	563.1	523.7	39.34	14.314	
7,300.0	6,866.3	7,214.1	6,780.0	21.5	21.7	81.08		189.6	-397.7	563.3	520.6	42.72	13.187	
7,400.0	6,866.3	7,310.2	6,779.9	23.5	23.6	81.07		189.6	-493.8	563.3	516.8	46.55	12.101	
7,500.0	6,865.2	7,410.2	6,779.1	25.7	25.8	81.10		189.6	-593.8	563.3	512.5	50.76	11.097	
7,600.0	6,864.1	7,510.2	6,778.3	27.9	28.0	81.13		189.6	-693.8	563.3	508.1	55.22	10.201	
7,700.0	6,863.0	7,610.2	6,777.4	30.3	30.3	81.16		189.6	-793.8	563.2	503.4	59.85	9.410	
7,800.0	6,861.9	7,710.2	6,776.6	32.7	32.8	81.19		189.6	-893.8	563.2	498.6	64.64	8.713	
7,900.0	6,860.8	7,810.2	6,775.7	35.2	35.2	81.22		189.6	-993.8	563.2	493.6	69.54	8.098	
8,000.0	6,859.6	7,910.2	6,774.9	37.7	37.8	81.24		189.6	-1,093.8	563.1	488.6	74.54	7.555	
8,100.0	6,858.5	8,010.2	6,774.1	40.3	40.3	81.27		189.7	-1,193.8	563.1	483.5	79.61	7.074	
8,200.0	6,857.4	8,110.2	6,773.2	42.9	42.9	81.30		189.7	-1,293.8	563.1	478.3	84.74	6.645	
8,300.0	6,856.3	8,210.2	6,772.4	45.5	45.5	81.33		189.7	-1,393.8	563.1	473.1	89.93	6.261	
8,400.0	6,855.2	8,310.2	6,771.6	48.1	48.1	81.36		189.7	-1,493.8	563.0	467.9	95.16	5.917	
8,500.0	6,854.1	8,410.2	6,770.7	50.8	50.8	81.39		189.7	-1,593.8	563.0	462.6	100.43	5.606	
8,600.0	6,852.9	8,510.2	6,769.9	53.5	53.5	81.41		189.7	-1,693.8	563.0	457.2	105.73	5.325	
8,700.0	6,851.8	8,610.2	6,769.0	56.2	56.2	81.44		189.7	-1,793.8	562.9	451.9	111.05	5.069	
8,800.0	6,850.7	8,710.2	6,768.2	58.9	58.9	81.47		189.8	-1,893.8	562.9	446.5	116.40	4.836	
8,900.0	6,849.6	8,810.2	6,767.4	61.6	61.6	81.50		189.8	-1,993.7	562.9	441.1	121.77	4.623	
9,000.0	6,848.5	8,910.2	6,766.5	64.3	64.3	81.53		189.8	-2,093.7	562.9	435.7	127.16	4.426	
9,100.0	6,847.3	9,010.2	6,765.7	67.0	67.0	81.56		189.8	-2,193.7	562.8	430.3	132.56	4.246	
9,200.0	6,846.2	9,110.2	6,764.9	69.7	69.7	81.58		189.8	-2,293.7	562.8	424.8	137.98	4.079	
9,300.0	6,845.1	9,210.2	6,764.0	72.5	72.5	81.61		189.8	-2,393.7	562.8	419.4	143.41	3.924	
9,400.0	6,844.0	9,310.2	6,763.2	75.2	75.2	81.64		189.8	-2,493.7	562.8	413.9	148.85	3.781	
9,500.0	6,842.9	9,410.2	6,762.3	78.0	78.0	81.67		189.8	-2,593.7	562.7	408.4	154.31	3.647	
9,600.0	6,841.8	9,510.2	6,761.5	80.7	80.7	81.70		189.9	-2,693.7	562.7	402.9	159.77	3.522	
9,700.0	6,840.6	9,610.2	6,760.7	83.5	83.5	81.73		189.9	-2,793.7	562.7	397.4	165.24	3.405	
9,800.0	6,839.5	9,710.2	6,759.8	86.2	86.2	81.75		189.9	-2,893.7	562.6	391.9	170.71	3.296	
9,900.0	6,838.4	9,810.2	6,759.0	89.0	89.0	81.78		189.9	-2,993.7	562.6	386.4	176.20	3.193	
10,000.0	6,837.3	9,910.2	6,758.2	91.7	91.7	81.81		189.9	-3,093.7	562.6	380.9	181.69	3.096	

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 LDS 1V-314
Project:	SEC.1-T5N-R65W	TVD Reference:	WELL @ 4653.0ft (Original Well Elev)
Reference Site:	LDS 5N65W1U Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4653.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (9-4-14)	Offset TVD Reference:	Offset Datum

Offset Design LDS 5N65W1U Pad Sec.1-T5N-R65W - LDS 1U-234 - Wellbore #1 - Plan #1 (9-4-14)													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
10,100.0	6,836.2	10,010.2	6,757.3	94.5	94.5	81.84	81.84	189.9	-3,193.7	562.6	375.4	187.18	3.005	
10,200.0	6,835.1	10,110.2	6,756.5	97.3	97.3	81.87	81.87	189.9	-3,293.7	562.5	369.9	192.69	2.919	
10,300.0	6,833.9	10,210.2	6,755.6	100.1	100.0	81.90	81.90	190.0	-3,393.7	562.5	364.3	198.19	2.838	
10,400.0	6,832.8	10,310.2	6,754.8	102.8	102.8	81.92	81.92	190.0	-3,493.7	562.5	358.8	203.70	2.761	
10,500.0	6,831.7	10,410.2	6,754.0	105.6	105.6	81.95	81.95	190.0	-3,593.7	562.5	353.2	209.22	2.688	
10,600.0	6,830.6	10,510.2	6,753.1	108.4	108.4	81.98	81.98	190.0	-3,693.7	562.4	347.7	214.74	2.619	
10,700.0	6,829.5	10,610.2	6,752.3	111.2	111.2	82.01	82.01	190.0	-3,793.7	562.4	342.1	220.26	2.553	
10,800.0	6,828.4	10,710.2	6,751.5	113.9	113.9	82.04	82.04	190.0	-3,893.7	562.4	336.6	225.79	2.491	
10,900.0	6,827.2	10,810.2	6,750.6	116.7	116.7	82.07	82.07	190.0	-3,993.7	562.4	331.0	231.32	2.431	
11,000.0	6,826.1	10,910.2	6,749.8	119.5	119.5	82.09	82.09	190.0	-4,093.7	562.3	325.5	236.86	2.374	
11,100.0	6,825.0	11,010.2	6,748.9	122.3	122.3	82.12	82.12	190.1	-4,193.7	562.3	319.9	242.39	2.320	
11,200.0	6,823.9	11,110.2	6,748.1	125.1	125.1	82.15	82.15	190.1	-4,293.7	562.3	314.4	247.93	2.268	
11,300.0	6,822.8	11,210.2	6,747.3	127.9	127.9	82.18	82.18	190.1	-4,393.7	562.3	308.8	253.48	2.218	
11,400.0	6,821.7	11,310.2	6,746.4	130.6	130.6	82.21	82.21	190.1	-4,493.7	562.2	303.2	259.02	2.171	
11,500.0	6,820.5	11,410.2	6,745.6	133.4	133.4	82.24	82.24	190.1	-4,593.6	562.2	297.6	264.57	2.125	
11,600.0	6,819.4	11,510.2	6,744.8	136.2	136.2	82.26	82.26	190.1	-4,693.6	562.2	292.1	270.12	2.081	
11,700.0	6,818.3	11,610.2	6,743.9	139.0	139.0	82.29	82.29	190.1	-4,793.6	562.2	286.5	275.67	2.039	
11,800.0	6,817.2	11,710.2	6,743.1	141.8	141.8	82.32	82.32	190.2	-4,893.6	562.1	280.9	281.22	1.999	
11,900.0	6,816.1	11,810.2	6,742.2	144.6	144.6	82.35	82.35	190.2	-4,993.6	562.1	275.3	286.78	1.960	
12,000.0	6,815.0	11,910.2	6,741.4	147.4	147.4	82.38	82.38	190.2	-5,093.6	562.1	269.8	292.34	1.923	
12,100.0	6,813.8	12,010.2	6,740.6	150.2	150.2	82.41	82.41	190.2	-5,193.6	562.1	264.2	297.90	1.887	
12,200.0	6,812.7	12,110.2	6,739.7	153.0	153.0	82.43	82.43	190.2	-5,293.6	562.0	258.6	303.46	1.852	
12,300.0	6,811.6	12,210.2	6,738.9	155.8	155.8	82.46	82.46	190.2	-5,393.6	562.0	253.0	309.02	1.819	
12,400.0	6,810.5	12,310.2	6,738.1	158.6	158.6	82.49	82.49	190.2	-5,493.6	562.0	247.4	314.59	1.786	
12,500.0	6,809.4	12,410.2	6,737.2	161.4	161.4	82.52	82.52	190.3	-5,593.6	562.0	241.8	320.16	1.755	
12,600.0	6,808.3	12,510.2	6,736.4	164.2	164.1	82.55	82.55	190.3	-5,693.6	562.0	236.2	325.72	1.725	
12,700.0	6,807.1	12,610.2	6,735.5	167.0	166.9	82.58	82.58	190.3	-5,793.6	561.9	230.6	331.29	1.696	
12,800.0	6,806.0	12,710.2	6,734.7	169.7	169.7	82.60	82.60	190.3	-5,893.6	561.9	225.0	336.87	1.668	
12,900.0	6,804.9	12,810.2	6,733.9	172.5	172.5	82.63	82.63	190.3	-5,993.6	561.9	219.4	342.44	1.641	
13,000.0	6,803.8	12,910.2	6,733.0	175.3	175.3	82.66	82.66	190.3	-6,093.6	561.9	213.8	348.01	1.614	
13,100.0	6,802.7	13,010.2	6,732.2	178.1	178.1	82.69	82.69	190.3	-6,193.6	561.8	208.3	353.59	1.589	
13,200.0	6,801.6	13,110.2	6,731.3	180.9	180.9	82.72	82.72	190.3	-6,293.6	561.8	202.7	359.16	1.564	
13,300.0	6,800.4	13,210.2	6,730.5	183.7	183.7	82.75	82.75	190.4	-6,393.6	561.8	197.1	364.74	1.540	
13,400.0	6,799.3	13,310.2	6,729.7	186.5	186.5	82.78	82.78	190.4	-6,493.6	561.8	191.5	370.32	1.517	
13,500.0	6,798.2	13,410.2	6,728.8	189.3	189.3	82.80	82.80	190.4	-6,593.6	561.8	185.8	375.90	1.494 Level 3	
13,600.0	6,797.1	13,510.2	6,728.0	192.1	192.1	82.83	82.83	190.4	-6,693.6	561.7	180.2	381.48	1.472 Level 3	
13,700.0	6,796.0	13,610.2	6,727.2	194.9	194.9	82.86	82.86	190.4	-6,793.6	561.7	174.6	387.07	1.451 Level 3	
13,800.0	6,794.9	13,710.2	6,726.3	197.7	197.7	82.89	82.89	190.4	-6,893.6	561.7	169.0	392.65	1.431 Level 3	
13,900.0	6,793.7	13,810.2	6,725.5	200.5	200.5	82.92	82.92	190.4	-6,993.6	561.7	163.4	398.23	1.410 Level 3	
13,946.8	6,793.2	13,857.0	6,725.1	201.8	201.8	82.93	82.93	190.4	-7,040.4	561.7	160.8	400.85	1.401 Level 3	
13,965.7	6,793.0	13,868.9	6,725.0	202.4	202.2	82.93	82.93	190.4	-7,052.3	561.7	160.0	401.70	1.398 Level 3, SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well LDS 1V-314
Project:	SEC.1-T5N-R65W	TVD Reference:	WELL @ 4653.0ft (Original Well Elev)
Reference Site:	LDS 5N65W1U Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4653.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (9-4-14)	Offset TVD Reference:	Offset Datum

