

PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **LDS 1V-234**

Surface Location: LDS 5N65W1W Pad Sec.1-T5N-R65W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

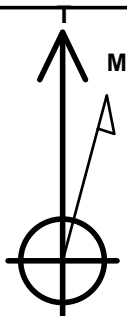
Ground Elevation: 4613.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1400493.84	3249728.30	40.429290	-104.602940	

Original Well Elev WELL @ 4628.0ft (Original Well Elev)

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 2124'FNL & 332'FEL, Sec.1	1.0	0.0	0.0	Point
BHL 1766'FNL & 2144'FEL, Sec.2	6694.0	365.4	-7127.0	Point



Azimuths to True North
Magnetic North: 8.34°

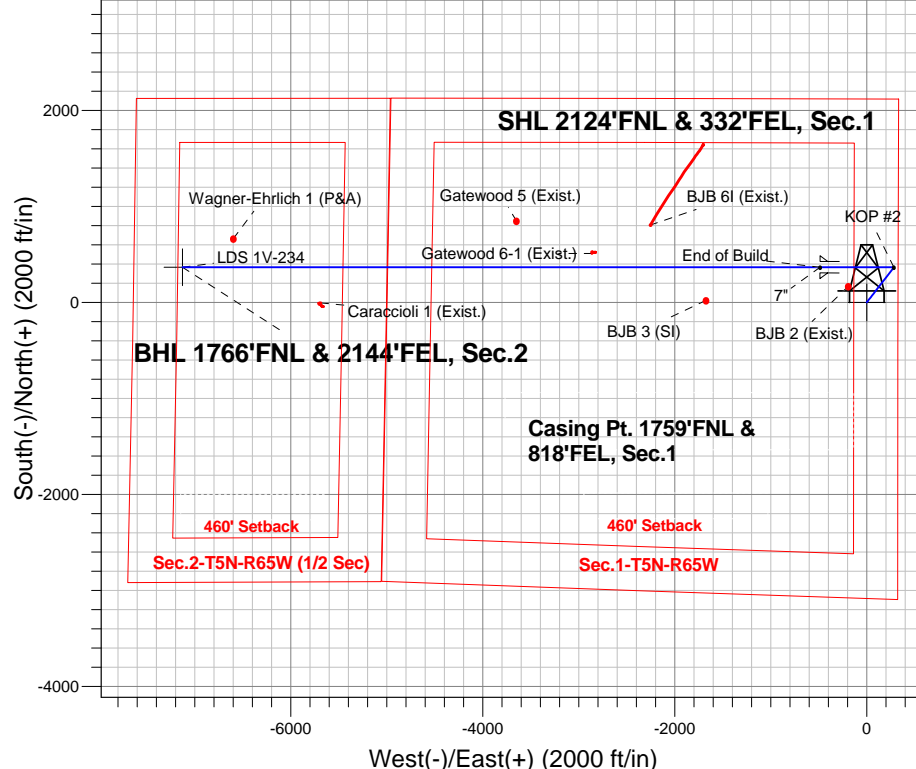
Magnetic Field
Strength: 52825.7srT
Dip Angle: 66.99°
Date: 9/4/2014
Model: IGRF2010

LDS 5N65W1W Pad Sec.1-T5N-R65W
LDS 1V-234
Plan #1 (9-4-14)

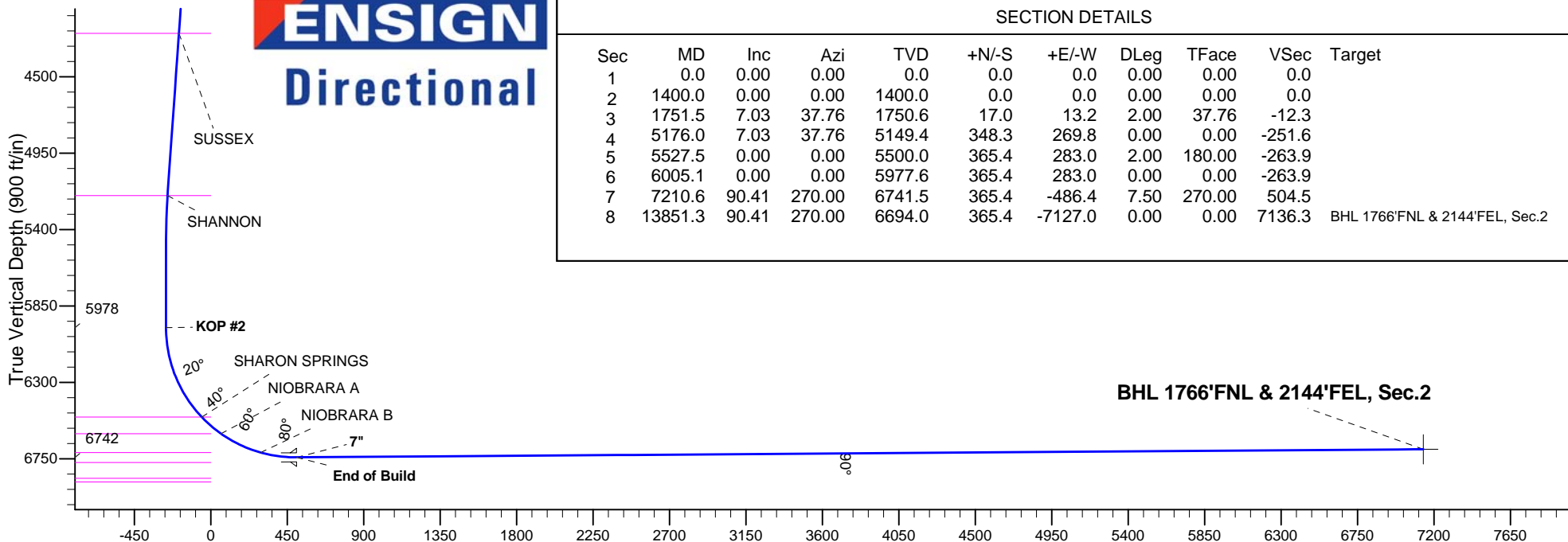
ANNOTATIONS

TVD	MD	Annotation
1400.0	1400.0	KOP #1
5977.6	6005.1	KOP #2
6741.5	7210.6	End of Build

South(-)/North(+) (2000 ft/in)



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	1400.0	0.00	0.00	1400.0	0.0	0.0	0.00	0.00	0.0	
3	1751.5	7.03	37.76	1750.6	17.0	13.2	2.00	37.76	-12.3	
4	5176.0	7.03	37.76	5149.4	348.3	269.8	0.00	0.00	-251.6	
5	5527.5	0.00	0.00	5500.0	365.4	283.0	2.00	180.00	-263.9	
6	6005.1	0.00	0.00	5977.6	365.4	283.0	0.00	0.00	-263.9	
7	7210.6	90.41	270.00	6741.5	365.4	-486.4	7.50	270.00	504.5	
8	13851.3	90.41	270.00	6694.0	365.4	-7127.0	0.00	0.00	7136.3	BHL 1766'FNL & 2144'FEL, Sec.2

BHL 1766'FNL & 2144'FEL, Sec.2

Vertical Section at 272.93° (900 ft/in)



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.1-T5N-R65W

LDS 5N65W1W Pad Sec.1-T5N-R65W

LDS 1V-234

Wellbore #1

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

Standard Planning Report

17 September, 2014

Database:	landmark	Local Co-ordinate Reference:	Well LDS 1V-234
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4628.0ft (Original Well Elev)
Project:	SEC.1-T5N-R65W	MD Reference:	WELL @ 4628.0ft (Original Well Elev)
Site:	LDS 5N65W1W Pad Sec.1-T5N-R65W	North Reference:	True
Well:	LDS 1V-234	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 5N65W1W Pad Sec.1-T5N-R65W											
Site Position:						Northing:			1,400,464.71 ft			Latitude:			40.429210		
From:			Lat/Long			Easting:			3,249,728.59ft			Longitude:			-104.602940		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			0.58 °		

Well	LDS 1V-234					
Well Position	+N/-S	29.1 ft	Northing:	1,400,493.84 ft	Latitude:	40.429290
	+E/-W	0.0 ft	Easting:	3,249,728.30 ft	Longitude:	-104.602940
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,613.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	9/4/2014	8.35	66.99	52,826

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	272.93

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,751.5	7.03	37.76	1,750.6	17.0	13.2	2.00	2.00	0.00	37.76	
5,176.0	7.03	37.76	5,149.4	348.3	269.8	0.00	0.00	0.00	0.00	
5,527.5	0.00	0.00	5,500.0	365.4	283.0	2.00	-2.00	0.00	180.00	
6,005.1	0.00	0.00	5,977.6	365.4	283.0	0.00	0.00	0.00	0.00	
7,210.6	90.41	270.00	6,741.5	365.4	-486.4	7.50	7.50	0.00	270.00	
13,851.3	90.41	270.00	6,694.0	365.4	-7,127.0	0.00	0.00	0.00	0.00	BHL 1766'FNL & 21

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Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4628.0ft (Original Well Elev)
Project:	SEC.1-T5N-R65W	MD Reference:	WELL @ 4628.0ft (Original Well Elev)
Site:	LDS 5N65W1W Pad Sec.1-T5N-R65W	North Reference:	True
Well:	LDS 1V-234	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
KOP #1									
1,500.0	2.00	37.76	1,500.0	1.4	1.1	-1.0	2.00	2.00	0.00
1,600.0	4.00	37.76	1,599.8	5.5	4.3	-4.0	2.00	2.00	0.00
1,700.0	6.00	37.76	1,699.5	12.4	9.6	-9.0	2.00	2.00	0.00
1,751.5	7.03	37.76	1,750.6	17.0	13.2	-12.3	2.00	2.00	0.00
1,800.0	7.03	37.76	1,798.8	21.7	16.8	-15.7	0.00	0.00	0.00
1,900.0	7.03	37.76	1,898.0	31.4	24.3	-22.7	0.00	0.00	0.00
2,000.0	7.03	37.76	1,997.3	41.1	31.8	-29.7	0.00	0.00	0.00
2,100.0	7.03	37.76	2,096.5	50.7	39.3	-36.7	0.00	0.00	0.00
2,200.0	7.03	37.76	2,195.7	60.4	46.8	-43.6	0.00	0.00	0.00
2,300.0	7.03	37.76	2,295.0	70.1	54.3	-50.6	0.00	0.00	0.00
2,400.0	7.03	37.76	2,394.2	79.8	61.8	-57.6	0.00	0.00	0.00
2,500.0	7.03	37.76	2,493.5	89.4	69.3	-64.6	0.00	0.00	0.00
2,600.0	7.03	37.76	2,592.7	99.1	76.8	-71.6	0.00	0.00	0.00
2,700.0	7.03	37.76	2,692.0	108.8	84.3	-78.6	0.00	0.00	0.00
2,800.0	7.03	37.76	2,791.2	118.5	91.8	-85.6	0.00	0.00	0.00
2,900.0	7.03	37.76	2,890.5	128.1	99.3	-92.6	0.00	0.00	0.00
3,000.0	7.03	37.76	2,989.7	137.8	106.7	-99.6	0.00	0.00	0.00
3,100.0	7.03	37.76	3,089.0	147.5	114.2	-106.5	0.00	0.00	0.00
3,200.0	7.03	37.76	3,188.2	157.2	121.7	-113.5	0.00	0.00	0.00
3,300.0	7.03	37.76	3,287.5	166.8	129.2	-120.5	0.00	0.00	0.00
3,400.0	7.03	37.76	3,386.7	176.5	136.7	-127.5	0.00	0.00	0.00
3,500.0	7.03	37.76	3,486.0	186.2	144.2	-134.5	0.00	0.00	0.00
PARKMAN									
3,600.0	7.03	37.76	3,585.2	195.9	151.7	-141.5	0.00	0.00	0.00
3,700.0	7.03	37.76	3,684.5	205.5	159.2	-148.5	0.00	0.00	0.00
3,800.0	7.03	37.76	3,783.7	215.2	166.7	-155.5	0.00	0.00	0.00
3,900.0	7.03	37.76	3,883.0	224.9	174.2	-162.4	0.00	0.00	0.00
4,000.0	7.03	37.76	3,982.2	234.6	181.7	-169.4	0.00	0.00	0.00
4,100.0	7.03	37.76	4,081.5	244.2	189.2	-176.4	0.00	0.00	0.00
4,200.0	7.03	37.76	4,180.7	253.9	196.7	-183.4	0.00	0.00	0.00
4,263.8	7.03	37.76	4,244.0	260.1	201.5	-187.9	0.00	0.00	0.00
SUSSEX									
4,300.0	7.03	37.76	4,280.0	263.6	204.2	-190.4	0.00	0.00	0.00
4,400.0	7.03	37.76	4,379.2	273.3	211.7	-197.4	0.00	0.00	0.00
4,500.0	7.03	37.76	4,478.5	282.9	219.2	-204.4	0.00	0.00	0.00
4,600.0	7.03	37.76	4,577.7	292.6	226.6	-211.4	0.00	0.00	0.00
4,700.0	7.03	37.76	4,677.0	302.3	234.1	-218.4	0.00	0.00	0.00

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Project:	SEC.1-T5N-R65W	MD Reference:	WELL @ 4628.0ft (Original Well Elev)
Site:	LDS 5N65W1W Pad Sec.1-T5N-R65W	North Reference:	True
Well:	LDS 1V-234	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)	
4,800.0	7.03	37.76	4,776.2	311.9	241.6	-225.3	0.00	0.00	0.00	
4,900.0	7.03	37.76	4,875.5	321.6	249.1	-232.3	0.00	0.00	0.00	
5,000.0	7.03	37.76	4,974.7	331.3	256.6	-239.3	0.00	0.00	0.00	
5,100.0	7.03	37.76	5,074.0	341.0	264.1	-246.3	0.00	0.00	0.00	
5,176.0	7.03	37.76	5,149.4	348.3	269.8	-251.6	0.00	0.00	0.00	
5,200.0	6.55	37.76	5,173.2	350.6	271.5	-253.2	2.00	-2.00	0.00	
5,226.9	6.01	37.76	5,200.0	352.9	273.4	-254.9	2.00	-2.00	0.00	
SHANNON										
5,300.0	4.55	37.76	5,272.7	358.2	277.5	-258.8	2.00	-2.00	0.00	
5,400.0	2.55	37.76	5,372.5	363.1	281.3	-262.3	2.00	-2.00	0.00	
5,500.0	0.55	37.76	5,472.5	365.2	282.9	-263.8	2.00	-2.00	0.00	
5,527.5	0.00	0.00	5,500.0	365.4	283.0	-263.9	2.00	-2.00	0.00	
5,600.0	0.00	0.00	5,572.5	365.4	283.0	-263.9	0.00	0.00	0.00	
5,700.0	0.00	0.00	5,672.5	365.4	283.0	-263.9	0.00	0.00	0.00	
5,800.0	0.00	0.00	5,772.5	365.4	283.0	-263.9	0.00	0.00	0.00	
5,900.0	0.00	0.00	5,872.5	365.4	283.0	-263.9	0.00	0.00	0.00	
6,000.0	0.00	0.00	5,972.5	365.4	283.0	-263.9	0.00	0.00	0.00	
6,005.1	0.00	0.00	5,977.6	365.4	283.0	-263.9	0.00	0.00	0.00	
KOP #2										
6,100.0	7.12	270.00	6,072.3	365.4	277.1	-258.0	7.50	7.50	0.00	
6,200.0	14.62	270.00	6,170.4	365.4	258.3	-239.2	7.50	7.50	0.00	
6,300.0	22.12	270.00	6,265.2	365.4	226.8	-207.8	7.50	7.50	0.00	
6,400.0	29.62	270.00	6,355.1	365.4	183.2	-164.2	7.50	7.50	0.00	
6,500.0	37.12	270.00	6,438.6	365.4	128.2	-109.3	7.50	7.50	0.00	
6,585.8	43.56	270.00	6,504.0	365.4	72.7	-53.9	7.50	7.50	0.00	
SHARON SPRINGS										
6,600.0	44.62	270.00	6,514.2	365.4	62.8	-44.0	7.50	7.50	0.00	
6,700.0	52.12	270.00	6,580.6	365.4	-11.9	30.5	7.50	7.50	0.00	
6,736.0	54.82	270.00	6,602.0	365.4	-40.8	59.4	7.50	7.50	0.00	
NIOBRARA A										
6,800.0	59.62	270.00	6,636.6	365.4	-94.6	113.1	7.50	7.50	0.00	
6,900.0	67.12	270.00	6,681.4	365.4	-183.9	202.4	7.50	7.50	0.00	
6,995.6	74.29	270.00	6,713.0	365.4	-274.1	292.4	7.50	7.50	0.00	
NIOBRARA B										
7,000.0	74.62	270.00	6,714.2	365.4	-278.3	296.6	7.50	7.50	0.00	
7,100.0	82.12	270.00	6,734.3	365.4	-376.2	394.4	7.50	7.50	0.00	
7,200.0	89.62	270.00	6,741.5	365.4	-475.8	493.9	7.50	7.50	0.00	
7,210.6	90.41	270.00	6,741.5	365.4	-486.4	504.5	7.47	7.47	0.00	
End of Build - 7"										
7,300.0	90.41	270.00	6,740.9	365.4	-575.8	593.8	0.00	0.00	0.00	
7,400.0	90.41	270.00	6,740.2	365.4	-675.8	693.7	0.00	0.00	0.00	
7,500.0	90.41	270.00	6,739.4	365.4	-775.8	793.5	0.00	0.00	0.00	
7,600.0	90.41	270.00	6,738.7	365.4	-875.8	893.4	0.00	0.00	0.00	
7,700.0	90.41	270.00	6,738.0	365.4	-975.8	993.3	0.00	0.00	0.00	
7,800.0	90.41	270.00	6,737.3	365.4	-1,075.8	1,093.1	0.00	0.00	0.00	
7,900.0	90.41	270.00	6,736.6	365.4	-1,175.8	1,193.0	0.00	0.00	0.00	
8,000.0	90.41	270.00	6,735.9	365.4	-1,275.8	1,292.9	0.00	0.00	0.00	
8,100.0	90.41	270.00	6,735.2	365.4	-1,375.8	1,392.7	0.00	0.00	0.00	
8,200.0	90.41	270.00	6,734.4	365.4	-1,475.8	1,492.6	0.00	0.00	0.00	
8,300.0	90.41	270.00	6,733.7	365.4	-1,575.8	1,592.5	0.00	0.00	0.00	
8,400.0	90.41	270.00	6,733.0	365.4	-1,675.8	1,692.3	0.00	0.00	0.00	
8,500.0	90.41	270.00	6,732.3	365.4	-1,775.8	1,792.2	0.00	0.00	0.00	

