

PETROLEUM DEVELOPMENT CORP DJ Basin

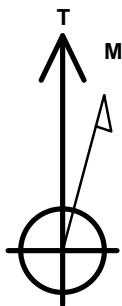
Well Name: **Loloff Farms 26I-312**

Surface Location: Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W
North American Datum 1983 , US State Plane 1983, Colorado Northern Zone
Ground Elevation: 4678.0

+N/-S +E/-W Northing Easting Latitude Longitude Slot
0.0 0.0 1376854.63 3271600.86 40.363770 -104.525310
RKB - 23' WELL @ 4701.0ft (RKB - 23')

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 236'FSL & 290'FWL, Sec.26	1.0	0.0	0.0	Point
Spacing Unit Buffer - 460' (26I-312)	1.0	118.5	5148.0	Rectangle
BHL 350'FSL, 500'FEL, SEC.25	6636.0	118.5	9764.6	Point



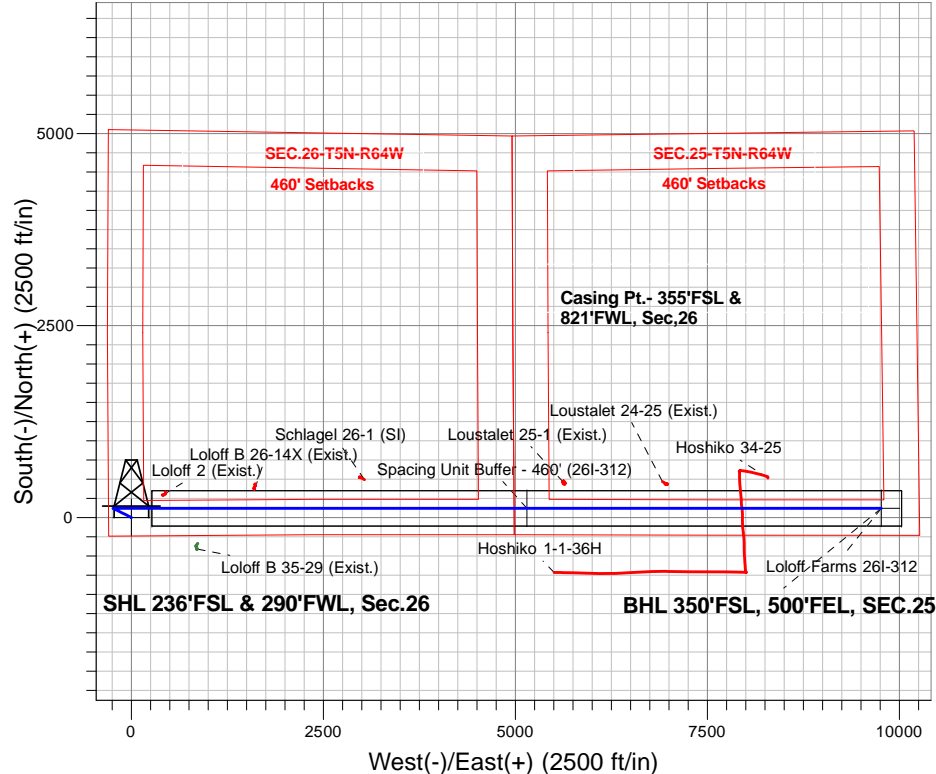
Azimuths to True North
Magnetic North: 8.11°

Magnetic Field
Strength: 52649.7snT
Dip Angle: 66.90°
Date: 2/2/2016
Model: IGRF2010

ANNOTATIONS

TVD	MD	Annotation
1800.0	1800.0	KOP - Start Build 1.00
4149.7	4163.9	Start Drop -2.00
4500.0	4515.1	Start 1462.3 hold at 4515.1 MD
5962.3	5977.4	Start Build 7.50
6726.2	7184.9	Start 9233.6 hold at 7184.9 MD
6636.0	16418.5	TD at 16418.5

Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W
Loloff Farms 26I-312
Extension Plan #1 (1-29-16)
9:05, February 02 2016



SHL 236'FSL & 290'FWL, Sec.26

BHL 350'FSL, 500'FEL, SEC.25

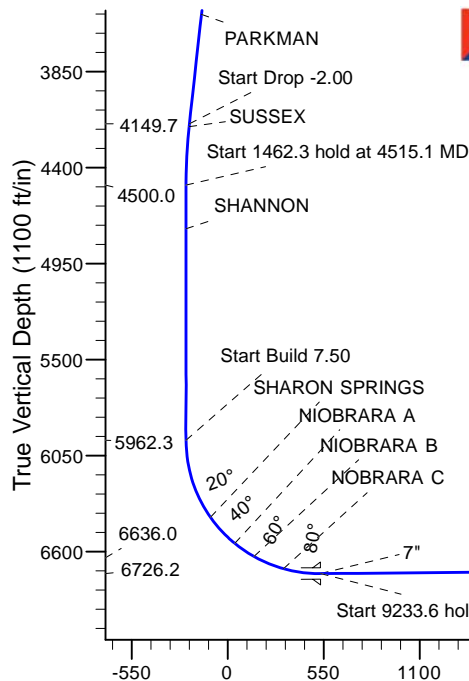
West(-)/East(+) (2500 ft/in)

South(-)/North(+) (2500 ft/in)

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1800.0	0.00	0.00	1800.0	0.0	0.0	0.00	0.00	0.0	
3	2502.3	7.02	296.28	2500.6	19.0	-38.6	1.00	296.28	-38.3	
4	4163.9	7.02	296.28	4149.7	109.0	-220.7	0.00	0.00	-219.4	
5	4515.1	0.00	0.00	4500.0	118.5	-240.0	2.00	180.00	-238.5	
6	5977.4	0.00	0.00	5962.3	118.5	-240.0	0.00	0.00	-238.5	
7	7184.9	90.56	90.00	6726.2	118.5	531.4	7.50	90.00	532.8	
8	16418.5	90.56	90.00	6636.0	118.5	9764.6	0.00	0.00	9765.3	BHL 350'FSL, 500'FEL, SEC.25

ENSIGN
Directional



BHL 350'FSL, 500'FEL, SEC.25

TD at 16418.5

91°

Vertical Section at 89.30° (1100 ft/in)



PETROLEUM DEVELOPMENT CORP DJ Basin

SEC.26-T5N-R64W

Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W

Loloff Farms 26I-312

Wellbore #1

Plan: Extension Plan #1 (1-29-16)

Standard Planning Report

02 February, 2016

Database:	US_EDM	Local Co-ordinate Reference:	Well Loloff Farms 26I-312
Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	TVD Reference:	WELL @ 4701.0ft (RKB - 23')
Project:	SEC.26-T5N-R64W	MD Reference:	WELL @ 4701.0ft (RKB - 23')
Site:	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	North Reference:	True
Well:	Loloff Farms 26I-312	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Extension Plan #1 (1-29-16)		

Project	SEC.26-T5N-R64W, 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	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W				
Site Position:		Northing:	1,376,850.35 usft	Latitude:	40.363760
From:	Lat/Long	Easting:	3,271,539.61 usft	Longitude:	-104.525530
Position Uncertainty:	0.0 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.63

Well	Loloff Farms 26I-312					
Well Position	+N/-S	3.6 ft	Northing:	1,376,854.63 usft	Latitude:	40.363770
	+E/-W	61.3 ft	Easting:	3,271,600.87 usft	Longitude:	-104.525310
Position Uncertainty		0.0 ft	Wellhead Elevation:		Ground Level:	4,678.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2/2/2016	8.11	66.90	52,650

Design	Extension Plan #1 (1-29-16)			
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	89.30

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,502.3	7.02	296.28	2,500.6	19.0	-38.6	1.00	1.00	0.00	296.28	
4,163.9	7.02	296.28	4,149.7	109.0	-220.7	0.00	0.00	0.00	0.00	
4,515.1	0.00	0.00	4,500.0	118.5	-240.0	2.00	-2.00	0.00	180.00	
5,977.4	0.00	0.00	5,962.3	118.5	-240.0	0.00	0.00	0.00	0.00	
7,184.9	90.56	90.00	6,726.2	118.5	531.4	7.50	7.50	0.00	90.00	
16,418.5	90.56	90.00	6,636.0	118.5	9,764.6	0.00	0.00	0.00	0.00	BHL 350'FSL, 500'FE

Database:	US_EDM	Local Co-ordinate Reference:	Well Loloff Farms 26I-312
Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	TVD Reference:	WELL @ 4701.0ft (RKB - 23')
Project:	SEC.26-T5N-R64W	MD Reference:	WELL @ 4701.0ft (RKB - 23')
Site:	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	North Reference:	True
Well:	Loloff Farms 26I-312	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Extension Plan #1 (1-29-16)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
1.0	0.00	0.00	1.0	0.0	0.0	0.0	0.00	0.00	0.00
SHL 236'FSL & 290'FWL, Sec.26 - Spacing Unit Buffer - 460' (26I-312)									
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP - Start Build 1.00									
1,900.0	1.00	296.28	1,900.0	0.4	-0.8	-0.8	1.00	1.00	0.00
2,000.0	2.00	296.28	2,000.0	1.5	-3.1	-3.1	1.00	1.00	0.00
2,100.0	3.00	296.28	2,099.9	3.5	-7.0	-7.0	1.00	1.00	0.00
2,200.0	4.00	296.28	2,199.7	6.2	-12.5	-12.4	1.00	1.00	0.00
2,300.0	5.00	296.28	2,299.4	9.7	-19.5	-19.4	1.00	1.00	0.00
2,400.0	6.00	296.28	2,398.9	13.9	-28.1	-28.0	1.00	1.00	0.00
2,500.0	7.00	296.28	2,498.3	18.9	-38.3	-38.1	1.00	1.00	0.00
2,502.3	7.02	296.28	2,500.6	19.0	-38.6	-38.3	1.00	1.00	0.00
2,600.0	7.02	296.28	2,597.5	24.3	-49.3	-49.0	0.00	0.00	0.00
2,700.0	7.02	296.28	2,696.8	29.7	-60.2	-59.9	0.00	0.00	0.00
2,800.0	7.02	296.28	2,796.0	35.1	-71.2	-70.8	0.00	0.00	0.00
2,900.0	7.02	296.28	2,895.3	40.6	-82.1	-81.7	0.00	0.00	0.00
3,000.0	7.02	296.28	2,994.5	46.0	-93.1	-92.5	0.00	0.00	0.00
3,100.0	7.02	296.28	3,093.8	51.4	-104.1	-103.4	0.00	0.00	0.00
3,200.0	7.02	296.28	3,193.0	56.8	-115.0	-114.3	0.00	0.00	0.00
3,300.0	7.02	296.28	3,292.3	62.2	-126.0	-125.2	0.00	0.00	0.00
3,400.0	7.02	296.28	3,391.5	67.6	-137.0	-136.1	0.00	0.00	0.00
3,500.0	7.02	296.28	3,490.8	73.0	-147.9	-147.0	0.00	0.00	0.00
3,532.5	7.02	296.28	3,523.0	74.8	-151.5	-150.6	0.00	0.00	0.00
PARKMAN									
3,600.0	7.02	296.28	3,590.0	78.5	-158.9	-157.9	0.00	0.00	0.00
3,700.0	7.02	296.28	3,689.3	83.9	-169.9	-168.8	0.00	0.00	0.00
3,800.0	7.02	296.28	3,788.5	89.3	-180.8	-179.7	0.00	0.00	0.00
3,900.0	7.02	296.28	3,887.8	94.7	-191.8	-190.6	0.00	0.00	0.00
4,000.0	7.02	296.28	3,987.0	100.1	-202.8	-201.5	0.00	0.00	0.00
4,100.0	7.02	296.28	4,086.3	105.5	-213.7	-212.4	0.00	0.00	0.00
4,163.9	7.02	296.28	4,149.7	109.0	-220.7	-219.4	0.00	0.00	0.00
Start Drop -2.00									
4,180.3	6.70	296.28	4,166.0	109.9	-222.5	-221.1	2.00	-2.00	0.00
SUSSEX									