Offset Design LDS 5N65W1U Pad Sec.1-T5N-R65W - LDS 1U-304 - Wellbore #1 - Plan #1 (9-4-14)													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)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)			
0.0	0.0	2.0	2.0	0.0	0.0	-48.02		40.1	-44.5	59.9	59.9	0.00	N/A	
100.0	100.0	102.0	102.0	0.1	0.1	-48.02		40.1	-44.5	59.9	59.7	0.23	261.342	
200.0	200.0	202.0	202.0	0.3	0.3	-48.02		40.1	-44.5	59.9	59.2	0.68	88.268	
300.0	300.0	302.0	302.0	0.6	0.6	-48.02		40.1	-44.5	59.9	58.8	1.13	53.101	
400.0	400.0	402.0	402.0	0.8	0.8	-48.02		40.1	-44.5	59.9	58.3	1.58	37.973	
500.0	500.0	502.0	502.0	1.0	1.0	-48.02		40.1	-44.5	59.9	57.9	2.03	29.553	
600.0	600.0	602.0	602.0	1.2	1.2	-48.02		40.1	-44.5	59.9	57.4	2.48	24.190	
700.0	700.0	702.0	702.0	1.5	1.5	-48.02		40.1	-44.5	59.9	57.0	2.93	20.474	
800.0	800.0	802.0	802.0	1.7	1.7	-48.02		40.1	-44.5	59.9	56.5	3.38	17.748	
900.0	900.0	902.0	902.0	1.9	1.9	-48.02		40.1	-44.5	59.9	56.1	3.83	15.662	
1,000.0	1,000.0	1,002.0	1,002.0	2.1	2.1	-48.02		40.1	-44.5	59.9	55.6	4.28	14.015	
1,100.0	1,100.0	1,102.0	1,102.0	2.4	2.4	-48.02		40.1	-44.5	59.9	55.2	4.72	12.682	
1,200.0	1,200.0	1,202.0	1,202.0	2.6	2.6	-48.02		40.1	-44.5	59.9	54.7	5.17	11.580	
1,300.0	1,300.0	1,302.0	1,302.0	2.8	2.8	-48.02		40.1	-44.5	59.9	54.3	5.62	10.654	
1,400.0	1,400.0	1,402.0	1,402.0	3.0	3.0	-48.02		40.1	-44.5	59.9	53.8	6.07	9.866	
1,500.0	1,500.0	1,502.2	1,502.1	3.3	3.3	-46.28		41.3	-43.2	59.8	53.2	6.52	9.168	
1,580.5	1,580.5	1,582.7	1,582.5	3.4	3.4	-42.45		44.0	-40.2	59.6	52.8	6.88	8.671 CC	
1,600.0	1,600.0	1,602.1	1,601.9	3.5	3.5	-41.19		44.9	-39.3	59.6	52.7	6.96	8.565 ES	
1,700.0	1,700.0	1,701.5	1,700.9	3.7	3.7	-170.69		50.8	-32.8	62.2	54.8	7.38	8.424	
1,800.0	1,799.8	1,800.4	1,799.1	3.9	3.9	-161.77		58.7	-24.2	70.1	62.3	7.79	8.999	
1,900.0	1,899.5	1,899.2	1,897.2	4.1	4.2	-155.39		67.0	-15.1	82.8	74.6	8.21	10.082	
2,000.0	1,998.7	1,997.7	1,994.9	4.3	4.4	-151.61		75.3	-6.1	98.9	90.3	8.64	11.447	
2,100.0	2,098.0	2,096.2	2,092.6	4.5	4.7	-149.13		83.5	3.0	115.9	106.8	9.10	12.738	
2,200.0	2,197.2	2,194.6	2,190.3	4.7	5.0	-147.27		91.8	12.0	133.0	123.5	9.57	13.908	
2,300.0	2,296.4	2,293.1	2,288.0	5.0	5.2	-145.85		100.1	21.1	150.3	140.2	10.04	14.964	
2,400.0	2,395.6	2,391.5	2,385.6	5.2	5.5	-144.71		108.3	30.1	167.6	157.1	10.53	15.919	
2,500.0	2,494.8	2,489.9	2,483.3	5.5	5.8	-143.79		116.6	39.1	184.9	173.9	11.02	16.783	
2,600.0	2,594.0	2,588.4	2,581.0	5.8	6.1	-143.03		124.9	48.2	202.3	190.8	11.52	17.567	
2,700.0	2,693.2	2,686.8	2,678.7	6.1	6.4	-142.38		133.1	57.2	219.8	207.7	12.02	18.278	
2,800.0	2,792.4	2,785.3	2,776.4	6.3	6.7	-141.84		141.4	66.2	237.2	224.7	12.53	18.927	
2,900.0	2,891.6	2,883.7	2,874.0	6.6	7.0	-141.36		149.7	75.3	254.7	241.6	13.05	19.518	
3,000.0	2,990.9	2,982.1	2,971.7	6.9	7.3	-140.95		157.9	84.3	272.2	258.6	13.57	20.060	
3,100.0	3,090.1	3,080.6	3,069.4	7.2	7.6	-140.59		166.2	93.3	289.7	275.6	14.09	20.558	
3,200.0	3,189.3	3,179.0	3,167.1	7.5	7.9	-140.27		174.5	102.4	307.2	292.6	14.62	21.016	
3,300.0	3,288.5	3,277.5	3,264.7	7.8	8.2	-139.98		182.7	111.4	324.7	309.5	15.15	21.438	
3,400.0	3,387.7	3,375.9	3,362.4	8.1	8.5	-139.72		191.0	120.5	342.2	326.5	15.68	21.829	
3,500.0	3,486.9	3,474.4	3,460.1	8.4	8.8	-139.49		199.2	129.5	359.7	343.5	16.21	22.191	
3,600.0	3,586.1	3,572.8	3,557.8	8.7	9.1	-139.28		207.5	138.5	377.3	360.5	16.75	22.527	
3,700.0	3,685.3	3,671.2	3,655.5	9.0	9.4	-139.09		215.8	147.6	394.8	377.5	17.29	22.840	
3,800.0	3,784.6	3,769.7	3,753.1	9.4	9.7	-138.91		224.0	156.6	412.3	394.5	17.83	23.132	
3,900.0	3,883.8	3,868.1	3,850.8	9.7	10.0	-138.75		232.3	165.6	429.9	411.5	18.37	23.405	
4,000.0	3,983.0	3,966.6	3,948.5	10.0	10.3	-138.60		240.6	174.7	447.4	428.5	18.91	23.661	
4,100.0	4,082.2	4,065.0	4,046.2	10.3	10.6	-138.47		248.8	183.7	465.0	445.5	19.45	23.901	
4,200.0	4,181.4	4,163.5	4,143.8	10.6	10.9	-138.34		257.1	192.7	482.5	462.5	20.00	24.126	
4,300.0	4,280.6	4,261.9	4,241.5	10.9	11.2	-138.22		265.4	201.8	500.1	479.5	20.55	24.338	
4,400.0	4,379.8	4,360.3	4,339.2	11.2	11.5	-138.11		273.6	210.8	517.6	496.5	21.10	24.538	
4,500.0	4,479.0	4,458.8	4,436.9	11.6	11.8	-138.01		281.9	219.9	535.2	513.5	21.64	24.726	
4,600.0	4,578.3	4,557.2	4,534.5	11.9	12.1	-137.91		290.2	228.9	552.7	530.6	22.19	24.904	
4,700.0	4,677.5	4,655.7	4,632.2	12.2	12.4	-137.82		298.4	237.9	570.3	547.6	22.75	25.073	
4,800.0	4,776.7	4,754.1	4,729.9	12.5	12.8	-137.73		306.7	247.0	587.9	564.6	23.30	25.233	
4,900.0	4,875.9	4,852.5	4,827.6	12.8	13.1	-137.65		315.0	256.0	605.4	581.6	23.85	25.385	

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 LDS 1V-314
Project:	SEC.1-T5N-R65W	TVD Reference:	WELL @ 4653.0ft (Original Well Elev)
Reference Site:	LDS 5N65W1U Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4653.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (9-4-14)	Offset TVD Reference:	Offset Datum

Offset Design LDS 5N65W1U Pad Sec.1-T5N-R65W - LDS 1U-304 - Wellbore #1 - Plan #1 (9-4-14)													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	4,975.1	4,951.0	4,925.3	13.2	13.4	-137.58		323.2	265.0	623.0	598.6	24.40	25.529	
5,100.0	5,074.3	5,049.4	5,022.9	13.5	13.7	-137.51		331.5	274.1	640.6	615.6	24.96	25.666	
5,200.0	5,173.5	5,147.9	5,120.6	13.8	14.0	-137.44		339.7	283.1	658.1	632.6	25.51	25.797	
5,300.0	5,272.7	5,246.3	5,218.3	14.1	14.3	-137.37		348.0	292.1	675.7	649.6	26.07	25.922	
5,400.0	5,372.0	5,344.8	5,316.0	14.5	14.6	-137.31		356.3	301.2	693.3	666.6	26.62	26.041	
5,500.0	5,471.2	5,443.2	5,413.6	14.8	14.9	-137.25		364.5	310.2	710.8	683.6	27.18	26.154	
5,600.0	5,570.4	5,541.7	5,511.3	15.1	15.2	-137.26		372.8	319.3	728.3	700.5	27.74	26.251	
5,700.0	5,669.9	5,654.5	5,623.4	15.3	15.5	-137.30		381.5	328.8	743.2	714.9	28.27	26.290	
5,800.0	5,769.7	5,775.4	5,743.9	15.5	15.8	-137.31		387.7	335.5	752.9	724.2	28.73	26.207	
5,900.0	5,869.7	5,897.0	5,865.5	15.7	16.0	-137.32		390.4	338.5	757.3	728.1	29.13	25.993	
6,000.0	5,969.7	6,003.2	5,971.7	15.9	16.2	0.21		390.6	338.7	757.5	728.1	29.37	25.791	
6,100.0	6,069.7	6,103.2	6,071.7	16.0	16.3	0.21		390.6	338.7	757.5	727.8	29.73	25.477	
6,200.0	6,169.6	6,203.4	6,171.8	16.2	16.5	90.19		390.6	335.5	757.5	727.3	30.17	25.108	
6,300.0	6,268.3	6,303.7	6,270.8	16.2	16.6	90.17		390.6	320.0	757.5	727.2	30.32	24.987	
6,400.0	6,364.3	6,404.0	6,366.9	16.3	16.5	90.14		390.6	291.6	757.5	727.2	30.34	24.963	
6,500.0	6,455.8	6,504.2	6,458.4	16.2	16.5	90.11		390.6	250.9	757.5	727.2	30.32	24.979	
6,600.0	6,541.2	6,604.3	6,543.8	16.2	16.4	90.07		390.6	198.6	757.5	727.1	30.36	24.949	
6,700.0	6,619.1	6,704.4	6,621.5	16.2	16.4	90.04		390.6	135.6	757.5	726.9	30.60	24.754	
6,800.0	6,688.2	6,804.5	6,690.3	16.2	16.4	90.01		390.6	63.1	757.5	726.3	31.21	24.271	
6,815.5	6,698.1	6,820.0	6,700.1	16.2	16.4	90.00		390.6	51.1	757.5	726.1	31.37	24.144	
6,900.0	6,747.3	6,904.5	6,749.0	16.3	16.6	89.97		390.6	-17.7	757.5	725.1	32.35	23.414	
7,000.0	6,795.4	7,004.4	6,796.7	16.9	17.3	89.94		390.6	-105.5	757.5	723.4	34.13	22.191	
7,100.0	6,831.6	7,104.2	6,832.4	18.1	18.5	89.90		390.6	-198.6	757.5	720.9	36.59	20.703	
7,200.0	6,855.4	7,204.0	6,855.7	19.7	20.0	89.87		390.6	-295.6	757.5	717.8	39.65	19.103	
7,300.0	6,866.3	7,303.8	6,866.2	21.5	21.8	89.84		390.6	-394.7	757.5	714.3	43.20	17.533	
7,400.0	6,866.3	7,403.7	6,865.7	23.5	23.7	89.80		390.6	-494.6	757.5	710.4	47.11	16.079	
7,500.0	6,865.2	7,503.7	6,863.8	25.7	25.8	89.74		390.6	-594.5	757.5	706.2	51.33	14.757	
7,600.0	6,864.1	7,603.7	6,862.0	27.9	28.0	89.69		390.6	-694.5	757.5	701.7	55.80	13.576	
7,700.0	6,863.0	7,703.7	6,860.1	30.3	30.3	89.63		390.6	-794.5	757.5	697.1	60.46	12.530	
7,800.0	6,861.9	7,803.7	6,858.3	32.7	32.7	89.58		390.6	-894.5	757.5	692.2	65.27	11.607	
7,900.0	6,860.8	7,903.7	6,856.4	35.2	35.2	89.52		390.6	-994.5	757.5	687.3	70.20	10.792	
8,000.0	6,859.6	8,003.7	6,854.6	37.7	37.7	89.47		390.6	-1,094.4	757.5	682.3	75.22	10.071	
8,100.0	6,858.5	8,103.6	6,852.7	40.3	40.2	89.41		390.6	-1,194.4	757.5	677.2	80.33	9.431	
8,200.0	6,857.4	8,203.6	6,850.9	42.9	42.8	89.35		390.6	-1,294.4	757.5	672.0	85.50	8.861	
8,300.0	6,856.3	8,303.6	6,849.0	45.5	45.4	89.30		390.6	-1,394.4	757.5	666.8	90.72	8.351	
8,400.0	6,855.2	8,403.6	6,847.2	48.1	48.0	89.24		390.6	-1,494.4	757.6	661.6	95.98	7.893	
8,500.0	6,854.1	8,503.6	6,845.3	50.8	50.7	89.19		390.6	-1,594.3	757.6	656.3	101.29	7.479	
8,600.0	6,852.9	8,603.6	6,843.5	53.5	53.3	89.13		390.6	-1,694.3	757.6	651.0	106.62	7.105	
8,700.0	6,851.8	8,703.6	6,841.6	56.2	56.0	89.08		390.6	-1,794.3	757.6	645.6	111.99	6.765	
8,800.0	6,850.7	8,803.6	6,839.8	58.9	58.7	89.02		390.6	-1,894.3	757.6	640.2	117.38	6.455	
8,900.0	6,849.6	8,903.6	6,837.9	61.6	61.4	88.97		390.6	-1,994.3	757.6	634.8	122.78	6.170	
9,000.0	6,848.5	9,003.6	6,836.1	64.3	64.1	88.91		390.6	-2,094.2	757.6	629.4	128.21	5.909	
9,100.0	6,847.3	9,103.6	6,834.2	67.0	66.8	88.86		390.6	-2,194.2	757.6	624.0	133.65	5.669	
9,200.0	6,846.2	9,203.6	6,832.4	69.7	69.5	88.80		390.6	-2,294.2	757.7	618.6	139.10	5.447	
9,300.0	6,845.1	9,303.6	6,830.5	72.5	72.3	88.75		390.6	-2,394.2	757.7	613.1	144.57	5.241	
9,400.0	6,844.0	9,403.6	6,828.7	75.2	75.0	88.69		390.6	-2,494.2	757.7	607.6	150.04	5.050	
9,500.0	6,842.9	9,503.6	6,826.8	78.0	77.7	88.63		390.6	-2,594.1	757.7	602.2	155.53	4.872	
9,600.0	6,841.8	9,603.6	6,825.0	80.7	80.5	88.58		390.6	-2,694.1	757.7	596.7	161.03	4.706	
9,700.0	6,840.6	9,703.6	6,823.1	83.5	83.2	88.52		390.6	-2,794.1	757.7	591.2	166.53	4.550	
9,800.0	6,839.5	9,803.6	6,821.3	86.2	86.0	88.47		390.6	-2,894.1	757.8	585.7	172.04	4.405	
9,900.0	6,838.4	9,903.6	6,819.4	89.0	88.7	88.41		390.6	-2,994.1	757.8	580.2	177.55	4.268	

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 LDS 1V-314
Project:	SEC.1-T5N-R65W	TVD Reference:	WELL @ 4653.0ft (Original Well Elev)
Reference Site:	LDS 5N65W1U Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4653.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (9-4-14)	Offset TVD Reference:	Offset Datum