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Site:	LDS 5N65W1W Pad Sec.1-T5N-R65W	North Reference:	True
Well:	LDS 1V-234	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)
8,600.0	90.41	270.00	6,731.6	365.4	-1,875.8	1,892.1	0.00	0.00	0.00
8,700.0	90.41	270.00	6,730.9	365.4	-1,975.8	1,991.9	0.00	0.00	0.00
8,800.0	90.41	270.00	6,730.1	365.4	-2,075.8	2,091.8	0.00	0.00	0.00
8,900.0	90.41	270.00	6,729.4	365.4	-2,175.8	2,191.7	0.00	0.00	0.00
9,000.0	90.41	270.00	6,728.7	365.4	-2,275.8	2,291.5	0.00	0.00	0.00
9,100.0	90.41	270.00	6,728.0	365.4	-2,375.8	2,391.4	0.00	0.00	0.00
9,200.0	90.41	270.00	6,727.3	365.4	-2,475.8	2,491.3	0.00	0.00	0.00
9,300.0	90.41	270.00	6,726.6	365.4	-2,575.8	2,591.1	0.00	0.00	0.00
9,400.0	90.41	270.00	6,725.9	365.4	-2,675.8	2,691.0	0.00	0.00	0.00
9,500.0	90.41	270.00	6,725.1	365.4	-2,775.8	2,790.9	0.00	0.00	0.00
9,600.0	90.41	270.00	6,724.4	365.4	-2,875.8	2,890.7	0.00	0.00	0.00
9,700.0	90.41	270.00	6,723.7	365.4	-2,975.8	2,990.6	0.00	0.00	0.00
9,800.0	90.41	270.00	6,723.0	365.4	-3,075.8	3,090.5	0.00	0.00	0.00
9,900.0	90.41	270.00	6,722.3	365.4	-3,175.8	3,190.3	0.00	0.00	0.00
10,000.0	90.41	270.00	6,721.6	365.4	-3,275.8	3,290.2	0.00	0.00	0.00
10,100.0	90.41	270.00	6,720.8	365.4	-3,375.8	3,390.1	0.00	0.00	0.00
10,200.0	90.41	270.00	6,720.1	365.4	-3,475.8	3,489.9	0.00	0.00	0.00
10,300.0	90.41	270.00	6,719.4	365.4	-3,575.8	3,589.8	0.00	0.00	0.00
10,400.0	90.41	270.00	6,718.7	365.4	-3,675.8	3,689.7	0.00	0.00	0.00
10,500.0	90.41	270.00	6,718.0	365.4	-3,775.8	3,789.5	0.00	0.00	0.00
10,600.0	90.41	270.00	6,717.3	365.4	-3,875.8	3,889.4	0.00	0.00	0.00
10,700.0	90.41	270.00	6,716.5	365.4	-3,975.8	3,989.3	0.00	0.00	0.00
10,800.0	90.41	270.00	6,715.8	365.4	-4,075.8	4,089.1	0.00	0.00	0.00
10,900.0	90.41	270.00	6,715.1	365.4	-4,175.8	4,189.0	0.00	0.00	0.00
11,000.0	90.41	270.00	6,714.4	365.4	-4,275.8	4,288.8	0.00	0.00	0.00
11,100.0	90.41	270.00	6,713.7	365.4	-4,375.7	4,388.7	0.00	0.00	0.00
11,200.0	90.41	270.00	6,713.0	365.4	-4,475.7	4,488.6	0.00	0.00	0.00
11,300.0	90.41	270.00	6,712.3	365.4	-4,575.7	4,588.4	0.00	0.00	0.00
11,400.0	90.41	270.00	6,711.5	365.4	-4,675.7	4,688.3	0.00	0.00	0.00
11,500.0	90.41	270.00	6,710.8	365.4	-4,775.7	4,788.2	0.00	0.00	0.00
11,600.0	90.41	270.00	6,710.1	365.4	-4,875.7	4,888.0	0.00	0.00	0.00
11,700.0	90.41	270.00	6,709.4	365.4	-4,975.7	4,987.9	0.00	0.00	0.00
11,800.0	90.41	270.00	6,708.7	365.4	-5,075.7	5,087.8	0.00	0.00	0.00
11,900.0	90.41	270.00	6,708.0	365.4	-5,175.7	5,187.6	0.00	0.00	0.00
12,000.0	90.41	270.00	6,707.2	365.4	-5,275.7	5,287.5	0.00	0.00	0.00
12,100.0	90.41	270.00	6,706.5	365.4	-5,375.7	5,387.4	0.00	0.00	0.00
12,200.0	90.41	270.00	6,705.8	365.4	-5,475.7	5,487.2	0.00	0.00	0.00
12,300.0	90.41	270.00	6,705.1	365.4	-5,575.7	5,587.1	0.00	0.00	0.00
12,400.0	90.41	270.00	6,704.4	365.4	-5,675.7	5,687.0	0.00	0.00	0.00
12,500.0	90.41	270.00	6,703.7	365.4	-5,775.7	5,786.8	0.00	0.00	0.00
12,600.0	90.41	270.00	6,703.0	365.4	-5,875.7	5,886.7	0.00	0.00	0.00
12,700.0	90.41	270.00	6,702.2	365.4	-5,975.7	5,986.6	0.00	0.00	0.00
12,800.0	90.41	270.00	6,701.5	365.4	-6,075.7	6,086.4	0.00	0.00	0.00
12,900.0	90.41	270.00	6,700.8	365.4	-6,175.7	6,186.3	0.00	0.00	0.00
13,000.0	90.41	270.00	6,700.1	365.4	-6,275.7	6,286.2	0.00	0.00	0.00
13,100.0	90.41	270.00	6,699.4	365.4	-6,375.7	6,386.0	0.00	0.00	0.00
13,200.0	90.41	270.00	6,698.7	365.4	-6,475.7	6,485.9	0.00	0.00	0.00
13,300.0	90.41	270.00	6,697.9	365.4	-6,575.7	6,585.8	0.00	0.00	0.00
13,400.0	90.41	270.00	6,697.2	365.4	-6,675.7	6,685.6	0.00	0.00	0.00
13,500.0	90.41	270.00	6,696.5	365.4	-6,775.7	6,785.5	0.00	0.00	0.00
13,600.0	90.41	270.00	6,695.8	365.4	-6,875.7	6,885.4	0.00	0.00	0.00
13,700.0	90.41	270.00	6,695.1	365.4	-6,975.7	6,985.2	0.00	0.00	0.00
13,800.0	90.41	270.00	6,694.4	365.4	-7,075.7	7,085.1	0.00	0.00	0.00

Database:	landmark	Local Co-ordinate Reference:	Well LDS 1V-234
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4628.0ft (Original Well Elev)
Project:	SEC.1-T5N-R65W	MD Reference:	WELL @ 4628.0ft (Original Well Elev)
Site:	LDS 5N65W1W Pad Sec.1-T5N-R65W	North Reference:	True
Well:	LDS 1V-234	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)
13,851.3	90.41	270.00	6,694.0	365.4	-7,127.0	7,136.3	0.00	0.00	0.00

Targets

Target Name	- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N-S (ft)	+E-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
BHL 1766'FNL & 214'	- plan hits target	0.00	0.00	6,694.0	365.4	-7,127.0	1,400,787.07	3,242,598.29	40.430290	-104.628540
SHL 2124'FNL & 332'	- plan hits target	0.00	0.00	1.0	0.0	0.0	1,400,493.85	3,249,728.30	40.429290	-104.602940

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,210.6	6,741.5	7"	7	7-1/2

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,500.0	3,486.0	PARKMAN		0.00	
4,263.8	4,244.0	SUSSEX		0.00	
5,226.9	5,200.0	SHANNON		0.00	
6,585.8	6,504.0	SHARON SPRINGS		0.00	
6,736.0	6,602.0	NIOBRARA A		0.00	
6,995.6	6,713.0	NIOBRARA B		0.00	
	6,772.0	NIOBRARA C		0.00	
	6,865.0	FT HAYS		0.00	
	6,887.0	CODELL		0.00	

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates	Comment
1,400.0	1,400.0	+N-S (ft) 0.0	KOP #1
6,005.1	5,977.6	+E-W (ft) 283.0	KOP #2
7,210.6	6,741.5	+E-W (ft) -486.4	End of Build



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.1-T5N-R65W

LDS 5N65W1W Pad Sec.1-T5N-R65W

LDS 1V-234

Wellbore #1

Plan #1 (9-4-14)

Anticollision Report

17 September, 2014



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well LDS 1V-234
Project:	SEC.1-T5N-R65W	TVD Reference:	WELL @ 4628.0ft (Original Well Elev)
Reference Site:	LDS 5N65W1W Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4628.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-234	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	9/17/2014		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	13,851.3	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 2 (Exist.) - Wellbore #1 - Wellbore #1	6,908.9	6,670.8	197.8	46.9	1.311	Level 3, CC, ES, SF
BJB 3 (SI) - Wellbore #1 - Wellbore #1	8,397.4	6,737.0	343.4	156.9	1.841	CC
BJB 3 (SI) - Wellbore #1 - Wellbore #1	8,400.0	6,737.0	343.4	156.8	1.840	ES, SF
BJB 6I (Exist.) - Wellbore #1 - Wellbore #1	8,973.0	6,896.9	438.0	353.0	5.153	CC, ES
BJB 6I (Exist.) - Wellbore #1 - Wellbore #1	9,000.0	6,896.9	438.8	353.1	5.118	SF
Gatewood 5 (Exist.) - Wellbore #1 - Wellbore #1	10,374.0	6,729.9	483.8	243.1	2.010	CC
Gatewood 5 (Exist.) - Wellbore #1 - Wellbore #1	10,400.0	6,729.7	484.5	243.1	2.007	ES, SF
Gatewood 6-1 (Exist.) - Wellbore #1 - Wellbore #1	9,586.5	6,734.2	147.3	-44.2	0.769	Level 1, CC, ES, SF
Existing Wells Sec.2-T5N-R65W						
Caraccioli 1 (Exist.) - Wellbore #1 - Wellbore #1	12,415.9	6,722.8	371.0	194.2	2.098	CC, ES, SF
Wagner-Ehrlich 1 (P&A) - Wellbore #1 - Wellbore #1	13,322.2	6,715.8	298.6	-24.1	0.925	Level 1, CC, ES, SF
LDS 5N65W1U Pad Sec.1-T5N-R65W						
LDS 1V-304 - Wellbore #1 - Plan #1 (9-4-14)	6,000.0	6,082.4	291.5	254.9	7.960	CC
LDS 1V-304 - Wellbore #1 - Plan #1 (9-4-14)	13,851.3	13,991.3	298.5	-99.2	0.750	Level 1, ES, SF
LDS 5N65W1W Pad Sec.1-T5N-R65W						
LDS 1V-434 - Wellbore #1 - Plan #1 (9-4-14)	1,000.0	1,000.0	29.3	25.0	6.857	CC
LDS 1V-434 - Wellbore #1 - Plan #1 (9-4-14)	13,851.3	13,995.6	227.9	-31.6	0.878	Level 1, ES, SF
LDS 1W-314 - Wellbore #1 - Plan #1 (9-4-14)	1,400.0	1,400.0	29.1	23.1	4.802	CC, ES
LDS 1W-314 - Wellbore #1 - Plan #1 (9-4-14)	12,200.0	12,213.9	413.5	105.1	1.341	Level 3, SF
LDS 1W-414 - Wellbore #1 - Plan #1 (9-4-14)	1,400.0	1,400.0	61.9	55.9	10.205	CC, ES
LDS 1W-414 - Wellbore #1 - Plan #1 (9-4-14)	13,851.3	13,975.2	623.4	229.9	1.584	SF

Offset Design											
Existing Wells Sec.1-T5N-R65W - BJB 2 (Exist.) - Wellbore #1 - Wellbore #1											
Survey Program: 7050-UNKNOWN											
Reference											
Offset											
Semi Major Axis											
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)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)
0.0	0.0	0.0	0.0	0.0	0.0	-48.90	167.6	-192.1	255.3		
100.0	100.0	86.0	86.0	0.1	1.7	-48.90	167.6	-192.1	254.9	253.1	1.83
200.0	200.0	186.0	186.0	0.3	3.7	-48.90	167.6	-192.1	254.9	250.9	4.06
300.0	300.0	286.0	286.0	0.6	5.7	-48.90	167.6	-192.1	254.9	248.6	6.28
											Warning
											Factor
											139.107
											62.831
											40.580

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-234
Project:	SEC.1-T5N-R65W	TVD Reference:	WELL @ 4628.0ft (Original Well Elev)
Reference Site:	LDS 5N65W1W Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4628.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-234	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 2 (Exist.) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 7050-UNKNOWN												Offset Well Error:	0.0 ft
Reference	Offset	Semi Major Axis		Distance		Warning							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
400.0	400.0	386.0	386.0	0.8	7.7	-48.90	167.6	-192.1	254.9	246.4	8.51	29.967	
500.0	500.0	486.0	486.0	1.0	9.7	-48.90	167.6	-192.1	254.9	244.2	10.73	23.755	
600.0	600.0	586.0	586.0	1.2	11.7	-48.90	167.6	-192.1	254.9	242.0	12.96	19.676	
700.0	700.0	686.0	686.0	1.5	13.7	-48.90	167.6	-192.1	254.9	239.7	15.18	16.792	
800.0	800.0	786.0	786.0	1.7	15.7	-48.90	167.6	-192.1	254.9	237.5	17.41	14.646	
900.0	900.0	886.0	886.0	1.9	17.7	-48.90	167.6	-192.1	254.9	235.3	19.63	12.986	
1,000.0	1,000.0	986.0	986.0	2.1	19.7	-48.90	167.6	-192.1	254.9	233.1	21.86	11.664	
1,100.0	1,100.0	1,086.0	1,086.0	2.4	21.7	-48.90	167.6	-192.1	254.9	230.8	24.08	10.587	
1,200.0	1,200.0	1,186.0	1,186.0	2.6	23.7	-48.90	167.6	-192.1	254.9	228.6	26.30	9.691	
1,300.0	1,300.0	1,286.0	1,286.0	2.8	25.7	-48.90	167.6	-192.1	254.9	226.4	28.53	8.935	
1,400.0	1,400.0	1,386.0	1,386.0	3.0	27.7	-48.90	167.6	-192.1	254.9	224.2	30.75	8.289	
1,500.0	1,500.0	1,486.0	1,486.0	3.3	29.7	-87.05	167.6	-192.1	254.8	221.9	32.98	7.728	
1,600.0	1,599.8	1,585.8	1,585.8	3.5	31.7	-88.23	167.6	-192.1	254.6	219.4	35.19	7.235	
1,691.9	1,691.4	1,677.4	1,677.4	3.7	33.5	-90.00	167.6	-192.1	254.5	217.3	37.23	6.836	
1,700.0	1,699.5	1,685.5	1,685.5	3.7	33.7	-90.19	167.6	-192.1	254.5	217.1	37.41	6.803	
1,800.0	1,798.8	1,784.8	1,784.8	3.9	35.7	-92.82	167.6	-192.1	254.8	215.2	39.63	6.429	
1,900.0	1,898.0	1,884.0	1,884.0	4.2	37.7	-95.54	167.6	-192.1	255.7	213.8	41.86	6.108	
2,000.0	1,997.3	1,983.3	1,983.3	4.4	39.7	-98.23	167.6	-192.1	257.2	213.1	44.10	5.832	
2,100.0	2,096.5	2,082.5	2,082.5	4.7	41.7	-100.89	167.6	-192.1	259.2	212.9	46.34	5.594	
2,200.0	2,195.7	2,181.7	2,181.7	5.0	43.6	-103.50	167.6	-192.1	261.8	213.3	48.58	5.390	
2,300.0	2,295.0	2,281.0	2,281.0	5.3	45.6	-106.06	167.6	-192.1	265.0	214.2	50.82	5.214	
2,400.0	2,394.2	2,380.2	2,380.2	5.5	47.6	-108.55	167.6	-192.1	268.6	215.6	53.06	5.063	
2,500.0	2,493.5	2,479.5	2,479.5	5.8	49.6	-110.97	167.6	-192.1	272.8	217.5	55.31	4.933	
2,600.0	2,592.7	2,578.7	2,578.7	6.1	51.6	-113.32	167.6	-192.1	277.5	219.9	57.54	4.822	
2,700.0	2,692.0	2,678.0	2,678.0	6.4	53.6	-115.58	167.6	-192.1	282.5	222.8	59.78	4.726	
2,800.0	2,791.2	2,777.2	2,777.2	6.7	55.5	-117.76	167.6	-192.1	288.1	226.1	62.01	4.645	
2,900.0	2,890.5	2,876.5	2,876.5	7.0	57.5	-119.86	167.6	-192.1	294.0	229.8	64.25	4.576	
3,000.0	2,989.7	2,975.7	2,975.7	7.3	59.5	-121.88	167.6	-192.1	300.3	233.9	66.47	4.518	
3,100.0	3,089.0	3,075.0	3,075.0	7.6	61.5	-123.81	167.6	-192.1	307.0	238.3	68.70	4.469	
3,200.0	3,188.2	3,174.2	3,174.2	7.9	63.5	-125.65	167.6	-192.1	314.0	243.1	70.92	4.428	
3,300.0	3,287.5	3,273.5	3,273.5	8.2	65.5	-127.42	167.6	-192.1	321.3	248.2	73.14	4.393	
3,400.0	3,386.7	3,372.7	3,372.7	8.5	67.5	-129.10	167.6	-192.1	328.9	253.6	75.36	4.365	
3,500.0	3,486.0	3,472.0	3,472.0	8.8	69.4	-130.71	167.6	-192.1	336.8	259.3	77.57	4.342	
3,600.0	3,585.2	3,571.2	3,571.2	9.1	71.4	-132.25	167.6	-192.1	345.0	265.2	79.78	4.324	
3,700.0	3,684.5	3,670.5	3,670.5	9.4	73.4	-133.71	167.6	-192.1	353.3	271.3	81.99	4.309	
3,800.0	3,783.7	3,769.7	3,769.7	9.7	75.4	-135.10	167.6	-192.1	361.9	277.7	84.20	4.298	
3,900.0	3,883.0	3,869.0	3,869.0	10.0	77.4	-136.44	167.6	-192.1	370.7	284.3	86.41	4.290	
4,000.0	3,982.2	3,968.2	3,968.2	10.3	79.4	-137.70	167.6	-192.1	379.7	291.1	88.62	4.285	
4,100.0	4,081.5	4,067.5	4,067.5	10.6	81.3	-138.91	167.6	-192.1	388.9	298.1	90.82	4.282	
4,200.0	4,180.7	4,166.7	4,166.7	10.9	83.3	-140.07	167.6	-192.1	398.2	305.2	93.03	4.281	
4,300.0	4,280.0	4,266.0	4,266.0	11.3	85.3	-141.17	167.6	-192.1	407.7	312.5	95.23	4.281	
4,400.0	4,379.2	4,365.2	4,365.2	11.6	87.3	-142.22	167.6	-192.1	417.4	319.9	97.43	4.284	
4,500.0	4,478.5	4,464.5	4,464.5	11.9	89.3	-143.22	167.6	-192.1	427.1	327.5	99.63	4.287	
4,600.0	4,577.7	4,563.7	4,563.7	12.2	91.3	-144.18	167.6	-192.1	437.0	335.2	101.83	4.291	
4,700.0	4,677.0	4,663.0	4,663.0	12.5	93.3	-145.09	167.6	-192.1	447.0	343.0	104.04	4.297	
4,800.0	4,776.2	4,762.2	4,762.2	12.8	95.2	-145.97	167.6	-192.1	457.1	350.9	106.24	4.303	
4,900.0	4,875.5	4,861.5	4,861.5	13.1	97.2	-146.81	167.6	-192.1	467.3	358.9	108.44	4.310	
5,000.0	4,974.7	4,960.7	4,960.7	13.4	99.2	-147.61	167.6	-192.1	477.6	367.0	110.64	4.317	
5,100.0	5,074.0	5,060.0	5,060.0	13.7	101.2	-148.38	167.6	-192.1	488.0	375.2	112.84	4.325	
5,200.0	5,173.2	5,159.2	5,159.2	14.0	103.2	-149.13	167.6	-192.1	498.4	383.3	115.11	4.330	
5,300.0	5,272.7	5,258.7	5,258.7	14.3	105.2	-149.78	167.6	-192.1	506.8	389.3	117.53	4.312	