Database:	US_EDM	Local Co-ordinate Reference:	Well Loloff Farms 26I-312
Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	TVD Reference:	WELL @ 4701.0ft (RKB - 23')
Project:	SEC.26-T5N-R64W	MD Reference:	WELL @ 4701.0ft (RKB - 23')
Site:	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	North Reference:	True
Well:	Loloff Farms 26I-312	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Extension Plan #1 (1-29-16)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,200.0	6.30	296.28	4,185.5	110.8	-224.5	-223.1	2.00	-2.00	0.00
4,300.0	4.30	296.28	4,285.1	114.9	-232.8	-231.4	2.00	-2.00	0.00
4,400.0	2.30	296.28	4,384.9	117.5	-237.9	-236.5	2.00	-2.00	0.00
4,500.0	0.30	296.28	4,484.9	118.5	-240.0	-238.5	2.00	-2.00	0.00
4,515.1	0.00	296.28	4,500.0	118.5	-240.0	-238.5	2.00	-2.00	0.00
Start 1462.3 hold at 4515.1 MD									
4,600.0	0.00	0.00	4,584.9	118.5	-240.0	-238.5	0.00	0.00	0.00
4,700.0	0.00	0.00	4,684.9	118.5	-240.0	-238.5	0.00	0.00	0.00
4,765.1	0.00	0.00	4,750.0	118.5	-240.0	-238.5	0.00	0.00	0.00
SHANNON									
4,800.0	0.00	0.00	4,784.9	118.5	-240.0	-238.5	0.00	0.00	0.00
4,900.0	0.00	0.00	4,884.9	118.5	-240.0	-238.5	0.00	0.00	0.00
5,000.0	0.00	0.00	4,984.9	118.5	-240.0	-238.5	0.00	0.00	0.00
5,100.0	0.00	0.00	5,084.9	118.5	-240.0	-238.5	0.00	0.00	0.00
5,200.0	0.00	0.00	5,184.9	118.5	-240.0	-238.5	0.00	0.00	0.00
5,300.0	0.00	0.00	5,284.9	118.5	-240.0	-238.5	0.00	0.00	0.00
5,400.0	0.00	0.00	5,384.9	118.5	-240.0	-238.5	0.00	0.00	0.00
5,500.0	0.00	0.00	5,484.9	118.5	-240.0	-238.5	0.00	0.00	0.00
5,600.0	0.00	0.00	5,584.9	118.5	-240.0	-238.5	0.00	0.00	0.00
5,700.0	0.00	0.00	5,684.9	118.5	-240.0	-238.5	0.00	0.00	0.00
5,800.0	0.00	0.00	5,784.9	118.5	-240.0	-238.5	0.00	0.00	0.00
5,900.0	0.00	0.00	5,884.9	118.5	-240.0	-238.5	0.00	0.00	0.00
5,977.4	0.00	0.00	5,962.3	118.5	-240.0	-238.5	0.00	0.00	0.00
Start Build 7.50									
6,000.0	1.69	90.00	5,984.9	118.5	-239.7	-238.2	7.49	7.49	0.00
6,100.0	9.19	90.00	6,084.4	118.5	-230.2	-228.7	7.50	7.50	0.00
6,200.0	16.69	90.00	6,181.8	118.5	-207.8	-206.4	7.50	7.50	0.00
6,300.0	24.19	90.00	6,275.4	118.5	-172.9	-171.5	7.50	7.50	0.00
6,400.0	31.69	90.00	6,363.7	118.5	-126.1	-124.6	7.50	7.50	0.00
6,447.1	35.23	90.00	6,403.0	118.5	-100.1	-98.7	7.50	7.50	0.00
SHARON SPRINGS									
6,500.0	39.19	90.00	6,445.1	118.5	-68.1	-66.7	7.50	7.50	0.00
6,600.0	46.69	90.00	6,518.2	118.5	-0.1	1.4	7.50	7.50	0.00
6,652.6	50.64	90.00	6,553.0	118.5	39.5	40.9	7.50	7.50	0.00
NIOBRARA A									
6,700.0	54.19	90.00	6,581.9	118.5	77.0	78.4	7.50	7.50	0.00
6,785.7	60.62	90.00	6,628.0	118.5	149.1	150.5	7.50	7.50	0.00
NIOBRARA B									
6,800.0	61.69	90.00	6,634.9	118.5	161.7	163.1	7.50	7.50	0.00
6,900.0	69.19	90.00	6,676.5	118.5	252.6	254.0	7.50	7.50	0.00
6,968.9	74.36	90.00	6,698.0	118.5	318.0	319.4	7.50	7.50	0.00
NOBRARA C									
7,000.0	76.69	90.00	6,705.8	118.5	348.1	349.5	7.50	7.50	0.00
7,100.0	84.19	90.00	6,722.4	118.5	446.6	448.0	7.50	7.50	0.00
7,184.9	90.56	90.00	6,726.2	118.5	531.4	532.8	7.50	7.50	0.00
Start 9233.6 hold at 7184.9 MD - 7"									
7,200.0	90.56	90.00	6,726.1	118.5	546.5	547.9	0.01	0.01	0.00
7,300.0	90.56	90.00	6,725.1	118.5	646.5	647.9	0.00	0.00	0.00
7,400.0	90.56	90.00	6,724.1	118.5	746.5	747.9	0.00	0.00	0.00
7,500.0	90.56	90.00	6,723.2	118.5	846.5	847.9	0.00	0.00	0.00
7,600.0	90.56	90.00	6,722.2	118.5	946.5	947.8	0.00	0.00	0.00

Database:	US_EDM	Local Co-ordinate Reference:	Well Loloff Farms 26I-312
Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	TVD Reference:	WELL @ 4701.0ft (RKB - 23')
Project:	SEC.26-T5N-R64W	MD Reference:	WELL @ 4701.0ft (RKB - 23')
Site:	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	North Reference:	True
Well:	Loloff Farms 26I-312	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Extension Plan #1 (1-29-16)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,700.0	90.56	90.00	6,721.2	118.5	1,046.5	1,047.8	0.00	0.00	0.00
7,800.0	90.56	90.00	6,720.2	118.5	1,146.5	1,147.8	0.00	0.00	0.00
7,900.0	90.56	90.00	6,719.3	118.5	1,246.5	1,247.8	0.00	0.00	0.00
8,000.0	90.56	90.00	6,718.3	118.5	1,346.5	1,347.8	0.00	0.00	0.00
8,100.0	90.56	90.00	6,717.3	118.5	1,446.5	1,447.8	0.00	0.00	0.00
8,200.0	90.56	90.00	6,716.3	118.5	1,546.5	1,547.8	0.00	0.00	0.00
8,300.0	90.56	90.00	6,715.3	118.5	1,646.4	1,647.8	0.00	0.00	0.00
8,400.0	90.56	90.00	6,714.4	118.5	1,746.4	1,747.8	0.00	0.00	0.00
8,500.0	90.56	90.00	6,713.4	118.5	1,846.4	1,847.7	0.00	0.00	0.00
8,600.0	90.56	90.00	6,712.4	118.5	1,946.4	1,947.7	0.00	0.00	0.00
8,700.0	90.56	90.00	6,711.4	118.5	2,046.4	2,047.7	0.00	0.00	0.00
8,800.0	90.56	90.00	6,710.5	118.5	2,146.4	2,147.7	0.00	0.00	0.00
8,900.0	90.56	90.00	6,709.5	118.5	2,246.4	2,247.7	0.00	0.00	0.00
9,000.0	90.56	90.00	6,708.5	118.5	2,346.4	2,347.7	0.00	0.00	0.00
9,100.0	90.56	90.00	6,707.5	118.5	2,446.4	2,447.7	0.00	0.00	0.00
9,200.0	90.56	90.00	6,706.6	118.5	2,546.4	2,547.7	0.00	0.00	0.00
9,300.0	90.56	90.00	6,705.6	118.5	2,646.4	2,647.6	0.00	0.00	0.00
9,400.0	90.56	90.00	6,704.6	118.5	2,746.4	2,747.6	0.00	0.00	0.00
9,500.0	90.56	90.00	6,703.6	118.5	2,846.4	2,847.6	0.00	0.00	0.00
9,600.0	90.56	90.00	6,702.6	118.5	2,946.4	2,947.6	0.00	0.00	0.00
9,700.0	90.56	90.00	6,701.7	118.5	3,046.4	3,047.6	0.00	0.00	0.00
9,800.0	90.56	90.00	6,700.7	118.5	3,146.4	3,147.6	0.00	0.00	0.00
9,900.0	90.56	90.00	6,699.7	118.5	3,246.4	3,247.6	0.00	0.00	0.00
10,000.0	90.56	90.00	6,698.7	118.5	3,346.4	3,347.6	0.00	0.00	0.00
10,100.0	90.56	90.00	6,697.8	118.5	3,446.4	3,447.5	0.00	0.00	0.00
10,200.0	90.56	90.00	6,696.8	118.5	3,546.4	3,547.5	0.00	0.00	0.00
10,300.0	90.56	90.00	6,695.8	118.5	3,646.4	3,647.5	0.00	0.00	0.00
10,400.0	90.56	90.00	6,694.8	118.5	3,746.3	3,747.5	0.00	0.00	0.00
10,500.0	90.56	90.00	6,693.8	118.5	3,846.3	3,847.5	0.00	0.00	0.00
10,600.0	90.56	90.00	6,692.9	118.5	3,946.3	3,947.5	0.00	0.00	0.00
10,700.0	90.56	90.00	6,691.9	118.5	4,046.3	4,047.5	0.00	0.00	0.00
10,800.0	90.56	90.00	6,690.9	118.5	4,146.3	4,147.5	0.00	0.00	0.00
10,900.0	90.56	90.00	6,689.9	118.5	4,246.3	4,247.4	0.00	0.00	0.00
11,000.0	90.56	90.00	6,689.0	118.5	4,346.3	4,347.4	0.00	0.00	0.00
11,100.0	90.56	90.00	6,688.0	118.5	4,446.3	4,447.4	0.00	0.00	0.00
11,200.0	90.56	90.00	6,687.0	118.5	4,546.3	4,547.4	0.00	0.00	0.00
11,300.0	90.56	90.00	6,686.0	118.5	4,646.3	4,647.4	0.00	0.00	0.00
11,400.0	90.56	90.00	6,685.0	118.5	4,746.3	4,747.4	0.00	0.00	0.00
11,500.0	90.56	90.00	6,684.1	118.5	4,846.3	4,847.4	0.00	0.00	0.00
11,600.0	90.56	90.00	6,683.1	118.5	4,946.3	4,947.4	0.00	0.00	0.00
11,700.0	90.56	90.00	6,682.1	118.5	5,046.3	5,047.4	0.00	0.00	0.00
11,800.0	90.56	90.00	6,681.1	118.5	5,146.3	5,147.3	0.00	0.00	0.00
11,900.0	90.56	90.00	6,680.2	118.5	5,246.3	5,247.3	0.00	0.00	0.00
12,000.0	90.56	90.00	6,679.2	118.5	5,346.3	5,347.3	0.00	0.00	0.00
12,100.0	90.56	90.00	6,678.2	118.5	5,446.3	5,447.3	0.00	0.00	0.00
12,200.0	90.56	90.00	6,677.2	118.5	5,546.3	5,547.3	0.00	0.00	0.00
12,300.0	90.56	90.00	6,676.3	118.5	5,646.3	5,647.3	0.00	0.00	0.00
12,400.0	90.56	90.00	6,675.3	118.5	5,746.3	5,747.3	0.00	0.00	0.00
12,500.0	90.56	90.00	6,674.3	118.5	5,846.2	5,847.3	0.00	0.00	0.00
12,600.0	90.56	90.00	6,673.3	118.5	5,946.2	5,947.2	0.00	0.00	0.00
12,700.0	90.56	90.00	6,672.3	118.5	6,046.2	6,047.2	0.00	0.00	0.00
12,800.0	90.56	90.00	6,671.4	118.5	6,146.2	6,147.2	0.00	0.00	0.00