Offset Design LDS 5N65W1U Pad Sec.1-T5N-R65W - LDS 1U-304 - Wellbore #1 - Plan #1 (9-4-14)													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	6,837.3	10,003.6	6,817.6	91.7	91.5	88.36	390.6	-3,094.1	757.8	574.7	183.07	4.139		
10,100.0	6,836.2	10,103.6	6,815.7	94.5	94.3	88.30	390.6	-3,194.0	757.8	569.2	188.60	4.018		
10,200.0	6,835.1	10,203.6	6,813.9	97.3	97.0	88.25	390.6	-3,294.0	757.8	563.7	194.13	3.904		
10,300.0	6,833.9	10,303.6	6,812.0	100.1	99.8	88.19	390.6	-3,394.0	757.9	558.2	199.67	3.796		
10,400.0	6,832.8	10,403.6	6,810.2	102.8	102.6	88.14	390.6	-3,494.0	757.9	552.7	205.20	3.693		
10,500.0	6,831.7	10,503.6	6,808.3	105.6	105.3	88.08	390.6	-3,594.0	757.9	547.2	210.75	3.596		
10,600.0	6,830.6	10,603.6	6,806.5	108.4	108.1	88.02	390.6	-3,693.9	757.9	541.7	216.29	3.504		
10,700.0	6,829.5	10,703.6	6,804.6	111.2	110.9	87.97	390.6	-3,793.9	758.0	536.1	221.84	3.417		
10,800.0	6,828.4	10,803.6	6,802.8	113.9	113.7	87.91	390.6	-3,893.9	758.0	530.6	227.39	3.334		
10,900.0	6,827.2	10,903.6	6,800.9	116.7	116.4	87.86	390.6	-3,993.9	758.0	525.1	232.94	3.254		
11,000.0	6,826.1	11,003.6	6,799.1	119.5	119.2	87.80	390.6	-4,093.9	758.1	519.6	238.49	3.178		
11,100.0	6,825.0	11,103.6	6,797.2	122.3	122.0	87.75	390.6	-4,193.8	758.1	514.0	244.05	3.106		
11,200.0	6,823.9	11,203.6	6,795.4	125.1	124.8	87.69	390.6	-4,293.8	758.1	508.5	249.61	3.037		
11,300.0	6,822.8	11,303.6	6,793.5	127.9	127.6	87.64	390.6	-4,393.8	758.1	503.0	255.17	2.971		
11,400.0	6,821.7	11,403.6	6,791.7	130.6	130.4	87.58	390.6	-4,493.8	758.2	497.4	260.73	2.908		
11,500.0	6,820.5	11,503.6	6,789.8	133.4	133.1	87.53	390.6	-4,593.8	758.2	491.9	266.29	2.847		
11,600.0	6,819.4	11,603.6	6,788.0	136.2	135.9	87.47	390.6	-4,693.7	758.2	486.4	271.85	2.789		
11,700.0	6,818.3	11,703.6	6,786.1	139.0	138.7	87.42	390.6	-4,793.7	758.3	480.8	277.42	2.733		
11,800.0	6,817.2	11,803.5	6,784.3	141.8	141.5	87.36	390.6	-4,893.7	758.3	475.3	282.98	2.680		
11,900.0	6,816.1	11,903.5	6,782.4	144.6	144.3	87.31	390.6	-4,993.7	758.3	469.8	288.55	2.628		
12,000.0	6,815.0	12,003.5	6,780.6	147.4	147.1	87.25	390.6	-5,093.7	758.4	464.3	294.11	2.578		
12,100.0	6,813.8	12,103.5	6,778.7	150.2	149.9	87.19	390.6	-5,193.6	758.4	458.7	299.68	2.531		
12,200.0	6,812.7	12,203.5	6,776.9	153.0	152.7	87.14	390.6	-5,293.6	758.4	453.2	305.25	2.485		
12,300.0	6,811.6	12,303.5	6,775.0	155.8	155.5	87.08	390.6	-5,393.6	758.5	447.7	310.82	2.440		
12,400.0	6,810.5	12,403.5	6,773.2	158.6	158.3	87.03	390.6	-5,493.6	758.5	442.1	316.39	2.397		
12,500.0	6,809.4	12,503.5	6,771.3	161.4	161.0	86.97	390.6	-5,593.6	758.6	436.6	321.95	2.356		
12,600.0	6,808.3	12,603.5	6,769.5	164.2	163.8	86.92	390.6	-5,693.5	758.6	431.1	327.52	2.316		
12,700.0	6,807.1	12,703.5	6,767.6	167.0	166.6	86.86	390.6	-5,793.5	758.6	425.5	333.09	2.278		
12,800.0	6,806.0	12,803.5	6,765.8	169.7	169.4	86.81	390.6	-5,893.5	758.7	420.0	338.66	2.240		
12,900.0	6,804.9	12,903.5	6,763.9	172.5	172.2	86.75	390.6	-5,993.5	758.7	414.5	344.23	2.204		
12,926.6	6,804.6	12,930.1	6,763.4	173.3	173.0	86.74	390.6	-6,020.1	758.7	413.0	345.71	2.195		
13,000.0	6,803.8	12,953.6	6,763.0	175.3	173.6	86.72	390.6	-6,043.6	760.4	412.0	348.41	2.182 SF		
13,100.0	6,802.7	12,953.6	6,763.0	178.1	173.6	86.72	390.6	-6,043.6	773.5	422.2	351.21	2.202		
13,200.0	6,801.6	12,953.6	6,763.0	180.9	173.6	86.72	390.6	-6,043.6	798.9	444.9	354.00	2.257		
13,300.0	6,800.4	12,953.6	6,763.0	183.7	173.6	86.72	390.6	-6,043.6	835.6	478.8	356.80	2.342		
13,400.0	6,799.3	12,953.6	6,763.0	186.5	173.6	86.72	390.6	-6,043.6	882.2	522.6	359.59	2.453		
13,500.0	6,798.2	12,953.6	6,763.0	189.3	173.6	86.72	390.6	-6,043.6	937.2	574.8	362.39	2.586		
13,600.0	6,797.1	12,953.6	6,763.0	192.1	173.6	86.72	390.6	-6,043.6	999.2	634.0	365.19	2.736		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well LDS 1V-314
Project:	SEC.1-T5N-R65W	TVD Reference:	WELL @ 4653.0ft (Original Well Elev)
Reference Site:	LDS 5N65W1U Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4653.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (9-4-14)	Offset TVD Reference:	Offset Datum

Offset Design LDS 5N65W1U Pad Sec.1-T5N-R65W - LDS 1V-204 - Wellbore #1 - Plan #1 (9-4-14)													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	0.0	0.0	0.0	0.0	136.31	136.31	-43.7	41.8	60.5				
100.0	100.0	100.0	100.0	0.1	0.1	136.31	136.31	-43.7	41.8	60.5	60.2	0.22	268.973	
200.0	200.0	200.0	200.0	0.3	0.3	136.31	136.31	-43.7	41.8	60.5	59.8	0.67	89.658	
300.0	300.0	300.0	300.0	0.6	0.6	136.31	136.31	-43.7	41.8	60.5	59.3	1.12	53.795	
400.0	400.0	400.0	400.0	0.8	0.8	136.31	136.31	-43.7	41.8	60.5	58.9	1.57	38.425 CC	
500.0	500.0	498.0	498.0	1.0	1.0	136.75	136.75	-45.2	42.5	62.1	60.1	2.00	31.122	
600.0	600.0	595.7	595.6	1.2	1.2	137.92	137.92	-49.7	44.8	67.0	64.6	2.41	27.799	
700.0	700.0	693.0	692.5	1.5	1.4	139.52	139.52	-57.0	48.6	75.3	72.5	2.84	26.479	
800.0	800.0	789.7	788.5	1.7	1.6	141.25	141.25	-67.2	53.9	86.9	83.6	3.29	26.389	
900.0	900.0	888.8	886.7	1.9	1.9	142.77	142.77	-79.0	60.1	100.2	96.4	3.76	26.649	
1,000.0	1,000.0	987.9	984.9	2.1	2.2	143.92	143.92	-90.9	66.2	113.4	109.2	4.23	26.814	
1,100.0	1,100.0	1,087.0	1,083.1	2.4	2.5	144.84	144.84	-102.7	72.3	126.7	122.0	4.71	26.904	
1,200.0	1,200.0	1,186.1	1,181.3	2.6	2.9	145.58	145.58	-114.5	78.4	140.0	134.8	5.20	26.949	
1,300.0	1,300.0	1,285.2	1,279.5	2.8	3.2	146.19	146.19	-126.3	84.6	153.4	147.7	5.69	26.966	
1,400.0	1,400.0	1,384.3	1,377.7	3.0	3.5	146.71	146.71	-138.1	90.7	166.7	160.6	6.18	26.968	
1,500.0	1,500.0	1,483.4	1,475.9	3.3	3.8	147.15	147.15	-149.9	96.8	180.1	173.4	6.68	26.959	
1,600.0	1,600.0	1,582.5	1,574.1	3.5	4.2	147.53	147.53	-161.8	103.0	193.5	186.3	7.18	26.944	
1,700.0	1,700.0	1,681.8	1,672.5	3.7	4.5	10.37	10.37	-173.6	109.1	205.2	197.8	7.33	27.987	
1,800.0	1,799.8	1,781.4	1,771.2	3.9	4.8	10.89	10.89	-185.5	115.3	213.5	205.7	7.74	27.566	
1,900.0	1,899.5	1,881.3	1,870.2	4.1	5.2	11.56	11.56	-197.4	121.4	218.3	210.2	8.16	26.769	
2,000.0	1,998.7	1,981.2	1,969.2	4.3	5.5	12.39	12.39	-209.3	127.6	220.1	211.5	8.58	25.665	
2,100.0	2,098.0	2,081.1	2,068.2	4.5	5.9	13.24	13.24	-221.2	133.8	221.3	212.3	9.01	24.558	
2,200.0	2,197.2	2,181.1	2,167.3	4.7	6.2	14.09	14.09	-233.2	140.0	222.6	213.2	9.46	23.543	
2,300.0	2,296.4	2,281.0	2,266.3	5.0	6.5	14.93	14.93	-245.1	146.1	223.9	214.0	9.90	22.612	
2,400.0	2,395.6	2,380.9	2,365.3	5.2	6.9	15.76	15.76	-257.0	152.3	225.3	214.9	10.36	21.754	
2,500.0	2,494.8	2,480.9	2,464.4	5.5	7.2	16.57	16.57	-268.9	158.5	226.7	215.9	10.81	20.963	
2,600.0	2,594.0	2,580.8	2,563.4	5.8	7.6	17.38	17.38	-280.8	164.7	228.2	216.9	11.28	20.231	
2,700.0	2,693.2	2,680.8	2,662.4	6.1	7.9	18.18	18.18	-292.8	170.9	229.7	217.9	11.75	19.553	
2,800.0	2,792.4	2,780.7	2,761.5	6.3	8.3	18.97	18.97	-304.7	177.0	231.2	219.0	12.22	18.923	
2,900.0	2,891.6	2,880.6	2,860.5	6.6	8.6	19.74	19.74	-316.6	183.2	232.8	220.1	12.70	18.337	
3,000.0	2,990.9	2,980.6	2,959.5	6.9	8.9	20.51	20.51	-328.5	189.4	234.4	221.2	13.18	17.790	
3,100.0	3,090.1	3,080.5	3,058.5	7.2	9.3	21.26	21.26	-340.4	195.6	236.1	222.4	13.66	17.279	
3,200.0	3,189.3	3,180.5	3,157.6	7.5	9.6	22.01	22.01	-352.4	201.8	237.8	223.7	14.15	16.801	
3,300.0	3,288.5	3,280.4	3,256.6	7.8	10.0	22.74	22.74	-364.3	207.9	239.6	224.9	14.65	16.353	
3,400.0	3,387.7	3,380.3	3,355.6	8.1	10.3	23.46	23.46	-376.2	214.1	241.4	226.2	15.15	15.932	
3,500.0	3,486.9	3,480.3	3,454.7	8.4	10.7	24.17	24.17	-388.1	220.3	243.2	227.5	15.65	15.536	
3,600.0	3,586.1	3,580.2	3,553.7	8.7	11.0	24.87	24.87	-400.0	226.5	245.0	228.9	16.16	15.163	
3,700.0	3,685.3	3,680.1	3,652.7	9.0	11.4	25.56	25.56	-411.9	232.7	246.9	230.3	16.67	14.811	
3,800.0	3,784.6	3,780.1	3,751.8	9.4	11.7	26.24	26.24	-423.9	238.8	248.9	231.7	17.19	14.478	
3,900.0	3,883.8	3,880.0	3,850.8	9.7	12.0	26.91	26.91	-435.8	245.0	250.9	233.1	17.71	14.164	
4,000.0	3,983.0	3,980.0	3,949.8	10.0	12.4	27.57	27.57	-447.7	251.2	252.9	234.6	18.24	13.866	
4,100.0	4,082.2	4,079.9	4,048.9	10.3	12.7	28.22	28.22	-459.6	257.4	254.9	236.1	18.76	13.584	
4,200.0	4,181.4	4,179.8	4,147.9	10.6	13.1	28.86	28.86	-471.5	263.6	257.0	237.7	19.30	13.317	
4,300.0	4,280.6	4,279.8	4,246.9	10.9	13.4	29.49	29.49	-483.5	269.7	259.1	239.2	19.83	13.062	
4,400.0	4,379.8	4,379.7	4,346.0	11.2	13.8	30.10	30.10	-495.4	275.9	261.2	240.8	20.37	12.820	
4,500.0	4,479.0	4,479.6	4,445.0	11.6	14.1	30.71	30.71	-507.3	282.1	263.4	242.4	20.92	12.590	
4,600.0	4,578.3	4,579.6	4,544.0	11.9	14.5	31.31	31.31	-519.2	288.3	265.6	244.1	21.47	12.371	
4,700.0	4,677.5	4,679.5	4,643.1	12.2	14.8	31.89	31.89	-531.1	294.4	267.8	245.8	22.02	12.162	
4,800.0	4,776.7	4,779.5	4,742.1	12.5	15.2	32.47	32.47	-543.1	300.6	270.0	247.5	22.57	11.962	
4,900.0	4,875.9	4,879.4	4,841.1	12.8	15.5	33.04	33.04	-555.0	306.8	272.3	249.2	23.13	11.772	
5,000.0	4,975.1	4,979.3	4,940.2	13.2	15.8	33.60	33.60	-566.9	313.0	274.6	250.9	23.69	11.590	

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 LDS 1V-314
Project:	SEC.1-T5N-R65W	TVD Reference:	WELL @ 4653.0ft (Original Well Elev)
Reference Site:	LDS 5N65W1U Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4653.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (9-4-14)	Offset TVD Reference:	Offset Datum