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-234
Project:	SEC.1-T5N-R65W	TVD Reference:	WELL @ 4628.0ft (Original Well Elev)
Reference Site:	LDS 5N65W1W Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4628.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-234	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 2 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 7050-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
5,400.0	5,372.5	5,358.5	5,358.5	14.5	107.2	-150.18		167.6	-192.1	512.1	392.3	119.86	4.273	
5,500.0	5,472.5	5,458.5	5,458.5	14.6	109.2	-150.35		167.6	-192.1	514.5	392.4	122.08	4.214	
5,600.0	5,572.5	5,558.5	5,558.5	14.8	111.2	-112.60		167.6	-192.1	514.6	389.1	125.52	4.100	
5,700.0	5,672.5	5,658.5	5,658.5	15.0	113.2	-112.60		167.6	-192.1	514.6	386.9	127.70	4.030	
5,800.0	5,772.5	5,758.5	5,758.5	15.2	115.2	-112.60		167.6	-192.1	514.6	384.7	129.89	3.962	
5,900.0	5,872.5	5,858.5	5,858.5	15.3	117.2	-112.60		167.6	-192.1	514.6	382.5	132.08	3.896	
6,000.0	5,972.5	5,958.5	5,958.5	15.5	119.2	-112.60		167.6	-192.1	514.6	380.3	134.28	3.832	
6,100.0	6,072.3	6,058.3	6,058.3	15.7	121.2	-23.01		167.6	-192.1	509.2	374.9	134.29	3.792	
6,200.0	6,170.4	6,156.4	6,156.4	15.7	123.1	-24.41		167.6	-192.1	491.9	358.3	133.56	3.683	
6,300.0	6,265.2	6,251.2	6,251.2	15.8	125.0	-27.00		167.6	-192.1	463.2	332.1	131.16	3.532	
6,400.0	6,355.1	6,341.1	6,341.1	15.8	126.8	-31.22		167.6	-192.1	424.2	296.3	127.92	3.316	
6,500.0	6,438.6	6,424.6	6,424.6	15.7	128.5	-37.75		167.6	-192.1	376.4	250.8	125.65	2.996	
6,600.0	6,514.2	6,500.2	6,500.2	15.7	130.0	-47.46		167.6	-192.1	322.6	195.3	127.39	2.533	
6,700.0	6,580.6	6,566.6	6,566.6	15.7	131.3	-60.77		167.6	-192.1	267.6	132.3	135.26	1.978	
6,800.0	6,636.6	6,622.6	6,622.6	16.3	132.5	-76.00		167.6	-192.1	220.5	75.2	145.29	1.518	
6,900.0	6,681.4	6,667.4	6,667.4	17.4	133.3	-89.08		167.6	-192.1	197.9	47.3	150.66	1.314	Level 3
6,908.9	6,684.8	6,670.8	6,670.8	17.5	133.4	-90.00		167.6	-192.1	197.8	46.9	150.88	1.311	Level 3, CC, ES, SF
7,000.0	6,714.2	6,700.2	6,700.2	18.8	134.0	-96.60		167.6	-192.1	215.7	63.8	151.91	1.420	Level 3
7,100.0	6,734.3	6,720.3	6,720.3	20.6	134.4	-97.27		167.6	-192.1	270.2	116.4	153.75	1.757	
7,200.0	6,741.5	6,727.5	6,727.5	22.5	134.6	-90.55		167.6	-192.1	345.9	189.0	156.89	2.205	
7,300.0	6,740.9	6,726.9	6,726.9	24.5	134.5	-89.20		167.6	-192.1	431.7	272.8	158.90	2.717	
7,400.0	6,740.2	6,726.2	6,726.2	26.7	134.5	-89.00		167.6	-192.1	522.6	361.5	161.07	3.245	
7,500.0	6,739.4	6,725.4	6,725.4	29.0	134.5	-88.79		167.6	-192.1	616.3	453.0	163.34	3.773	
7,600.0	6,738.7	6,724.7	6,724.7	31.4	134.5	-88.58		167.6	-192.1	711.8	546.1	165.69	4.296	
7,700.0	6,738.0	6,724.0	6,724.0	33.9	134.5	-88.38		167.6	-192.1	808.3	640.2	168.11	4.808	
7,800.0	6,737.3	6,723.3	6,723.3	36.4	134.5	-88.17		167.6	-192.1	905.6	735.0	170.57	5.309	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well LDS 1V-234
Project:	SEC.1-T5N-R65W	TVD Reference:	WELL @ 4628.0ft (Original Well Elev)
Reference Site:	LDS 5N65W1W Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4628.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-234	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 3 (SI) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 7027-UNKNOWN												Offset Well Error:	0.0 ft
Reference	Offset	Semi Major Axis		Distance									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
7,500.0	6,739.4	6,743.4	6,743.4	29.0	134.9	-91.07	21.9	-1,673.2	960.8	797.1	163.75	5.868	
7,600.0	6,738.7	6,742.7	6,742.7	31.4	134.9	-90.95	21.9	-1,673.2	868.2	702.0	166.13	5.226	
7,700.0	6,738.0	6,742.0	6,742.0	33.9	134.8	-90.83	21.9	-1,673.2	777.3	608.8	168.56	4.611	
7,800.0	6,737.3	6,741.3	6,741.3	36.4	134.8	-90.71	21.9	-1,673.2	689.0	518.0	171.06	4.028	
7,900.0	6,736.6	6,740.6	6,740.6	38.9	134.8	-90.59	21.9	-1,673.2	604.4	430.8	173.59	3.482	
8,000.0	6,735.9	6,739.9	6,739.9	41.5	134.8	-90.47	21.9	-1,673.2	525.2	349.1	176.15	2.982	
8,100.0	6,735.2	6,739.2	6,739.2	44.1	134.8	-90.35	21.9	-1,673.2	454.3	275.5	178.75	2.541	
8,200.0	6,734.4	6,738.4	6,738.4	46.7	134.8	-90.24	21.9	-1,673.2	396.1	214.7	181.36	2.184	
8,300.0	6,733.7	6,737.7	6,737.7	49.3	134.8	-90.12	21.9	-1,673.2	357.0	173.0	184.00	1.940	
8,397.4	6,733.0	6,737.0	6,737.0	51.9	134.7	-90.00	21.9	-1,673.2	343.4	156.9	186.58	1.841 CC	
8,400.0	6,733.0	6,737.0	6,737.0	52.0	134.7	-90.00	21.9	-1,673.2	343.4	156.8	186.65	1.840 ES, SF	
8,500.0	6,732.3	6,736.3	6,736.3	54.7	134.7	-89.88	21.9	-1,673.2	358.4	169.1	189.31	1.893	
8,600.0	6,731.6	6,735.6	6,735.6	57.4	134.7	-89.76	21.9	-1,673.2	398.8	206.8	191.99	2.077	
8,700.0	6,730.9	6,734.9	6,734.9	60.1	134.7	-89.64	21.9	-1,673.2	457.7	263.1	194.68	2.351	
8,800.0	6,730.1	6,734.1	6,734.1	62.8	134.7	-89.52	21.9	-1,673.2	529.2	331.8	197.37	2.681	
8,900.0	6,729.4	6,733.4	6,733.4	65.5	134.7	-89.40	21.9	-1,673.2	608.7	408.7	200.07	3.043	
9,000.0	6,728.7	6,732.7	6,732.7	68.2	134.7	-89.28	21.9	-1,673.2	693.6	490.8	202.78	3.420	
9,100.0	6,728.0	6,732.0	6,732.0	71.0	134.6	-89.16	21.9	-1,673.2	782.1	576.6	205.49	3.806	
9,200.0	6,727.3	6,731.3	6,731.3	73.7	134.6	-89.04	21.9	-1,673.2	873.0	664.8	208.21	4.193	
9,300.0	6,726.6	6,730.6	6,730.6	76.5	134.6	-88.92	21.9	-1,673.2	965.7	754.8	210.93	4.578	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well LDS 1V-234
Project:	SEC.1-T5N-R65W	TVD Reference:	WELL @ 4628.0ft (Original Well Elev)
Reference Site:	LDS 5N65W1W Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4628.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-234	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	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)			
8,100.0	6,735.2	6,895.1	6,740.9	44.1	22.4	89.86	803.4	-2,248.8	976.7	915.1	61.54	15.870		
8,200.0	6,734.4	6,895.3	6,741.0	46.7	22.4	89.89	803.4	-2,248.8	888.4	824.3	64.17	13.844		
8,300.0	6,733.7	6,895.5	6,741.2	49.3	22.4	89.91	803.4	-2,248.8	802.9	736.1	66.83	12.016		
8,400.0	6,733.0	6,895.7	6,741.4	52.0	22.4	89.94	803.4	-2,248.8	721.2	651.7	69.49	10.378		
8,500.0	6,732.3	6,895.9	6,741.6	54.7	22.4	89.96	803.4	-2,248.8	644.6	572.4	72.18	8.931		
8,600.0	6,731.6	6,896.1	6,741.8	57.4	22.4	89.99	803.4	-2,248.8	575.3	500.4	74.87	7.684		
8,700.0	6,730.9	6,896.3	6,742.0	60.1	22.4	90.02	803.4	-2,248.8	516.1	438.5	77.58	6.653		
8,800.0	6,730.1	6,896.5	6,742.2	62.8	22.4	90.04	803.3	-2,248.8	470.9	390.6	80.29	5.865		
8,900.0	6,729.4	6,896.7	6,742.4	65.5	22.4	90.07	803.3	-2,248.8	444.0	361.0	83.01	5.349		
8,973.0	6,728.9	6,896.9	6,742.6	67.5	22.4	90.09	803.3	-2,248.8	438.0	353.0	85.00	5.153 CC, ES		
9,000.0	6,728.7	6,896.9	6,742.7	68.2	22.4	90.10	803.3	-2,248.8	438.8	353.1	85.74	5.118 SF		
9,100.0	6,728.0	6,897.2	6,742.9	71.0	22.4	90.13	803.3	-2,248.8	456.0	367.6	88.48	5.154		
9,200.0	6,727.3	6,897.4	6,743.1	73.7	22.4	90.16	803.3	-2,248.8	493.3	402.1	91.22	5.408		
9,300.0	6,726.6	6,897.6	6,743.3	76.5	22.4	90.19	803.3	-2,248.8	546.6	452.7	93.97	5.817		
9,400.0	6,725.9	6,897.9	6,743.6	79.2	22.4	90.22	803.3	-2,248.8	611.7	515.0	96.72	6.325		
9,500.0	6,725.1	6,898.1	6,743.8	82.0	22.4	90.25	803.3	-2,248.8	685.3	585.8	99.47	6.889		
9,600.0	6,724.4	6,898.3	6,744.0	84.7	22.4	90.28	803.3	-2,248.8	764.9	662.6	102.23	7.482		
9,700.0	6,723.7	6,898.6	6,744.3	87.5	22.4	90.31	803.3	-2,248.8	848.8	743.8	104.99	8.084		
9,800.0	6,723.0	6,898.8	6,744.6	90.2	22.4	90.35	803.3	-2,248.8	935.9	828.1	107.76	8.685		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well LDS 1V-234
Project:	SEC.1-T5N-R65W	TVD Reference:	WELL @ 4628.0ft (Original Well Elev)
Reference Site:	LDS 5N65W1W Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4628.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-234	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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
9,500.0	6,725.1	6,736.1	6,736.1	82.0	134.7	90.74	849.1	-3,649.7	998.9	782.3	216.57	4.612	
9,600.0	6,724.4	6,735.4	6,735.4	84.7	134.7	90.66	849.1	-3,649.7	912.7	693.4	219.32	4.161	
9,700.0	6,723.7	6,734.7	6,734.7	87.5	134.7	90.57	849.1	-3,649.7	829.6	607.5	222.07	3.736	
9,800.0	6,723.0	6,734.0	6,734.0	90.2	134.7	90.49	849.1	-3,649.7	750.6	525.8	224.83	3.339	
9,900.0	6,722.3	6,733.3	6,733.3	93.0	134.7	90.40	849.1	-3,649.7	677.2	449.7	227.58	2.976	
10,000.0	6,721.6	6,732.6	6,732.6	95.8	134.7	90.32	849.1	-3,649.7	611.4	381.1	230.34	2.654	
10,100.0	6,720.8	6,731.8	6,731.8	98.5	134.6	90.23	849.1	-3,649.7	555.9	322.8	233.10	2.385	
10,200.0	6,720.1	6,731.1	6,731.1	101.3	134.6	90.15	849.1	-3,649.7	514.1	278.2	235.87	2.180	
10,300.0	6,719.4	6,730.4	6,730.4	104.1	134.6	90.06	849.1	-3,649.7	489.4	250.8	238.63	2.051	
10,374.0	6,718.9	6,729.9	6,729.9	106.1	134.6	90.00	849.1	-3,649.7	483.8	243.1	240.67	2.010 CC	
10,400.0	6,718.7	6,729.7	6,729.7	106.9	134.6	89.98	849.1	-3,649.7	484.5	243.1	241.39	2.007 ES, SF	
10,500.0	6,718.0	6,729.0	6,729.0	109.6	134.6	89.89	849.1	-3,649.7	499.9	255.8	244.16	2.048	
10,600.0	6,717.3	6,728.3	6,728.3	112.4	134.6	89.81	849.1	-3,649.7	534.0	287.1	246.93	2.162	
10,700.0	6,716.5	6,727.5	6,727.5	115.2	134.6	89.72	849.1	-3,649.7	583.4	333.7	249.69	2.336	
10,800.0	6,715.8	6,726.8	6,726.8	118.0	134.5	89.64	849.1	-3,649.7	644.6	392.2	252.46	2.553	
10,900.0	6,715.1	6,726.1	6,726.1	120.8	134.5	89.55	849.1	-3,649.7	714.7	459.4	255.23	2.800	
11,000.0	6,714.4	6,725.4	6,725.4	123.5	134.5	89.47	849.1	-3,649.7	791.2	533.2	258.00	3.067	
11,100.0	6,713.7	6,724.7	6,724.7	126.3	134.5	89.38	849.1	-3,649.7	872.4	611.7	260.77	3.346	
11,200.0	6,713.0	6,724.0	6,724.0	129.1	134.5	89.30	849.1	-3,649.7	957.3	693.7	263.54	3.632	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well LDS 1V-234
Project:	SEC.1-T5N-R65W	TVD Reference:	WELL @ 4628.0ft (Original Well Elev)
Reference Site:	LDS 5N65W1W Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4628.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-234	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 6-1 (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
8,600.0	6,731.6	6,740.0	6,739.6	57.4	107.2	92.76	512.6	-2,862.3	997.4	833.1	164.32	6.070	
8,700.0	6,730.9	6,739.5	6,739.0	60.1	107.2	92.53	512.6	-2,862.3	898.6	731.6	167.05	5.379	
8,800.0	6,730.1	6,738.9	6,738.4	62.8	107.2	92.30	512.6	-2,862.3	800.2	630.4	169.78	4.713	
8,900.0	6,729.4	6,738.3	6,737.8	65.5	107.2	92.07	512.6	-2,862.3	702.1	529.6	172.52	4.070	
9,000.0	6,728.7	6,737.7	6,737.2	68.2	107.2	91.84	512.6	-2,862.3	604.7	429.4	175.27	3.450	
9,100.0	6,728.0	6,737.1	6,736.7	71.0	107.2	91.61	512.6	-2,862.3	508.3	330.3	178.01	2.855	
9,200.0	6,727.3	6,736.5	6,736.1	73.7	107.2	91.38	512.6	-2,862.3	413.6	232.8	180.76	2.288	
9,300.0	6,726.6	6,735.9	6,735.5	76.5	107.2	91.15	512.6	-2,862.3	322.1	138.6	183.52	1.755	
9,400.0	6,725.9	6,735.3	6,734.9	79.2	107.2	90.92	512.6	-2,862.3	237.6	51.4	186.27	1.276 Level 3	
9,500.0	6,725.1	6,734.7	6,734.3	82.0	107.2	90.69	512.6	-2,862.3	170.8	-18.2	189.03	0.903 Level 1	
9,586.5	6,724.5	6,734.2	6,733.8	84.3	107.2	90.49	512.6	-2,862.3	147.3	-44.2	191.42	0.769 Level 1, CC, ES, SF	
9,600.0	6,724.4	6,734.1	6,733.7	84.7	107.2	90.45	512.6	-2,862.3	147.9	-43.9	191.79	0.771 Level 1	
9,700.0	6,723.7	6,733.5	6,733.1	87.5	107.2	90.22	512.6	-2,862.3	185.9	-8.6	194.55	0.956 Level 1	
9,800.0	6,723.0	6,732.9	6,732.5	90.2	107.1	89.99	512.6	-2,862.3	259.4	62.1	197.31	1.314 Level 3	
9,900.0	6,722.3	6,732.3	6,731.9	93.0	107.1	89.76	512.6	-2,862.3	346.4	146.3	200.07	1.731	
10,000.0	6,721.6	6,731.7	6,731.3	95.8	107.1	89.53	512.6	-2,862.3	438.9	236.1	202.83	2.164	
10,100.0	6,720.8	6,731.1	6,730.7	98.5	107.1	89.30	512.6	-2,862.3	534.2	328.6	205.58	2.598	
10,200.0	6,720.1	6,730.5	6,730.1	101.3	107.1	89.07	512.6	-2,862.3	630.9	422.6	208.34	3.028	
10,300.0	6,719.4	6,730.0	6,729.5	104.1	107.1	88.84	512.6	-2,862.3	728.5	517.4	211.09	3.451	
10,400.0	6,718.7	6,729.4	6,728.9	106.9	107.1	88.61	512.7	-2,862.3	826.7	612.9	213.84	3.866	
10,500.0	6,718.0	6,728.8	6,728.3	109.6	107.1	88.38	512.7	-2,862.3	925.3	708.7	216.59	4.272	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well LDS 1V-234
Project:	SEC.1-T5N-R65W	TVD Reference:	WELL @ 4628.0ft (Original Well Elev)
Reference Site:	LDS 5N65W1W Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4628.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-234	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 - Caraccioli 1 (Exist.) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS												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
11,500.0	6,710.8	6,742.9	6,742.1	137.5	13.8	-93.37	-5.5	-5,691.3	987.9	836.9	151.04	6.541	
11,600.0	6,710.1	6,740.7	6,739.9	140.3	13.8	-93.03	-5.5	-5,691.3	896.0	742.2	153.87	5.824	
11,700.0	6,709.4	6,738.5	6,737.7	143.1	13.8	-92.69	-5.5	-5,691.3	806.1	649.4	156.69	5.145	
11,800.0	6,708.7	6,736.3	6,735.5	145.9	13.8	-92.35	-5.5	-5,691.4	718.8	559.3	159.51	4.506	
11,900.0	6,708.0	6,734.1	6,733.3	148.6	13.8	-92.01	-5.6	-5,691.4	635.3	473.0	162.32	3.914	
12,000.0	6,707.2	6,731.9	6,731.1	151.4	13.8	-91.68	-5.6	-5,691.4	557.2	392.1	165.14	3.374	
12,100.0	6,706.5	6,729.7	6,728.9	154.2	13.8	-91.34	-5.6	-5,691.5	487.2	319.2	167.94	2.901	
12,200.0	6,705.8	6,727.5	6,726.8	157.0	13.8	-91.00	-5.6	-5,691.5	429.2	258.4	170.75	2.513	
12,300.0	6,705.1	6,725.3	6,724.6	159.8	13.8	-90.66	-5.6	-5,691.5	388.6	215.1	173.55	2.239	
12,400.0	6,704.4	6,723.1	6,722.4	162.6	13.8	-90.33	-5.6	-5,691.6	371.3	195.0	176.34	2.106	
12,415.9	6,704.3	6,722.8	6,722.1	163.1	13.8	-90.28	-5.6	-5,691.6	371.0	194.2	176.79	2.098	CC, ES, SF
12,500.0	6,703.7	6,721.0	6,720.2	165.4	13.8	-89.99	-5.6	-5,691.6	380.4	201.2	179.13	2.123	
12,600.0	6,703.0	6,718.8	6,718.1	168.2	13.8	-89.66	-5.6	-5,691.6	414.1	232.2	181.92	2.276	
12,700.0	6,702.2	6,716.6	6,715.9	171.0	13.8	-89.32	-5.6	-5,691.7	467.2	282.5	184.70	2.530	
12,800.0	6,701.5	6,714.5	6,713.7	173.8	13.8	-88.99	-5.6	-5,691.7	533.9	346.5	187.47	2.848	
12,900.0	6,700.8	6,712.3	6,711.6	176.6	13.8	-88.66	-5.7	-5,691.7	609.8	419.6	190.24	3.206	
13,000.0	6,700.1	6,710.2	6,709.4	179.4	13.7	-88.33	-5.7	-5,691.8	691.9	498.9	193.00	3.585	
13,100.0	6,699.4	6,708.0	6,707.3	182.2	13.7	-87.99	-5.7	-5,691.8	778.1	582.3	195.75	3.975	
13,200.0	6,698.7	6,705.9	6,705.1	185.0	13.7	-87.66	-5.7	-5,691.8	867.3	668.8	198.50	4.369	
13,300.0	6,697.9	6,703.7	6,703.0	187.8	13.7	-87.33	-5.7	-5,691.9	958.6	757.4	201.24	4.764	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well LDS 1V-234
Project:	SEC.1-T5N-R65W	TVD Reference:	WELL @ 4628.0ft (Original Well Elev)
Reference Site:	LDS 5N65W1W Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4628.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-234	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 - Wagner-Ehrlich 1 (P&A) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 7030-UNKNOWN												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
12,400.0	6,704.4	6,722.4	6,722.4	162.6	134.4	91.27	663.9	-6,597.9	969.3	672.4	296.93	3.265	
12,500.0	6,703.7	6,721.7	6,721.7	165.4	134.4	91.13	663.9	-6,597.9	874.8	575.0	299.73	2.918	
12,600.0	6,703.0	6,721.0	6,721.0	168.2	134.4	90.99	663.9	-6,597.9	781.5	479.0	302.53	2.583	
12,700.0	6,702.2	6,720.2	6,720.2	171.0	134.4	90.85	663.9	-6,597.9	690.2	384.8	305.33	2.260	
12,800.0	6,701.5	6,719.5	6,719.5	173.8	134.4	90.72	663.9	-6,597.9	601.6	293.4	308.12	1.952	
12,900.0	6,700.8	6,718.8	6,718.8	176.6	134.4	90.58	663.9	-6,597.9	517.1	206.2	310.92	1.663	
13,000.0	6,700.1	6,718.1	6,718.1	179.4	134.4	90.44	663.9	-6,597.9	439.3	125.6	313.71	1.400	Level 3
13,100.0	6,699.4	6,717.4	6,717.4	182.2	134.3	90.31	663.9	-6,597.9	372.2	55.7	316.50	1.176	Level 2
13,200.0	6,698.7	6,716.7	6,716.7	185.0	134.3	90.17	663.9	-6,597.9	322.6	3.3	319.29	1.010	Level 2
13,300.0	6,697.9	6,715.9	6,715.9	187.8	134.3	90.03	663.9	-6,597.9	299.4	-22.7	322.08	0.930	Level 1
13,322.2	6,697.8	6,715.8	6,715.8	188.4	134.3	90.00	663.9	-6,597.9	298.6	-24.1	322.70	0.925	Level 1, CC, ES, SF
13,400.0	6,697.2	6,715.2	6,715.2	190.6	134.3	89.89	663.9	-6,597.9	308.5	-16.3	324.87	0.950	Level 1
13,500.0	6,696.5	6,714.5	6,714.5	193.4	134.3	89.76	663.9	-6,597.9	347.5	19.8	327.65	1.061	Level 2
13,600.0	6,695.8	6,713.8	6,713.8	196.2	134.3	89.62	663.9	-6,597.9	407.8	77.4	330.44	1.234	Level 2
13,700.0	6,695.1	6,713.1	6,713.1	199.0	134.3	89.48	663.9	-6,597.9	481.5	148.3	333.22	1.445	Level 3
13,800.0	6,694.4	6,712.4	6,712.4	201.8	134.2	89.34	663.9	-6,597.9	563.4	227.4	336.00	1.677	
13,851.3	6,694.0	6,712.0	6,712.0	203.2	134.2	89.27	663.9	-6,597.9	607.5	270.0	337.43	1.800	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well LDS 1V-234
Project:	SEC.1-T5N-R65W	TVD Reference:	WELL @ 4628.0ft (Original Well Elev)
Reference Site:	LDS 5N65W1W Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4628.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-234	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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
2,900.0	2,890.5	3,130.9	3,086.4	7.0	11.8	-35.51		1,097.9	153.1	986.4	971.8	14.60	67.555	
3,000.0	2,989.7	3,227.1	3,181.0	7.3	12.2	-35.56		1,080.9	158.2	959.2	944.0	15.12	63.443	
3,100.0	3,089.0	3,323.4	3,275.6	7.6	12.6	-35.62		1,063.8	163.4	931.9	916.3	15.64	59.600	
3,200.0	3,188.2	3,419.6	3,370.1	7.9	13.0	-35.68		1,046.8	168.5	904.7	888.6	16.16	56.002	
3,300.0	3,287.5	3,515.8	3,464.7	8.2	13.4	-35.75		1,029.7	173.6	877.5	860.8	16.67	52.625	
3,400.0	3,386.7	3,612.0	3,559.2	8.5	13.8	-35.82		1,012.7	178.8	850.3	833.1	17.19	49.451	
3,500.0	3,486.0	3,708.2	3,653.8	8.8	14.2	-35.89		995.6	183.9	823.1	805.3	17.71	46.463	
3,600.0	3,585.2	3,804.5	3,748.3	9.1	14.6	-35.97		978.6	189.0	795.8	777.6	18.23	43.644	
3,700.0	3,684.5	3,900.7	3,842.9	9.4	15.0	-36.06		961.5	194.1	768.6	749.9	18.76	40.981	
3,800.0	3,783.7	3,996.9	3,937.5	9.7	15.4	-36.15		944.5	199.3	741.4	722.1	19.28	38.462	
3,900.0	3,883.0	4,093.1	4,032.0	10.0	15.8	-36.25		927.4	204.4	714.2	694.4	19.80	36.076	
4,000.0	3,982.2	4,189.3	4,126.6	10.3	16.2	-36.35		910.4	209.5	687.0	666.7	20.32	33.812	
4,100.0	4,081.5	4,285.6	4,221.1	10.6	16.6	-36.47		893.3	214.6	659.8	639.0	20.84	31.661	
4,200.0	4,180.7	4,381.8	4,315.7	10.9	17.0	-36.59		876.3	219.8	632.6	611.2	21.36	29.616	
4,300.0	4,280.0	4,478.0	4,410.2	11.3	17.5	-36.73		859.2	224.9	605.4	583.5	21.88	27.668	
4,400.0	4,379.2	4,574.2	4,504.8	11.6	17.9	-36.87		842.2	230.0	578.2	555.8	22.40	25.812	
4,500.0	4,478.5	4,670.4	4,599.4	11.9	18.3	-37.04		825.1	235.1	551.0	528.1	22.92	24.040	
4,600.0	4,577.7	4,766.7	4,693.9	12.2	18.7	-37.22		808.0	240.3	523.8	500.4	23.44	22.348	
4,700.0	4,677.0	4,862.9	4,788.5	12.5	19.1	-37.42		791.0	245.4	496.6	472.7	23.96	20.730	
4,800.0	4,776.2	4,959.1	4,883.0	12.8	19.5	-37.64		773.9	250.5	469.4	445.0	24.47	19.181	
4,900.0	4,875.5	5,055.3	4,977.6	13.1	19.9	-37.89		756.9	255.6	442.3	417.3	24.99	17.698	
5,000.0	4,974.7	5,151.5	5,072.2	13.4	20.3	-38.17		739.8	260.8	415.1	389.6	25.51	16.276	
5,100.0	5,074.0	5,247.7	5,166.7	13.7	20.7	-38.49		722.8	265.9	388.0	361.9	26.02	14.911	
5,200.0	5,173.2	5,344.0	5,261.3	14.0	21.1	-38.77		705.7	271.0	360.9	334.4	26.55	13.594	
5,300.0	5,272.7	5,431.8	5,347.8	14.3	21.4	-38.64		691.2	275.4	336.9	309.8	27.04	12.460	
5,400.0	5,372.5	5,520.4	5,435.4	14.5	21.6	-38.39		679.1	279.0	318.4	290.9	27.48	11.588	
5,500.0	5,472.5	5,610.2	5,524.7	14.6	21.8	-37.98		669.5	281.9	305.6	277.7	27.88	10.958	
5,600.0	5,572.5	5,700.0	5,614.2	14.8	22.0	0.19		662.6	284.0	297.8	262.4	35.40	8.411	
5,700.0	5,672.5	5,791.6	5,705.7	15.0	22.1	0.45		658.3	285.3	293.1	257.4	35.72	8.206	
5,800.0	5,772.5	5,885.9	5,800.0	15.2	22.2	0.54		656.8	285.7	291.5	255.5	36.03	8.090	
5,834.5	5,807.0	5,917.0	5,831.0	15.2	22.3	0.54		656.8	285.7	291.5	255.3	36.13	8.067	
5,900.0	5,872.5	5,982.4	5,896.5	15.3	22.3	0.54		656.8	285.7	291.5	255.1	36.32	8.025	
6,000.0	5,972.5	6,082.4	5,996.5	15.5	22.4	0.54		656.8	285.7	291.5	254.9	36.62	7.960 CC	
6,100.0	6,072.3	6,182.5	6,096.6	15.7	22.5	91.54		656.8	285.0	291.6	261.5	30.05	9.704	
6,200.0	6,170.4	6,283.8	6,197.2	15.7	22.6	93.07		656.8	273.7	291.9	261.5	30.33	9.623	
6,300.0	6,265.2	6,386.1	6,296.4	15.8	22.7	94.55		656.8	248.9	292.4	261.9	30.51	9.584	
6,400.0	6,355.1	6,489.5	6,392.3	15.8	22.7	95.96		656.8	210.7	293.0	262.4	30.62	9.571	
6,500.0	6,438.6	6,593.9	6,483.1	15.7	22.6	97.26		656.8	159.3	293.8	263.1	30.76	9.551	
6,600.0	6,514.2	6,699.3	6,566.8	15.7	22.6	98.43		656.8	95.3	294.7	263.6	31.08	9.480	
6,700.0	6,580.6	6,805.5	6,641.4	15.7	22.6	99.45		656.8	19.8	295.5	263.7	31.76	9.305	
6,800.0	6,636.6	6,912.6	6,705.3	16.3	22.6	100.30		656.8	-66.0	296.2	263.3	32.97	8.986	
6,900.0	6,681.4	7,020.2	6,756.8	17.4	22.7	100.97		656.8	-160.4	296.9	262.0	34.88	8.511	
7,000.0	6,714.2	7,128.4	6,794.7	18.8	22.9	101.43		656.8	-261.6	297.4	259.8	37.52	7.926	
7,100.0	6,734.3	7,236.9	6,818.0	20.6	23.5	101.69		656.8	-367.4	297.6	256.8	40.83	7.290	
7,200.0	6,741.5	7,345.5	6,826.0	22.5	24.7	101.73		656.8	-475.6	297.7	253.0	44.68	6.662	
7,238.1	6,741.7	7,384.2	6,825.8	23.3	25.3	101.66		656.8	-514.4	297.6	251.4	46.21	6.440	
7,300.0	6,740.9	7,446.1	6,825.4	24.5	26.4	101.73		656.8	-576.2	297.7	249.0	48.71	6.111	
7,400.0	6,740.2	7,546.1	6,824.7	26.7	28.4	101.74		656.8	-676.2	297.7	244.7	52.97	5.620	
7,500.0	6,739.4	7,646.1	6,824.1	29.0	30.5	101.75		656.8	-776.2	297.7	240.3	57.45	5.182	
7,600.0	6,738.7	7,746.1	6,823.4	31.4	32.8	101.76		656.8	-876.2	297.7	235.6	62.09	4.795	
7,700.0	6,738.0	7,846.1	6,822.8	33.9	35.1	101.77		656.8	-976.2	297.7	230.9	66.86	4.453	