Database:	US_EDM	Local Co-ordinate Reference:	Well Loloff Farms 26I-312
Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	TVD Reference:	WELL @ 4701.0ft (RKB - 23')
Project:	SEC.26-T5N-R64W	MD Reference:	WELL @ 4701.0ft (RKB - 23')
Site:	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	North Reference:	True
Well:	Loloff Farms 26I-312	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Extension Plan #1 (1-29-16)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,900.0	90.56	90.00	6,670.4	118.5	6,246.2	6,247.2	0.00	0.00	0.00
13,000.0	90.56	90.00	6,669.4	118.5	6,346.2	6,347.2	0.00	0.00	0.00
13,100.0	90.56	90.00	6,668.4	118.5	6,446.2	6,447.2	0.00	0.00	0.00
13,200.0	90.56	90.00	6,667.5	118.5	6,546.2	6,547.2	0.00	0.00	0.00
13,300.0	90.56	90.00	6,666.5	118.5	6,646.2	6,647.2	0.00	0.00	0.00
13,400.0	90.56	90.00	6,665.5	118.5	6,746.2	6,747.1	0.00	0.00	0.00
13,500.0	90.56	90.00	6,664.5	118.5	6,846.2	6,847.1	0.00	0.00	0.00
13,600.0	90.56	90.00	6,663.5	118.5	6,946.2	6,947.1	0.00	0.00	0.00
13,700.0	90.56	90.00	6,662.6	118.5	7,046.2	7,047.1	0.00	0.00	0.00
13,785.1	90.56	90.00	6,661.7	118.5	7,131.3	7,132.2	0.00	0.00	0.00
BHL 405°FSL & 2143°FWL, Sec.25									
13,800.0	90.56	90.00	6,661.6	118.5	7,146.2	7,147.1	0.00	0.00	0.00
13,900.0	90.56	90.00	6,660.6	118.5	7,246.2	7,247.1	0.00	0.00	0.00
14,000.0	90.56	90.00	6,659.6	118.5	7,346.2	7,347.1	0.00	0.00	0.00
14,100.0	90.56	90.00	6,658.7	118.5	7,446.2	7,447.1	0.00	0.00	0.00
14,200.0	90.56	90.00	6,657.7	118.5	7,546.2	7,547.0	0.00	0.00	0.00
14,300.0	90.56	90.00	6,656.7	118.5	7,646.2	7,647.0	0.00	0.00	0.00
14,400.0	90.56	90.00	6,655.7	118.5	7,746.2	7,747.0	0.00	0.00	0.00
14,500.0	90.56	90.00	6,654.8	118.5	7,846.2	7,847.0	0.00	0.00	0.00
14,600.0	90.56	90.00	6,653.8	118.5	7,946.1	7,947.0	0.00	0.00	0.00
14,700.0	90.56	90.00	6,652.8	118.5	8,046.1	8,047.0	0.00	0.00	0.00
14,800.0	90.56	90.00	6,651.8	118.5	8,146.1	8,147.0	0.00	0.00	0.00
14,900.0	90.56	90.00	6,650.8	118.5	8,246.1	8,247.0	0.00	0.00	0.00
15,000.0	90.56	90.00	6,649.9	118.5	8,346.1	8,347.0	0.00	0.00	0.00
15,100.0	90.56	90.00	6,648.9	118.5	8,446.1	8,446.9	0.00	0.00	0.00
15,200.0	90.56	90.00	6,647.9	118.5	8,546.1	8,546.9	0.00	0.00	0.00
15,300.0	90.56	90.00	6,646.9	118.5	8,646.1	8,646.9	0.00	0.00	0.00
15,400.0	90.56	90.00	6,646.0	118.5	8,746.1	8,746.9	0.00	0.00	0.00
15,500.0	90.56	90.00	6,645.0	118.5	8,846.1	8,846.9	0.00	0.00	0.00
15,600.0	90.56	90.00	6,644.0	118.5	8,946.1	8,946.9	0.00	0.00	0.00
15,700.0	90.56	90.00	6,643.0	118.5	9,046.1	9,046.9	0.00	0.00	0.00
15,800.0	90.56	90.00	6,642.0	118.5	9,146.1	9,146.9	0.00	0.00	0.00
15,900.0	90.56	90.00	6,641.1	118.5	9,246.1	9,246.8	0.00	0.00	0.00
16,000.0	90.56	90.00	6,640.1	118.5	9,346.1	9,346.8	0.00	0.00	0.00
16,100.0	90.56	90.00	6,639.1	118.5	9,446.1	9,446.8	0.00	0.00	0.00
16,200.0	90.56	90.00	6,638.1	118.5	9,546.1	9,546.8	0.00	0.00	0.00
16,300.0	90.56	90.00	6,637.2	118.5	9,646.1	9,646.8	0.00	0.00	0.00
16,400.0	90.56	90.00	6,636.2	118.5	9,746.1	9,746.8	0.00	0.00	0.00
16,418.5	90.56	90.00	6,636.0	118.5	9,764.6	9,765.3	0.00	0.00	0.00
TD at 16418.5 - BHL 350°FSL, 500°FEL, SEC.25									

Database:	US_EDM	Local Co-ordinate Reference:	Well Loloff Farms 26I-312
Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	TVD Reference:	WELL @ 4701.0ft (RKB - 23')
Project:	SEC.26-T5N-R64W	MD Reference:	WELL @ 4701.0ft (RKB - 23')
Site:	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	North Reference:	True
Well:	Loloff Farms 26I-312	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Extension Plan #1 (1-29-16)		

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SHL 236'FSL & 290'FWL - plan hits target center - Point	0.00	0.00	1.0	0.0	0.0	1,376,854.66	3,271,600.87	40.363770	-104.525310
Spacing Unit Buffer - 46I - plan misses target center by 5149.4ft at 1.0ft MD (1.0 TVD, 0.0 N, 0.0 E) - Rectangle (sides W9,764.6 H460.0 D0.0)	0.00	0.00	1.0	118.5	5,148.0	1,377,029.70	3,276,747.03	40.364094	-104.506837
BHL 350'FSL, 500'FEL, : - plan hits target center - Point	0.00	0.00	6,636.0	118.5	9,764.6	1,377,080.48	3,281,363.15	40.364090	-104.490270

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,184.9	6,726.2	7"	7	8-3/4

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,532.5	3,523.0	PARKMAN		0.00	
4,180.3	4,166.0	SUSSEX		0.00	
4,765.1	4,750.0	SHANNON		0.00	
6,447.1	6,403.0	SHARON SPRINGS		0.00	
6,652.6	6,553.0	NIOBRARA A		0.00	
6,785.7	6,628.0	NIOBRARA B		0.00	
6,968.9	6,698.0	NOBRARA C		0.00	

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,800.0	1,800.0	0.0	0.0	KOP - Start Build 1.00
4,163.9	4,149.7	19.0	-38.6	Start Drop -2.00
4,515.1	4,500.0	109.0	-220.7	Start 1462.3 hold at 4515.1 MD
5,977.4	5,962.3	118.5	-240.0	Start Build 7.50
7,184.9	6,726.2	118.5	-240.0	Start 9233.6 hold at 7184.9 MD
16,418.5	6,636.0	118.5	531.4	TD at 16418.5

PETROLEUM DEVELOPMENT CORP DJ Basin

SEC.26-T5N-R64W

Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W

Loloff Farms 26I-312

Wellbore #1

Extension Plan #1 (1-29-16)

Anticollision Report

02 February, 2016

Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	Local Co-ordinate Reference:	Well Loloff Farms 26I-312
Project:	SEC.26-T5N-R64W	TVD Reference:	WELL @ 4701.0ft (RKB - 23')
Reference Site:	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	MD Reference:	WELL @ 4701.0ft (RKB - 23')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Loloff Farms 26I-312	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Extension Plan #1 (1-29-16)	Offset TVD Reference:	Offset Datum

Reference	Extension Plan #1 (1-29-16)		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 800.0 ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date 2/2/2016			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	16,418.5	Extension Plan #1 (1-29-16) (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 Pad Sec.26-T5N-R64W						
Loustalet 24-25 (Exist.) - Wellbore #1 - Wellbore #1	13,610.2	6,535.5	326.4	117.4	1.562	CC, ES, SF
Loustalet 25-1 (Exist.) - Wellbore #1 - Wellbore #1	12,276.6	6,568.9	345.5	172.9	2.002	CC, ES
Loustalet 25-1 (Exist.) - Wellbore #1 - Wellbore #1	12,300.0	6,568.6	346.3	173.0	1.999	SF
Schlagel 26-1 (SI) - Wellbore #1 - Wellbore #1	9,681.6	6,618.3	376.3	276.3	3.762	CC
Schlagel 26-1 (SI) - Wellbore #1 - Wellbore #1	9,700.0	6,618.7	376.8	276.2	3.748	ES, SF
Existing Wells Pad Sec.26-T5N-R64W (Grid)						
Loloff 2 (Exist.) - Wellbore #1 - Wellbore #1	7,065.8	6,682.0	176.1	144.1	5.491	CC, ES
Loloff 2 (Exist.) - Wellbore #1 - Wellbore #1	7,100.0	6,686.5	179.4	146.6	5.483	SF
Loloff B 26-14X (Exist.) - Wellbore #1 - Wellbore #1	8,256.6	6,675.0	252.6	191.0	4.105	CC, ES
Loloff B 26-14X (Exist.) - Wellbore #1 - Wellbore #1	8,300.0	6,675.0	256.3	193.6	4.088	SF
Loloff B 35-29 (Exist.) - Wellbore #1 - Wellbore #1	7,510.1	6,685.6	528.6	485.9	12.388	CC, ES
Loloff B 35-29 (Exist.) - Wellbore #1 - Wellbore #1	7,700.0	6,685.9	561.6	514.3	11.863	SF
Hoshiko 34-25 Pad Sec.25-T5N-R64W						
Hoshiko 1-1-36H - Wellbore #1 - Wellbore #1						Out of range
Hoshiko 34-25 - Wellbore #1 - Wellbore #1	14,941.0	6,586.0	398.2	148.3	1.593	CC, ES, SF
Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W						
Loloff Farms 26H-232 - Wellbore #1 - Extension Plan #1	1,000.0	1,000.0	30.7	26.4	7.178	CC
Loloff Farms 26H-232 - Wellbore #1 - Extension Plan #1	16,418.5	16,367.0	446.4	-100.9	0.816	Level 1, ES, SF
Loloff Farms 26H-332 - Wellbore #1 - Extension Plan #1	166.3	167.3	61.4	60.9	116.939	CC
Loloff Farms 26H-332 - Wellbore #1 - Extension Plan #1	300.0	300.8	61.6	60.4	54.671	ES
Loloff Farms 26H-332 - Wellbore #1 - Extension Plan #1	16,418.5	16,456.1	706.8	153.4	1.277	Level 3, SF
Loloff Farms 26I-402 - Wellbore #1 - Extension Plan #1 (1,800.0	1,799.0	27.9	20.0	3.543	CC
Loloff Farms 26I-402 - Wellbore #1 - Extension Plan #1 (16,418.5	16,506.4	306.7	-214.9	0.588	Level 1, ES, SF

Offset Design													Existing Wells Pad Sec.26-T5N-R64W - Loustalet 24-25 (Exist.) - Wellbore #1 - Wellbore #1		Offset Site Error:		0.0 ft	
Survey Program:		100-NS-GYRO-MS													Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning				
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor						
12,900.0	6,670.4	6,613.1	6,610.3	178.0	11.5	-100.27	448.5	6,948.5	777.7	591.2	186.55	4.169						

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

Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	Local Co-ordinate Reference:	Well Loloff Farms 26I-312
Project:	SEC.26-T5N-R64W	TVD Reference:	WELL @ 4701.0ft (RKB - 23')
Reference Site:	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	MD Reference:	WELL @ 4701.0ft (RKB - 23')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Loloff Farms 26I-312	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Extension Plan #1 (1-29-16)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Pad Sec.26-T5N-R64W - Loustalet 24-25 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						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		
13,000.0	6,669.4	6,602.1	6,599.5	180.8	11.5	-98.45	447.9	6,949.6	688.8	498.5	190.23	3.621		
13,100.0	6,668.4	6,591.2	6,588.6	183.6	11.5	-96.61	447.4	6,950.7	603.1	409.3	193.76	3.112		
13,200.0	6,667.5	6,580.3	6,577.8	186.4	11.4	-94.75	446.8	6,951.8	522.3	325.1	197.14	2.649		
13,300.0	6,666.5	6,569.4	6,566.9	189.2	11.4	-92.87	446.2	6,952.8	449.0	248.7	200.33	2.241		
13,400.0	6,665.5	6,558.4	6,556.1	192.0	11.4	-90.98	445.7	6,953.9	387.5	184.2	203.34	1.906		
13,500.0	6,664.5	6,547.5	6,545.2	194.8	11.4	-89.08	445.1	6,955.0	344.3	138.1	206.15	1.670		
13,600.0	6,663.5	6,536.6	6,534.3	197.6	11.4	-87.17	444.5	6,956.1	326.5	117.8	208.74	1.564		
13,610.2	6,663.4	6,535.5	6,533.2	197.9	11.4	-86.98	444.4	6,956.2	326.4	117.4	208.99	1.562 CC, ES, SF		
13,700.0	6,662.6	6,525.7	6,523.5	200.4	11.3	-85.27	443.9	6,957.2	338.4	127.3	211.10	1.603		
13,800.0	6,661.6	6,514.7	6,512.6	203.2	11.3	-83.36	443.4	6,958.3	377.0	163.7	213.24	1.768		
13,900.0	6,660.6	6,503.8	6,501.8	206.0	11.3	-81.47	442.8	6,959.4	435.3	220.2	215.15	2.023		
14,000.0	6,659.6	6,492.9	6,490.9	208.8	11.3	-79.59	442.2	6,960.5	506.6	289.8	216.81	2.337		
14,100.0	6,658.7	6,482.0	6,480.1	211.6	11.3	-77.72	441.6	6,961.5	586.1	367.9	218.25	2.686		
14,200.0	6,657.7	6,471.0	6,469.2	214.4	11.2	-75.87	441.1	6,962.6	671.0	451.5	219.45	3.058		
14,300.0	6,656.7	6,460.1	6,458.3	217.2	11.2	-74.05	440.5	6,963.7	759.4	539.0	220.43	3.445		

Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	Local Co-ordinate Reference:	Well Loloff Farms 26I-312
Project:	SEC.26-T5N-R64W	TVD Reference:	WELL @ 4701.0ft (RKB - 23')
Reference Site:	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	MD Reference:	WELL @ 4701.0ft (RKB - 23')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Loloff Farms 26I-312	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Extension Plan #1 (1-29-16)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Pad Sec.26-T5N-R64W - Loustalet 25-1 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
11,600.0	6,683.1	6,578.6	6,578.2	141.6	12.1	-91.94	464.0	5,622.8	759.7	606.0	153.62	4.945		
11,700.0	6,682.1	6,577.2	6,576.7	144.4	12.1	-91.70	464.0	5,622.9	672.2	515.7	156.43	4.297		
11,800.0	6,681.1	6,575.7	6,575.3	147.2	12.1	-91.46	464.0	5,622.9	588.6	429.4	159.24	3.697		
11,900.0	6,680.2	6,574.3	6,573.9	150.0	12.1	-91.22	464.0	5,622.9	511.1	349.0	162.05	3.154		
12,000.0	6,679.2	6,572.9	6,572.4	152.8	12.1	-90.99	464.0	5,622.9	442.6	277.7	164.86	2.685		
12,100.0	6,678.2	6,571.4	6,571.0	155.6	12.1	-90.75	464.0	5,622.9	388.0	220.4	167.66	2.314		
12,200.0	6,677.2	6,570.0	6,569.6	158.4	12.1	-90.51	464.0	5,622.9	353.9	183.4	170.46	2.076		
12,276.6	6,676.5	6,568.9	6,568.5	160.5	12.1	-90.33	464.0	5,622.9	345.5	172.9	172.61	2.002 CC, ES		
12,300.0	6,676.3	6,568.6	6,568.1	161.2	12.1	-90.27	464.0	5,622.9	346.3	173.0	173.26	1.999 SF		
12,400.0	6,675.3	6,567.1	6,566.7	164.0	12.1	-90.04	464.0	5,622.9	366.9	190.8	176.06	2.084		
12,500.0	6,674.3	6,565.7	6,565.3	166.8	12.1	-89.80	464.0	5,622.9	411.4	232.6	178.86	2.300		
12,600.0	6,673.3	6,564.3	6,563.8	169.6	12.1	-89.56	464.1	5,622.9	473.2	291.6	181.65	2.605		
12,700.0	6,672.3	6,562.8	6,562.4	172.4	12.1	-89.32	464.1	5,622.9	546.4	362.0	184.45	2.963		
12,800.0	6,671.4	6,561.4	6,561.0	175.2	12.1	-89.09	464.1	5,622.9	627.1	439.9	187.23	3.349		
12,900.0	6,670.4	6,560.0	6,559.5	178.0	12.1	-88.85	464.1	5,622.9	712.7	522.7	190.02	3.751		

Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	Local Co-ordinate Reference:	Well Loloff Farms 26I-312
Project:	SEC.26-T5N-R64W	TVD Reference:	WELL @ 4701.0ft (RKB - 23')
Reference Site:	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	MD Reference:	WELL @ 4701.0ft (RKB - 23')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Loloff Farms 26I-312	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Extension Plan #1 (1-29-16)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Pad Sec.26-T5N-R64W - Schlagel 26-1 (SI) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						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		
9,000.0	6,708.5	6,606.4	6,605.2	69.5	11.8	-88.99	495.0	3,027.7	778.5	697.2	81.25	9.581		
9,100.0	6,707.5	6,608.1	6,606.9	72.2	11.8	-89.25	494.9	3,027.7	692.6	608.6	84.00	8.246		
9,200.0	6,706.6	6,609.9	6,608.7	75.0	11.8	-89.52	494.9	3,027.8	611.1	524.4	86.75	7.045		
9,300.0	6,705.6	6,611.6	6,610.4	77.7	11.8	-89.79	494.9	3,027.8	535.9	446.4	89.51	5.987		
9,400.0	6,704.6	6,613.4	6,612.2	80.5	11.8	-90.05	494.9	3,027.9	470.0	377.7	92.26	5.094		
9,500.0	6,703.6	6,615.2	6,613.9	83.2	11.8	-90.32	494.8	3,027.9	417.8	322.8	95.02	4.397		
9,600.0	6,702.6	6,616.9	6,615.7	86.0	11.8	-90.59	494.8	3,028.0	385.1	287.3	97.78	3.938		
9,681.6	6,701.8	6,618.3	6,617.1	88.2	11.8	-90.80	494.8	3,028.0	376.3	276.3	100.03	3.762 CC		
9,700.0	6,701.7	6,618.7	6,617.5	88.8	11.8	-90.85	494.8	3,028.0	376.8	276.2	100.54	3.748 ES, SF		
9,800.0	6,700.7	6,620.4	6,619.2	91.5	11.8	-91.12	494.8	3,028.1	394.5	291.2	103.30	3.819		
9,900.0	6,699.7	6,622.2	6,621.0	94.3	11.8	-91.39	494.8	3,028.1	435.1	329.0	106.06	4.102		
10,000.0	6,698.7	6,623.9	6,622.7	97.1	11.8	-91.66	494.7	3,028.2	492.9	384.1	108.82	4.530		
10,100.0	6,697.8	6,625.7	6,624.5	99.8	11.8	-91.92	494.7	3,028.2	562.7	451.1	111.58	5.043		
10,200.0	6,696.8	6,627.4	6,626.2	102.6	11.8	-92.19	494.7	3,028.3	640.5	526.2	114.34	5.602		
10,300.0	6,695.8	6,629.2	6,628.0	105.4	11.8	-92.46	494.7	3,028.3	723.8	606.7	117.10	6.181		

Company:	PETROLEUM DEVELOPMENT CORP DJ	Local Co-ordinate Reference:	Well Loloff Farms 26I-312
Project:	SEC.26-T5N-R64W	TVD Reference:	WELL @ 4701.0ft (RKB - 23')
Reference Site:	Loloff Farms 5N64W26I Pad	MD Reference:	WELL @ 4701.0ft (RKB - 23')
	Sec.26-T5N-R64W		
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Loloff Farms 26I-312	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Extension Plan #1 (1-29-16)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Pad Sec.26-T5N-R64W (Grid) - Loloff 2 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
0.0	0.0	0.0	0.0	0.0	0.0	53.97	324.3	445.9	552.6					
100.0	100.0	62.5	62.5	0.1	0.1	53.98	324.2	445.9	551.3	551.1	0.20	2,820.494		
200.0	200.0	164.0	164.0	0.3	0.3	54.01	323.8	445.9	551.1	550.4	0.63	867.845		
300.0	300.0	264.4	264.3	0.6	0.6	54.05	323.3	445.7	550.6	549.5	1.12	491.514		
386.9	386.9	348.9	348.9	0.8	0.7	54.07	323.0	445.7	550.4	548.9	1.49	370.241		
400.0	400.0	361.4	361.4	0.8	0.7	54.07	322.9	445.7	550.4	548.9	1.54	358.328		
500.0	500.0	461.2	461.2	1.0	0.9	54.08	323.0	446.0	550.7	548.7	1.93	285.388		
600.0	600.0	559.8	559.8	1.2	1.1	54.09	323.1	446.1	550.8	548.5	2.31	238.433		
700.0	700.0	659.6	659.6	1.5	1.2	54.03	323.9	446.2	551.3	548.7	2.65	208.327		
800.0	800.0	760.4	760.4	1.7	1.3	53.99	324.4	446.2	551.6	548.7	2.98	184.922		
900.0	900.0	861.1	861.0	1.9	1.4	53.89	325.3	445.9	551.9	548.6	3.35	164.874		
1,000.0	1,000.0	960.8	960.8	2.1	1.6	53.85	325.7	445.7	552.0	548.3	3.74	147.560		
1,100.0	1,100.0	1,061.9	1,061.9	2.4	1.8	53.83	325.9	445.8	552.2	548.1	4.15	132.972		
1,177.3	1,177.3	1,139.3	1,139.3	2.5	1.9	53.81	326.1	445.6	552.2	547.7	4.47	123.417		
1,200.0	1,200.0	1,161.5	1,161.5	2.6	2.0	53.80	326.1	445.6	552.2	547.6	4.57	120.880		
1,300.0	1,300.0	1,260.8	1,260.8	2.8	2.2	53.77	326.5	445.6	552.4	547.4	5.00	110.460		
1,400.0	1,400.0	1,361.7	1,361.7	3.0	2.4	53.74	326.9	445.5	552.6	547.1	5.45	101.456		
1,500.0	1,500.0	1,462.9	1,462.9	3.3	2.6	53.66	327.4	445.1	552.5	546.6	5.89	93.801		
1,600.0	1,600.0	1,563.2	1,563.1	3.5	2.9	53.52	328.4	444.1	552.3	546.0	6.34	87.176		
1,700.0	1,700.0	1,663.2	1,663.1	3.7	3.1	53.35	329.6	443.0	552.1	545.3	6.79	81.341		
1,800.0	1,800.0	1,762.3	1,762.2	3.9	3.3	53.17	330.9	441.8	552.0	544.7	7.24	76.185		
1,804.2	1,804.2	1,766.4	1,766.4	3.9	3.3	116.88	330.9	441.7	552.0	544.7	7.26	75.983		
1,900.0	1,900.0	1,861.6	1,861.6	4.2	3.6	116.81	332.1	440.9	552.4	544.7	7.70	71.722		
2,000.0	2,000.0	1,961.2	1,961.2	4.4	3.8	116.92	333.1	440.3	553.7	545.5	8.16	67.878		
2,100.0	2,099.9	2,061.2	2,061.1	4.6	4.0	117.24	333.7	440.1	555.8	547.2	8.60	64.631		
2,200.0	2,199.7	2,162.6	2,162.5	4.8	4.2	117.77	333.7	440.1	558.7	549.7	8.98	62.191		
2,300.0	2,299.4	2,262.8	2,262.7	5.0	4.3	118.48	333.3	440.0	562.1	552.8	9.30	60.455		
2,400.0	2,398.9	2,361.1	2,361.0	5.3	4.4	119.34	332.8	440.2	566.6	557.0	9.60	59.019		
2,502.3	2,500.6	2,461.2	2,461.1	5.5	4.5	120.40	331.8	441.0	572.6	562.6	9.93	57.663		
2,600.0	2,597.5	2,557.6	2,557.5	5.8	4.6	121.62	330.2	442.4	579.1	568.8	10.27	56.404		
2,700.0	2,696.8	2,657.1	2,657.0	6.0	4.7	122.89	328.2	444.0	586.0	575.3	10.63	55.134		
2,800.0	2,796.0	2,757.3	2,757.1	6.3	4.8	124.13	326.1	445.5	593.0	582.0	11.00	53.894		
2,900.0	2,895.3	2,858.3	2,858.1	6.5	5.0	125.35	323.9	446.8	600.0	588.6	11.39	52.677		
3,000.0	2,994.5	2,959.7	2,959.5	6.8	5.1	126.50	321.9	447.5	606.9	595.1	11.79	51.485		
3,100.0	3,093.8	3,060.2	3,059.9	7.1	5.3	127.57	320.2	447.6	613.7	601.5	12.19	50.329		
3,200.0	3,193.0	3,160.3	3,160.0	7.4	5.4	128.60	318.7	447.5	620.6	608.0	12.61	49.220		
3,300.0	3,292.3	3,261.0	3,260.7	7.7	5.6	129.62	316.8	447.4	627.4	614.4	13.03	48.147		
3,400.0	3,391.5	3,364.2	3,363.9	8.0	5.8	130.68	314.5	446.9	634.0	620.6	13.47	47.088		
3,500.0	3,490.8	3,470.2	3,469.8	8.2	6.0	131.75	311.6	445.7	640.0	626.1	13.91	46.011		
3,600.0	3,590.0	3,573.9	3,573.4	8.5	6.2	132.79	308.4	443.6	645.2	630.9	14.36	44.943		
3,700.0	3,689.3	3,675.1	3,674.6	8.8	6.4	133.79	305.1	441.0	650.1	635.3	14.80	43.920		
3,800.0	3,788.5	3,774.4	3,773.8	9.1	6.6	134.75	301.7	438.4	655.1	639.8	15.25	42.956		
3,900.0	3,887.8	3,875.6	3,874.9	9.4	6.8	135.71	298.4	435.7	660.2	644.5	15.70	42.038		
4,000.0	3,987.0	3,976.1	3,975.3	9.7	7.0	136.55	296.0	432.3	665.1	648.9	16.16	41.160		
4,100.0	4,086.3	4,076.0	4,075.2	10.0	7.2	137.32	294.3	428.7	670.1	653.5	16.61	40.332		
4,163.9	4,149.7	4,140.5	4,139.6	10.2	7.3	137.80	293.3	426.2	673.3	656.4	16.91	39.822		
4,200.0	4,185.5	4,177.1	4,176.1	10.3	7.4	138.07	292.8	424.8	674.9	657.8	17.07	39.531		
4,300.0	4,285.1	4,275.9	4,274.8	10.5	7.6	138.62	291.7	420.7	677.6	660.1	17.49	38.739		
4,400.0	4,384.9	4,375.4	4,374.3	10.7	7.8	138.92	290.9	416.8	677.9	660.0	17.89	37.881		
4,500.0	4,484.9	4,474.0	4,472.8	10.9	8.0	139.01	290.1	413.0	675.6	657.3	18.28	36.959		
4,515.1	4,500.0	4,488.8	4,487.6	10.9	8.1	75.28	289.9	412.4	675.1	656.5	18.60	36.295		