Offset Design LDS 5N65W1U Pad Sec.1-T5N-R65W - LDS 1V-204 - Wellbore #1 - Plan #1 (9-4-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,074.3	5,079.3	5,039.2	13.5	16.2	34.15		-578.8	319.2	276.9	252.7	24.26	11.416	
5,200.0	5,173.5	5,181.6	5,140.6	13.8	16.5	34.71		-590.9	325.4	279.2	254.4	24.83	11.245	
5,300.0	5,272.7	5,291.6	5,249.9	14.1	16.8	35.52		-601.3	330.8	278.9	253.5	25.39	10.985	
5,400.0	5,372.0	5,401.3	5,359.4	14.5	17.0	36.64		-608.0	334.3	275.1	249.2	25.97	10.594	
5,500.0	5,471.2	5,510.4	5,468.4	14.8	17.1	38.13		-610.9	335.8	267.9	241.3	26.58	10.079	
5,600.0	5,570.4	5,612.3	5,570.4	15.1	17.3	39.82		-611.0	335.9	258.4	231.2	27.21	9.498	
5,700.0	5,669.9	5,711.9	5,669.9	15.3	17.4	41.15		-611.0	335.9	251.0	223.3	27.72	9.053	
5,800.0	5,769.7	5,811.7	5,769.7	15.5	17.5	42.04		-611.0	335.9	246.3	218.1	28.16	8.744	
5,900.0	5,869.7	5,911.6	5,869.7	15.7	17.7	42.46		-611.0	335.9	244.2	215.7	28.52	8.561	
5,952.8	5,922.5	5,964.5	5,922.5	15.8	17.7	42.52		-611.0	335.9	243.9	215.2	28.71	8.496	
6,000.0	5,969.7	6,011.6	5,969.7	15.9	17.8	-179.99		-611.0	335.9	244.1	212.4	31.70	7.699	
6,050.3	6,020.0	6,061.9	6,020.0	15.9	17.9	-179.99		-611.0	335.9	244.1	212.2	31.86	7.661	
6,100.0	6,069.7	6,111.5	6,069.6	16.0	17.9	-179.61		-611.0	334.3	244.1	212.1	31.97	7.634	
6,200.0	6,169.6	6,210.2	6,167.3	16.2	18.0	-87.28		-611.0	321.5	244.4	214.6	29.75	8.215	
6,300.0	6,268.3	6,307.5	6,261.3	16.2	18.0	-84.84		-611.0	296.8	245.1	215.0	30.12	8.138	
6,400.0	6,364.3	6,403.6	6,350.4	16.3	18.0	-82.51		-611.0	260.8	246.2	215.9	30.33	8.117	
6,500.0	6,455.8	6,498.5	6,433.2	16.2	18.0	-80.34		-611.0	214.5	247.6	217.2	30.44	8.134	
6,600.0	6,541.2	6,592.4	6,508.9	16.2	18.0	-78.36		-611.0	159.0	249.2	218.7	30.53	8.163	
6,700.0	6,619.1	6,685.5	6,576.6	16.2	17.9	-76.59		-611.0	95.3	251.0	220.2	30.74	8.163	
6,800.0	6,688.2	6,777.8	6,635.6	16.2	17.9	-75.05		-611.0	24.4	252.7	221.4	31.23	8.091	
6,900.0	6,747.3	6,869.4	6,685.3	16.3	17.9	-73.76		-611.0	-52.5	254.2	222.1	32.16	7.907	
7,000.0	6,795.4	6,960.5	6,725.3	16.9	18.0	-72.73		-611.0	-134.3	255.6	221.9	33.67	7.591	
7,100.0	6,831.6	7,050.0	6,754.8	18.1	18.8	-71.97		-611.0	-218.7	256.7	220.9	35.81	7.169	
7,200.0	6,855.4	7,141.6	6,774.6	19.7	20.3	-71.46		-611.0	-308.1	257.4	218.8	38.61	6.667	
7,300.0	6,866.3	7,231.9	6,783.5	21.5	22.0	-71.24		-611.0	-397.9	257.8	215.8	41.94	6.147	
7,400.0	6,866.3	7,327.8	6,783.5	23.5	23.9	-71.25		-611.0	-493.9	257.8	212.0	45.71	5.639	
7,500.0	6,865.2	7,427.8	6,782.6	25.7	26.1	-71.30		-611.0	-593.9	257.7	207.9	49.78	5.176	
7,600.0	6,864.1	7,527.8	6,781.7	27.9	28.3	-71.35		-611.0	-693.9	257.6	203.5	54.08	4.763	
7,700.0	6,863.0	7,627.8	6,780.8	30.3	30.7	-71.40		-611.0	-793.9	257.5	199.0	58.56	4.398	
7,800.0	6,861.9	7,727.8	6,779.9	32.7	33.1	-71.44		-611.0	-893.9	257.5	194.3	63.17	4.076	
7,900.0	6,860.8	7,827.8	6,779.0	35.2	35.6	-71.49		-611.0	-993.9	257.4	189.5	67.89	3.791	
8,000.0	6,859.6	7,927.8	6,778.2	37.7	38.1	-71.54		-611.0	-1,093.9	257.3	184.6	72.71	3.539	
8,100.0	6,858.5	8,027.8	6,777.3	40.3	40.7	-71.59		-611.0	-1,193.8	257.2	179.6	77.60	3.315	
8,200.0	6,857.4	8,127.8	6,776.4	42.9	43.3	-71.63		-611.0	-1,293.8	257.2	174.6	82.55	3.115	
8,300.0	6,856.3	8,227.8	6,775.5	45.5	45.9	-71.68		-611.0	-1,393.8	257.1	169.6	87.55	2.937	
8,400.0	6,855.2	8,327.8	6,774.6	48.1	48.5	-71.73		-611.0	-1,493.8	257.0	164.4	92.60	2.776	
8,500.0	6,854.1	8,427.8	6,773.7	50.8	51.2	-71.78		-611.0	-1,593.8	257.0	159.3	97.68	2.631	
8,600.0	6,852.9	8,527.8	6,772.8	53.5	53.8	-71.83		-611.0	-1,693.8	256.9	154.1	102.80	2.499	
8,700.0	6,851.8	8,627.8	6,771.9	56.2	56.5	-71.88		-611.0	-1,793.8	256.8	148.9	107.94	2.379	
8,800.0	6,850.7	8,727.8	6,771.0	58.9	59.2	-71.92		-611.0	-1,893.8	256.7	143.6	113.11	2.270	
8,900.0	6,849.6	8,827.8	6,770.1	61.6	61.9	-71.97		-611.0	-1,993.8	256.7	138.4	118.30	2.170	
9,000.0	6,848.5	8,927.8	6,769.3	64.3	64.6	-72.02		-611.0	-2,093.8	256.6	133.1	123.51	2.078	
9,100.0	6,847.3	9,027.8	6,768.4	67.0	67.4	-72.07		-611.0	-2,193.8	256.5	127.8	128.74	1.993	
9,200.0	6,846.2	9,127.8	6,767.5	69.7	70.1	-72.12		-611.0	-2,293.8	256.5	122.5	133.98	1.914	
9,300.0	6,845.1	9,227.8	6,766.6	72.5	72.8	-72.16		-611.0	-2,393.8	256.4	117.2	139.23	1.842	
9,400.0	6,844.0	9,327.8	6,765.7	75.2	75.6	-72.21		-611.0	-2,493.8	256.3	111.8	144.50	1.774	
9,500.0	6,842.9	9,427.8	6,764.8	78.0	78.3	-72.26		-611.0	-2,593.8	256.3	106.5	149.78	1.711	
9,600.0	6,841.8	9,527.8	6,763.9	80.7	81.1	-72.31		-611.0	-2,693.8	256.2	101.1	155.08	1.652	
9,700.0	6,840.6	9,627.8	6,763.0	83.5	83.8	-72.36		-611.0	-2,793.8	256.1	95.7	160.38	1.597	
9,800.0	6,839.5	9,727.8	6,762.1	86.2	86.6	-72.41		-611.0	-2,893.8	256.1	90.4	165.69	1.545	
9,900.0	6,838.4	9,827.8	6,761.2	89.0	89.3	-72.45		-611.0	-2,993.8	256.0	85.0	171.01	1.497 Level 3	

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 LDS 1V-314
Project:	SEC.1-T5N-R65W	TVD Reference:	WELL @ 4653.0ft (Original Well Elev)
Reference Site:	LDS 5N65W1U Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4653.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (9-4-14)	Offset TVD Reference:	Offset Datum

Offset Design LDS 5N65W1U Pad Sec.1-T5N-R65W - LDS 1V-204 - Wellbore #1 - Plan #1 (9-4-14)													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
10,000.0	6,837.3	9,927.8	6,760.4	91.7	92.1	-72.50	-611.0	-3,093.8	255.9	79.6	176.34	1.451	Level 3	
10,100.0	6,836.2	10,027.8	6,759.5	94.5	94.9	-72.55	-611.0	-3,193.8	255.8	74.2	181.67	1.408	Level 3	
10,200.0	6,835.1	10,127.8	6,758.6	97.3	97.6	-72.60	-611.0	-3,293.8	255.8	68.8	187.01	1.368	Level 3	
10,300.0	6,833.9	10,227.8	6,757.7	100.1	100.4	-72.65	-611.0	-3,393.8	255.7	63.4	192.36	1.329	Level 3	
10,400.0	6,832.8	10,327.8	6,756.8	102.8	103.2	-72.70	-611.0	-3,493.8	255.6	57.9	197.72	1.293	Level 3	
10,500.0	6,831.7	10,427.8	6,755.9	105.6	105.9	-72.75	-611.0	-3,593.7	255.6	52.5	203.08	1.259	Level 3	
10,600.0	6,830.6	10,527.8	6,755.0	108.4	108.7	-72.79	-611.0	-3,693.7	255.5	47.1	208.45	1.226	Level 2	
10,700.0	6,829.5	10,627.8	6,754.1	111.2	111.5	-72.84	-611.0	-3,793.7	255.4	41.6	213.82	1.195	Level 2	
10,800.0	6,828.4	10,727.8	6,753.2	113.9	114.3	-72.89	-611.0	-3,893.7	255.4	36.2	219.20	1.165	Level 2	
10,900.0	6,827.2	10,827.8	6,752.3	116.7	117.1	-72.94	-611.0	-3,993.7	255.3	30.7	224.58	1.137	Level 2	
11,000.0	6,826.1	10,927.8	6,751.5	119.5	119.8	-72.99	-611.0	-4,093.7	255.2	25.3	229.97	1.110	Level 2	
11,100.0	6,825.0	11,027.8	6,750.6	122.3	122.6	-73.04	-611.0	-4,193.7	255.2	19.8	235.37	1.084	Level 2	
11,200.0	6,823.9	11,127.8	6,749.7	125.1	125.4	-73.09	-611.0	-4,293.7	255.1	14.3	240.77	1.060	Level 2	
11,300.0	6,822.8	11,227.8	6,748.8	127.9	128.2	-73.13	-611.0	-4,393.7	255.0	8.9	246.17	1.036	Level 2	
11,400.0	6,821.7	11,327.8	6,747.9	130.6	131.0	-73.18	-611.0	-4,493.7	255.0	3.4	251.58	1.014	Level 2	
11,500.0	6,820.5	11,427.8	6,747.0	133.4	133.8	-73.23	-611.0	-4,593.7	254.9	-2.1	256.99	0.992	Level 1	
11,600.0	6,819.4	11,527.8	6,746.1	136.2	136.6	-73.28	-611.0	-4,693.7	254.9	-7.6	262.40	0.971	Level 1	
11,700.0	6,818.3	11,627.8	6,745.2	139.0	139.3	-73.33	-611.0	-4,793.7	254.8	-13.0	267.82	0.951	Level 1	
11,800.0	6,817.2	11,727.8	6,744.3	141.8	142.1	-73.38	-611.0	-4,893.7	254.7	-18.5	273.24	0.932	Level 1	
11,900.0	6,816.1	11,827.8	6,743.4	144.6	144.9	-73.43	-611.0	-4,993.7	254.7	-24.0	278.67	0.914	Level 1	
12,000.0	6,815.0	11,927.8	6,742.6	147.4	147.7	-73.48	-611.0	-5,093.7	254.6	-29.5	284.10	0.896	Level 1	
12,100.0	6,813.8	12,027.8	6,741.7	150.2	150.5	-73.53	-611.0	-5,193.7	254.5	-35.0	289.54	0.879	Level 1	
12,200.0	6,812.7	12,127.8	6,740.8	153.0	153.3	-73.57	-611.0	-5,293.7	254.5	-40.5	294.97	0.863	Level 1	
12,300.0	6,811.6	12,227.8	6,739.9	155.8	156.1	-73.62	-611.0	-5,393.7	254.4	-46.0	300.42	0.847	Level 1	
12,400.0	6,810.5	12,327.8	6,739.0	158.6	158.9	-73.67	-611.0	-5,493.7	254.3	-51.5	305.86	0.832	Level 1	
12,500.0	6,809.4	12,427.8	6,738.1	161.4	161.7	-73.72	-611.0	-5,593.7	254.3	-57.0	311.31	0.817	Level 1	
12,600.0	6,808.3	12,527.8	6,737.2	164.2	164.5	-73.77	-611.0	-5,693.7	254.2	-62.6	316.76	0.803	Level 1	
12,700.0	6,807.1	12,627.8	6,736.3	167.0	167.3	-73.82	-611.0	-5,793.7	254.1	-68.1	322.22	0.789	Level 1	
12,800.0	6,806.0	12,727.8	6,735.4	169.7	170.1	-73.87	-611.0	-5,893.6	254.1	-73.6	327.67	0.775	Level 1	
12,900.0	6,804.9	12,827.8	6,734.5	172.5	172.9	-73.92	-611.0	-5,993.6	254.0	-79.1	333.13	0.763	Level 1	
13,000.0	6,803.8	12,927.8	6,733.7	175.3	175.7	-73.97	-611.0	-6,093.6	254.0	-84.6	338.60	0.750	Level 1	
13,100.0	6,802.7	13,027.8	6,732.8	178.1	178.5	-74.02	-611.0	-6,193.6	253.9	-90.2	344.07	0.738	Level 1	
13,200.0	6,801.6	13,127.8	6,731.9	180.9	181.3	-74.07	-611.0	-6,293.6	253.8	-95.7	349.54	0.726	Level 1	
13,300.0	6,800.4	13,227.8	6,731.0	183.7	184.1	-74.12	-611.0	-6,393.6	253.8	-101.2	355.01	0.715	Level 1	
13,400.0	6,799.3	13,327.8	6,730.1	186.5	186.8	-74.16	-611.0	-6,493.6	253.7	-106.8	360.48	0.704	Level 1	
13,500.0	6,798.2	13,427.8	6,729.2	189.3	189.6	-74.21	-611.0	-6,593.6	253.6	-112.3	365.96	0.693	Level 1	
13,600.0	6,797.1	13,527.8	6,728.3	192.1	192.4	-74.26	-611.0	-6,693.6	253.6	-117.9	371.45	0.683	Level 1	
13,700.0	6,796.0	13,627.8	6,727.4	194.9	195.2	-74.31	-611.0	-6,793.6	253.5	-123.4	376.93	0.673	Level 1	
13,800.0	6,794.9	13,727.8	6,726.5	197.7	198.0	-74.36	-611.0	-6,893.6	253.5	-129.0	382.42	0.663	Level 1	
13,900.0	6,793.7	13,827.8	6,725.6	200.5	200.8	-74.41	-611.0	-6,993.6	253.4	-134.5	387.91	0.653	Level 1	
13,965.7	6,793.0	13,893.5	6,725.1	202.4	202.7	-74.44	-611.0	-7,059.3	253.4	-138.2	391.51	0.647	Level 1, ES, SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well LDS 1V-314
Project:	SEC.1-T5N-R65W	TVD Reference:	WELL @ 4653.0ft (Original Well Elev)
Reference Site:	LDS 5N65W1U Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4653.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (9-4-14)	Offset TVD Reference:	Offset Datum