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-234
Project:	SEC.1-T5N-R65W	TVD Reference:	WELL @ 4628.0ft (Original Well Elev)
Reference Site:	LDS 5N65W1W Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4628.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-234	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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
7,800.0	6,737.3	7,946.1	6,822.1	36.4	37.5	101.78		656.8	-1,076.2	297.7	226.0	71.74	4.150	
7,900.0	6,736.6	8,046.1	6,821.4	38.9	40.0	101.79		656.8	-1,176.2	297.7	221.0	76.70	3.882	
8,000.0	6,735.9	8,146.1	6,820.8	41.5	42.5	101.80		656.8	-1,276.2	297.8	216.0	81.73	3.643	
8,100.0	6,735.2	8,246.1	6,820.1	44.1	45.1	101.81		656.8	-1,376.2	297.8	210.9	86.82	3.430	
8,200.0	6,734.4	8,346.1	6,819.4	46.7	47.6	101.82		656.8	-1,476.2	297.8	205.8	91.95	3.238	
8,300.0	6,733.7	8,446.1	6,818.8	49.3	50.2	101.83		656.8	-1,576.2	297.8	200.7	97.13	3.066	
8,400.0	6,733.0	8,546.1	6,818.1	52.0	52.9	101.84		656.8	-1,676.2	297.8	195.5	102.34	2.910	
8,500.0	6,732.3	8,646.1	6,817.5	54.7	55.5	101.85		656.8	-1,776.2	297.8	190.2	107.58	2.768	
8,600.0	6,731.6	8,746.1	6,816.8	57.4	58.2	101.86		656.8	-1,876.2	297.8	185.0	112.84	2.639	
8,700.0	6,730.9	8,846.1	6,816.1	60.1	60.8	101.87		656.8	-1,976.2	297.8	179.7	118.12	2.521	
8,800.0	6,730.1	8,946.1	6,815.5	62.8	63.5	101.88		656.8	-2,076.2	297.8	174.4	123.43	2.413	
8,900.0	6,729.4	9,046.1	6,814.8	65.5	66.2	101.89		656.8	-2,176.2	297.8	169.1	128.75	2.313	
9,000.0	6,728.7	9,146.1	6,814.1	68.2	68.9	101.90		656.8	-2,276.2	297.9	163.8	134.08	2.221	
9,100.0	6,728.0	9,246.1	6,813.5	71.0	71.6	101.91		656.8	-2,376.2	297.9	158.4	139.43	2.136	
9,200.0	6,727.3	9,346.1	6,812.8	73.7	74.4	101.92		656.8	-2,476.2	297.9	153.1	144.78	2.057	
9,300.0	6,726.6	9,446.1	6,812.1	76.5	77.1	101.93		656.8	-2,576.2	297.9	147.7	150.15	1.984	
9,400.0	6,725.9	9,546.1	6,811.5	79.2	79.8	101.94		656.8	-2,676.2	297.9	142.4	155.53	1.915	
9,500.0	6,725.1	9,646.1	6,810.8	82.0	82.5	101.95		656.8	-2,776.2	297.9	137.0	160.91	1.851	
9,600.0	6,724.4	9,746.1	6,810.2	84.7	85.3	101.96		656.8	-2,876.2	297.9	131.6	166.30	1.791	
9,700.0	6,723.7	9,846.1	6,809.5	87.5	88.0	101.97		656.8	-2,976.2	297.9	126.2	171.70	1.735	
9,800.0	6,723.0	9,946.1	6,808.8	90.2	90.8	101.98		656.8	-3,076.2	297.9	120.8	177.10	1.682	
9,900.0	6,722.3	10,046.1	6,808.2	93.0	93.5	101.99		656.8	-3,176.2	298.0	115.4	182.51	1.633	
10,000.0	6,721.6	10,146.1	6,807.5	95.8	96.3	102.00		656.8	-3,276.2	298.0	110.0	187.92	1.586	
10,100.0	6,720.8	10,246.1	6,806.8	98.5	99.1	102.01		656.8	-3,376.2	298.0	104.6	193.34	1.541	
10,200.0	6,720.1	10,346.1	6,806.2	101.3	101.8	102.02		656.8	-3,476.2	298.0	99.2	198.76	1.499 Level 3	
10,300.0	6,719.4	10,446.1	6,805.5	104.1	104.6	102.03		656.8	-3,576.2	298.0	93.8	204.19	1.459 Level 3	
10,400.0	6,718.7	10,546.1	6,804.8	106.9	107.3	102.04		656.8	-3,676.2	298.0	88.4	209.62	1.422 Level 3	
10,500.0	6,718.0	10,646.1	6,804.2	109.6	110.1	102.05		656.8	-3,776.2	298.0	83.0	215.05	1.386 Level 3	
10,600.0	6,717.3	10,746.1	6,803.5	112.4	112.9	102.06		656.8	-3,876.2	298.0	77.5	220.48	1.352 Level 3	
10,700.0	6,716.5	10,846.1	6,802.9	115.2	115.7	102.07		656.8	-3,976.2	298.0	72.1	225.92	1.319 Level 3	
10,800.0	6,715.8	10,946.1	6,802.2	118.0	118.4	102.08		656.8	-4,076.2	298.1	66.7	231.36	1.288 Level 3	
10,900.0	6,715.1	11,046.1	6,801.5	120.8	121.2	102.09		656.8	-4,176.2	298.1	61.3	236.80	1.259 Level 3	
11,000.0	6,714.4	11,146.1	6,800.9	123.5	124.0	102.10		656.8	-4,276.2	298.1	55.8	242.24	1.230 Level 2	
11,100.0	6,713.7	11,246.1	6,800.2	126.3	126.8	102.11		656.8	-4,376.2	298.1	50.4	247.69	1.203 Level 2	
11,200.0	6,713.0	11,346.1	6,799.5	129.1	129.5	102.12		656.8	-4,476.2	298.1	45.0	253.14	1.178 Level 2	
11,300.0	6,712.3	11,446.1	6,798.9	131.9	132.3	102.13		656.8	-4,576.2	298.1	39.5	258.58	1.153 Level 2	
11,400.0	6,711.5	11,546.1	6,798.2	134.7	135.1	102.14		656.8	-4,676.2	298.1	34.1	264.03	1.129 Level 2	
11,500.0	6,710.8	11,646.1	6,797.6	137.5	137.9	102.15		656.8	-4,776.2	298.1	28.6	269.48	1.106 Level 2	
11,600.0	6,710.1	11,746.1	6,796.9	140.3	140.7	102.16		656.8	-4,876.2	298.1	23.2	274.94	1.084 Level 2	
11,700.0	6,709.4	11,846.1	6,796.2	143.1	143.5	102.17		656.8	-4,976.2	298.2	17.8	280.39	1.063 Level 2	
11,800.0	6,708.7	11,946.1	6,795.6	145.9	146.2	102.18		656.8	-5,076.1	298.2	12.3	285.84	1.043 Level 2	
11,900.0	6,708.0	12,046.1	6,794.9	148.6	149.0	102.19		656.8	-5,176.1	298.2	6.9	291.30	1.024 Level 2	
12,000.0	6,707.2	12,146.1	6,794.2	151.4	151.8	102.20		656.8	-5,276.1	298.2	1.4	296.76	1.005 Level 2	
12,100.0	6,706.5	12,246.1	6,793.6	154.2	154.6	102.21		656.8	-5,376.1	298.2	-4.0	302.21	0.987 Level 1	
12,200.0	6,705.8	12,346.1	6,792.9	157.0	157.4	102.22		656.8	-5,476.1	298.2	-9.5	307.67	0.969 Level 1	
12,300.0	6,705.1	12,446.1	6,792.2	159.8	160.2	102.23		656.8	-5,576.1	298.2	-14.9	313.13	0.952 Level 1	
12,400.0	6,704.4	12,546.1	6,791.6	162.6	163.0	102.24		656.8	-5,676.1	298.2	-20.4	318.59	0.936 Level 1	
12,500.0	6,703.7	12,646.1	6,790.9	165.4	165.8	102.25		656.8	-5,776.1	298.2	-25.8	324.05	0.920 Level 1	
12,600.0	6,703.0	12,746.1	6,790.3	168.2	168.6	102.26		656.8	-5,876.1	298.2	-31.3	329.51	0.905 Level 1	
12,700.0	6,702.2	12,846.1	6,789.6	171.0	171.4	102.27		656.8	-5,976.1	298.3	-36.7	334.97	0.890 Level 1	
12,800.0	6,701.5	12,946.1	6,788.9	173.8	174.1	102.27		656.8	-6,076.1	298.3	-42.2	340.43	0.876 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-234
Project:	SEC.1-T5N-R65W	TVD Reference:	WELL @ 4628.0ft (Original Well Elev)
Reference Site:	LDS 5N65W1W Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4628.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-234	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 (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	
12,900.0	6,700.8	13,046.1	6,788.3	176.6	176.9	102.28	656.8	-6,176.1	298.3	-47.6	345.89	0.862	Level 1	
13,000.0	6,700.1	13,146.1	6,787.6	179.4	179.7	102.29	656.8	-6,276.1	298.3	-53.1	351.35	0.849	Level 1	
13,100.0	6,699.4	13,246.1	6,786.9	182.2	182.5	102.30	656.8	-6,376.1	298.3	-58.5	356.81	0.836	Level 1	
13,200.0	6,698.7	13,346.1	6,786.3	185.0	185.3	102.31	656.8	-6,476.1	298.3	-64.0	362.28	0.823	Level 1	
13,300.0	6,697.9	13,446.1	6,785.6	187.8	188.1	102.32	656.8	-6,576.1	298.3	-69.4	367.74	0.811	Level 1	
13,400.0	6,697.2	13,546.1	6,785.0	190.6	190.9	102.33	656.8	-6,676.1	298.3	-74.9	373.20	0.799	Level 1	
13,500.0	6,696.5	13,646.1	6,784.3	193.4	193.7	102.34	656.8	-6,776.1	298.3	-80.3	378.66	0.788	Level 1	
13,600.0	6,695.8	13,746.1	6,783.6	196.2	196.5	102.35	656.8	-6,876.1	298.4	-85.8	384.13	0.777	Level 1	
13,700.0	6,695.1	13,846.1	6,783.0	199.0	199.3	102.36	656.8	-6,976.1	298.4	-91.2	389.59	0.766	Level 1	
13,800.0	6,694.4	13,946.1	6,782.3	201.8	202.1	102.37	656.8	-7,076.1	298.4	-96.7	395.05	0.755	Level 1	
13,826.2	6,694.2	13,972.2	6,782.1	202.5	202.8	102.38	656.8	-7,102.3	298.4	-98.1	396.48	0.753	Level 1	
13,851.3	6,694.0	13,991.3	6,782.0	203.2	203.4	102.38	656.8	-7,121.3	298.5	-99.2	397.69	0.750	Level 1, ES, SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well LDS 1V-234
Project:	SEC.1-T5N-R65W	TVD Reference:	WELL @ 4628.0ft (Original Well Elev)
Reference Site:	LDS 5N65W1W Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4628.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-234	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 5N65W1W Pad Sec.1-T5N-R65W - LDS 1V-434 - 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 (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	5.46	29.1	2.8	29.3					
100.0	100.0	100.0	100.0	0.1	0.1	5.46	29.1	2.8	29.3	29.1	0.22	130.277		
200.0	200.0	200.0	200.0	0.3	0.3	5.46	29.1	2.8	29.3	28.6	0.67	43.426		
300.0	300.0	300.0	300.0	0.6	0.6	5.46	29.1	2.8	29.3	28.2	1.12	26.055		
400.0	400.0	400.0	400.0	0.8	0.8	5.46	29.1	2.8	29.3	27.7	1.57	18.611		
500.0	500.0	500.0	500.0	1.0	1.0	5.46	29.1	2.8	29.3	27.3	2.02	14.475		
600.0	600.0	600.0	600.0	1.2	1.2	5.46	29.1	2.8	29.3	26.8	2.47	11.843		
700.0	700.0	700.0	700.0	1.5	1.5	5.46	29.1	2.8	29.3	26.4	2.92	10.021		
800.0	800.0	800.0	800.0	1.7	1.7	5.46	29.1	2.8	29.3	25.9	3.37	8.685		
900.0	900.0	900.0	900.0	1.9	1.9	5.46	29.1	2.8	29.3	25.5	3.82	7.663		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	5.46	29.1	2.8	29.3	25.0	4.27	6.857 CC		
1,100.0	1,100.0	1,099.0	1,099.0	2.4	2.4	6.82	30.6	3.7	30.9	26.1	4.72	6.542		
1,200.0	1,200.0	1,197.9	1,197.7	2.6	2.6	10.17	35.0	6.3	35.6	30.5	5.16	6.906		
1,300.0	1,300.0	1,296.2	1,295.7	2.8	2.8	14.10	42.3	10.6	43.8	38.2	5.61	7.805		
1,400.0	1,400.0	1,393.8	1,392.6	3.0	3.0	17.61	52.4	16.6	55.4	49.4	6.07	9.126		
1,500.0	1,500.0	1,492.0	1,489.7	3.3	3.3	-17.74	65.0	24.1	68.4	61.9	6.51	10.512		
1,600.0	1,599.8	1,591.5	1,588.0	3.5	3.6	-16.74	78.1	32.0	78.6	71.6	6.95	11.307		
1,700.0	1,699.5	1,691.2	1,686.5	3.7	3.9	-16.63	91.2	39.8	85.4	78.0	7.39	11.555		
1,800.0	1,798.8	1,791.2	1,785.3	3.9	4.2	-17.12	104.4	47.7	89.3	81.4	7.85	11.379		
1,900.0	1,898.0	1,891.1	1,884.0	4.2	4.5	-17.66	117.6	55.5	92.7	84.4	8.32	11.150		
2,000.0	1,997.3	1,991.0	1,982.8	4.4	4.8	-18.17	130.8	63.4	96.2	87.4	8.79	10.939		
2,100.0	2,096.5	2,091.0	2,081.5	4.7	5.1	-18.64	143.9	71.2	99.6	90.4	9.27	10.745		
2,200.0	2,195.7	2,190.9	2,180.3	5.0	5.5	-19.09	157.1	79.1	103.1	93.3	9.76	10.567		
2,300.0	2,295.0	2,290.8	2,279.0	5.3	5.8	-19.50	170.3	86.9	106.6	96.3	10.25	10.403		
2,400.0	2,394.2	2,390.8	2,377.8	5.5	6.2	-19.88	183.5	94.8	110.1	99.3	10.74	10.251		
2,500.0	2,493.5	2,490.7	2,476.5	5.8	6.5	-20.25	196.6	102.6	113.5	102.3	11.23	10.110		
2,600.0	2,592.7	2,590.7	2,575.3	6.1	6.8	-20.59	209.8	110.5	117.0	105.3	11.73	9.979		
2,700.0	2,692.0	2,690.6	2,674.0	6.4	7.2	-20.91	223.0	118.4	120.5	108.3	12.23	9.857		
2,800.0	2,791.2	2,790.5	2,772.8	6.7	7.5	-21.21	236.2	126.2	124.0	111.3	12.73	9.744		
2,900.0	2,890.5	2,890.5	2,871.5	7.0	7.9	-21.50	249.3	134.1	127.5	114.3	13.23	9.637		
3,000.0	2,989.7	2,990.4	2,970.3	7.3	8.2	-21.77	262.5	141.9	131.0	117.3	13.74	9.537		
3,100.0	3,089.0	3,090.3	3,069.1	7.6	8.6	-22.02	275.7	149.8	134.5	120.3	14.24	9.444		
3,200.0	3,188.2	3,190.3	3,167.8	7.9	8.9	-22.27	288.9	157.6	138.0	123.3	14.75	9.356		
3,300.0	3,287.5	3,290.2	3,266.6	8.2	9.3	-22.50	302.0	165.5	141.5	126.3	15.26	9.273		
3,400.0	3,386.7	3,390.1	3,365.3	8.5	9.6	-22.72	315.2	173.3	145.0	129.3	15.77	9.195		
3,500.0	3,486.0	3,490.1	3,464.1	8.8	10.0	-22.93	328.4	181.2	148.6	132.3	16.29	9.121		
3,600.0	3,585.2	3,590.0	3,562.8	9.1	10.3	-23.13	341.6	189.1	152.1	135.3	16.80	9.051		
3,700.0	3,684.5	3,690.0	3,661.6	9.4	10.7	-23.32	354.7	196.9	155.6	138.3	17.32	8.985		
3,800.0	3,783.7	3,789.9	3,760.3	9.7	11.0	-23.50	367.9	204.8	159.1	141.3	17.83	8.922		
3,900.0	3,883.0	3,889.8	3,859.1	10.0	11.4	-23.68	381.1	212.6	162.6	144.3	18.35	8.862		
4,000.0	3,982.2	3,989.8	3,957.8	10.3	11.7	-23.85	394.3	220.5	166.1	147.3	18.87	8.805		
4,100.0	4,081.5	4,089.7	4,056.6	10.6	12.1	-24.01	407.4	228.3	169.7	150.3	19.39	8.751		
4,200.0	4,180.7	4,189.6	4,155.3	10.9	12.5	-24.16	420.6	236.2	173.2	153.3	19.91	8.700		
4,300.0	4,280.0	4,289.6	4,254.1	11.3	12.8	-24.31	433.8	244.0	176.7	156.3	20.43	8.650		
4,400.0	4,379.2	4,389.5	4,352.8	11.6	13.2	-24.45	447.0	251.9	180.2	159.3	20.95	8.603		
4,500.0	4,478.5	4,489.5	4,451.6	11.9	13.5	-24.59	460.1	259.8	183.8	162.3	21.47	8.558		
4,600.0	4,577.7	4,589.4	4,550.3	12.2	13.9	-24.72	473.3	267.6	187.3	165.3	22.00	8.515		
4,700.0	4,677.0	4,695.4	4,655.3	12.5	14.2	-25.00	485.9	275.1	189.4	166.9	22.51	8.414		
4,800.0	4,776.2	4,802.0	4,761.4	12.8	14.5	-25.66	495.2	280.7	188.0	165.0	23.01	8.169		
4,900.0	4,875.5	4,908.3	4,867.5	13.1	14.7	-26.74	501.2	284.2	183.1	159.6	23.53	7.781		
5,000.0	4,974.7	5,014.1	4,973.2	13.4	14.8	-28.33	503.7	285.7	174.8	150.8	24.08	7.260		