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

Company:	PETROLEUM DEVELOPMENT CORP DJ	Local Co-ordinate Reference:	Well Loloff Farms 26I-312
Project:	SEC.26-T5N-R64W	TVD Reference:	WELL @ 4701.0ft (RKB - 23')
Reference Site:	Loloff Farms 5N64W26I Pad	MD Reference:	WELL @ 4701.0ft (RKB - 23')
	Sec.26-T5N-R64W		
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Loloff Farms 26I-312	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Extension Plan #1 (1-29-16)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Pad Sec.26-T5N-R64W (Grid) - Loloff 2 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
4,600.0	4,584.9	4,572.1	4,570.8	11.1	8.2	75.24	289.5	409.4	671.9	653.0	18.94	35.486		
4,700.0	4,684.9	4,665.1	4,663.8	11.3	8.4	75.17	289.6	406.3	668.8	649.4	19.34	34.585		
4,800.0	4,784.9	4,756.9	4,755.5	11.5	8.6	75.10	290.0	404.4	666.9	647.2	19.73	33.806		
4,900.0	4,884.9	4,852.6	4,851.3	11.7	8.8	75.00	290.9	403.3	666.0	645.9	20.11	33.118		
5,000.0	4,984.9	4,952.6	4,951.3	11.9	9.0	74.87	292.2	402.3	665.4	644.9	20.50	32.466		
5,100.0	5,084.9	5,051.8	5,050.4	12.1	9.2	74.75	293.4	401.3	664.8	643.9	20.88	31.831		
5,200.0	5,184.9	5,150.7	5,149.3	12.3	9.4	74.67	294.2	400.7	664.4	643.1	21.28	31.226		
5,279.8	5,264.7	5,228.1	5,226.7	12.5	9.5	74.60	294.8	400.3	664.1	642.6	21.58	30.778		
5,300.0	5,284.9	5,246.6	5,245.2	12.5	9.5	74.59	295.0	400.3	664.2	642.5	21.65	30.678		
5,400.0	5,384.9	5,342.3	5,341.0	12.7	9.7	74.51	296.0	400.7	664.9	642.9	21.99	30.232		
5,500.0	5,484.9	5,444.1	5,442.7	12.9	9.8	74.49	296.5	401.4	665.7	643.4	22.33	29.817		
5,600.0	5,584.9	5,545.8	5,544.4	13.1	9.9	74.50	296.5	401.9	666.2	643.5	22.66	29.398		
5,700.0	5,684.9	5,646.3	5,644.9	13.3	10.0	74.50	296.6	402.2	666.5	643.5	23.00	28.982		
5,800.0	5,784.9	5,746.0	5,744.6	13.5	10.2	74.51	296.6	402.5	666.8	643.4	23.34	28.568		
5,900.0	5,884.9	5,846.0	5,844.6	13.7	10.3	74.49	296.9	402.9	667.1	643.5	23.69	28.157		
5,977.4	5,962.3	5,923.0	5,921.6	13.9	10.4	74.52	296.7	403.2	667.4	643.4	23.97	27.839		
6,000.0	5,984.9	5,944.8	5,943.4	13.9	10.4	-15.49	296.6	403.3	667.2	643.4	23.81	28.018		
6,050.0	6,034.8	5,992.9	5,991.5	14.0	10.5	-15.59	296.4	403.7	664.5	640.7	23.86	27.854		
6,100.0	6,084.4	6,042.8	6,041.4	14.1	10.6	-15.83	296.3	404.1	658.8	635.0	23.81	27.668		
6,150.0	6,133.4	6,092.6	6,091.2	14.1	10.7	-16.24	296.2	404.5	649.9	626.2	23.67	27.452		
6,200.0	6,181.8	6,140.6	6,139.2	14.2	10.7	-16.81	296.2	404.8	637.9	614.5	23.45	27.205		
6,250.0	6,229.1	6,187.4	6,186.0	14.2	10.8	-17.58	296.3	405.2	623.0	599.9	23.14	26.919		
6,300.0	6,275.4	6,232.8	6,231.4	14.2	10.9	-18.55	296.4	405.6	605.3	582.5	22.77	26.583		
6,350.0	6,320.3	6,276.8	6,275.4	14.3	10.9	-19.76	296.4	406.1	584.8	562.5	22.34	26.179		
6,400.0	6,363.7	6,319.6	6,318.2	14.3	11.0	-21.26	296.4	406.7	561.7	539.8	21.87	25.679		
6,450.0	6,405.3	6,361.0	6,359.5	14.4	11.1	-23.11	296.3	407.3	536.1	514.7	21.41	25.042		
6,500.0	6,445.1	6,400.6	6,399.1	14.5	11.1	-25.41	296.2	408.0	508.3	487.3	20.99	24.213		
6,550.0	6,482.8	6,439.0	6,437.6	14.7	11.2	-28.30	296.1	408.6	478.2	457.5	20.69	23.109		
6,600.0	6,518.2	6,475.3	6,473.8	14.9	11.2	-31.87	295.9	409.3	446.2	425.6	20.61	21.652		
6,650.0	6,551.3	6,509.2	6,507.7	15.1	11.3	-36.28	295.8	409.9	412.5	391.7	20.85	19.784		
6,700.0	6,581.9	6,540.5	6,539.0	15.5	11.4	-41.67	295.6	410.4	377.6	356.1	21.54	17.528		
6,750.0	6,609.8	6,569.2	6,567.8	15.9	11.4	-48.11	295.4	411.0	341.9	319.1	22.74	15.031		
6,800.0	6,634.9	6,595.3	6,593.8	16.4	11.4	-55.55	295.2	411.4	306.0	281.6	24.39	12.542		
6,850.0	6,657.2	6,618.6	6,617.1	17.0	11.5	-63.69	295.0	411.9	270.8	244.5	26.28	10.304		
6,900.0	6,676.5	6,638.7	6,637.3	17.7	11.5	-71.84	294.8	412.2	237.8	209.7	28.10	8.465		
6,950.0	6,692.7	6,655.6	6,654.1	18.5	11.6	-79.22	294.7	412.4	209.1	179.5	29.61	7.062		
7,000.0	6,705.8	6,669.2	6,667.7	19.3	11.6	-85.16	294.7	412.6	187.6	156.8	30.79	6.092		
7,050.0	6,715.7	6,679.5	6,678.0	20.2	11.6	-89.26	294.6	412.7	176.8	145.1	31.78	5.565		
7,065.8	6,718.1	6,682.0	6,680.6	20.5	11.6	-90.14	294.6	412.7	176.1	144.1	32.08	5.491 CC, ES		
7,100.0	6,722.4	6,686.5	6,685.0	21.1	11.6	-91.32	294.6	412.7	179.4	146.6	32.71	5.483 SF		
7,150.0	6,725.8	6,690.2	6,688.7	22.1	11.6	-91.29	294.6	412.8	195.0	161.3	33.71	5.786		
7,184.9	6,726.2	6,690.9	6,689.5	22.8	11.6	-90.02	294.6	412.8	212.4	177.9	34.44	6.167		
7,200.0	6,726.1	6,690.9	6,689.4	23.1	11.6	-90.01	294.6	412.8	221.1	186.4	34.75	6.364		
7,300.0	6,725.1	6,690.7	6,689.3	25.3	11.6	-89.95	294.6	412.8	292.7	255.8	36.90	7.932		
7,400.0	6,724.1	6,690.5	6,689.1	27.6	11.6	-89.89	294.6	412.8	377.4	338.2	39.17	9.635		
7,500.0	6,723.2	6,690.4	6,688.9	29.9	11.6	-89.84	294.6	412.8	468.1	426.6	41.53	11.273		
7,600.0	6,722.2	6,690.2	6,688.7	32.4	11.6	-89.78	294.6	412.8	562.1	518.1	43.96	12.785		
7,700.0	6,721.2	6,690.0	6,688.6	34.9	11.6	-89.73	294.6	412.7	657.8	611.3	46.45	14.160		
7,800.0	6,720.2	6,689.9	6,688.4	37.4	11.6	-89.68	294.6	412.7	754.6	705.6	48.99	15.404		

Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	Local Co-ordinate Reference:	Well Loloff Farms 26I-312
Project:	SEC.26-T5N-R64W	TVD Reference:	WELL @ 4701.0ft (RKB - 23')
Reference Site:	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	MD Reference:	WELL @ 4701.0ft (RKB - 23')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Loloff Farms 26I-312	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Extension Plan #1 (1-29-16)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Pad Sec.26-T5N-R64W (Grid) - Loloff B 26-14X (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
7,500.0	6,723.2	6,675.1	6,674.1	29.9	12.2	-90.08	371.1	1,603.1	797.7	755.5	42.11	18.941		
7,600.0	6,722.2	6,675.1	6,674.1	32.4	12.2	-90.08	371.1	1,603.1	703.5	659.0	44.55	15.793		
7,700.0	6,721.2	6,675.1	6,674.1	34.9	12.2	-90.08	371.1	1,603.1	611.2	564.2	47.04	12.995		
7,800.0	6,720.2	6,675.0	6,674.1	37.4	12.2	-90.07	371.1	1,603.1	521.8	472.2	49.57	10.526		
7,900.0	6,719.3	6,675.0	6,674.1	40.0	12.2	-90.07	371.1	1,603.1	437.0	384.8	52.14	8.381		
8,000.0	6,718.3	6,675.0	6,674.1	42.6	12.2	-90.07	371.1	1,603.1	360.1	305.3	54.75	6.577		
8,100.0	6,717.3	6,675.0	6,674.0	45.2	12.2	-90.06	371.1	1,603.1	297.2	239.8	57.37	5.180		
8,200.0	6,716.3	6,675.0	6,674.0	47.8	12.2	-90.06	371.1	1,603.1	258.8	198.8	60.02	4.312		
8,256.6	6,715.8	6,675.0	6,674.0	49.3	12.2	-90.06	371.1	1,603.1	252.6	191.0	61.53	4.105 CC, ES		
8,300.0	6,715.3	6,675.0	6,674.0	50.5	12.2	-90.05	371.1	1,603.1	256.3	193.6	62.69	4.088 SF		
8,400.0	6,714.4	6,674.9	6,674.0	53.2	12.2	-90.05	371.1	1,603.1	290.4	225.1	65.37	4.443		
8,500.0	6,713.4	6,674.9	6,674.0	55.9	12.2	-90.05	371.1	1,603.1	350.7	282.7	68.06	5.154		
8,600.0	6,712.4	6,674.9	6,674.0	58.6	12.2	-90.04	371.1	1,603.1	426.3	355.5	70.76	6.024		
8,700.0	6,711.4	6,674.9	6,673.9	61.3	12.2	-90.04	371.1	1,603.1	510.3	436.8	73.48	6.945		
8,800.0	6,710.5	6,674.9	6,673.9	64.0	12.2	-90.04	371.1	1,603.1	599.2	523.0	76.20	7.864		
8,900.0	6,709.5	6,674.9	6,673.9	66.7	12.2	-90.03	371.1	1,603.1	691.2	612.3	78.93	8.757		
9,000.0	6,708.5	6,674.8	6,673.9	69.5	12.2	-90.03	371.1	1,603.1	785.1	703.5	81.66	9.614		

Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	Local Co-ordinate Reference:	Well Loloff Farms 26I-312
Project:	SEC.26-T5N-R64W	TVD Reference:	WELL @ 4701.0ft (RKB - 23')
Reference Site:	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	MD Reference:	WELL @ 4701.0ft (RKB - 23')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Loloff Farms 26I-312	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Extension Plan #1 (1-29-16)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Pad Sec.26-T5N-R64W (Grid) - Loloff B 35-29 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
6,950.0	6,692.7	6,649.7	6,647.5	18.5	12.5	72.25	-410.0	856.2	767.4	737.8	29.57	25.952		
7,000.0	6,705.8	6,663.0	6,660.7	19.3	12.5	76.91	-410.0	856.4	733.3	702.3	30.97	23.674		
7,050.0	6,715.7	6,673.2	6,670.9	20.2	12.5	81.19	-410.0	856.5	700.3	668.0	32.28	21.694		
7,100.0	6,722.4	6,680.3	6,678.0	21.1	12.5	84.94	-410.1	856.5	668.9	635.4	33.48	19.979		
7,150.0	6,725.8	6,684.2	6,682.0	22.1	12.5	88.07	-410.1	856.6	639.6	605.0	34.59	18.491		
7,184.9	6,726.2	6,685.1	6,682.8	22.8	12.5	89.86	-410.1	856.6	620.6	585.3	35.33	17.568		
7,200.0	6,726.1	6,685.1	6,682.8	23.1	12.5	89.86	-410.1	856.6	612.8	577.2	35.64	17.196		
7,300.0	6,725.1	6,685.2	6,683.0	25.3	12.5	89.88	-410.1	856.6	568.8	531.0	37.79	15.052		
7,400.0	6,724.1	6,685.4	6,683.1	27.6	12.5	89.90	-410.1	856.6	539.9	499.9	40.06	13.478		
7,500.0	6,723.2	6,685.5	6,683.3	29.9	12.5	89.91	-410.1	856.6	528.7	486.2	42.42	12.463		
7,510.1	6,723.1	6,685.6	6,683.3	30.2	12.5	89.91	-410.1	856.6	528.6	485.9	42.67	12.388 CC, ES		
7,600.0	6,722.2	6,685.7	6,683.4	32.4	12.5	89.93	-410.1	856.6	536.2	491.3	44.85	11.953		
7,700.0	6,721.2	6,685.9	6,683.6	34.9	12.5	89.95	-410.1	856.6	561.6	514.3	47.34	11.863 SF		
7,800.0	6,720.2	6,686.0	6,683.7	37.4	12.5	89.96	-410.1	856.6	602.8	553.0	49.88	12.086		
7,900.0	6,719.3	6,686.2	6,683.9	40.0	12.5	89.98	-410.1	856.6	656.8	604.3	52.45	12.522		
8,000.0	6,718.3	6,686.3	6,684.0	42.6	12.5	90.00	-410.1	856.6	720.7	665.6	55.05	13.090		
8,100.0	6,717.3	6,686.5	6,684.2	45.2	12.5	90.01	-410.1	856.6	792.0	734.4	57.68	13.731		

Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	Local Co-ordinate Reference:	Well Loloff Farms 26I-312
Project:	SEC.26-T5N-R64W	TVD Reference:	WELL @ 4701.0ft (RKB - 23')
Reference Site:	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	MD Reference:	WELL @ 4701.0ft (RKB - 23')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Loloff Farms 26I-312	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Extension Plan #1 (1-29-16)	Offset TVD Reference:	Offset Datum

Offset Design		Hoshiko 34-25 Pad Sec.25-T5N-R64W - Hoshiko 34-25 - Wellbore #1 - Wellbore #1											Offset Site Error:		0.0 ft
Survey Program: 599-													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor			
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)				
14,300.0	6,656.7	6,595.5	6,565.5	217.2	14.8	-91.88	516.6	8,287.1	754.5	522.7	231.79	3.255			
14,400.0	6,655.7	6,594.0	6,564.0	220.0	14.8	-91.66	516.6	8,287.1	671.7	437.1	234.62	2.863			
14,500.0	6,654.8	6,592.5	6,562.5	222.8	14.8	-91.45	516.6	8,287.1	594.1	356.7	237.44	2.502			
14,600.0	6,653.8	6,591.0	6,561.0	225.6	14.8	-91.23	516.6	8,287.1	524.2	283.9	240.26	2.182			
14,700.0	6,652.8	6,589.6	6,559.5	228.4	14.8	-91.02	516.6	8,287.1	465.4	222.3	243.08	1.915			
14,800.0	6,651.8	6,588.1	6,558.0	231.2	14.8	-90.81	516.7	8,287.2	422.4	176.5	245.90	1.718			
14,900.0	6,650.8	6,586.6	6,556.6	234.0	14.8	-90.60	516.7	8,287.2	400.3	151.5	248.71	1.609			
14,941.0	6,650.4	6,586.0	6,556.0	235.2	14.8	-90.51	516.7	8,287.2	398.2	148.3	249.86	1.593	CC, ES, SF		
15,000.0	6,649.9	6,585.1	6,555.1	236.8	14.8	-90.38	516.7	8,287.2	402.5	151.0	251.52	1.600			
15,100.0	6,648.9	6,583.7	6,553.7	239.6	14.8	-90.17	516.7	8,287.2	428.7	174.4	254.33	1.686			
15,200.0	6,647.9	6,582.2	6,552.2	242.4	14.8	-89.97	516.7	8,287.2	475.0	217.8	257.13	1.847			
15,300.0	6,646.9	6,580.8	6,550.8	245.2	14.8	-89.76	516.7	8,287.2	536.1	276.1	259.94	2.062			
15,400.0	6,646.0	6,579.4	6,549.3	248.0	14.8	-89.55	516.7	8,287.2	607.6	344.8	262.74	2.313			
15,500.0	6,645.0	6,577.9	6,547.9	250.8	14.8	-89.35	516.7	8,287.2	686.2	420.7	265.53	2.584			
15,600.0	6,644.0	6,576.5	6,546.5	253.6	14.8	-89.14	516.8	8,287.2	769.9	501.6	268.32	2.869			

Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	Local Co-ordinate Reference:	Well Loloff Farms 26I-312
Project:	SEC.26-T5N-R64W	TVD Reference:	WELL @ 4701.0ft (RKB - 23')
Reference Site:	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	MD Reference:	WELL @ 4701.0ft (RKB - 23')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Loloff Farms 26I-312	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Extension Plan #1 (1-29-16)	Offset TVD Reference:	Offset Datum

Offset Design														Offset Site Error:	0.0 ft
Survey Program: 0-MWD														Offset Well Error:	0.0 ft
Reference															
Offset															
Semi Major Axis															
Distance															
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	-89.98	0.0	-30.7	30.7						
100.0	100.0	100.0	100.0	0.1	0.1	-89.98	0.0	-30.7	30.7	30.4	0.22	136.381			
200.0	200.0	200.0	200.0	0.3	0.3	-89.98	0.0	-30.7	30.7	30.0	0.67	45.460			
300.0	300.0	300.0	300.0	0.6	0.6	-89.98	0.0	-30.7	30.7	29.5	1.12	27.276			
400.0	400.0	400.0	400.0	0.8	0.8	-89.98	0.0	-30.7	30.7	29.1	1.57	19.483			
500.0	500.0	500.0	500.0	1.0	1.0	-89.98	0.0	-30.7	30.7	28.6	2.02	15.153			
600.0	600.0	600.0	600.0	1.2	1.2	-89.98	0.0	-30.7	30.7	28.2	2.47	12.398			
700.0	700.0	700.0	700.0	1.5	1.5	-89.98	0.0	-30.7	30.7	27.7	2.92	10.491			
800.0	800.0	800.0	800.0	1.7	1.7	-89.98	0.0	-30.7	30.7	27.3	3.37	9.092			
900.0	900.0	900.0	900.0	1.9	1.9	-89.98	0.0	-30.7	30.7	26.8	3.82	8.022			
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-89.98	0.0	-30.7	30.7	26.4	4.27	7.178 CC			
1,100.0	1,100.0	1,099.8	1,099.8	2.4	2.4	-88.48	0.8	-31.0	31.0	26.3	4.72	6.563			
1,200.0	1,200.0	1,199.5	1,199.5	2.6	2.6	-84.16	3.3	-31.9	32.0	26.9	5.17	6.202			
1,300.0	1,300.0	1,299.2	1,299.0	2.8	2.8	-77.64	7.3	-33.4	34.2	28.6	5.62	6.090			
1,400.0	1,400.0	1,398.6	1,398.3	3.0	3.0	-69.92	13.0	-35.5	37.9	31.8	6.07	6.241			
1,500.0	1,500.0	1,497.8	1,497.2	3.3	3.3	-62.11	20.2	-38.2	43.4	36.8	6.52	6.652			
1,600.0	1,600.0	1,596.7	1,595.6	3.5	3.5	-55.03	29.1	-41.6	50.9	43.9	6.98	7.298			
1,700.0	1,700.0	1,695.3	1,693.5	3.7	3.8	-49.05	39.5	-45.5	60.5	53.1	7.44	8.137			
1,800.0	1,800.0	1,793.4	1,790.9	3.9	4.0	-44.19	51.4	-49.9	72.2	64.3	7.91	9.125			
1,900.0	1,900.0	1,891.2	1,887.6	4.2	4.3	23.58	64.8	-55.0	85.0	76.7	8.32	10.227			
2,000.0	2,000.0	1,990.3	1,985.5	4.4	4.6	27.17	79.0	-60.3	97.4	88.6	8.76	11.123			
2,100.0	2,099.9	2,089.5	2,083.5	4.6	4.9	30.40	93.3	-65.7	108.6	99.4	9.20	11.802			
2,200.0	2,199.7	2,188.8	2,181.7	4.8	5.2	33.46	107.7	-71.1	118.5	108.9	9.64	12.292			
2,300.0	2,299.4	2,288.2	2,279.9	5.0	5.5	36.50	122.0	-76.4	127.4	117.3	10.09	12.623			
2,400.0	2,398.9	2,387.6	2,378.1	5.3	5.8	39.60	136.3	-81.8	135.3	124.7	10.55	12.819			
2,502.3	2,500.6	2,489.4	2,478.7	5.5	6.2	42.90	151.0	-87.3	142.4	131.3	11.04	12.902			
2,600.0	2,597.5	2,586.5	2,574.6	5.8	6.5	46.03	165.0	-92.6	149.0	137.4	11.52	12.934			
2,700.0	2,696.8	2,685.9	2,672.9	6.0	6.8	48.95	179.3	-98.0	156.1	144.1	12.02	12.986			
2,800.0	2,796.0	2,785.4	2,771.1	6.3	7.2	51.61	193.7	-103.4	163.6	151.1	12.54	13.051			
2,900.0	2,895.3	2,884.8	2,869.4	6.5	7.5	54.04	208.0	-108.7	171.5	158.4	13.07	13.123			
3,000.0	2,994.5	2,984.3	2,967.6	6.8	7.9	56.24	222.3	-114.1	179.6	166.0	13.61	13.200			
3,100.0	3,093.8	3,083.7	3,065.9	7.1	8.2	58.26	236.7	-119.5	188.0	173.8	14.16	13.279			
3,200.0	3,193.0	3,183.1	3,164.1	7.4	8.5	60.10	251.0	-124.9	196.6	181.9	14.72	13.358			
3,300.0	3,292.3	3,282.6	3,262.4	7.7	8.9	61.79	265.3	-130.3	205.3	190.1	15.28	13.437			
3,400.0	3,391.5	3,382.0	3,360.6	8.0	9.2	63.34	279.7	-135.6	214.3	198.4	15.86	13.514			
3,500.0	3,490.8	3,481.5	3,458.9	8.2	9.6	64.76	294.0	-141.0	223.4	206.9	16.44	13.589			
3,600.0	3,590.0	3,580.9	3,557.2	8.5	9.9	66.07	308.3	-146.4	232.6	215.5	17.02	13.662			
3,700.0	3,689.3	3,680.3	3,655.4	8.8	10.3	67.29	322.7	-151.8	241.9	224.3	17.61	13.732			
3,800.0	3,788.5	3,779.8	3,753.7	9.1	10.6	68.41	337.0	-157.2	251.3	233.1	18.21	13.800			
3,900.0	3,887.8	3,879.2	3,851.9	9.4	11.0	69.45	351.3	-162.5	260.8	242.0	18.81	13.865			
4,000.0	3,987.0	3,978.7	3,950.2	9.7	11.3	70.42	365.7	-167.9	270.4	250.9	19.41	13.928			
4,100.0	4,086.3	4,078.1	4,048.4	10.0	11.7	71.32	380.0	-173.3	280.0	260.0	20.02	13.988			
4,163.9	4,149.7	4,141.7	4,111.2	10.2	11.9	71.86	389.2	-176.7	286.2	265.8	20.41	14.026			
4,200.0	4,185.5	4,177.5	4,146.7	10.3	12.0	72.18	394.3	-178.7	289.8	269.2	20.61	14.060			
4,300.0	4,285.1	4,276.9	4,244.9	10.5	12.4	72.63	408.7	-184.1	300.5	279.3	21.11	14.232			
4,400.0	4,384.9	4,376.2	4,343.0	10.7	12.7	72.46	423.0	-189.4	312.2	290.6	21.56	14.476			
4,500.0	4,484.9	4,475.3	4,440.9	10.9	13.1	71.75	437.3	-194.8	325.0	303.0	21.97	14.794			
4,515.1	4,500.0	4,490.2	4,455.6	10.9	13.1	7.88	439.4	-195.6	327.0	304.5	22.45	14.568			
4,600.0	4,584.9	4,574.1	4,538.5	11.1	13.4	6.82	451.5	-200.1	338.6	315.6	22.94	14.757			
4,700.0	4,684.9	4,672.9	4,636.1	11.3	13.8	5.68	465.7	-205.5	352.3	328.8	23.55	14.964			
4,800.0	4,784.9	4,771.7	4,733.8	11.5	14.1	4.61	480.0	-210.8	366.3	342.1	24.15	15.168			