Offset Design LDS 5N65W1U Pad Sec.1-T5N-R65W - LDS 1V-304 - Wellbore #1 - Plan #1 (9-4-14)													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
0.0	0.0	0.0	0.0	0.0	0.0	136.95	136.95	-65.6	61.2	89.7				
100.0	100.0	99.0	99.0	0.1	0.1	136.95	136.95	-65.6	61.2	89.7	89.5	0.22	401.196	
200.0	200.0	199.0	199.0	0.3	0.3	136.95	136.95	-65.6	61.2	89.7	89.1	0.67	133.510 CC, ES	
300.0	300.0	296.3	296.2	0.6	0.5	137.41	137.41	-67.1	61.7	91.2	90.1	1.10	83.269	
400.0	400.0	393.3	393.1	0.8	0.7	138.69	138.69	-71.8	63.1	95.8	94.3	1.52	62.859	
500.0	500.0	489.8	489.3	1.0	1.0	140.57	140.57	-79.6	65.5	103.5	101.5	1.97	52.600	
600.0	600.0	585.8	584.6	1.2	1.2	142.76	142.76	-90.4	68.7	114.5	112.0	2.42	47.204	
700.0	700.0	680.8	678.6	1.5	1.6	145.03	145.03	-104.1	72.8	128.7	125.8	2.90	44.432	
800.0	800.0	776.8	773.0	1.7	1.9	147.19	147.19	-120.7	77.8	145.9	142.5	3.39	43.050	
900.0	900.0	875.1	869.6	1.9	2.3	148.98	148.98	-138.1	83.0	163.8	159.9	3.89	42.101	
1,000.0	1,000.0	973.4	966.2	2.1	2.7	150.42	150.42	-155.5	88.3	181.8	177.4	4.40	41.289	
1,100.0	1,100.0	1,071.7	1,062.7	2.4	3.1	151.60	151.60	-172.9	93.5	199.9	195.0	4.93	40.588	
1,200.0	1,200.0	1,169.9	1,159.3	2.6	3.5	152.58	152.58	-190.3	98.8	218.1	212.6	5.45	39.984	
1,300.0	1,300.0	1,268.2	1,255.9	2.8	3.9	153.41	153.41	-207.8	104.0	236.3	230.3	5.99	39.460	
1,400.0	1,400.0	1,366.5	1,352.5	3.0	4.3	154.12	154.12	-225.2	109.2	254.6	248.0	6.53	39.004	
1,500.0	1,500.0	1,464.8	1,449.0	3.3	4.7	154.74	154.74	-242.6	114.5	272.9	265.8	7.07	38.605	
1,600.0	1,600.0	1,563.0	1,545.6	3.5	5.1	155.28	155.28	-260.0	119.7	291.2	283.6	7.61	38.253	
1,700.0	1,700.0	1,661.6	1,642.5	3.7	5.6	18.23	18.23	-277.5	124.9	307.9	300.3	7.56	40.717	
1,800.0	1,799.8	1,760.6	1,739.8	3.9	6.0	18.86	18.86	-295.0	130.2	321.4	313.4	7.99	40.210	
1,900.0	1,899.5	1,859.9	1,837.4	4.1	6.4	19.66	19.66	-312.6	135.5	331.6	323.2	8.42	39.369	
2,000.0	1,998.7	1,959.5	1,935.2	4.3	6.8	20.63	20.63	-330.3	140.8	338.9	330.1	8.86	38.253	
2,100.0	2,098.0	2,059.1	2,033.1	4.5	7.2	21.63	21.63	-347.9	146.1	345.8	336.5	9.31	37.138	
2,200.0	2,197.2	2,158.7	2,131.0	4.7	7.6	22.58	22.58	-365.6	151.4	352.7	343.0	9.77	36.110	
2,300.0	2,296.4	2,258.2	2,228.8	5.0	8.1	23.51	23.51	-383.2	156.7	359.8	349.6	10.23	35.159	
2,400.0	2,395.6	2,357.8	2,326.7	5.2	8.5	24.39	24.39	-400.9	162.0	366.9	356.2	10.70	34.278	
2,500.0	2,494.8	2,457.4	2,424.6	5.5	8.9	25.24	25.24	-418.5	167.3	374.1	363.0	11.18	33.459	
2,600.0	2,594.0	2,557.0	2,522.4	5.8	9.3	26.06	26.06	-436.2	172.7	381.4	369.8	11.67	32.697	
2,700.0	2,693.2	2,656.6	2,620.3	6.1	9.7	26.85	26.85	-453.8	178.0	388.8	376.7	12.16	31.986	
2,800.0	2,792.4	2,756.2	2,718.2	6.3	10.2	27.61	27.61	-471.4	183.3	396.3	383.6	12.65	31.322	
2,900.0	2,891.6	2,855.8	2,816.0	6.6	10.6	28.34	28.34	-489.1	188.6	403.8	390.6	13.15	30.700	
3,000.0	2,990.9	2,955.4	2,913.9	6.9	11.0	29.05	29.05	-506.7	193.9	411.3	397.7	13.66	30.117	
3,100.0	3,090.1	3,054.9	3,011.8	7.2	11.4	29.73	29.73	-524.4	199.2	419.0	404.8	14.17	29.569	
3,200.0	3,189.3	3,154.5	3,109.6	7.5	11.9	30.38	30.38	-542.0	204.5	426.7	412.0	14.69	29.054	
3,300.0	3,288.5	3,254.1	3,207.5	7.8	12.3	31.02	31.02	-559.7	209.8	434.4	419.2	15.21	28.568	
3,400.0	3,387.7	3,353.7	3,305.4	8.1	12.7	31.62	31.62	-577.3	215.1	442.2	426.5	15.73	28.110	
3,500.0	3,486.9	3,453.3	3,403.2	8.4	13.1	32.21	32.21	-595.0	220.4	450.1	433.8	16.26	27.677	
3,600.0	3,586.1	3,552.9	3,501.1	8.7	13.5	32.78	32.78	-612.6	225.7	458.0	441.2	16.79	27.267	
3,700.0	3,685.3	3,652.5	3,599.0	9.0	14.0	33.33	33.33	-630.3	231.0	465.9	448.6	17.33	26.879	
3,800.0	3,784.6	3,752.0	3,696.8	9.4	14.4	33.86	33.86	-647.9	236.3	473.9	456.0	17.87	26.512	
3,900.0	3,883.8	3,851.6	3,794.7	9.7	14.8	34.37	34.37	-665.6	241.6	481.9	463.5	18.42	26.162	
4,000.0	3,983.0	3,951.2	3,892.6	10.0	15.2	34.87	34.87	-683.2	246.9	489.9	471.0	18.97	25.830	
4,100.0	4,082.2	4,050.8	3,990.4	10.3	15.6	35.35	35.35	-700.9	252.2	498.0	478.5	19.52	25.515	
4,200.0	4,181.4	4,150.4	4,088.3	10.6	16.1	35.82	35.82	-718.5	257.5	506.1	486.1	20.07	25.214	
4,300.0	4,280.6	4,250.0	4,186.2	10.9	16.5	36.27	36.27	-736.2	262.8	514.3	493.6	20.63	24.928	
4,400.0	4,379.8	4,349.6	4,284.0	11.2	16.9	36.70	36.70	-753.8	268.2	522.5	501.3	21.19	24.654	
4,500.0	4,479.0	4,449.2	4,381.9	11.6	17.3	37.12	37.12	-771.5	273.5	530.7	508.9	21.75	24.393	
4,600.0	4,578.3	4,548.7	4,479.8	11.9	17.8	37.53	37.53	-789.1	278.8	538.9	516.6	22.32	24.144	
4,700.0	4,677.5	4,648.3	4,577.6	12.2	18.2	37.93	37.93	-806.8	284.1	547.2	524.3	22.89	23.905	
4,800.0	4,776.7	4,747.9	4,675.5	12.5	18.6	38.32	38.32	-824.4	289.4	555.5	532.0	23.46	23.677	
4,900.0	4,875.9	4,847.5	4,773.4	12.8	19.0	38.69	38.69	-842.1	294.7	563.8	539.8	24.03	23.458	
5,000.0	4,975.1	4,947.1	4,871.2	13.2	19.4	39.05	39.05	-859.7	300.0	572.1	547.5	24.61	23.249	

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 LDS 1V-314
Project:	SEC.1-T5N-R65W	TVD Reference:	WELL @ 4653.0ft (Original Well Elev)
Reference Site:	LDS 5N65W1U Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4653.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (9-4-14)	Offset TVD Reference:	Offset Datum

Offset Design LDS 5N65W1U Pad Sec.1-T5N-R65W - LDS 1V-304 - Wellbore #1 - Plan #1 (9-4-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,074.3	5,046.7	4,969.1	13.5	19.9	39.41		-877.3	305.3	580.5	555.3	25.19	23.048	
5,200.0	5,173.5	5,146.3	5,067.0	13.8	20.3	39.75		-895.0	310.6	588.9	563.1	25.77	22.855	
5,300.0	5,272.7	5,245.9	5,164.8	14.1	20.7	40.08		-912.6	315.9	597.3	570.9	26.35	22.669	
5,400.0	5,372.0	5,345.4	5,262.7	14.5	21.1	40.41		-930.3	321.2	605.7	578.8	26.93	22.491	
5,500.0	5,471.2	5,469.0	5,384.6	14.8	21.5	40.86		-950.0	327.1	612.3	584.8	27.54	22.234	
5,600.0	5,570.4	5,594.8	5,509.4	15.1	21.8	41.43		-964.8	331.6	614.9	586.8	28.13	21.863	
5,700.0	5,669.9	5,720.7	5,634.9	15.3	22.0	41.94		-974.4	334.5	615.3	586.6	28.61	21.508	
5,800.0	5,769.7	5,846.5	5,760.6	15.5	22.2	42.30		-978.7	335.8	614.0	585.0	29.02	21.155	
5,900.0	5,869.7	5,954.6	5,868.7	15.7	22.3	42.47		-979.0	335.8	612.1	582.8	29.35	20.858	
5,952.8	5,922.5	6,007.4	5,921.5	15.8	22.4	42.49		-979.0	335.8	611.8	582.3	29.52	20.730	
6,000.0	5,969.7	6,054.6	5,968.7	15.9	22.4	-179.99		-979.0	335.8	612.0	575.4	36.58	16.730	
6,064.7	6,034.4	6,119.3	6,033.4	16.0	22.5	-179.99		-979.0	335.8	612.0	575.3	36.76	16.650	
6,100.0	6,069.7	6,154.6	6,068.7	16.0	22.5	-179.99		-979.0	335.8	612.0	575.2	36.85	16.606	
6,200.0	6,169.6	6,254.2	6,167.9	16.2	22.6	-89.57		-979.0	328.5	612.0	581.7	30.32	20.184	
6,300.0	6,268.3	6,353.2	6,264.8	16.2	22.6	-89.09		-979.0	308.5	612.1	581.6	30.52	20.054	
6,400.0	6,364.3	6,451.5	6,357.6	16.3	22.7	-88.63		-979.0	276.4	612.2	581.6	30.61	19.999	
6,500.0	6,455.8	6,549.2	6,445.1	16.2	22.7	-88.19		-979.0	232.9	612.3	581.7	30.66	19.973	
6,600.0	6,541.2	6,646.4	6,525.8	16.2	22.6	-87.79		-979.0	179.0	612.5	581.7	30.77	19.906	
6,700.0	6,619.1	6,743.0	6,598.7	16.2	22.6	-87.42		-979.0	115.6	612.6	581.6	31.09	19.708	
6,800.0	6,688.2	6,839.3	6,662.8	16.2	22.6	-87.09		-979.0	43.9	612.8	581.0	31.77	19.288	
6,900.0	6,747.3	6,935.1	6,717.2	16.3	22.7	-86.82		-979.0	-35.0	613.0	580.0	32.98	18.586	
7,000.0	6,795.4	7,030.7	6,761.1	16.9	22.7	-86.59		-979.0	-119.8	613.1	578.3	34.81	17.612	
7,100.0	6,831.6	7,126.0	6,794.0	18.1	22.9	-86.42		-979.0	-209.2	613.2	575.9	37.29	16.444	
7,200.0	6,855.4	7,221.2	6,815.5	19.7	23.4	-86.31		-979.0	-301.8	613.3	572.9	40.36	15.194	
7,300.0	6,866.3	7,316.2	6,825.4	21.5	24.4	-86.26		-979.0	-396.3	613.3	569.4	43.91	13.967	
7,400.0	6,866.3	7,414.3	6,825.6	23.5	25.8	-86.29		-979.0	-494.4	613.3	565.5	47.85	12.818	
7,500.0	6,865.2	7,514.3	6,825.0	25.7	27.7	-86.33		-979.0	-594.3	613.3	561.2	52.09	11.772	
7,600.0	6,864.1	7,614.3	6,824.3	27.9	29.8	-86.37		-979.0	-694.3	613.3	556.7	56.58	10.839	
7,700.0	6,863.0	7,714.3	6,823.6	30.3	32.0	-86.41		-979.0	-794.3	613.2	552.0	61.25	10.012	
7,800.0	6,861.9	7,814.3	6,823.0	32.7	34.3	-86.46		-979.0	-894.3	613.2	547.1	66.07	9.281	
7,900.0	6,860.8	7,914.3	6,822.3	35.2	36.7	-86.50		-979.0	-994.3	613.2	542.2	71.00	8.636	
8,000.0	6,859.6	8,014.3	6,821.6	37.7	39.2	-86.54		-979.0	-1,094.3	613.1	537.1	76.03	8.064	
8,100.0	6,858.5	8,114.3	6,821.0	40.3	41.7	-86.58		-979.0	-1,194.3	613.1	532.0	81.14	7.556	
8,200.0	6,857.4	8,214.3	6,820.3	42.9	44.2	-86.63		-979.0	-1,294.3	613.1	526.8	86.31	7.104	
8,300.0	6,856.3	8,314.3	6,819.7	45.5	46.8	-86.67		-979.0	-1,394.3	613.1	521.5	91.53	6.698	
8,400.0	6,855.2	8,414.3	6,819.0	48.1	49.4	-86.71		-979.0	-1,494.3	613.0	516.2	96.79	6.333	
8,500.0	6,854.1	8,514.3	6,818.3	50.8	52.0	-86.75		-979.0	-1,594.3	613.0	510.9	102.10	6.004	
8,600.0	6,852.9	8,614.3	6,817.7	53.5	54.7	-86.79		-979.0	-1,694.3	613.0	505.6	107.43	5.706	
8,700.0	6,851.8	8,714.3	6,817.0	56.2	57.3	-86.84		-979.0	-1,794.3	613.0	500.2	112.79	5.434	
8,800.0	6,850.7	8,814.3	6,816.3	58.9	60.0	-86.88		-979.0	-1,894.3	612.9	494.8	118.18	5.187	
8,900.0	6,849.6	8,914.3	6,815.7	61.6	62.7	-86.92		-979.0	-1,994.3	612.9	489.3	123.58	4.960	
9,000.0	6,848.5	9,014.3	6,815.0	64.3	65.4	-86.96		-979.0	-2,094.3	612.9	483.9	129.01	4.751	
9,100.0	6,847.3	9,114.3	6,814.3	67.0	68.1	-87.01		-979.0	-2,194.3	612.9	478.4	134.45	4.558	
9,200.0	6,846.2	9,214.3	6,813.7	69.7	70.8	-87.05		-979.0	-2,294.3	612.8	472.9	139.90	4.381	
9,300.0	6,845.1	9,314.3	6,813.0	72.5	73.5	-87.09		-979.0	-2,394.3	612.8	467.4	145.37	4.216	
9,400.0	6,844.0	9,414.3	6,812.4	75.2	76.2	-87.13		-979.0	-2,494.3	612.8	461.9	150.84	4.062	
9,500.0	6,842.9	9,514.3	6,811.7	78.0	78.9	-87.18		-979.0	-2,594.3	612.8	456.4	156.33	3.920	
9,600.0	6,841.8	9,614.3	6,811.0	80.7	81.7	-87.22		-979.0	-2,694.3	612.7	450.9	161.83	3.786	
9,700.0	6,840.6	9,714.3	6,810.4	83.5	84.4	-87.26		-979.0	-2,794.3	612.7	445.4	167.33	3.662	
9,800.0	6,839.5	9,814.3	6,809.7	86.2	87.2	-87.30		-979.0	-2,894.3	612.7	439.9	172.85	3.545	
9,900.0	6,838.4	9,914.3	6,809.0	89.0	89.9	-87.35		-979.0	-2,994.3	612.7	434.3	178.37	3.435	