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-234
Project:	SEC.1-T5N-R65W	TVD Reference:	WELL @ 4628.0ft (Original Well Elev)
Reference Site:	LDS 5N65W1W Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4628.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-234	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 5N65W1W Pad Sec.1-T5N-R65W - LDS 1V-434 - 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	5,074.0	5,114.9	5,074.0	13.7	15.0	-30.37		503.8	285.8	164.3	139.6	24.68	6.656	
5,200.0	5,173.2	5,214.1	5,173.2	14.0	15.1	-32.62		503.8	285.8	153.9	128.6	25.32	6.079	
5,300.0	5,272.7	5,313.7	5,272.7	14.3	15.3	-34.58		503.8	285.8	145.8	120.0	25.87	5.637	
5,400.0	5,372.5	5,413.5	5,372.5	14.5	15.5	-35.95		503.8	285.8	140.8	114.4	26.34	5.343	
5,500.0	5,472.5	5,513.4	5,472.5	14.6	15.6	-36.58		503.8	285.8	138.6	111.8	26.73	5.184	
5,551.0	5,523.5	5,564.4	5,523.5	14.7	15.7	-36.67		503.8	285.8	138.3	111.4	26.92	5.137	
5,600.0	5,572.5	5,613.4	5,572.5	14.8	15.8	1.15		503.8	285.8	138.5	109.4	29.03	4.770	
5,700.0	5,672.5	5,713.4	5,672.5	15.0	16.0	1.15		503.8	285.8	138.5	109.1	29.40	4.711	
5,800.0	5,772.5	5,813.4	5,772.5	15.2	16.1	1.15		503.8	285.8	138.5	108.7	29.76	4.652	
5,900.0	5,872.5	5,913.4	5,872.5	15.3	16.3	1.15		503.8	285.8	138.5	108.3	30.13	4.595	
6,000.0	5,972.5	6,013.4	5,972.5	15.5	16.5	1.15		503.8	285.8	138.5	108.0	30.51	4.539	
6,004.8	5,977.3	6,018.2	5,977.3	15.5	16.5	91.16		503.8	285.8	138.5	109.8	28.72	4.822	
6,100.0	6,072.3	6,113.2	6,072.3	15.7	16.7	93.56		503.8	285.8	138.7	109.9	28.85	4.808	
6,200.0	6,170.4	6,213.5	6,172.5	15.7	16.8	100.06		503.8	283.1	140.7	112.1	28.59	4.920	
6,300.0	6,265.2	6,316.5	6,274.3	15.8	16.9	106.59		503.8	267.6	144.6	116.4	28.26	5.117	
6,400.0	6,355.1	6,422.1	6,375.5	15.8	16.9	112.53		503.8	237.7	150.2	122.3	27.91	5.380	
6,500.0	6,438.6	6,530.3	6,473.8	15.7	16.9	117.75		503.8	192.9	156.8	129.3	27.55	5.692	
6,600.0	6,514.2	6,641.0	6,566.9	15.7	16.9	122.17		503.8	133.2	164.0	136.8	27.21	6.026	
6,700.0	6,580.6	6,754.1	6,652.1	15.7	16.9	125.81		503.8	58.8	171.1	144.1	26.99	6.339	
6,800.0	6,636.6	6,869.6	6,726.7	16.3	16.9	128.69		503.8	-29.1	177.7	150.6	27.07	6.565	
6,900.0	6,681.4	6,987.0	6,788.2	17.4	17.2	130.86		503.8	-129.0	183.3	155.7	27.57	6.647	
7,000.0	6,714.2	7,106.1	6,834.2	18.8	18.7	132.35		503.8	-238.7	187.4	158.7	28.70	6.531	
7,100.0	6,734.3	7,226.2	6,862.7	20.6	20.7	133.21		503.8	-355.2	190.0	159.5	30.52	6.224	
7,200.0	6,741.5	7,346.9	6,872.7	22.5	22.9	133.45		503.8	-475.4	190.7	157.7	33.03	5.773	
7,213.5	6,741.6	7,360.8	6,872.7	22.7	23.2	133.44		503.8	-489.3	190.7	157.2	33.44	5.701	
7,300.0	6,740.9	7,447.3	6,872.7	24.5	25.0	133.60		503.8	-575.8	191.2	155.2	35.95	5.318	
7,400.0	6,740.2	7,547.3	6,872.7	26.7	27.2	133.76		503.8	-675.8	191.7	152.6	39.08	4.906	
7,500.0	6,739.4	7,647.3	6,872.8	29.0	29.4	133.92		503.8	-775.8	192.2	149.9	42.35	4.538	
7,600.0	6,738.7	7,747.3	6,872.8	31.4	31.8	134.08		503.8	-875.8	192.7	147.0	45.75	4.213	
7,700.0	6,738.0	7,847.3	6,872.9	33.9	34.2	134.24		503.8	-975.8	193.3	144.0	49.23	3.926	
7,800.0	6,737.3	7,947.3	6,872.9	36.4	36.7	134.40		503.8	-1,075.8	193.8	141.0	52.77	3.672	
7,900.0	6,736.6	8,047.3	6,872.9	38.9	39.2	134.56		503.8	-1,175.8	194.3	137.9	56.36	3.448	
8,000.0	6,735.9	8,147.3	6,873.0	41.5	41.8	134.72		503.8	-1,275.8	194.8	134.8	59.99	3.248	
8,100.0	6,735.2	8,247.3	6,873.0	44.1	44.4	134.87		503.8	-1,375.8	195.4	131.7	63.64	3.070	
8,200.0	6,734.4	8,347.3	6,873.0	46.7	47.0	135.03		503.8	-1,475.8	195.9	128.6	67.31	2.910	
8,300.0	6,733.7	8,447.3	6,873.1	49.3	49.6	135.18		503.8	-1,575.8	196.4	125.4	71.00	2.767	
8,400.0	6,733.0	8,547.3	6,873.1	52.0	52.3	135.34		503.8	-1,675.8	197.0	122.3	74.69	2.637	
8,500.0	6,732.3	8,647.3	6,873.1	54.7	55.0	135.49		503.8	-1,775.8	197.5	119.1	78.39	2.519	
8,600.0	6,731.6	8,747.3	6,873.2	57.4	57.6	135.64		503.8	-1,875.8	198.0	115.9	82.08	2.413	
8,700.0	6,730.9	8,847.2	6,873.2	60.1	60.3	135.79		503.8	-1,975.8	198.6	112.8	85.78	2.315	
8,800.0	6,730.1	8,947.2	6,873.2	62.8	63.0	135.95		503.8	-2,075.8	199.1	109.6	89.47	2.225	
8,900.0	6,729.4	9,047.2	6,873.3	65.5	65.8	136.10		503.8	-2,175.8	199.6	106.5	93.15	2.143	
9,000.0	6,728.7	9,147.2	6,873.3	68.2	68.5	136.24		503.8	-2,275.8	200.2	103.3	96.83	2.067	
9,100.0	6,728.0	9,247.2	6,873.3	71.0	71.2	136.39		503.8	-2,375.7	200.7	100.2	100.50	1.997	
9,200.0	6,727.3	9,347.2	6,873.4	73.7	73.9	136.54		503.8	-2,475.7	201.3	97.1	104.17	1.932	
9,300.0	6,726.6	9,447.2	6,873.4	76.5	76.7	136.69		503.8	-2,575.7	201.8	94.0	107.82	1.872	
9,400.0	6,725.9	9,547.2	6,873.4	79.2	79.4	136.83		503.8	-2,675.7	202.4	90.9	111.46	1.816	
9,500.0	6,725.1	9,647.2	6,873.5	82.0	82.2	136.98		503.8	-2,775.7	202.9	87.8	115.09	1.763	
9,600.0	6,724.4	9,747.2	6,873.5	84.7	84.9	137.12		503.8	-2,875.7	203.5	84.8	118.70	1.714	
9,700.0	6,723.7	9,847.2	6,873.6	87.5	87.7	137.26		503.8	-2,975.7	204.0	81.7	122.31	1.668	
9,800.0	6,723.0	9,947.2	6,873.6	90.2	90.4	137.41		503.8	-3,075.7	204.6	78.7	125.90	1.625	