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

Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	Local Co-ordinate Reference:	Well Loloff Farms 26I-312
Project:	SEC.26-T5N-R64W	TVD Reference:	WELL @ 4701.0ft (RKB - 23')
Reference Site:	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	MD Reference:	WELL @ 4701.0ft (RKB - 23')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Loloff Farms 26I-312	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Extension Plan #1 (1-29-16)	Offset TVD Reference:	Offset Datum

Offset Design														Offset Site Error:	0.0 ft
Survey Program: 0-MWD														Offset Well Error:	0.0 ft
Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W - Loloff Farms 26H-232 - Wellbore #1 - Extension Plan															
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		
4,900.0	4,884.9	4,870.5	4,831.4	11.7	14.5	3.63	494.2	-216.2	380.3	355.5	24.75	15.368			
5,000.0	4,984.9	4,969.3	4,929.0	11.9	14.9	2.71	508.5	-221.5	394.4	369.0	25.34	15.563			
5,100.0	5,084.9	5,068.1	5,026.6	12.1	15.2	1.86	522.7	-226.9	408.6	382.7	25.94	15.753			
5,200.0	5,184.9	5,177.4	5,134.8	12.3	15.6	1.03	537.5	-232.4	422.1	395.5	26.53	15.908			
5,300.0	5,284.9	5,292.9	5,249.6	12.5	15.8	0.43	549.1	-236.8	432.1	405.0	27.06	15.969			
5,400.0	5,384.9	5,409.2	5,365.7	12.7	16.1	0.06	556.5	-239.5	438.4	410.9	27.52	15.929			
5,500.0	5,484.9	5,526.0	5,482.4	12.9	16.3	-0.08	559.4	-240.6	440.9	412.9	27.93	15.784			
5,600.0	5,584.9	5,628.5	5,584.9	13.1	16.4	-0.08	559.4	-240.7	440.9	412.6	28.31	15.577			
5,700.0	5,684.9	5,728.5	5,684.9	13.3	16.6	-0.08	559.4	-240.7	440.9	412.2	28.69	15.369			
5,800.0	5,784.9	5,828.5	5,784.9	13.5	16.7	-0.08	559.4	-240.7	440.9	411.8	29.07	15.166			
5,900.0	5,884.9	5,928.5	5,884.9	13.7	16.9	-0.08	559.4	-240.7	440.9	411.5	29.46	14.967			
5,934.2	5,919.1	5,962.7	5,919.1	13.8	17.0	0.00	559.4	-240.0	440.9	411.3	29.58	14.904			
5,977.4	5,962.3	6,005.8	5,962.0	13.9	17.0	0.39	559.4	-237.0	440.9	411.2	29.72	14.835			
6,000.0	5,984.9	6,028.1	5,984.2	13.9	17.0	-89.33	559.4	-234.5	440.9	412.9	28.03	15.728			
6,050.0	6,034.8	6,077.4	6,032.9	14.0	17.1	-88.70	559.4	-226.7	441.0	412.8	28.21	15.635			
6,100.0	6,084.4	6,126.4	6,080.6	14.1	17.1	-88.08	559.4	-215.8	441.2	412.8	28.36	15.557			
6,150.0	6,133.4	6,175.0	6,127.3	14.1	17.2	-87.47	559.4	-202.0	441.3	412.9	28.49	15.491			
6,200.0	6,181.8	6,223.4	6,172.7	14.2	17.2	-86.88	559.4	-185.4	441.6	413.0	28.61	15.435			
6,250.0	6,229.1	6,271.6	6,216.8	14.2	17.2	-86.29	559.4	-166.0	441.8	413.1	28.72	15.385			
6,300.0	6,275.4	6,319.5	6,259.3	14.2	17.2	-85.73	559.4	-144.0	442.1	413.3	28.83	15.334			
6,350.0	6,320.3	6,367.1	6,300.2	14.3	17.2	-85.18	559.4	-119.6	442.5	413.5	28.96	15.278			
6,400.0	6,363.7	6,414.5	6,339.2	14.3	17.2	-84.66	559.4	-92.8	442.8	413.7	29.12	15.208			
6,450.0	6,405.3	6,461.7	6,376.4	14.4	17.2	-84.16	559.4	-63.7	443.2	413.9	29.32	15.116			
6,500.0	6,445.1	6,508.6	6,411.5	14.5	17.3	-83.69	559.4	-32.5	443.6	414.0	29.59	14.994			
6,550.0	6,482.8	6,555.4	6,444.6	14.7	17.3	-83.24	559.4	0.6	444.0	414.1	29.93	14.835			
6,600.0	6,518.2	6,602.0	6,475.4	14.9	17.3	-82.82	559.4	35.5	444.4	414.0	30.38	14.630			
6,650.0	6,551.3	6,650.0	6,504.9	15.1	17.4	-82.41	559.4	73.4	444.8	413.9	30.95	14.372			
6,700.0	6,581.9	6,694.7	6,530.1	15.5	17.5	-82.07	559.4	110.3	445.2	413.5	31.64	14.071			
6,750.0	6,609.8	6,740.8	6,553.9	15.9	17.6	-81.74	559.4	149.8	445.5	413.1	32.48	13.717			
6,800.0	6,634.9	6,786.9	6,575.1	16.4	17.9	-81.44	559.4	190.6	445.9	412.4	33.48	13.320			
6,850.0	6,657.2	6,832.8	6,593.9	17.0	18.4	-81.18	559.4	232.5	446.2	411.6	34.62	12.887			
6,900.0	6,676.5	6,878.6	6,610.0	17.7	18.9	-80.96	559.4	275.3	446.5	410.5	35.92	12.429			
6,950.0	6,692.7	6,924.3	6,623.6	18.5	19.6	-80.77	559.4	319.0	446.7	409.3	37.36	11.956			
7,000.0	6,705.8	6,970.0	6,634.5	19.3	20.4	-80.61	559.4	363.4	446.9	408.0	38.94	11.477			
7,050.0	6,715.7	7,015.6	6,642.7	20.2	21.2	-80.49	559.4	408.2	447.0	406.4	40.63	11.002			
7,100.0	6,722.4	7,061.1	6,648.2	21.1	22.0	-80.41	559.4	453.4	447.1	404.7	42.43	10.537			
7,150.0	6,725.8	7,106.7	6,651.0	22.1	22.9	-80.37	559.4	498.9	447.2	402.9	44.32	10.090			
7,184.9	6,726.2	7,138.5	6,651.4	22.8	23.5	-80.36	559.4	530.7	447.2	401.5	45.68	9.790			
7,200.0	6,726.1	7,153.6	6,651.2	23.1	23.8	-80.36	559.4	545.8	447.2	400.9	46.30	9.659			
7,300.0	6,725.1	7,253.6	6,650.3	25.3	26.0	-80.37	559.4	645.8	447.2	396.7	50.55	8.847			
7,400.0	6,724.1	7,353.6	6,649.4	27.6	28.2	-80.37	559.4	745.8	447.2	392.2	55.01	8.129			
7,500.0	6,723.2	7,453.6	6,648.5	29.9	30.6	-80.38	559.4	845.8	447.2	387.5	59.66	7.495			
7,600.0	6,722.2	7,553.6	6,647.5	32.4	33.0	-80.39	559.4	945.8	447.2	382.7	64.45	6.938			
7,700.0	6,721.2	7,653.6	6,646.6	34.9	35.4	-80.39	559.4	1,045.8	447.2	377.8	69.36	6.447			
7,800.0	6,720.2	7,753.6	6,645.7	37.4	37.9	-80.40	559.4	1,145.8	447.2	372.8	74.35	6.014			
7,900.0	6,719.3	7,853.6	6,644.8	40.0	40.5	-80.41	559.4	1,245.8	447.1	367.7	79.42	5.630			
8,000.0	6,718.3	7,953.6	6,643.8	42.6	43.1	-80.41	559.4	1,345.8	447.1	362.6	84.55	5.288			
8,100.0	6,717.3	8,053.6	6,642.9	45.2	45.7	-80.42	559.4	1,445.8	447.1	357.4	89.73	4.983			
8,200.0	6,716.3	8,153.6	6,642.0	47.8	48.3	-80.43	559.4	1,545.8	447.1	352.2	94.96	4.709			
8,300.0	6,715.3	8,253.6	6,641.1	50.5	51.0	-80.43	559.4	1,645.8	447.1	346.9	100.22	4.461			

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

Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	Local Co-ordinate Reference:	Well Loloff Farms 26I-312
Project:	SEC.26-T5N-R64W	TVD Reference:	WELL @ 4701.0ft (RKB - 23')
Reference Site:	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	MD Reference:	WELL @ 4701.0ft (RKB - 23')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Loloff Farms 26I-312	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Extension Plan #1 (1-29-16)	Offset TVD Reference:	Offset Datum