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 LDS 1V-314
Project:	SEC.1-T5N-R65W	TVD Reference:	WELL @ 4653.0ft (Original Well Elev)
Reference Site:	LDS 5N65W1U Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4653.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (9-4-14)	Offset TVD Reference:	Offset Datum

Offset Design LDS 5N65W1U Pad Sec.1-T5N-R65W - LDS 1V-304 - Wellbore #1 - Plan #1 (9-4-14)													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
10,000.0	6,837.3	10,014.3	6,808.4	91.7	92.7	-87.39		-979.0	-3,094.3	612.7	428.8	183.89	3.332	
10,100.0	6,836.2	10,114.2	6,807.7	94.5	95.4	-87.43		-979.0	-3,194.3	612.6	423.2	189.42	3.234	
10,200.0	6,835.1	10,214.2	6,807.1	97.3	98.2	-87.47		-979.0	-3,294.3	612.6	417.7	194.96	3.142	
10,300.0	6,833.9	10,314.2	6,806.4	100.1	100.9	-87.52		-979.0	-3,394.3	612.6	412.1	200.50	3.055	
10,400.0	6,832.8	10,414.2	6,805.7	102.8	103.7	-87.56		-979.0	-3,494.3	612.6	406.5	206.05	2.973	
10,500.0	6,831.7	10,514.2	6,805.1	105.6	106.5	-87.60		-979.0	-3,594.3	612.6	401.0	211.60	2.895	
10,600.0	6,830.6	10,614.2	6,804.4	108.4	109.2	-87.64		-979.0	-3,694.2	612.5	395.4	217.15	2.821	
10,700.0	6,829.5	10,714.2	6,803.7	111.2	112.0	-87.68		-979.0	-3,794.2	612.5	389.8	222.71	2.750	
10,800.0	6,828.4	10,814.2	6,803.1	113.9	114.8	-87.73		-979.0	-3,894.2	612.5	384.2	228.27	2.683	
10,900.0	6,827.2	10,914.2	6,802.4	116.7	117.5	-87.77		-979.0	-3,994.2	612.5	378.7	233.83	2.619	
11,000.0	6,826.1	11,014.2	6,801.7	119.5	120.3	-87.81		-979.0	-4,094.2	612.5	373.1	239.40	2.558	
11,100.0	6,825.0	11,114.2	6,801.1	122.3	123.1	-87.85		-979.0	-4,194.2	612.5	367.5	244.96	2.500	
11,200.0	6,823.9	11,214.2	6,800.4	125.1	125.9	-87.90		-979.0	-4,294.2	612.4	361.9	250.54	2.445	
11,300.0	6,822.8	11,314.2	6,799.8	127.9	128.7	-87.94		-979.0	-4,394.2	612.4	356.3	256.11	2.391	
11,400.0	6,821.7	11,414.2	6,799.1	130.6	131.4	-87.98		-979.0	-4,494.2	612.4	350.7	261.68	2.340	
11,500.0	6,820.5	11,514.2	6,798.4	133.4	134.2	-88.02		-979.0	-4,594.2	612.4	345.1	267.26	2.291	
11,600.0	6,819.4	11,614.2	6,797.8	136.2	137.0	-88.07		-979.0	-4,694.2	612.4	339.5	272.84	2.244	
11,700.0	6,818.3	11,714.2	6,797.1	139.0	139.8	-88.11		-979.0	-4,794.2	612.4	333.9	278.42	2.199	
11,800.0	6,817.2	11,814.2	6,796.4	141.8	142.6	-88.15		-979.0	-4,894.2	612.3	328.3	284.01	2.156	
11,900.0	6,816.1	11,914.2	6,795.8	144.6	145.4	-88.19		-979.0	-4,994.2	612.3	322.7	289.59	2.114	
12,000.0	6,815.0	12,014.2	6,795.1	147.4	148.1	-88.24		-979.0	-5,094.2	612.3	317.1	295.18	2.074	
12,100.0	6,813.8	12,114.2	6,794.4	150.2	150.9	-88.28		-979.0	-5,194.2	612.3	311.5	300.76	2.036	
12,200.0	6,812.7	12,214.2	6,793.8	153.0	153.7	-88.32		-979.0	-5,294.2	612.3	305.9	306.35	1.999	
12,300.0	6,811.6	12,314.2	6,793.1	155.8	156.5	-88.36		-979.0	-5,394.2	612.3	300.3	311.94	1.963	
12,400.0	6,810.5	12,414.2	6,792.5	158.6	159.3	-88.41		-979.0	-5,494.2	612.3	294.7	317.53	1.928	
12,500.0	6,809.4	12,514.2	6,791.8	161.4	162.1	-88.45		-979.0	-5,594.2	612.3	289.1	323.12	1.895	
12,600.0	6,808.3	12,614.2	6,791.1	164.2	164.9	-88.49		-979.0	-5,694.2	612.2	283.5	328.72	1.863	
12,700.0	6,807.1	12,714.2	6,790.5	167.0	167.7	-88.53		-979.0	-5,794.2	612.2	277.9	334.31	1.831	
12,800.0	6,806.0	12,814.2	6,789.8	169.7	170.5	-88.58		-979.0	-5,894.2	612.2	272.3	339.91	1.801	
12,900.0	6,804.9	12,914.2	6,789.1	172.5	173.3	-88.62		-979.0	-5,994.2	612.2	266.7	345.50	1.772	
13,000.0	6,803.8	13,014.2	6,788.5	175.3	176.1	-88.66		-979.0	-6,094.2	612.2	261.1	351.10	1.744	
13,100.0	6,802.7	13,114.2	6,787.8	178.1	178.8	-88.70		-979.0	-6,194.2	612.2	255.5	356.70	1.716	
13,200.0	6,801.6	13,214.2	6,787.2	180.9	181.6	-88.75		-979.0	-6,294.2	612.2	249.9	362.30	1.690	
13,300.0	6,800.4	13,314.2	6,786.5	183.7	184.4	-88.79		-979.0	-6,394.2	612.2	244.3	367.90	1.664	
13,400.0	6,799.3	13,414.2	6,785.8	186.5	187.2	-88.83		-979.0	-6,494.2	612.2	238.7	373.50	1.639	
13,500.0	6,798.2	13,514.2	6,785.2	189.3	190.0	-88.87		-979.0	-6,594.2	612.1	233.0	379.10	1.615	
13,600.0	6,797.1	13,614.2	6,784.5	192.1	192.8	-88.92		-979.0	-6,694.2	612.1	227.4	384.70	1.591	
13,700.0	6,796.0	13,714.2	6,783.8	194.9	195.6	-88.96		-979.0	-6,794.1	612.1	221.8	390.30	1.568	
13,800.0	6,794.9	13,814.2	6,783.2	197.7	198.4	-89.00		-979.0	-6,894.1	612.1	216.2	395.90	1.546	
13,900.0	6,793.7	13,914.2	6,782.5	200.5	201.2	-89.04		-979.0	-6,994.1	612.1	210.6	401.50	1.525	
13,965.7	6,793.0	13,979.9	6,782.1	202.4	203.1	-89.07		-979.0	-7,059.8	612.1	206.9	405.19	1.511 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well LDS 1V-314
Project:	SEC.1-T5N-R65W	TVD Reference:	WELL @ 4653.0ft (Original Well Elev)
Reference Site:	LDS 5N65W1U Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4653.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (9-4-14)	Offset TVD Reference:	Offset Datum

Offset Design		LDS 5N65W1U Pad Sec.1-T5N-R65W - LDS 1V-414 - Wellbore #1 - Plan #1 (9-4-14)											Offset Site Error:		0.0 ft
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
0.0	0.0	0.0	0.0	0.0	0.0	138.28	-21.9	19.5	29.3						
100.0	100.0	100.0	100.0	0.1	0.1	138.28	-21.9	19.5	29.3	29.1	0.22	130.286			
200.0	200.0	200.0	200.0	0.3	0.3	138.28	-21.9	19.5	29.3	28.6	0.67	43.429			
300.0	300.0	300.0	300.0	0.6	0.6	138.28	-21.9	19.5	29.3	28.2	1.12	26.057			
400.0	400.0	400.0	400.0	0.8	0.8	138.28	-21.9	19.5	29.3	27.7	1.57	18.612			
500.0	500.0	500.0	500.0	1.0	1.0	138.28	-21.9	19.5	29.3	27.3	2.02	14.476			
600.0	600.0	600.0	600.0	1.2	1.2	138.28	-21.9	19.5	29.3	26.8	2.47	11.844			
700.0	700.0	700.0	700.0	1.5	1.5	138.28	-21.9	19.5	29.3	26.4	2.92	10.022			
800.0	800.0	800.0	800.0	1.7	1.7	138.28	-21.9	19.5	29.3	25.9	3.37	8.686			
900.0	900.0	900.0	900.0	1.9	1.9	138.28	-21.9	19.5	29.3	25.5	3.82	7.664			
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	138.28	-21.9	19.5	29.3	25.0	4.27	6.857 CC			
1,100.0	1,100.0	1,099.0	1,098.9	2.4	2.3	138.72	-23.3	20.4	31.0	26.3	4.69	6.605			
1,200.0	1,200.0	1,197.7	1,197.5	2.6	2.5	139.78	-27.5	23.3	36.1	31.0	5.10	7.086			
1,300.0	1,300.0	1,295.9	1,295.4	2.8	2.7	141.00	-34.6	28.0	44.7	39.2	5.52	8.103			
1,400.0	1,400.0	1,394.2	1,393.0	3.0	2.9	142.08	-44.2	34.4	56.4	50.5	5.95	9.487			
1,500.0	1,500.0	1,493.4	1,491.5	3.3	3.2	142.82	-54.4	41.3	68.8	62.4	6.39	10.775			
1,600.0	1,600.0	1,592.7	1,589.9	3.5	3.4	143.34	-64.7	48.1	81.2	74.4	6.84	11.881			
1,700.0	1,700.0	1,692.1	1,688.6	3.7	3.7	6.29	-74.9	55.0	91.9	84.7	7.18	12.797			
1,800.0	1,799.8	1,791.8	1,787.5	3.9	4.0	6.90	-85.2	61.9	99.2	91.6	7.57	13.108			
1,900.0	1,899.5	1,891.7	1,886.7	4.1	4.2	7.69	-95.6	68.8	103.0	95.0	7.95	12.951			
2,000.0	1,998.7	1,991.7	1,985.9	4.3	4.5	8.69	-105.9	75.7	103.6	95.3	8.35	12.411			
2,100.0	2,098.0	2,091.7	2,085.1	4.5	4.8	9.73	-116.2	82.6	103.7	94.9	8.77	11.825			
2,200.0	2,197.2	2,191.7	2,184.3	4.7	5.1	10.78	-126.5	89.5	103.8	94.6	9.19	11.286			
2,300.0	2,296.4	2,291.7	2,283.5	5.0	5.4	11.82	-136.9	96.4	103.9	94.3	9.63	10.792			
2,400.0	2,395.6	2,391.6	2,382.7	5.2	5.7	12.86	-147.2	103.3	104.1	94.0	10.07	10.336			
2,500.0	2,494.8	2,491.6	2,481.9	5.5	6.1	13.89	-157.5	110.3	104.3	93.8	10.52	9.916			
2,600.0	2,594.0	2,591.6	2,581.1	5.8	6.4	14.92	-167.8	117.2	104.5	93.5	10.97	9.528			
2,700.0	2,693.2	2,691.6	2,680.3	6.1	6.7	15.95	-178.2	124.1	104.8	93.3	11.43	9.169			
2,800.0	2,792.4	2,791.6	2,779.5	6.3	7.0	16.97	-188.5	131.0	105.1	93.2	11.89	8.836			
2,900.0	2,891.6	2,891.5	2,878.7	6.6	7.3	17.98	-198.8	137.9	105.4	93.0	12.36	8.527			
3,000.0	2,990.9	2,991.5	2,977.9	6.9	7.6	18.99	-209.2	144.8	105.8	92.9	12.84	8.239			
3,100.0	3,090.1	3,091.5	3,077.1	7.2	8.0	19.99	-219.5	151.7	106.2	92.9	13.32	7.971			
3,200.0	3,189.3	3,191.5	3,176.3	7.5	8.3	20.98	-229.8	158.6	106.6	92.8	13.81	7.720			
3,300.0	3,288.5	3,291.5	3,275.5	7.8	8.6	21.96	-240.1	165.5	107.1	92.8	14.30	7.486			
3,400.0	3,387.7	3,391.5	3,374.8	8.1	8.9	22.94	-250.5	172.4	107.6	92.8	14.80	7.266			
3,500.0	3,486.9	3,491.4	3,474.0	8.4	9.2	23.91	-260.8	179.4	108.1	92.8	15.31	7.060			
3,600.0	3,586.1	3,591.4	3,573.2	8.7	9.6	24.86	-271.1	186.3	108.6	92.8	15.82	6.867			
3,700.0	3,685.3	3,691.4	3,672.4	9.0	9.9	25.81	-281.5	193.2	109.2	92.9	16.34	6.685			
3,800.0	3,784.6	3,791.4	3,771.6	9.4	10.2	26.75	-291.8	200.1	109.8	93.0	16.86	6.513			
3,900.0	3,883.8	3,891.4	3,870.8	9.7	10.5	27.67	-302.1	207.0	110.5	93.1	17.39	6.352			
4,000.0	3,983.0	3,991.3	3,970.0	10.0	10.9	28.59	-312.4	213.9	111.2	93.2	17.93	6.199			
4,100.0	4,082.2	4,091.3	4,069.2	10.3	11.2	29.49	-322.8	220.8	111.9	93.4	18.47	6.055			
4,200.0	4,181.4	4,191.3	4,168.4	10.6	11.5	30.38	-333.1	227.7	112.6	93.6	19.02	5.919			
4,300.0	4,280.6	4,291.3	4,267.6	10.9	11.8	31.26	-343.4	234.6	113.3	93.8	19.57	5.790			
4,400.0	4,379.8	4,391.3	4,366.8	11.2	12.2	32.13	-353.7	241.5	114.1	94.0	20.13	5.668			
4,500.0	4,479.0	4,491.3	4,466.0	11.6	12.5	32.99	-364.1	248.5	114.9	94.2	20.70	5.553			
4,600.0	4,578.3	4,591.2	4,565.2	11.9	12.8	33.83	-374.4	255.4	115.8	94.5	21.27	5.443			
4,700.0	4,677.5	4,691.2	4,664.4	12.2	13.1	34.66	-384.7	262.3	116.6	94.8	21.84	5.339			
4,800.0	4,776.7	4,791.2	4,763.7	12.5	13.5	35.48	-395.1	269.2	117.5	95.1	22.42	5.240			
4,900.0	4,875.9	4,891.2	4,862.9	12.8	13.8	36.29	-405.4	276.1	118.4	95.4	23.01	5.146			
5,000.0	4,975.1	4,991.2	4,962.1	13.2	14.1	37.08	-415.7	283.0	119.3	95.7	23.60	5.056			