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-234
Project:	SEC.1-T5N-R65W	TVD Reference:	WELL @ 4628.0ft (Original Well Elev)
Reference Site:	LDS 5N65W1W Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4628.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-234	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 5N65W1W Pad Sec.1-T5N-R65W - LDS 1V-434 - 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
9,900.0	6,722.3	10,047.2	6,873.6	93.0	93.2	137.55		503.8	-3,175.7	205.1	75.6	129.48	1.584	
10,000.0	6,721.6	10,147.2	6,873.7	95.8	96.0	137.69		503.8	-3,275.7	205.7	72.6	133.04	1.546	
10,100.0	6,720.8	10,247.2	6,873.7	98.5	98.7	137.83		503.8	-3,375.7	206.2	69.6	136.60	1.510	
10,200.0	6,720.1	10,347.2	6,873.7	101.3	101.5	137.97		503.8	-3,475.7	206.8	66.6	140.13	1.476 Level 3	
10,300.0	6,719.4	10,447.2	6,873.8	104.1	104.3	138.11		503.8	-3,575.7	207.3	63.7	143.66	1.443 Level 3	
10,400.0	6,718.7	10,547.2	6,873.8	106.9	107.0	138.25		503.8	-3,675.7	207.9	60.7	147.17	1.413 Level 3	
10,500.0	6,718.0	10,647.2	6,873.8	109.6	109.8	138.38		503.8	-3,775.7	208.5	57.8	150.66	1.384 Level 3	
10,600.0	6,717.3	10,747.2	6,873.9	112.4	112.6	138.52		503.8	-3,875.7	209.0	54.9	154.14	1.356 Level 3	
10,700.0	6,716.5	10,847.2	6,873.9	115.2	115.4	138.66		503.8	-3,975.7	209.6	52.0	157.61	1.330 Level 3	
10,800.0	6,715.8	10,947.2	6,873.9	118.0	118.2	138.79		503.8	-4,075.7	210.1	49.1	161.06	1.305 Level 3	
10,900.0	6,715.1	11,047.2	6,874.0	120.8	120.9	138.93		503.8	-4,175.7	210.7	46.2	164.50	1.281 Level 3	
11,000.0	6,714.4	11,147.2	6,874.0	123.5	123.7	139.06		503.8	-4,275.7	211.3	43.4	167.93	1.258 Level 3	
11,100.0	6,713.7	11,247.2	6,874.0	126.3	126.5	139.19		503.8	-4,375.7	211.8	40.5	171.33	1.236 Level 2	
11,200.0	6,713.0	11,347.2	6,874.1	129.1	129.3	139.33		503.8	-4,475.7	212.4	37.7	174.73	1.216 Level 2	
11,300.0	6,712.3	11,447.2	6,874.1	131.9	132.1	139.46		503.8	-4,575.7	213.0	34.9	178.11	1.196 Level 2	
11,400.0	6,711.5	11,547.2	6,874.1	134.7	134.9	139.59		503.8	-4,675.7	213.6	32.1	181.47	1.177 Level 2	
11,500.0	6,710.8	11,647.2	6,874.2	137.5	137.6	139.72		503.8	-4,775.7	214.1	29.3	184.82	1.159 Level 2	
11,600.0	6,710.1	11,747.2	6,874.2	140.3	140.4	139.85		503.8	-4,875.7	214.7	26.5	188.16	1.141 Level 2	
11,700.0	6,709.4	11,847.2	6,874.3	143.1	143.2	139.98		503.8	-4,975.7	215.3	23.8	191.48	1.124 Level 2	
11,800.0	6,708.7	11,947.2	6,874.3	145.9	146.0	140.10		503.8	-5,075.7	215.9	21.1	194.79	1.108 Level 2	
11,900.0	6,708.0	12,047.2	6,874.3	148.6	148.8	140.23		503.8	-5,175.7	216.4	18.3	198.08	1.093 Level 2	
12,000.0	6,707.2	12,147.2	6,874.4	151.4	151.6	140.36		503.8	-5,275.7	217.0	15.6	201.36	1.078 Level 2	
12,100.0	6,706.5	12,247.2	6,874.4	154.2	154.4	140.49		503.8	-5,375.7	217.6	13.0	204.62	1.063 Level 2	
12,200.0	6,705.8	12,347.1	6,874.4	157.0	157.2	140.61		503.8	-5,475.7	218.2	10.3	207.87	1.049 Level 2	
12,300.0	6,705.1	12,447.1	6,874.5	159.8	160.0	140.74		503.8	-5,575.7	218.7	7.6	211.11	1.036 Level 2	
12,400.0	6,704.4	12,547.1	6,874.5	162.6	162.8	140.86		503.8	-5,675.7	219.3	5.0	214.33	1.023 Level 2	
12,500.0	6,703.7	12,647.1	6,874.5	165.4	165.6	140.98		503.8	-5,775.7	219.9	2.4	217.54	1.011 Level 2	
12,600.0	6,703.0	12,747.1	6,874.6	168.2	168.4	141.11		503.8	-5,875.7	220.5	-0.2	220.73	0.999 Level 1	
12,700.0	6,702.2	12,847.1	6,874.6	171.0	171.2	141.23		503.8	-5,975.6	221.1	-2.8	223.91	0.987 Level 1	
12,800.0	6,701.5	12,947.1	6,874.6	173.8	174.0	141.35		503.8	-6,075.6	221.7	-5.4	227.08	0.976 Level 1	
12,900.0	6,700.8	13,047.1	6,874.7	176.6	176.7	141.47		503.8	-6,175.6	222.2	-8.0	230.23	0.965 Level 1	
13,000.0	6,700.1	13,147.1	6,874.7	179.4	179.5	141.59		503.8	-6,275.6	222.8	-10.5	233.37	0.955 Level 1	
13,100.0	6,699.4	13,247.1	6,874.7	182.2	182.3	141.71		503.8	-6,375.6	223.4	-13.1	236.49	0.945 Level 1	
13,200.0	6,698.7	13,347.1	6,874.8	185.0	185.1	141.83		503.8	-6,475.6	224.0	-15.6	239.61	0.935 Level 1	
13,300.0	6,697.9	13,447.1	6,874.8	187.8	187.9	141.95		503.8	-6,575.6	224.6	-18.1	242.70	0.925 Level 1	
13,400.0	6,697.2	13,547.1	6,874.8	190.6	190.7	142.06		503.8	-6,675.6	225.2	-20.6	245.79	0.916 Level 1	
13,500.0	6,696.5	13,647.1	6,874.9	193.4	193.5	142.18		503.8	-6,775.6	225.8	-23.1	248.86	0.907 Level 1	
13,600.0	6,695.8	13,747.1	6,874.9	196.2	196.3	142.30		503.8	-6,875.6	226.4	-25.5	251.91	0.899 Level 1	
13,700.0	6,695.1	13,847.1	6,874.9	199.0	199.1	142.41		503.8	-6,975.6	227.0	-28.0	254.96	0.890 Level 1	
13,800.0	6,694.4	13,947.1	6,875.0	201.8	201.9	142.53		503.8	-7,075.6	227.6	-30.4	257.99	0.882 Level 1	
13,851.3	6,694.0	13,995.6	6,875.0	203.2	203.3	142.59		503.8	-7,124.1	227.9	-31.6	259.51	0.878 Level 1, ES, SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well LDS 1V-234
Project:	SEC.1-T5N-R65W	TVD Reference:	WELL @ 4628.0ft (Original Well Elev)
Reference Site:	LDS 5N65W1W Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4628.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-234	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 5N65W1W Pad Sec.1-T5N-R65W - LDS 1W-314 - Wellbore #1 - Plan #1 (9-4-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWDD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	180.00		-29.1	0.0	29.1				
100.0	100.0	100.0	100.0	0.1	0.1	180.00		-29.1	0.0	29.1	28.9	0.22	129.651	
200.0	200.0	200.0	200.0	0.3	0.3	180.00		-29.1	0.0	29.1	28.5	0.67	43.217	
300.0	300.0	300.0	300.0	0.6	0.6	180.00		-29.1	0.0	29.1	28.0	1.12	25.930	
400.0	400.0	400.0	400.0	0.8	0.8	180.00		-29.1	0.0	29.1	27.6	1.57	18.522	
500.0	500.0	500.0	500.0	1.0	1.0	180.00		-29.1	0.0	29.1	27.1	2.02	14.406	
600.0	600.0	600.0	600.0	1.2	1.2	180.00		-29.1	0.0	29.1	26.7	2.47	11.786	
700.0	700.0	700.0	700.0	1.5	1.5	180.00		-29.1	0.0	29.1	26.2	2.92	9.973	
800.0	800.0	800.0	800.0	1.7	1.7	180.00		-29.1	0.0	29.1	25.8	3.37	8.643	
900.0	900.0	900.0	900.0	1.9	1.9	180.00		-29.1	0.0	29.1	25.3	3.82	7.627	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	180.00		-29.1	0.0	29.1	24.9	4.27	6.824	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	180.00		-29.1	0.0	29.1	24.4	4.72	6.174	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	180.00		-29.1	0.0	29.1	24.0	5.17	5.637	
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	180.00		-29.1	0.0	29.1	23.5	5.62	5.186	
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	180.00		-29.1	0.0	29.1	23.1	6.07	4.802 CC, ES	
1,500.0	1,500.0	1,500.0	1,500.0	3.3	3.3	144.23		-29.1	0.0	30.5	24.0	6.51	4.688	
1,600.0	1,599.8	1,599.8	1,599.8	3.5	3.5	149.21		-29.1	0.0	34.9	28.0	6.95	5.022	
1,700.0	1,699.5	1,699.5	1,699.5	3.7	3.7	155.14		-29.1	0.0	42.6	35.3	7.39	5.773	
1,800.0	1,798.8	1,798.8	1,798.8	3.9	3.9	160.41		-29.1	0.0	53.6	45.7	7.82	6.848	
1,900.0	1,898.0	1,898.0	1,898.0	4.2	4.2	164.01		-29.1	0.0	65.2	57.0	8.27	7.890	
2,000.0	1,997.3	1,997.3	1,997.3	4.4	4.4	166.52		-29.1	0.0	77.1	68.4	8.72	8.843	
2,100.0	2,096.5	2,097.7	2,097.7	4.7	4.6	167.38		-29.2	1.7	88.4	79.2	9.16	9.652	
2,200.0	2,195.7	2,198.4	2,198.3	5.0	4.8	166.15		-29.4	6.9	98.3	88.7	9.59	10.251	
2,300.0	2,295.0	2,299.2	2,298.7	5.3	5.0	163.38		-29.7	15.6	107.1	97.1	10.04	10.664	
2,400.0	2,394.2	2,399.3	2,398.1	5.5	5.2	159.50		-30.1	27.5	115.2	104.7	10.52	10.952	
2,500.0	2,493.5	2,498.7	2,496.6	5.8	5.5	155.87		-30.6	40.0	123.6	112.6	11.01	11.226	
2,600.0	2,592.7	2,598.0	2,595.2	6.1	5.7	152.72		-31.1	52.4	132.4	120.9	11.52	11.499	
2,700.0	2,692.0	2,697.4	2,693.8	6.4	6.0	149.96		-31.5	64.9	141.6	129.6	12.04	11.767	
2,800.0	2,791.2	2,796.8	2,792.4	6.7	6.2	147.55		-32.0	77.3	151.1	138.6	12.57	12.025	
2,900.0	2,890.5	2,896.1	2,890.9	7.0	6.5	145.42		-32.4	89.8	160.8	147.7	13.11	12.271	
3,000.0	2,989.7	2,995.5	2,989.5	7.3	6.7	143.53		-32.9	102.3	170.7	157.1	13.65	12.506	
3,100.0	3,089.0	3,094.8	3,088.1	7.6	7.0	141.86		-33.3	114.7	180.8	166.6	14.21	12.728	
3,200.0	3,188.2	3,194.2	3,186.7	7.9	7.3	140.36		-33.8	127.2	191.0	176.3	14.76	12.938	
3,300.0	3,287.5	3,293.6	3,285.2	8.2	7.6	139.01		-34.2	139.6	201.3	186.0	15.33	13.137	
3,400.0	3,386.7	3,392.9	3,383.8	8.5	7.9	137.80		-34.7	152.1	211.8	195.9	15.89	13.324	
3,500.0	3,486.0	3,492.3	3,482.4	8.8	8.2	136.70		-35.1	164.6	222.3	205.8	16.47	13.500	
3,600.0	3,585.2	3,591.6	3,581.0	9.1	8.4	135.69		-35.6	177.0	232.9	215.8	17.04	13.666	
3,700.0	3,684.5	3,691.0	3,679.5	9.4	8.7	134.78		-36.1	189.5	243.5	225.9	17.62	13.823	
3,800.0	3,783.7	3,790.4	3,778.1	9.7	9.0	133.94		-36.5	201.9	254.2	236.0	18.20	13.971	
3,900.0	3,883.0	3,889.7	3,876.7	10.0	9.3	133.17		-37.0	214.4	265.0	246.2	18.78	14.111	
4,000.0	3,982.2	3,989.1	3,975.3	10.3	9.6	132.46		-37.4	226.8	275.8	256.4	19.36	14.243	
4,100.0	4,081.5	4,088.4	4,073.8	10.6	9.9	131.81		-37.9	239.3	286.6	266.7	19.95	14.369	
4,200.0	4,180.7	4,187.8	4,172.4	10.9	10.2	131.20		-38.3	251.8	297.5	277.0	20.53	14.487	
4,300.0	4,280.0	4,287.9	4,271.8	11.3	10.5	130.66		-38.8	264.1	308.4	287.2	21.11	14.604	
4,400.0	4,379.2	4,390.0	4,373.4	11.6	10.8	130.64		-39.1	274.0	318.6	297.0	21.63	14.729	
4,500.0	4,478.5	4,492.1	4,475.3	11.9	11.0	131.23		-39.4	280.3	328.1	305.9	22.11	14.835	
4,600.0	4,577.7	4,594.0	4,577.2	12.2	11.2	132.40		-39.5	282.9	336.8	314.2	22.56	14.928	
4,700.0	4,677.0	4,693.8	4,677.0	12.5	11.3	133.89		-39.5	283.0	345.2	322.2	22.99	15.018	
4,800.0	4,776.2	4,793.1	4,776.2	12.8	11.5	135.31		-39.5	283.0	353.8	330.4	23.42	15.106	
4,900.0	4,875.5	4,892.3	4,875.5	13.1	11.7	136.66		-39.5	283.0	362.7	338.8	23.86	15.200	
5,000.0	4,974.7	4,991.6	4,974.7	13.4	11.9	137.95		-39.5	283.0	371.7	347.4	24.29	15.300	