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 LDS 1V-314
Project:	SEC.1-T5N-R65W	TVD Reference:	WELL @ 4653.0ft (Original Well Elev)
Reference Site:	LDS 5N65W1U Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4653.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (9-4-14)	Offset TVD Reference:	Offset Datum

Offset Design LDS 5N65W1U Pad Sec.1-T5N-R65W - LDS 1V-414 - Wellbore #1 - Plan #1 (9-4-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,074.3	5,091.1	5,061.3	13.5	14.5	37.87		-426.0	289.9	120.3	96.1	24.19	4.971	
5,200.0	5,173.5	5,191.1	5,160.5	13.8	14.8	38.64		-436.4	296.8	121.2	96.5	24.79	4.890	
5,300.0	5,272.7	5,291.1	5,259.7	14.1	15.1	39.39		-446.7	303.7	122.2	96.8	25.40	4.813	
5,400.0	5,372.0	5,391.1	5,358.9	14.5	15.4	40.14		-457.0	310.6	123.3	97.2	26.01	4.739	
5,500.0	5,471.2	5,491.1	5,458.1	14.8	15.8	40.87		-467.3	317.6	124.3	97.7	26.62	4.669	
5,600.0	5,570.4	5,591.6	5,557.8	15.1	16.1	41.56		-477.7	324.5	125.4	98.2	27.22	4.607	
5,700.0	5,669.9	5,695.4	5,661.1	15.3	16.3	42.04		-486.4	330.3	126.6	98.9	27.71	4.571	
5,800.0	5,769.7	5,799.2	5,764.7	15.5	16.5	42.34		-492.1	334.1	127.4	99.3	28.13	4.531	
5,900.0	5,869.7	5,903.1	5,868.5	15.7	16.7	42.47		-494.6	335.8	127.8	99.3	28.48	4.487	
6,000.0	5,969.7	6,004.2	5,969.7	15.9	16.8	-179.99		-494.7	335.9	127.8	97.2	30.57	4.180	
6,100.0	6,069.7	6,104.2	6,069.7	16.0	17.0	-179.99		-494.7	335.9	127.8	96.9	30.89	4.137	
6,200.0	6,169.6	6,204.2	6,169.6	16.2	17.1	-89.99		-494.7	333.0	127.8	98.3	29.48	4.335	
6,300.0	6,268.3	6,304.2	6,268.3	16.2	17.2	-90.00		-494.7	317.8	127.8	98.2	29.64	4.312	
6,400.0	6,364.3	6,404.2	6,364.3	16.3	17.2	-90.00		-494.7	289.9	127.8	98.1	29.68	4.306	
6,500.0	6,455.8	6,504.2	6,455.8	16.2	17.2	-90.00		-494.7	249.6	127.8	98.1	29.68	4.306	
6,600.0	6,541.2	6,604.2	6,541.2	16.2	17.2	-90.00		-494.7	197.8	127.8	98.1	29.74	4.297	
6,624.2	6,560.8	6,628.4	6,560.8	16.2	17.2	-90.00		-494.7	183.6	127.8	98.0	29.80	4.289	
6,700.0	6,619.1	6,704.2	6,619.1	16.2	17.1	-90.00		-494.7	135.3	127.8	97.8	30.02	4.258	
6,800.0	6,688.2	6,804.2	6,688.2	16.2	17.1	-90.00		-494.7	63.1	127.8	97.1	30.67	4.167	
6,900.0	6,747.3	6,904.2	6,747.4	16.3	17.0	-90.00		-494.7	-17.5	127.8	95.9	31.87	4.010	
7,000.0	6,795.4	7,004.2	6,795.4	16.9	17.0	-90.00		-494.7	-105.1	127.8	94.1	33.73	3.789	
7,100.0	6,831.6	7,104.2	6,831.7	18.1	18.2	-90.01		-494.7	-198.2	127.8	91.5	36.26	3.525	
7,200.0	6,855.4	7,204.2	6,855.4	19.7	19.8	-90.01		-494.7	-295.3	127.8	88.4	39.40	3.243	
7,300.0	6,866.3	7,304.2	6,866.3	21.5	21.7	-90.01		-494.7	-394.6	127.8	84.8	43.03	2.970	
7,306.7	6,866.6	7,310.9	6,866.6	21.7	21.8	-90.00		-494.7	-401.3	127.8	84.5	43.30	2.952	
7,400.0	6,866.3	7,404.2	6,867.4	23.5	23.7	-90.46		-494.7	-494.6	127.8	80.8	46.99	2.720	
7,500.0	6,865.2	7,504.2	6,867.8	25.7	25.9	-91.16		-494.7	-594.6	127.8	76.6	51.24	2.495	
7,600.0	6,864.1	7,604.2	6,868.3	27.9	28.1	-91.87		-494.7	-694.6	127.9	72.2	55.72	2.295	
7,700.0	6,863.0	7,704.2	6,868.7	30.3	30.5	-92.57		-494.7	-794.6	127.9	67.6	60.37	2.119	
7,800.0	6,861.9	7,804.2	6,869.2	32.7	32.9	-93.27		-494.7	-894.6	128.0	62.9	65.15	1.965	
7,900.0	6,860.8	7,904.2	6,869.6	35.2	35.4	-93.97		-494.7	-994.5	128.1	58.1	70.03	1.829	
8,000.0	6,859.6	8,004.2	6,870.1	37.7	37.9	-94.67		-494.7	-1,094.5	128.2	53.2	74.99	1.710	
8,100.0	6,858.5	8,104.1	6,870.5	40.3	40.5	-95.37		-494.7	-1,194.5	128.4	48.4	80.01	1.604	
8,200.0	6,857.4	8,204.1	6,871.0	42.9	43.1	-96.07		-494.7	-1,294.5	128.5	43.5	85.06	1.511	
8,300.0	6,856.3	8,304.1	6,871.4	45.5	45.7	-96.76		-494.7	-1,394.5	128.7	38.6	90.15	1.428 Level 3	
8,400.0	6,855.2	8,404.1	6,871.9	48.1	48.3	-97.46		-494.7	-1,494.5	128.9	33.6	95.25	1.353 Level 3	
8,500.0	6,854.1	8,504.1	6,872.4	50.8	51.0	-98.15		-494.7	-1,594.5	129.1	28.8	100.35	1.287 Level 3	
8,600.0	6,852.9	8,604.1	6,872.8	53.5	53.7	-98.84		-494.7	-1,694.4	129.3	23.9	105.46	1.226 Level 2	
8,700.0	6,851.8	8,704.1	6,873.3	56.2	56.3	-99.52		-494.7	-1,794.4	129.6	19.0	110.57	1.172 Level 2	
8,800.0	6,850.7	8,804.1	6,873.7	58.9	59.0	-100.21		-494.7	-1,894.4	129.9	14.2	115.66	1.123 Level 2	
8,900.0	6,849.6	8,904.0	6,874.2	61.6	61.7	-100.89		-494.7	-1,994.4	130.1	9.4	120.74	1.078 Level 2	
9,000.0	6,848.5	9,004.0	6,874.6	64.3	64.5	-101.56		-494.7	-2,094.4	130.5	4.7	125.79	1.037 Level 2	
9,100.0	6,847.3	9,104.0	6,875.1	67.0	67.2	-102.24		-494.7	-2,194.4	130.8	-0.1	130.83	1.000 Level 1	
9,200.0	6,846.2	9,204.0	6,875.5	69.7	69.9	-102.91		-494.7	-2,294.4	131.1	-4.7	135.84	0.965 Level 1	
9,300.0	6,845.1	9,304.0	6,876.0	72.5	72.6	-103.58		-494.7	-2,394.4	131.5	-9.3	140.81	0.934 Level 1	
9,400.0	6,844.0	9,404.0	6,876.4	75.2	75.4	-104.24		-494.7	-2,494.3	131.9	-13.9	145.76	0.905 Level 1	
9,500.0	6,842.9	9,504.0	6,876.9	78.0	78.1	-104.90		-494.7	-2,594.3	132.3	-18.4	150.67	0.878 Level 1	
9,600.0	6,841.8	9,604.0	6,877.3	80.7	80.9	-105.56		-494.7	-2,694.3	132.7	-22.9	155.54	0.853 Level 1	
9,700.0	6,840.6	9,703.9	6,877.8	83.5	83.6	-106.21		-494.7	-2,794.3	133.1	-27.3	160.38	0.830 Level 1	
9,800.0	6,839.5	9,803.9	6,878.3	86.2	86.4	-106.85		-494.7	-2,894.3	133.5	-31.6	165.17	0.809 Level 1	
9,900.0	6,838.4	9,903.9	6,878.7	89.0	89.1	-107.50		-494.7	-2,994.3	134.0	-35.9	169.92	0.789 Level 1	

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 LDS 1V-314
Project:	SEC.1-T5N-R65W	TVD Reference:	WELL @ 4653.0ft (Original Well Elev)
Reference Site:	LDS 5N65W1U Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4653.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (9-4-14)	Offset TVD Reference:	Offset Datum

Offset Design LDS 5N65W1U Pad Sec.1-T5N-R65W - LDS 1V-414 - Wellbore #1 - Plan #1 (9-4-14)													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
10,000.0	6,837.3	10,003.9	6,879.2	91.7	91.9	-108.13		-494.7	-3,094.3	134.5	-40.1	174.63	0.770	Level 1
10,100.0	6,836.2	10,103.9	6,879.6	94.5	94.7	-108.77		-494.7	-3,194.2	135.0	-44.3	179.29	0.753	Level 1
10,200.0	6,835.1	10,203.9	6,880.1	97.3	97.4	-109.40		-494.7	-3,294.2	135.5	-48.4	183.90	0.737	Level 1
10,300.0	6,833.9	10,303.9	6,880.5	100.1	100.2	-110.02		-494.7	-3,394.2	136.0	-52.4	188.47	0.722	Level 1
10,400.0	6,832.8	10,403.9	6,881.0	102.8	103.0	-110.64		-494.7	-3,494.2	136.6	-56.4	192.98	0.708	Level 1
10,500.0	6,831.7	10,503.8	6,881.4	105.6	105.8	-111.25		-494.7	-3,594.2	137.1	-60.3	197.45	0.695	Level 1
10,600.0	6,830.6	10,603.8	6,881.9	108.4	108.5	-111.86		-494.7	-3,694.2	137.7	-64.2	201.87	0.682	Level 1
10,700.0	6,829.5	10,703.8	6,882.3	111.2	111.3	-112.47		-494.7	-3,794.2	138.3	-67.9	206.23	0.671	Level 1
10,800.0	6,828.4	10,803.8	6,882.8	113.9	114.1	-113.07		-494.7	-3,894.2	138.9	-71.6	210.55	0.660	Level 1
10,900.0	6,827.2	10,903.8	6,883.2	116.7	116.9	-113.66		-494.7	-3,994.1	139.5	-75.3	214.81	0.650	Level 1
11,000.0	6,826.1	11,003.8	6,883.7	119.5	119.7	-114.25		-494.7	-4,094.1	140.2	-78.8	219.02	0.640	Level 1
11,100.0	6,825.0	11,103.8	6,884.1	122.3	122.4	-114.83		-494.7	-4,194.1	140.8	-82.4	223.18	0.631	Level 1
11,200.0	6,823.9	11,203.8	6,884.6	125.1	125.2	-115.41		-494.7	-4,294.1	141.5	-85.8	227.28	0.623	Level 1
11,300.0	6,822.8	11,303.7	6,885.1	127.9	128.0	-115.98		-494.7	-4,394.1	142.2	-89.2	231.33	0.615	Level 1
11,400.0	6,821.7	11,403.7	6,885.5	130.6	130.8	-116.54		-494.7	-4,494.1	142.9	-92.5	235.33	0.607	Level 1
11,500.0	6,820.5	11,503.7	6,886.0	133.4	133.6	-117.11		-494.7	-4,594.1	143.6	-95.7	239.27	0.600	Level 1
11,600.0	6,819.4	11,603.7	6,886.4	136.2	136.4	-117.66		-494.7	-4,694.0	144.3	-98.9	243.16	0.593	Level 1
11,700.0	6,818.3	11,703.7	6,886.9	139.0	139.2	-118.21		-494.7	-4,794.0	145.0	-102.0	247.00	0.587	Level 1
11,800.0	6,817.2	11,803.7	6,887.3	141.8	141.9	-118.75		-494.7	-4,894.0	145.8	-105.0	250.79	0.581	Level 1
11,900.0	6,816.1	11,903.7	6,887.8	144.6	144.7	-119.29		-494.7	-4,994.0	146.5	-108.0	254.52	0.576	Level 1
12,000.0	6,815.0	12,003.7	6,888.2	147.4	147.5	-119.83		-494.7	-5,094.0	147.3	-110.9	258.20	0.571	Level 1
12,100.0	6,813.8	12,103.7	6,888.7	150.2	150.3	-120.35		-494.7	-5,194.0	148.1	-113.7	261.82	0.566	Level 1
12,200.0	6,812.7	12,203.6	6,889.1	153.0	153.1	-120.87		-494.7	-5,294.0	148.9	-116.5	265.40	0.561	Level 1
12,300.0	6,811.6	12,303.6	6,889.6	155.8	155.9	-121.39		-494.7	-5,394.0	149.7	-119.2	268.92	0.557	Level 1
12,400.0	6,810.5	12,403.6	6,890.0	158.6	158.7	-121.90		-494.7	-5,493.9	150.5	-121.9	272.40	0.553	Level 1
12,500.0	6,809.4	12,503.6	6,890.5	161.4	161.5	-122.40		-494.7	-5,593.9	151.4	-124.4	275.82	0.549	Level 1
12,600.0	6,808.3	12,603.6	6,891.0	164.2	164.3	-122.90		-494.7	-5,693.9	152.2	-127.0	279.19	0.545	Level 1
12,700.0	6,807.1	12,703.6	6,891.4	167.0	167.1	-123.40		-494.7	-5,793.9	153.1	-129.4	282.51	0.542	Level 1
12,800.0	6,806.0	12,803.6	6,891.9	169.7	169.9	-123.89		-494.7	-5,893.9	154.0	-131.8	285.79	0.539	Level 1, ES, SF
12,900.0	6,804.9	12,834.6	6,892.0	172.5	170.7	-124.04		-494.7	-5,924.9	169.5	-118.9	288.41	0.588	Level 1
13,000.0	6,803.8	12,834.6	6,892.0	175.3	170.7	-124.04		-494.7	-5,924.9	229.8	-61.0	290.76	0.790	Level 1
13,100.0	6,802.7	12,834.6	6,892.0	178.1	170.7	-124.04		-494.7	-5,924.9	311.2	18.1	293.12	1.062	Level 2
13,200.0	6,801.6	12,834.6	6,892.0	180.9	170.7	-124.04		-494.7	-5,924.9	401.2	105.7	295.48	1.358	Level 3
13,300.0	6,800.4	12,834.6	6,892.0	183.7	170.7	-124.04		-494.7	-5,924.9	495.0	197.1	297.84	1.662	
13,400.0	6,799.3	12,834.6	6,892.0	186.5	170.7	-124.04		-494.7	-5,924.9	590.8	290.6	300.19	1.968	
13,500.0	6,798.2	12,834.6	6,892.0	189.3	170.7	-124.04		-494.7	-5,924.9	687.9	385.3	302.55	2.273	
13,600.0	6,797.1	12,834.6	6,892.0	192.1	170.7	-124.04		-494.7	-5,924.9	785.6	480.7	304.91	2.577	
13,700.0	6,796.0	12,834.6	6,892.0	194.9	170.7	-124.04		-494.7	-5,924.9	883.9	576.6	307.27	2.877	
13,800.0	6,794.9	12,834.6	6,892.0	197.7	170.7	-124.04		-494.7	-5,924.9	982.5	672.9	309.63	3.173	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well LDS 1V-314
Project:	SEC.1-T5N-R65W	TVD Reference:	WELL @ 4653.0ft (Original Well Elev)
Reference Site:	LDS 5N65W1U Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4653.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (9-4-14)	Offset TVD Reference:	Offset Datum