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-234
Project:	SEC.1-T5N-R65W	TVD Reference:	WELL @ 4628.0ft (Original Well Elev)
Reference Site:	LDS 5N65W1W Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4628.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-234	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 5N65W1W Pad Sec.1-T5N-R65W - LDS 1W-314 - Wellbore #1 - Plan #1 (9-4-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWDD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside	Offset Wellbore Centre	Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	Toolface (°)		+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)		
5,100.0	5,074.0	5,090.8	5,074.0	13.7	12.1	139.18		-39.5	283.0	380.9	356.2	24.73	15.405	
5,200.0	5,173.2	5,190.1	5,173.2	14.0	12.3	140.37		-39.5	283.0	390.2	365.0	25.16	15.511	
5,300.0	5,272.7	5,289.6	5,272.7	14.3	12.5	141.35		-39.5	283.0	397.7	372.2	25.54	15.573	
5,400.0	5,372.5	5,389.4	5,372.5	14.5	12.7	141.96		-39.5	283.0	402.6	376.7	25.91	15.539	
5,500.0	5,472.5	5,489.4	5,472.5	14.6	12.9	142.23		-39.5	283.0	404.7	378.5	26.26	15.412	
5,600.0	5,572.5	5,589.4	5,572.5	14.8	13.1	180.00		-39.5	283.0	404.8	378.8	25.99	15.578	
5,700.0	5,672.5	5,689.4	5,672.5	15.0	13.3	180.00		-39.5	283.0	404.8	378.4	26.39	15.338	
5,800.0	5,772.5	5,789.4	5,772.5	15.2	13.5	180.00		-39.5	283.0	404.8	378.0	26.80	15.105	
5,900.0	5,872.5	5,889.4	5,872.5	15.3	13.7	180.00		-39.5	283.0	404.8	377.6	27.21	14.878	
6,000.0	5,972.5	5,989.4	5,972.5	15.5	13.9	180.00		-39.5	283.0	404.8	377.2	27.62	14.657	
6,000.0	5,972.5	5,989.4	5,972.5	15.5	13.9	180.00		-39.5	283.0	404.8	377.2	27.62	14.657	
6,100.0	6,072.3	6,089.4	6,072.5	15.7	14.1	-90.72		-39.5	282.2	404.8	376.2	28.62	14.146	
6,200.0	6,170.4	6,190.3	6,172.7	15.7	14.2	-91.83		-39.5	271.0	405.0	376.2	28.87	14.029	
6,300.0	6,265.2	6,292.2	6,271.5	15.8	14.3	-92.91		-39.5	246.4	405.3	376.3	29.03	13.964	
6,400.0	6,355.1	6,395.2	6,367.2	15.8	14.4	-93.94		-39.5	208.4	405.8	376.6	29.15	13.919	
6,500.0	6,438.6	6,499.3	6,457.7	15.7	14.5	-94.91		-39.5	157.3	406.3	377.0	29.36	13.841	
6,600.0	6,514.2	6,604.3	6,541.3	15.7	14.7	-95.79		-39.5	93.8	406.9	377.1	29.79	13.658	
6,700.0	6,580.6	6,710.3	6,615.9	15.7	15.2	-96.57		-39.5	18.7	407.5	376.9	30.64	13.299	
6,800.0	6,636.6	6,817.0	6,679.8	16.3	15.9	-97.23		-39.5	-66.7	408.1	376.0	32.08	12.721	
6,900.0	6,681.4	6,924.4	6,731.6	17.4	17.0	-97.76		-39.5	-160.7	408.6	374.4	34.21	11.942	
7,000.0	6,714.2	7,032.4	6,769.7	18.8	18.5	-98.15		-39.5	-261.6	409.0	371.9	37.06	11.036	
7,100.0	6,734.3	7,140.8	6,793.4	20.6	20.3	-98.39		-39.5	-367.3	409.2	368.7	40.53	10.095	
7,200.0	6,741.5	7,249.3	6,801.9	22.5	22.4	-98.48		-39.5	-475.4	409.3	364.8	44.49	9.199	
7,300.0	6,740.9	7,350.0	6,801.5	24.5	24.5	-98.52		-39.5	-576.1	409.3	360.7	48.61	8.420	
7,400.0	6,740.2	7,450.0	6,801.1	26.7	26.7	-98.56		-39.5	-676.1	409.4	356.4	52.96	7.729	
7,500.0	6,739.4	7,550.0	6,800.7	29.0	29.0	-98.61		-39.5	-776.1	409.4	351.9	57.52	7.118	
7,600.0	6,738.7	7,650.0	6,800.3	31.4	31.4	-98.65		-39.5	-876.1	409.5	347.2	62.24	6.579	
7,700.0	6,738.0	7,750.0	6,799.9	33.9	33.9	-98.69		-39.5	-976.1	409.5	342.4	67.09	6.104	
7,800.0	6,737.3	7,850.0	6,799.5	36.4	36.4	-98.74		-39.5	-1,076.1	409.6	337.5	72.04	5.685	
7,900.0	6,736.6	7,950.0	6,799.1	38.9	38.9	-98.78		-39.5	-1,176.1	409.6	332.5	77.07	5.315	
8,000.0	6,735.9	8,050.0	6,798.7	41.5	41.5	-98.82		-39.5	-1,276.1	409.7	327.5	82.17	4.986	
8,100.0	6,735.2	8,150.0	6,798.3	44.1	44.1	-98.87		-39.5	-1,376.1	409.7	322.4	87.32	4.692	
8,200.0	6,734.4	8,250.0	6,797.9	46.7	46.8	-98.91		-39.5	-1,476.1	409.8	317.2	92.52	4.429	
8,300.0	6,733.7	8,350.0	6,797.5	49.3	49.4	-98.95		-39.5	-1,576.1	409.8	312.1	97.75	4.192	
8,400.0	6,733.0	8,450.0	6,797.1	52.0	52.1	-99.00		-39.5	-1,676.1	409.9	306.8	103.02	3.978	
8,500.0	6,732.3	8,550.0	6,796.7	54.7	54.8	-99.04		-39.5	-1,776.1	409.9	301.6	108.31	3.785	
8,600.0	6,731.6	8,650.0	6,796.3	57.4	57.5	-99.08		-39.5	-1,876.1	410.0	296.3	113.63	3.608	
8,700.0	6,730.9	8,750.0	6,795.9	60.1	60.2	-99.13		-39.5	-1,976.1	410.0	291.0	118.96	3.447	
8,800.0	6,730.1	8,850.0	6,795.5	62.8	62.9	-99.17		-39.5	-2,076.1	410.1	285.7	124.32	3.299	
8,900.0	6,729.4	8,950.0	6,795.1	65.5	65.6	-99.21		-39.5	-2,176.1	410.1	280.4	129.68	3.162	
9,000.0	6,728.7	9,050.0	6,794.7	68.2	68.4	-99.26		-39.5	-2,276.1	410.2	275.1	135.06	3.037	
9,100.0	6,728.0	9,150.0	6,794.3	71.0	71.1	-99.30		-39.5	-2,376.1	410.2	269.8	140.45	2.921	
9,200.0	6,727.3	9,250.0	6,793.9	73.7	73.8	-99.34		-39.5	-2,476.1	410.3	264.4	145.85	2.813	
9,300.0	6,726.6	9,350.0	6,793.5	76.5	76.6	-99.39		-39.5	-2,576.1	410.3	259.0	151.26	2.713	
9,400.0	6,725.9	9,450.0	6,793.1	79.2	79.3	-99.43		-39.5	-2,676.1	410.4	253.7	156.68	2.619	
9,500.0	6,725.1	9,550.0	6,792.7	82.0	82.1	-99.47		-39.5	-2,776.1	410.4	248.3	162.10	2.532	
9,600.0	6,724.4	9,650.0	6,792.3	84.7	84.8	-99.52		-39.5	-2,876.1	410.5	242.9	167.53	2.450	
9,700.0	6,723.7	9,750.0	6,791.9	87.5	87.6	-99.56		-39.5	-2,976.1	410.5	237.6	172.97	2.373	
9,800.0	6,723.0	9,850.0	6,791.5	90.2	90.4	-99.60		-39.5	-3,076.1	410.6	232.2	178.40	2.301	
9,900.0	6,722.3	9,950.0	6,791.1	93.0	93.1	-99.65		-39.5	-3,176.1	410.6	226.8	183.85	2.234	
10,000.0	6,721.6	10,050.0	6,790.7	95.8	95.9	-99.69		-39.5	-3,276.1	410.7	221.4	189.29	2.170	

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-234
Project:	SEC.1-T5N-R65W	TVD Reference:	WELL @ 4628.0ft (Original Well Elev)
Reference Site:	LDS 5N65W1W Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4628.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-234	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 5N65W1W Pad Sec.1-T5N-R65W - LDS 1W-314 - 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
10,100.0	6,720.8	10,150.0	6,790.3	98.5	98.7	-99.73	-39.5	-3,376.1	410.7	216.0	194.74	2.109	
10,200.0	6,720.1	10,250.0	6,789.9	101.3	101.5	-99.78	-39.5	-3,476.1	410.8	210.6	200.19	2.052	
10,300.0	6,719.4	10,350.0	6,789.5	104.1	104.2	-99.82	-39.5	-3,576.1	410.8	205.2	205.65	1.998	
10,400.0	6,718.7	10,450.0	6,789.1	106.9	107.0	-99.86	-39.5	-3,676.0	410.9	199.8	211.10	1.946	
10,500.0	6,718.0	10,550.0	6,788.7	109.6	109.8	-99.91	-39.5	-3,776.0	410.9	194.4	216.56	1.898	
10,600.0	6,717.3	10,650.0	6,788.3	112.4	112.6	-99.95	-39.5	-3,876.0	411.0	189.0	222.02	1.851	
10,700.0	6,716.5	10,750.0	6,787.9	115.2	115.4	-99.99	-39.5	-3,976.0	411.1	183.6	227.48	1.807	
10,800.0	6,715.8	10,850.0	6,787.5	118.0	118.1	-100.04	-39.5	-4,076.0	411.1	178.2	232.95	1.765	
10,900.0	6,715.1	10,950.0	6,787.1	120.8	120.9	-100.08	-39.5	-4,176.0	411.2	172.8	238.41	1.725	
11,000.0	6,714.4	11,050.0	6,786.7	123.5	123.7	-100.12	-39.5	-4,276.0	411.2	167.3	243.87	1.686	
11,100.0	6,713.7	11,150.0	6,786.3	126.3	126.5	-100.17	-39.5	-4,376.0	411.3	161.9	249.34	1.649	
11,200.0	6,713.0	11,250.0	6,785.9	129.1	129.3	-100.21	-39.5	-4,476.0	411.3	156.5	254.80	1.614	
11,300.0	6,712.3	11,350.0	6,785.5	131.9	132.1	-100.25	-39.5	-4,576.0	411.4	151.1	260.27	1.581	
11,400.0	6,711.5	11,450.0	6,785.1	134.7	134.9	-100.29	-39.5	-4,676.0	411.4	145.7	265.73	1.548	
11,500.0	6,710.8	11,550.0	6,784.7	137.5	137.7	-100.34	-39.5	-4,776.0	411.5	140.3	271.20	1.517	
11,600.0	6,710.1	11,650.0	6,784.3	140.3	140.5	-100.38	-39.5	-4,876.0	411.6	134.9	276.66	1.488	Level 3
11,700.0	6,709.4	11,750.0	6,783.9	143.1	143.2	-100.42	-39.5	-4,976.0	411.6	129.5	282.13	1.459	Level 3
11,800.0	6,708.7	11,850.0	6,783.5	145.9	146.0	-100.47	-39.5	-5,076.0	411.7	124.1	287.59	1.431	Level 3
11,900.0	6,708.0	11,950.0	6,783.1	148.6	148.8	-100.51	-39.5	-5,176.0	411.7	118.7	293.06	1.405	Level 3
12,000.0	6,707.2	12,050.0	6,782.7	151.4	151.6	-100.55	-39.5	-5,276.0	411.8	113.3	298.52	1.379	Level 3
12,100.0	6,706.5	12,150.0	6,782.3	154.2	154.4	-100.60	-39.5	-5,376.0	411.8	107.9	303.99	1.355	Level 3
12,141.6	6,706.2	12,191.5	6,782.1	155.4	155.6	-100.61	-39.5	-5,417.6	411.9	105.6	306.26	1.345	Level 3
12,200.0	6,705.8	12,213.9	6,782.0	157.0	156.1	-100.62	-39.5	-5,440.0	413.5	105.1	308.34	1.341	Level 3, SF
12,300.0	6,705.1	12,213.9	6,782.0	159.8	156.1	-100.62	-39.5	-5,440.0	433.8	122.8	311.09	1.395	Level 3
12,400.0	6,704.4	12,213.9	6,782.0	162.6	156.1	-100.62	-39.5	-5,440.0	474.8	161.0	313.84	1.513	
12,500.0	6,703.7	12,213.9	6,782.0	165.4	156.1	-100.62	-39.5	-5,440.0	531.7	215.1	316.59	1.680	
12,600.0	6,703.0	12,213.9	6,782.0	168.2	156.1	-100.62	-39.5	-5,440.0	600.0	280.7	319.35	1.879	
12,700.0	6,702.2	12,213.9	6,782.0	171.0	156.1	-100.62	-39.5	-5,440.0	676.2	354.1	322.10	2.099	
12,800.0	6,701.5	12,213.9	6,782.0	173.8	156.1	-100.62	-39.5	-5,440.0	758.0	433.1	324.85	2.333	
12,900.0	6,700.8	12,213.9	6,782.0	176.6	156.1	-100.62	-39.5	-5,440.0	843.7	516.1	327.61	2.575	
13,000.0	6,700.1	12,213.9	6,782.0	179.4	156.1	-100.62	-39.5	-5,440.0	932.2	601.9	330.36	2.822	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well LDS 1V-234
Project:	SEC.1-T5N-R65W	TVD Reference:	WELL @ 4628.0ft (Original Well Elev)
Reference Site:	LDS 5N65W1W Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4628.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-234	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 5N65W1W Pad Sec.1-T5N-R65W - LDS 1W-414 - Wellbore #1 - Plan #1 (9-4-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWDD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	180.00	-61.9	0.0	61.9					
100.0	100.0	100.0	100.0	0.1	0.1	180.00	-61.9	0.0	61.9	61.7	0.22	275.528		
200.0	200.0	200.0	200.0	0.3	0.3	180.00	-61.9	0.0	61.9	61.3	0.67	91.843		
300.0	300.0	300.0	300.0	0.6	0.6	180.00	-61.9	0.0	61.9	60.8	1.12	55.106		
400.0	400.0	400.0	400.0	0.8	0.8	180.00	-61.9	0.0	61.9	60.4	1.57	39.361		
500.0	500.0	500.0	500.0	1.0	1.0	180.00	-61.9	0.0	61.9	59.9	2.02	30.614		
600.0	600.0	600.0	600.0	1.2	1.2	180.00	-61.9	0.0	61.9	59.5	2.47	25.048		
700.0	700.0	700.0	700.0	1.5	1.5	180.00	-61.9	0.0	61.9	59.0	2.92	21.194		
800.0	800.0	800.0	800.0	1.7	1.7	180.00	-61.9	0.0	61.9	58.6	3.37	18.369		
900.0	900.0	900.0	900.0	1.9	1.9	180.00	-61.9	0.0	61.9	58.1	3.82	16.208		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	180.00	-61.9	0.0	61.9	57.7	4.27	14.501		
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	180.00	-61.9	0.0	61.9	57.2	4.72	13.120		
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	180.00	-61.9	0.0	61.9	56.8	5.17	11.979		
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	180.00	-61.9	0.0	61.9	56.3	5.62	11.021		
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	180.00	-61.9	0.0	61.9	55.9	6.07	10.205 CC, ES		
1,500.0	1,500.0	1,500.0	1,500.0	3.3	3.3	143.19	-61.9	0.0	63.3	56.8	6.51	9.720		
1,600.0	1,599.8	1,599.8	1,599.8	3.5	3.5	145.80	-61.9	0.0	67.6	60.6	6.95	9.718		
1,700.0	1,699.5	1,698.4	1,698.3	3.7	3.7	148.25	-62.8	1.4	75.7	68.3	7.37	10.270		
1,800.0	1,798.8	1,796.4	1,796.3	3.9	3.9	149.20	-65.5	5.7	87.9	80.1	7.78	11.306		
1,900.0	1,898.0	1,894.1	1,893.6	4.2	4.1	148.35	-69.8	12.8	102.0	93.8	8.21	12.426		
2,000.0	1,997.3	1,991.7	1,990.5	4.4	4.3	146.31	-75.8	22.6	117.4	108.8	8.65	13.570		
2,100.0	2,096.5	2,090.4	2,088.4	4.7	4.5	144.45	-82.3	33.1	133.4	124.3	9.12	14.627		
2,200.0	2,195.7	2,189.0	2,186.3	5.0	4.7	142.99	-88.7	43.6	149.5	139.9	9.60	15.575		
2,300.0	2,295.0	2,287.7	2,284.1	5.3	5.0	141.82	-95.1	54.1	165.6	155.5	10.08	16.425		
2,400.0	2,394.2	2,386.3	2,382.0	5.5	5.2	140.85	-101.6	64.6	181.8	171.2	10.58	17.187		
2,500.0	2,493.5	2,484.9	2,479.9	5.8	5.5	140.04	-108.0	75.1	198.0	186.9	11.08	17.872		
2,600.0	2,592.7	2,583.6	2,577.7	6.1	5.8	139.35	-114.5	85.5	214.3	202.7	11.59	18.492		
2,700.0	2,692.0	2,682.2	2,675.6	6.4	6.1	138.76	-120.9	96.0	230.6	218.5	12.10	19.052		
2,800.0	2,791.2	2,780.8	2,773.5	6.7	6.3	138.25	-127.4	106.5	246.9	234.3	12.62	19.560		
2,900.0	2,890.5	2,879.5	2,871.3	7.0	6.6	137.80	-133.8	117.0	263.2	250.1	13.15	20.023		
3,000.0	2,989.7	2,978.1	2,969.2	7.3	6.9	137.41	-140.2	127.5	279.6	265.9	13.67	20.445		
3,100.0	3,089.0	3,076.8	3,067.1	7.6	7.2	137.06	-146.7	138.0	295.9	281.7	14.21	20.832		
3,200.0	3,188.2	3,175.4	3,164.9	7.9	7.5	136.74	-153.1	148.5	312.3	297.6	14.74	21.187		
3,300.0	3,287.5	3,274.0	3,262.8	8.2	7.8	136.46	-159.6	158.9	328.7	313.4	15.28	21.514		
3,400.0	3,386.7	3,372.7	3,360.7	8.5	8.1	136.20	-166.0	169.4	345.1	329.2	15.82	21.816		
3,500.0	3,486.0	3,471.3	3,458.5	8.8	8.4	135.97	-172.4	179.9	361.4	345.1	16.36	22.096		
3,600.0	3,585.2	3,569.9	3,556.4	9.1	8.7	135.75	-178.9	190.4	377.8	360.9	16.90	22.355		
3,700.0	3,684.5	3,668.6	3,654.3	9.4	9.0	135.56	-185.3	200.9	394.2	376.8	17.45	22.596		
3,800.0	3,783.7	3,767.2	3,752.2	9.7	9.3	135.38	-191.8	211.4	410.6	392.6	17.99	22.820		
3,900.0	3,883.0	3,865.9	3,850.0	10.0	9.6	135.21	-198.2	221.9	427.0	408.5	18.54	23.030		
4,000.0	3,982.2	3,964.5	3,947.9	10.3	9.9	135.06	-204.6	232.4	443.4	424.4	19.09	23.226		
4,100.0	4,081.5	4,063.1	4,045.8	10.6	10.2	134.91	-211.1	242.8	459.9	440.2	19.64	23.409		
4,200.0	4,180.7	4,161.8	4,143.6	10.9	10.5	134.78	-217.5	253.3	476.3	456.1	20.20	23.581		
4,300.0	4,280.0	4,260.4	4,241.5	11.3	10.9	134.66	-224.0	263.8	492.7	471.9	20.75	23.744		
4,400.0	4,379.2	4,371.2	4,351.7	11.6	11.1	134.71	-230.1	273.8	507.9	486.7	21.29	23.864		
4,500.0	4,478.5	4,482.8	4,463.0	11.9	11.4	135.14	-234.0	280.2	520.8	499.0	21.79	23.897		
4,600.0	4,577.7	4,594.7	4,574.9	12.2	11.6	135.92	-235.7	282.9	531.3	509.0	22.28	23.847		
4,700.0	4,677.0	4,696.8	4,677.0	12.5	11.7	136.83	-235.8	283.0	540.2	517.5	22.74	23.762		
4,800.0	4,776.2	4,796.1	4,776.2	12.8	11.9	137.70	-235.8	283.0	549.3	526.1	23.19	23.683		
4,900.0	4,875.5	4,895.3	4,875.5	13.1	12.1	138.55	-235.8	283.0	558.4	534.8	23.65	23.613		
5,000.0	4,974.7	4,994.6	4,974.7	13.4	12.3	139.36	-235.8	283.0	567.7	543.6	24.10	23.553		

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-234
Project:	SEC.1-T5N-R65W	TVD Reference:	WELL @ 4628.0ft (Original Well Elev)
Reference Site:	LDS 5N65W1W Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4628.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-234	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 5N65W1W Pad Sec.1-T5N-R65W - LDS 1W-414 - Wellbore #1 - Plan #1 (9-4-14)												Offset Site Error: 0.0 ft	
Survey Program: 0-MWDD												Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)			
5,100.0	5,074.0	5,093.8	5,074.0	13.7	12.5	140.15	-235.8	283.0	577.0	552.5	24.56	23.500	
5,200.0	5,173.2	5,193.1	5,173.2	14.0	12.6	140.94	-235.8	283.0	586.4	561.4	25.01	23.450	
5,300.0	5,272.7	5,292.6	5,272.7	14.3	12.8	141.62	-235.8	283.0	594.0	568.6	25.42	23.369	
5,400.0	5,372.5	5,392.4	5,372.5	14.5	13.0	142.04	-235.8	283.0	598.9	573.1	25.80	23.209	
5,500.0	5,472.5	5,492.4	5,472.5	14.6	13.2	142.23	-235.8	283.0	601.0	574.8	26.16	22.972	
5,600.0	5,572.5	5,592.4	5,572.5	14.8	13.4	180.00	-235.8	283.0	601.1	574.8	26.29	22.861	
5,700.0	5,672.5	5,692.4	5,672.5	15.0	13.6	180.00	-235.8	283.0	601.1	574.4	26.69	22.525	
5,800.0	5,772.5	5,792.4	5,772.5	15.2	13.8	180.00	-235.8	283.0	601.1	574.0	27.08	22.197	
5,900.0	5,872.5	5,892.4	5,872.5	15.3	14.0	180.00	-235.8	283.0	601.1	573.6	27.48	21.877	
6,000.0	5,972.5	5,992.4	5,972.5	15.5	14.2	180.00	-235.8	283.0	601.1	573.2	27.87	21.565	
6,030.9	6,003.4	6,023.3	6,003.4	15.6	14.2	-90.06	-235.8	283.0	601.1	572.9	28.23	21.292	
6,100.0	6,072.3	6,092.1	6,072.3	15.7	14.3	-90.56	-235.8	283.0	601.1	572.7	28.48	21.105	
6,200.0	6,170.4	6,192.2	6,172.2	15.7	14.5	-92.08	-235.8	280.4	601.5	572.8	28.76	20.912	
6,300.0	6,265.2	6,294.8	6,273.7	15.8	14.6	-93.68	-235.8	265.0	602.4	573.4	28.94	20.818	
6,400.0	6,355.1	6,400.0	6,374.5	15.8	14.7	-95.22	-235.8	235.4	603.7	574.6	29.05	20.782	
6,500.0	6,438.6	6,507.8	6,472.5	15.7	14.7	-96.69	-235.8	191.0	605.3	576.1	29.19	20.735	
6,600.0	6,514.2	6,618.1	6,565.4	15.7	14.8	-98.05	-235.8	131.6	607.2	577.7	29.52	20.572	
6,700.0	6,580.6	6,730.9	6,650.6	15.7	15.0	-99.27	-235.8	57.8	609.2	579.0	30.21	20.166	
6,800.0	6,636.6	6,846.0	6,725.4	16.3	15.5	-100.31	-235.8	-29.6	611.1	579.6	31.47	19.419	
6,900.0	6,681.4	6,963.2	6,787.1	17.4	16.5	-101.17	-235.8	-129.1	612.8	579.3	33.48	18.304	
7,000.0	6,714.2	7,082.0	6,833.4	18.8	18.1	-101.80	-235.8	-238.4	614.1	577.8	36.28	16.927	
7,100.0	6,734.3	7,202.1	6,862.4	20.6	20.0	-102.19	-235.8	-354.7	615.0	575.2	39.82	15.446	
7,200.0	6,741.5	7,322.7	6,872.9	22.5	22.3	-102.33	-235.8	-474.8	615.3	571.4	43.93	14.008	
7,300.0	6,740.9	7,424.0	6,872.7	24.5	24.4	-102.37	-235.8	-576.1	615.4	567.4	48.00	12.821	
7,400.0	6,740.2	7,524.0	6,872.5	26.7	26.6	-102.42	-235.8	-676.1	615.5	563.2	52.30	11.770	
7,500.0	6,739.4	7,624.0	6,872.3	29.0	29.0	-102.46	-235.8	-776.1	615.6	558.8	56.80	10.839	
7,600.0	6,738.7	7,724.0	6,872.1	31.4	31.4	-102.51	-235.8	-876.1	615.7	554.3	61.46	10.019	
7,700.0	6,738.0	7,824.0	6,871.9	33.9	33.8	-102.56	-235.8	-976.1	615.8	549.6	66.25	9.296	
7,800.0	6,737.3	7,924.0	6,871.7	36.4	36.3	-102.60	-235.8	-1,076.1	616.0	544.8	71.13	8.659	
7,900.0	6,736.6	8,024.0	6,871.5	38.9	38.9	-102.65	-235.8	-1,176.1	616.1	540.0	76.10	8.095	
8,000.0	6,735.9	8,124.0	6,871.3	41.5	41.5	-102.69	-235.8	-1,276.1	616.2	535.0	81.13	7.595	
8,100.0	6,735.2	8,224.0	6,871.1	44.1	44.1	-102.74	-235.8	-1,376.1	616.3	530.1	86.22	7.148	
8,200.0	6,734.4	8,324.0	6,870.9	46.7	46.7	-102.79	-235.8	-1,476.1	616.4	525.1	91.35	6.748	
8,300.0	6,733.7	8,424.0	6,870.6	49.3	49.4	-102.83	-235.8	-1,576.1	616.5	520.0	96.51	6.388	
8,400.0	6,733.0	8,524.0	6,870.4	52.0	52.0	-102.88	-235.8	-1,676.1	616.6	514.9	101.71	6.063	
8,500.0	6,732.3	8,624.0	6,870.2	54.7	54.7	-102.92	-235.8	-1,776.1	616.7	509.8	106.93	5.768	
8,600.0	6,731.6	8,724.0	6,870.0	57.4	57.4	-102.97	-235.8	-1,876.1	616.8	504.7	112.18	5.499	
8,700.0	6,730.9	8,824.0	6,869.8	60.1	60.1	-103.02	-235.8	-1,976.1	617.0	499.5	117.44	5.253	
8,800.0	6,730.1	8,924.0	6,869.6	62.8	62.8	-103.06	-235.8	-2,076.1	617.1	494.4	122.72	5.028	
8,900.0	6,729.4	9,024.0	6,869.4	65.5	65.6	-103.11	-235.8	-2,176.1	617.2	489.2	128.01	4.821	
9,000.0	6,728.7	9,124.0	6,869.2	68.2	68.3	-103.15	-235.8	-2,276.1	617.3	484.0	133.32	4.630	
9,100.0	6,728.0	9,224.0	6,869.0	71.0	71.0	-103.20	-235.8	-2,376.1	617.4	478.8	138.63	4.454	
9,200.0	6,727.3	9,324.0	6,868.8	73.7	73.8	-103.24	-235.8	-2,476.1	617.5	473.6	143.96	4.290	
9,300.0	6,726.6	9,424.0	6,868.6	76.5	76.5	-103.29	-235.8	-2,576.1	617.7	468.4	149.29	4.137	
9,400.0	6,725.9	9,524.0	6,868.3	79.2	79.3	-103.34	-235.8	-2,676.1	617.8	463.1	154.63	3.995	
9,500.0	6,725.1	9,624.0	6,868.1	82.0	82.0	-103.38	-235.8	-2,776.1	617.9	457.9	159.98	3.862	
9,600.0	6,724.4	9,724.0	6,867.9	84.7	84.8	-103.43	-235.8	-2,876.1	618.0	452.7	165.33	3.738	
9,700.0	6,723.7	9,824.0	6,867.7	87.5	87.5	-103.47	-235.8	-2,976.1	618.1	447.4	170.68	3.621	
9,800.0	6,723.0	9,924.0	6,867.5	90.2	90.3	-103.52	-235.8	-3,076.1	618.2	442.2	176.04	3.512	
9,900.0	6,722.3	10,024.0	6,867.3	93.0	93.1	-103.56	-235.8	-3,176.1	618.4	437.0	181.40	3.409	
10,000.0	6,721.6	10,124.0	6,867.1	95.8	95.8	-103.61	-235.8	-3,276.1	618.5	431.7	186.77	3.311	

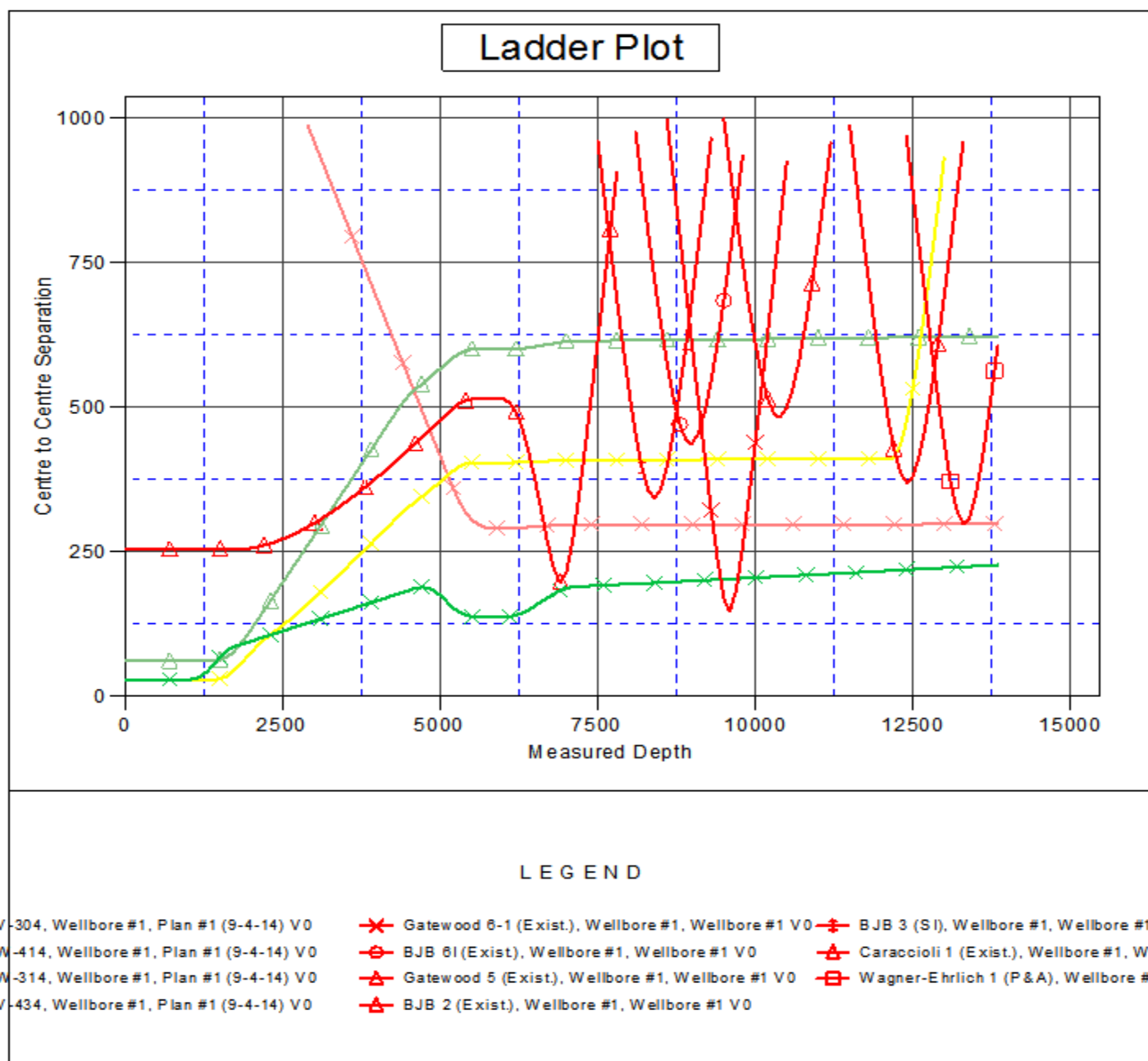
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well LDS 1V-234
Project:	SEC.1-T5N-R65W	TVD Reference:	WELL @ 4628.0ft (Original Well Elev)
Reference Site:	LDS 5N65W1W Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4628.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-234	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 5N65W1W Pad Sec.1-T5N-R65W - LDS 1W-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
10,100.0	6,720.8	10,224.0	6,866.9	98.5	98.6	-103.65		-235.8	-3,376.1	618.6	426.5	192.14	3.220	
10,200.0	6,720.1	10,324.0	6,866.7	101.3	101.4	-103.70		-235.8	-3,476.1	618.7	421.2	197.51	3.133	
10,300.0	6,719.4	10,424.0	6,866.5	104.1	104.2	-103.75		-235.8	-3,576.1	618.8	416.0	202.88	3.050	
10,400.0	6,718.7	10,524.0	6,866.3	106.9	106.9	-103.79		-235.8	-3,676.1	619.0	410.7	208.25	2.972	
10,500.0	6,718.0	10,624.0	6,866.0	109.6	109.7	-103.84		-235.8	-3,776.1	619.1	405.5	213.62	2.898	
10,600.0	6,717.3	10,724.0	6,865.8	112.4	112.5	-103.88		-235.8	-3,876.1	619.2	400.2	219.00	2.827	
10,700.0	6,716.5	10,824.0	6,865.6	115.2	115.3	-103.93		-235.8	-3,976.1	619.3	394.9	224.37	2.760	
10,800.0	6,715.8	10,924.0	6,865.4	118.0	118.1	-103.97		-235.8	-4,076.1	619.4	389.7	229.75	2.696	
10,900.0	6,715.1	11,024.0	6,865.2	120.8	120.9	-104.02		-235.8	-4,176.1	619.6	384.4	235.12	2.635	
11,000.0	6,714.4	11,124.0	6,865.0	123.5	123.6	-104.06		-235.8	-4,276.1	619.7	379.2	240.50	2.577	
11,100.0	6,713.7	11,224.0	6,864.8	126.3	126.4	-104.11		-235.8	-4,376.1	619.8	373.9	245.88	2.521	
11,200.0	6,713.0	11,324.0	6,864.6	129.1	129.2	-104.15		-235.8	-4,476.1	619.9	368.7	251.25	2.467	
11,300.0	6,712.3	11,424.0	6,864.4	131.9	132.0	-104.20		-235.8	-4,576.1	620.1	363.4	256.63	2.416	
11,400.0	6,711.5	11,524.0	6,864.2	134.7	134.8	-104.25		-235.8	-4,676.1	620.2	358.2	262.00	2.367	
11,500.0	6,710.8	11,624.0	6,863.9	137.5	137.6	-104.29		-235.8	-4,776.1	620.3	352.9	267.38	2.320	
11,600.0	6,710.1	11,724.0	6,863.7	140.3	140.4	-104.34		-235.8	-4,876.1	620.4	347.7	272.75	2.275	
11,700.0	6,709.4	11,824.0	6,863.5	143.1	143.2	-104.38		-235.8	-4,976.1	620.6	342.4	278.12	2.231	
11,800.0	6,708.7	11,924.0	6,863.3	145.9	146.0	-104.43		-235.8	-5,076.1	620.7	337.2	283.50	2.189	
11,900.0	6,708.0	12,024.0	6,863.1	148.6	148.8	-104.47		-235.8	-5,176.1	620.8	331.9	288.87	2.149	
12,000.0	6,707.2	12,124.0	6,862.9	151.4	151.6	-104.52		-235.8	-5,276.1	620.9	326.7	294.24	2.110	
12,100.0	6,706.5	12,224.0	6,862.7	154.2	154.3	-104.56		-235.8	-5,376.1	621.1	321.5	299.61	2.073	
12,200.0	6,705.8	12,324.0	6,862.5	157.0	157.1	-104.61		-235.8	-5,476.0	621.2	316.2	304.98	2.037	
12,300.0	6,705.1	12,424.0	6,862.3	159.8	159.9	-104.65		-235.8	-5,576.0	621.3	311.0	310.34	2.002	
12,400.0	6,704.4	12,524.0	6,862.1	162.6	162.7	-104.70		-235.8	-5,676.0	621.5	305.7	315.71	1.968	
12,500.0	6,703.7	12,624.0	6,861.9	165.4	165.5	-104.74		-235.8	-5,776.0	621.6	300.5	321.07	1.936	
12,600.0	6,703.0	12,724.0	6,861.6	168.2	168.3	-104.79		-235.8	-5,876.0	621.7	295.3	326.44	1.905	
12,700.0	6,702.2	12,824.0	6,861.4	171.0	171.1	-104.83		-235.8	-5,976.0	621.8	290.0	331.80	1.874	
12,800.0	6,701.5	12,924.0	6,861.2	173.8	173.9	-104.88		-235.8	-6,076.0	622.0	284.8	337.16	1.845	
12,900.0	6,700.8	13,024.0	6,861.0	176.6	176.7	-104.92		-235.8	-6,176.0	622.1	279.6	342.52	1.816	
13,000.0	6,700.1	13,124.0	6,860.8	179.4	179.5	-104.97		-235.8	-6,276.0	622.2	274.4	347.87	1.789	
13,100.0	6,699.4	13,224.0	6,860.6	182.2	182.3	-105.01		-235.8	-6,376.0	622.4	269.1	353.23	1.762	
13,200.0	6,698.7	13,324.0	6,860.4	185.0	185.1	-105.06		-235.8	-6,476.0	622.5	263.9	358.58	1.736	
13,300.0	6,697.9	13,424.0	6,860.2	187.8	187.9	-105.10		-235.8	-6,576.0	622.6	258.7	363.94	1.711	
13,400.0	6,697.2	13,524.0	6,860.0	190.6	190.7	-105.15		-235.8	-6,676.0	622.8	253.5	369.29	1.686	
13,500.0	6,696.5	13,624.0	6,859.8	193.4	193.5	-105.19		-235.8	-6,776.0	622.9	248.3	374.64	1.663	
13,600.0	6,695.8	13,724.0	6,859.5	196.2	196.3	-105.24		-235.8	-6,876.0	623.0	243.0	379.98	1.640	
13,700.0	6,695.1	13,824.0	6,859.3	199.0	199.1	-105.28		-235.8	-6,976.0	623.2	237.8	385.33	1.617	
13,800.0	6,694.4	13,924.0	6,859.1	201.8	201.9	-105.33		-235.8	-7,076.0	623.3	232.6	390.67	1.595	
13,851.3	6,694.0	13,975.2	6,859.0	203.2	203.4	-105.35		-235.8	-7,127.3	623.4	229.9	393.41	1.584 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well LDS 1V-234
Project:	SEC.1-T5N-R65W	TVD Reference:	WELL @ 4628.0ft (Original Well Elev)
Reference Site:	LDS 5N65W1W Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4628.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-234	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 @ 4628.0ft (Original Well Elev) Coordinates are relative to: LDS 1V-234
 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°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well LDS 1V-234
Project:	SEC.1-T5N-R65W	TVD Reference:	WELL @ 4628.0ft (Original Well Elev)
Reference Site:	LDS 5N65W1W Pad Sec.1-T5N-R65W	MD Reference:	WELL @ 4628.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	LDS 1V-234	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 @ 4628.0ft (Original Well Elev) Coordinates are relative to: LDS 1V-234

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°