Offset Design Noffsinger Pad Sec.2-T5N-R65W - Noffsinger 2C (Vert.) - Wellbore #1 - Design #1													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)			
12,000.0	6,815.0	6,822.0	6,822.0	147.4	15.2	-93.54	-538.4	-6,045.5	966.5	804.2	162.26	5.957		
12,100.0	6,813.8	6,820.8	6,820.8	150.2	15.2	-93.17	-538.4	-6,045.5	868.3	703.2	165.11	5.259		
12,200.0	6,812.7	6,819.7	6,819.7	153.0	15.2	-92.80	-538.4	-6,045.5	770.5	602.6	167.95	4.588		
12,300.0	6,811.6	6,818.6	6,818.6	155.8	15.2	-92.43	-538.4	-6,045.5	673.4	502.6	170.79	3.943		
12,400.0	6,810.5	6,817.5	6,817.5	158.6	15.2	-92.06	-538.4	-6,045.5	577.3	403.6	173.62	3.325		
12,500.0	6,809.4	6,816.4	6,816.4	161.4	15.2	-91.68	-538.4	-6,045.5	482.7	306.2	176.45	2.736		
12,600.0	6,808.3	6,815.3	6,815.3	164.2	15.2	-91.31	-538.4	-6,045.5	390.8	211.6	179.27	2.180		
12,700.0	6,807.1	6,814.1	6,814.1	167.0	15.2	-90.94	-538.4	-6,045.5	304.2	122.1	182.09	1.670		
12,800.0	6,806.0	6,813.0	6,813.0	169.7	15.2	-90.56	-538.4	-6,045.5	228.6	43.7	184.90	1.237 Level 2		
12,900.0	6,804.9	6,811.9	6,811.9	172.5	15.2	-90.19	-538.4	-6,045.5	179.0	-8.7	187.71	0.954 Level 1		
12,951.2	6,804.3	6,811.3	6,811.3	174.0	15.2	-90.00	-538.4	-6,045.5	171.5	-17.6	189.14	0.907 Level 1, CC, ES, SF		
13,000.0	6,803.8	6,810.8	6,810.8	175.3	15.2	-89.82	-538.4	-6,045.5	178.3	-12.2	190.51	0.936 Level 1		
13,100.0	6,802.7	6,809.7	6,809.7	178.1	15.2	-89.44	-538.4	-6,045.5	227.0	33.7	193.30	1.175 Level 2		
13,200.0	6,801.6	6,808.6	6,808.6	180.9	15.2	-89.07	-538.4	-6,045.5	302.2	106.1	196.08	1.541		
13,300.0	6,800.4	6,807.4	6,807.4	183.7	15.2	-88.70	-538.4	-6,045.5	388.6	189.8	198.86	1.954		
13,400.0	6,799.3	6,806.3	6,806.3	186.5	15.2	-88.33	-538.4	-6,045.5	480.4	278.8	201.62	2.383		
13,500.0	6,798.2	6,805.2	6,805.2	189.3	15.2	-87.95	-538.4	-6,045.5	574.9	370.5	204.38	2.813		
13,600.0	6,797.1	6,804.1	6,804.1	192.1	15.2	-87.58	-538.4	-6,045.5	671.0	463.9	207.13	3.240		
13,700.0	6,796.0	6,803.0	6,803.0	194.9	15.2	-87.21	-538.4	-6,045.5	768.1	558.2	209.87	3.660		
13,800.0	6,794.9	6,801.9	6,801.9	197.7	15.2	-86.84	-538.4	-6,045.5	865.9	653.3	212.60	4.073		
13,900.0	6,793.7	6,800.7	6,800.7	200.5	15.2	-86.46	-538.4	-6,045.5	964.1	748.8	215.33	4.477		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well LDS 1V-314
Project:	SEC.1-T5N-R65W	TVD Reference:	WELL @ 4653.0ft (Original Well Elev)
Reference Site:	LDS 5N65W1U Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4653.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (9-4-14)	Offset TVD Reference:	Offset Datum

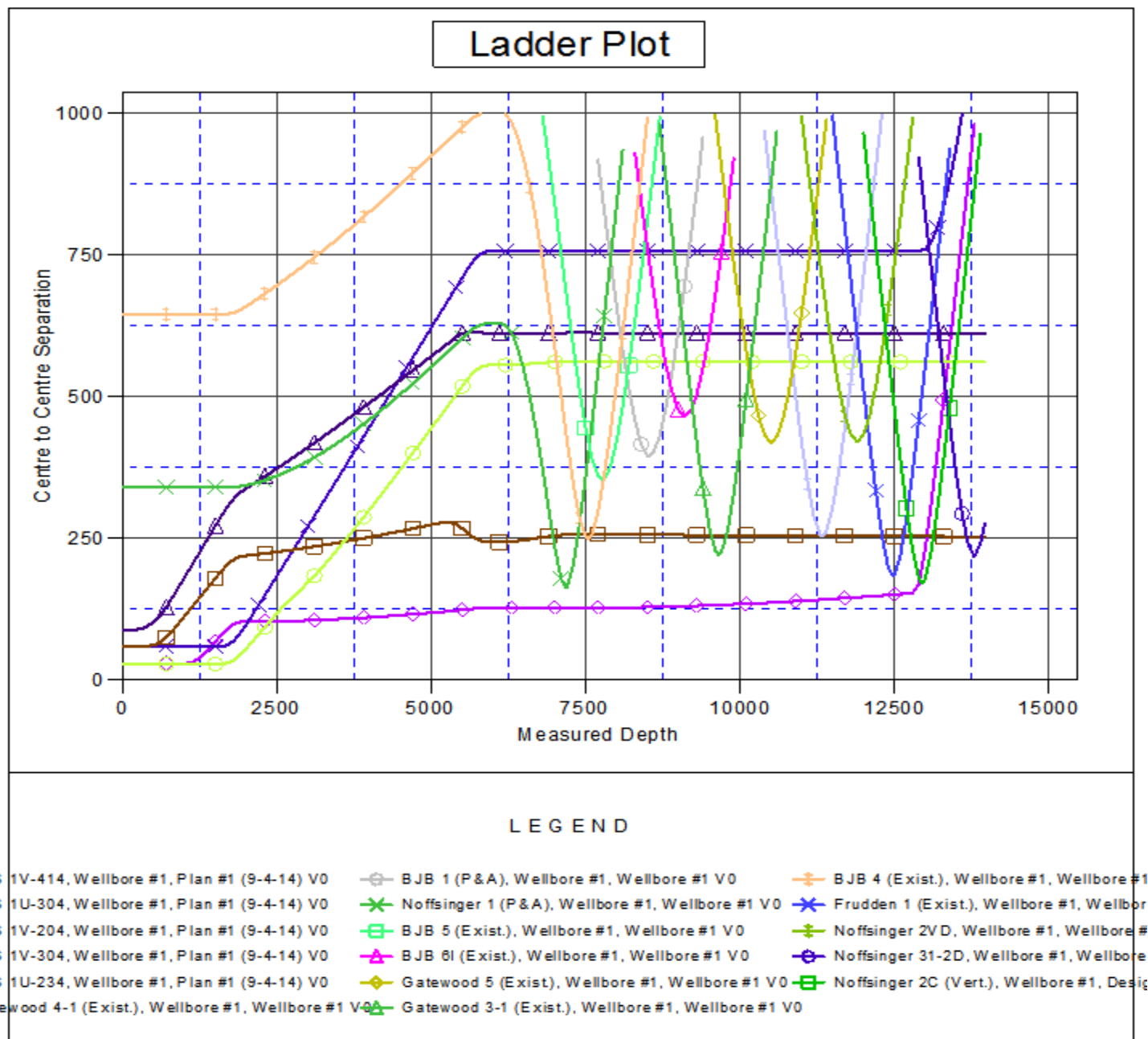
Offset Design													Offset Site Error:	0.0 ft
Survey Program: 700-MWD													Offset Well Error:	0.0 ft
Reference														
		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
11,000.0	6,826.1	6,983.7	6,849.9	119.5	23.3	-93.64	-788.1	-4,994.6	994.1	852.0	142.08	6.996		
11,100.0	6,825.0	6,980.7	6,846.8	122.3	23.3	-93.23	-788.1	-4,994.7	904.5	759.6	144.92	6.241		
11,200.0	6,823.9	6,977.6	6,843.8	125.1	23.3	-92.82	-788.1	-4,994.8	817.4	669.6	147.76	5.532		
11,300.0	6,822.8	6,974.5	6,840.7	127.9	23.3	-92.40	-788.1	-4,994.8	733.5	582.9	150.59	4.871		
11,400.0	6,821.7	6,971.4	6,837.6	130.6	23.3	-91.98	-788.1	-4,994.9	654.2	500.8	153.42	4.264		
11,500.0	6,820.5	6,968.3	6,834.5	133.4	23.3	-91.56	-788.1	-4,994.9	581.3	425.1	156.24	3.720		
11,600.0	6,819.4	6,965.2	6,831.4	136.2	23.3	-91.13	-788.1	-4,995.0	517.5	358.4	159.06	3.253		
11,700.0	6,818.3	6,962.1	6,828.2	139.0	23.3	-90.70	-788.1	-4,995.1	466.6	304.7	161.87	2.882		
11,800.0	6,817.2	6,958.9	6,825.1	141.8	23.3	-90.27	-788.1	-4,995.1	433.0	268.4	164.67	2.630		
11,900.0	6,816.1	6,955.7	6,821.9	144.6	23.3	-89.84	-788.1	-4,995.2	421.1	253.7	167.46	2.515		
11,900.9	6,816.1	6,955.7	6,821.9	144.6	23.3	-89.84	-788.1	-4,995.2	421.1	253.7	167.49	2.514 CC, ES, SF		
12,000.0	6,815.0	6,952.6	6,818.7	147.4	23.3	-89.41	-788.1	-4,995.3	432.6	262.4	170.25	2.541		
12,100.0	6,813.8	6,949.3	6,815.5	150.2	23.3	-88.97	-788.1	-4,995.3	465.8	292.8	173.03	2.692		
12,200.0	6,812.7	6,946.1	6,812.3	153.0	23.3	-88.54	-788.1	-4,995.4	516.5	340.7	175.80	2.938		
12,300.0	6,811.6	6,944.0	6,810.2	155.8	23.3	-88.25	-788.0	-4,995.4	580.1	401.5	178.57	3.249		
12,400.0	6,810.5	6,939.8	6,806.0	158.6	23.3	-87.68	-788.0	-4,995.5	652.9	471.6	181.30	3.601		
12,500.0	6,809.4	6,936.8	6,803.0	161.4	23.3	-87.27	-788.0	-4,995.6	732.1	548.0	184.05	3.978		
12,600.0	6,808.3	6,933.9	6,800.0	164.2	23.3	-86.87	-788.0	-4,995.6	815.9	629.1	186.78	4.368		
12,700.0	6,807.1	6,931.0	6,797.2	167.0	23.3	-86.48	-788.0	-4,995.7	902.9	713.4	189.50	4.765		
12,800.0	6,806.0	6,928.2	6,794.3	169.7	23.3	-86.10	-788.0	-4,995.8	992.5	800.2	192.22	5.163		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well LDS 1V-314
Project:	SEC.1-T5N-R65W	TVD Reference:	WELL @ 4653.0ft (Original Well Elev)
Reference Site:	LDS 5N65W1U Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4653.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (9-4-14)	Offset TVD Reference:	Offset Datum

Offset Design Noffsinger Pad Sec.2-T5N-R65W - Noffsinger 31-2D - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 700-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)		
12,900.0	6,804.9	6,951.1	6,844.0	172.5	21.3	100.94	-149.2	-6,890.0	922.3	732.8	189.50	4.867	
13,000.0	6,803.8	6,947.2	6,840.1	175.3	21.3	99.94	-149.1	-6,890.1	825.6	632.8	192.81	4.282	
13,100.0	6,802.7	6,943.2	6,836.1	178.1	21.3	98.92	-149.0	-6,890.2	729.8	533.7	196.10	3.721	
13,200.0	6,801.6	6,939.2	6,832.1	180.9	21.3	97.88	-148.9	-6,890.3	635.1	435.8	199.36	3.186	
13,300.0	6,800.4	6,935.1	6,828.0	183.7	21.3	96.83	-148.8	-6,890.5	542.4	339.9	202.57	2.678	
13,400.0	6,799.3	6,931.0	6,823.9	186.5	21.3	95.77	-148.7	-6,890.6	452.8	247.0	205.74	2.201	
13,500.0	6,798.2	6,926.9	6,819.8	189.3	21.3	94.69	-148.6	-6,890.7	368.5	159.6	208.86	1.764	
13,600.0	6,797.1	6,922.7	6,815.6	192.1	21.3	93.59	-148.5	-6,890.9	294.1	82.2	211.92	1.388	Level 3
13,700.0	6,796.0	6,918.4	6,811.3	194.9	21.3	92.48	-148.4	-6,891.0	239.1	24.2	214.92	1.113	Level 2
13,796.8	6,794.9	6,914.3	6,807.2	197.6	21.3	91.39	-148.3	-6,891.1	218.7	0.9	217.76	1.004	Level 2, CC
13,800.0	6,794.9	6,914.1	6,807.0	197.7	21.3	91.35	-148.3	-6,891.1	218.7	0.8	217.85	1.004	Level 2, ES, SF
13,900.0	6,793.7	6,909.8	6,802.7	200.5	21.3	90.22	-148.2	-6,891.3	241.7	21.0	220.71	1.095	Level 2
13,965.7	6,793.0	6,906.9	6,799.8	202.4	21.3	89.46	-148.2	-6,891.4	276.2	53.6	222.54	1.241	Level 2

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well LDS 1V-314
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Reference Site:	LDS 5N65W1U Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4653.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (9-4-14)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4653.0ft (Original Well Elev) Coordinates are relative to: LDS 1V-314
 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: 0.58°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well LDS 1V-314
Project:	SEC.1-T5N-R65W	TVD Reference:	WELL @ 4653.0ft (Original Well Elev)
Reference Site:	LDS 5N65W1U Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4653.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (9-4-14)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4653.0ft (Original Well Elev) Coordinates are relative to: LDS 1V-314

Offset Depths are relative to Offset Datum

Coordinate System is US State Plane 1983, Colorado Northern Zone

Central Meridian is -105.500000 °

Grid Convergence at Surface is: 0.58°