Offset Design														Offset Site Error:	0.0 ft
Survey Program: 0-MWD														Offset Well Error:	0.0 ft
Reference															
Offset															
Semi Major Axis															
Distance															
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning		
8,400.0	6,714.4	8,353.6	6,640.1	53.2	53.6	-80.44	559.4	1,745.8	447.1	341.6	105.50	4.238			
8,500.0	6,713.4	8,453.6	6,639.2	55.9	56.3	-80.45	559.4	1,845.8	447.1	336.3	110.82	4.034			
8,600.0	6,712.4	8,553.6	6,638.3	58.6	59.0	-80.45	559.4	1,945.7	447.1	330.9	116.15	3.849			
8,700.0	6,711.4	8,653.6	6,637.4	61.3	61.7	-80.46	559.4	2,045.7	447.1	325.6	121.51	3.679			
8,800.0	6,710.5	8,753.6	6,636.4	64.0	64.4	-80.47	559.4	2,145.7	447.1	320.2	126.88	3.523			
8,900.0	6,709.5	8,853.6	6,635.5	66.7	67.1	-80.47	559.4	2,245.7	447.0	314.8	132.27	3.380			
9,000.0	6,708.5	8,953.6	6,634.6	69.5	69.9	-80.48	559.4	2,345.7	447.0	309.4	137.67	3.247			
9,100.0	6,707.5	9,053.6	6,633.6	72.2	72.6	-80.49	559.4	2,445.7	447.0	303.9	143.08	3.124			
9,200.0	6,706.6	9,153.6	6,632.7	75.0	75.3	-80.49	559.4	2,545.7	447.0	298.5	148.51	3.010			
9,300.0	6,705.6	9,253.6	6,631.8	77.7	78.1	-80.50	559.4	2,645.7	447.0	293.1	153.94	2.904			
9,400.0	6,704.6	9,353.6	6,630.9	80.5	80.8	-80.51	559.4	2,745.7	447.0	287.6	159.38	2.805			
9,500.0	6,703.6	9,453.6	6,629.9	83.2	83.6	-80.51	559.4	2,845.7	447.0	282.2	164.83	2.712			
9,600.0	6,702.6	9,553.6	6,629.0	86.0	86.3	-80.52	559.4	2,945.7	447.0	276.7	170.28	2.625			
9,700.0	6,701.7	9,653.6	6,628.1	88.8	89.1	-80.53	559.4	3,045.7	447.0	271.2	175.75	2.543			
9,800.0	6,700.7	9,753.6	6,627.2	91.5	91.8	-80.53	559.4	3,145.7	447.0	265.7	181.21	2.466			
9,900.0	6,699.7	9,853.6	6,626.2	94.3	94.6	-80.54	559.4	3,245.7	447.0	260.3	186.69	2.394			
10,000.0	6,698.7	9,953.6	6,625.3	97.1	97.4	-80.55	559.4	3,345.7	446.9	254.8	192.16	2.326			
10,100.0	6,697.8	10,053.6	6,624.4	99.8	100.1	-80.55	559.4	3,445.7	446.9	249.3	197.65	2.261			
10,200.0	6,696.8	10,153.6	6,623.5	102.6	102.9	-80.56	559.4	3,545.7	446.9	243.8	203.13	2.200			
10,300.0	6,695.8	10,253.6	6,622.5	105.4	105.7	-80.57	559.4	3,645.7	446.9	238.3	208.62	2.142			
10,400.0	6,694.8	10,353.6	6,621.6	108.2	108.5	-80.57	559.4	3,745.7	446.9	232.8	214.12	2.087			
10,500.0	6,693.8	10,453.6	6,620.7	111.0	111.2	-80.58	559.4	3,845.7	446.9	227.3	219.61	2.035			
10,600.0	6,692.9	10,553.6	6,619.8	113.7	114.0	-80.59	559.4	3,945.7	446.9	221.8	225.11	1.985			
10,700.0	6,691.9	10,653.6	6,618.8	116.5	116.8	-80.59	559.4	4,045.7	446.9	216.3	230.62	1.938			
10,800.0	6,690.9	10,753.6	6,617.9	119.3	119.6	-80.60	559.4	4,145.7	446.9	210.7	236.12	1.893			
10,900.0	6,689.9	10,853.6	6,617.0	122.1	122.4	-80.61	559.4	4,245.7	446.9	205.2	241.63	1.849			
11,000.0	6,689.0	10,953.6	6,616.1	124.9	125.2	-80.61	559.4	4,345.6	446.8	199.7	247.14	1.808			
11,100.0	6,688.0	11,053.6	6,615.1	127.7	127.9	-80.62	559.4	4,445.6	446.8	194.2	252.65	1.769			
11,200.0	6,687.0	11,153.6	6,614.2	130.5	130.7	-80.63	559.4	4,545.6	446.8	188.7	258.16	1.731			
11,300.0	6,686.0	11,253.6	6,613.3	133.2	133.5	-80.63	559.4	4,645.6	446.8	183.1	263.68	1.695			
11,400.0	6,685.0	11,353.6	6,612.4	136.0	136.3	-80.64	559.4	4,745.6	446.8	177.6	269.20	1.660			
11,500.0	6,684.1	11,453.6	6,611.4	138.8	139.1	-80.65	559.4	4,845.6	446.8	172.1	274.72	1.626			
11,600.0	6,683.1	11,553.6	6,610.5	141.6	141.9	-80.65	559.4	4,945.6	446.8	166.6	280.24	1.594			
11,700.0	6,682.1	11,653.6	6,609.6	144.4	144.7	-80.66	559.4	5,045.6	446.8	161.0	285.76	1.563			
11,800.0	6,681.1	11,753.6	6,608.7	147.2	147.5	-80.67	559.4	5,145.6	446.8	155.5	291.29	1.534			
11,900.0	6,680.2	11,853.6	6,607.7	150.0	150.3	-80.67	559.4	5,245.6	446.8	149.9	296.81	1.505			
12,000.0	6,679.2	11,953.6	6,606.8	152.8	153.1	-80.68	559.4	5,345.6	446.8	144.4	302.34	1.478 Level 3			
12,100.0	6,678.2	12,053.6	6,605.9	155.6	155.8	-80.68	559.4	5,445.6	446.7	138.9	307.87	1.451 Level 3			
12,200.0	6,677.2	12,153.6	6,605.0	158.4	158.6	-80.69	559.4	5,545.6	446.7	133.3	313.40	1.425 Level 3			
12,300.0	6,676.3	12,253.6	6,604.0	161.2	161.4	-80.70	559.4	5,645.6	446.7	127.8	318.93	1.401 Level 3			
12,400.0	6,675.3	12,353.6	6,603.1	164.0	164.2	-80.70	559.4	5,745.6	446.7	122.3	324.46	1.377 Level 3			
12,500.0	6,674.3	12,453.6	6,602.2	166.8	167.0	-80.71	559.4	5,845.6	446.7	116.7	330.00	1.354 Level 3			
12,600.0	6,673.3	12,553.6	6,601.3	169.6	169.8	-80.72	559.4	5,945.6	446.7	111.2	335.53	1.331 Level 3			
12,700.0	6,672.3	12,653.6	6,600.3	172.4	172.6	-80.72	559.4	6,045.6	446.7	105.6	341.06	1.310 Level 3			
12,800.0	6,671.4	12,753.6	6,599.4	175.2	175.4	-80.73	559.4	6,145.6	446.7	100.1	346.60	1.289 Level 3			
12,900.0	6,670.4	12,853.6	6,598.5	178.0	178.2	-80.74	559.4	6,245.6	446.7	94.5	352.14	1.268 Level 3			
13,000.0	6,669.4	12,953.6	6,597.6	180.8	181.0	-80.74	559.4	6,345.6	446.7	89.0	357.68	1.249 Level 2			
13,100.0	6,668.4	13,053.6	6,596.6	183.6	183.8	-80.75	559.4	6,445.6	446.6	83.4	363.21	1.230 Level 2			
13,200.0	6,667.5	13,153.6	6,595.7	186.4	186.6	-80.76	559.4	6,545.6	446.6	77.9	368.75	1.211 Level 2			
13,300.0	6,666.5	13,253.6	6,594.8	189.2	189.4	-80.76	559.4	6,645.5	446.6	72.3	374.29	1.193 Level 2			
13,400.0	6,665.5	13,353.6	6,593.9	192.0	192.2	-80.77	559.4	6,745.5	446.6	66.8	379.83	1.176 Level 2			

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

Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	Local Co-ordinate Reference:	Well Loloff Farms 26I-312
Project:	SEC.26-T5N-R64W	TVD Reference:	WELL @ 4701.0ft (RKB - 23')
Reference Site:	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	MD Reference:	WELL @ 4701.0ft (RKB - 23')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Loloff Farms 26I-312	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Extension Plan #1 (1-29-16)	Offset TVD Reference:	Offset Datum

Offset Design														Offset Site Error:	0.0 ft
Survey Program: 0-MWD														Offset Well Error:	0.0 ft
Reference															
Offset															
Semi Major Axis															
Distance															
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning		
13,500.0	6,664.5	13,453.6	6,592.9	194.8	195.0	-80.78	559.4	6,845.5	446.6	61.2	385.38	1.159	Level 2		
13,600.0	6,663.5	13,553.6	6,592.0	197.6	197.8	-80.78	559.4	6,945.5	446.6	55.7	390.92	1.142	Level 2		
13,700.0	6,662.6	13,653.6	6,591.1	200.4	200.6	-80.79	559.4	7,045.5	446.6	50.1	396.46	1.126	Level 2		
13,800.0	6,661.6	13,753.6	6,590.2	203.2	203.4	-80.80	559.4	7,145.5	446.6	44.6	402.01	1.111	Level 2		
13,900.0	6,660.6	13,853.6	6,589.2	206.0	206.2	-80.80	559.4	7,245.5	446.6	39.0	407.55	1.096	Level 2		
14,000.0	6,659.6	13,953.6	6,588.3	208.8	209.0	-80.81	559.4	7,345.5	446.6	33.5	413.10	1.081	Level 2		
14,100.0	6,658.7	14,053.6	6,587.4	211.6	211.8	-80.82	559.4	7,445.5	446.6	27.9	418.64	1.067	Level 2		
14,200.0	6,657.7	14,153.6	6,586.5	214.4	214.6	-80.82	559.4	7,545.5	446.5	22.4	424.19	1.053	Level 2		
14,300.0	6,656.7	14,253.6	6,585.5	217.2	217.4	-80.83	559.4	7,645.5	446.5	16.8	429.73	1.039	Level 2		
14,400.0	6,655.7	14,353.6	6,584.6	220.0	220.2	-80.84	559.4	7,745.5	446.5	11.2	435.28	1.026	Level 2		
14,500.0	6,654.8	14,453.6	6,583.7	222.8	223.0	-80.84	559.4	7,845.5	446.5	5.7	440.83	1.013	Level 2		
14,600.0	6,653.8	14,553.6	6,582.8	225.6	225.8	-80.85	559.4	7,945.5	446.5	0.1	446.38	1.000	Level 2		
14,700.0	6,652.8	14,653.6	6,581.8	228.4	228.6	-80.86	559.4	8,045.5	446.5	-5.4	451.93	0.988	Level 1		
14,800.0	6,651.8	14,753.6	6,580.9	231.2	231.4	-80.86	559.4	8,145.5	446.5	-11.0	457.48	0.976	Level 1		
14,900.0	6,650.8	14,853.6	6,580.0	234.0	234.2	-80.87	559.4	8,245.5	446.5	-16.5	463.03	0.964	Level 1		
15,000.0	6,649.9	14,953.6	6,579.1	236.8	237.0	-80.88	559.4	8,345.5	446.5	-22.1	468.58	0.953	Level 1		
15,100.0	6,648.9	15,053.6	6,578.1	239.6	239.8	-80.88	559.4	8,445.5	446.5	-27.7	474.13	0.942	Level 1		
15,200.0	6,647.9	15,153.6	6,577.2	242.4	242.6	-80.89	559.4	8,545.5	446.5	-33.2	479.68	0.931	Level 1		
15,300.0	6,646.9	15,253.6	6,576.3	245.2	245.4	-80.90	559.4	8,645.5	446.4	-38.8	485.23	0.920	Level 1		
15,400.0	6,646.0	15,353.6	6,575.4	248.0	248.2	-80.90	559.4	8,745.5	446.4	-44.4	490.79	0.910	Level 1		
15,500.0	6,645.0	15,453.6	6,574.4	250.8	251.0	-80.91	559.4	8,845.5	446.4	-49.9	496.34	0.899	Level 1		
15,600.0	6,644.0	15,553.6	6,573.5	253.6	253.8	-80.92	559.4	8,945.4	446.4	-55.5	501.89	0.889	Level 1		
15,700.0	6,643.0	15,653.6	6,572.6	256.4	256.7	-80.92	559.4	9,045.4	446.4	-61.0	507.44	0.880	Level 1		
15,800.0	6,642.0	15,753.6	6,571.7	259.2	259.5	-80.93	559.4	9,145.4	446.4	-66.6	513.00	0.870	Level 1		
15,900.0	6,641.1	15,853.6	6,570.7	262.1	262.3	-80.94	559.4	9,245.4	446.4	-72.2	518.55	0.861	Level 1		
16,000.0	6,640.1	15,953.6	6,569.8	264.9	265.1	-80.94	559.4	9,345.4	446.4	-77.7	524.11	0.852	Level 1		
16,100.0	6,639.1	16,053.6	6,568.9	267.7	267.9	-80.95	559.4	9,445.4	446.4	-83.3	529.66	0.843	Level 1		
16,200.0	6,638.1	16,153.6	6,568.0	270.5	270.7	-80.96	559.4	9,545.4	446.4	-88.9	535.22	0.834	Level 1		
16,300.0	6,637.2	16,253.6	6,567.0	273.3	273.5	-80.96	559.4	9,645.4	446.4	-94.4	540.78	0.825	Level 1		
16,400.0	6,636.2	16,353.6	6,566.1	276.1	276.3	-80.97	559.3	9,745.4	446.3	-100.0	546.33	0.817	Level 1		
16,413.5	6,636.0	16,367.0	6,566.0	276.5	276.7	-80.97	559.3	9,758.8	446.3	-100.7	547.08	0.816	Level 1		
16,418.5	6,636.0	16,367.0	6,566.0	276.6	276.7	-80.97	559.3	9,758.8	446.4	-100.9	547.22	0.816	Level 1, ES, SF		

Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	Local Co-ordinate Reference:	Well Loloff Farms 26I-312
Project:	SEC.26-T5N-R64W	TVD Reference:	WELL @ 4701.0ft (RKB - 23')
Reference Site:	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	MD Reference:	WELL @ 4701.0ft (RKB - 23')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Loloff Farms 26I-312	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Extension Plan #1 (1-29-16)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference														
		Offset		Semi Major Axis			Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	1.0	1.0	0.0	0.0	-93.39	-3.6	-61.3	61.4	61.4	0.00	N/A		
100.0	100.0	101.0	101.0	0.1	0.1	-93.39	-3.6	-61.3	61.4	61.2	0.23	270.534		
166.3	166.3	167.3	167.3	0.3	0.3	-93.39	-3.6	-61.3	61.4	60.9	0.53	116.939 CC		
200.0	200.0	201.0	201.0	0.3	0.3	-93.39	-3.6	-61.3	61.4	60.7	0.68	90.777		
300.0	300.0	300.8	300.8	0.6	0.6	-92.57	-2.8	-61.5	61.6	60.4	1.13	54.671 ES		
400.0	400.0	400.6	400.5	0.8	0.8	-90.18	-0.2	-62.1	62.1	60.5	1.58	39.338		
500.0	500.0	500.2	500.1	1.0	1.0	-86.31	4.1	-63.0	63.1	61.1	2.03	31.091		
600.0	600.0	599.7	599.4	1.2	1.3	-81.16	10.0	-64.3	65.1	62.6	2.48	26.196		
700.0	700.0	698.9	698.3	1.5	1.5	-75.06	17.6	-65.9	68.3	65.3	2.94	23.237		
800.0	800.0	797.8	796.7	1.7	1.8	-68.45	26.8	-67.9	73.1	69.8	3.40	21.543		
900.0	900.0	896.4	894.7	1.9	2.0	-61.80	37.7	-70.3	80.0	76.1	3.86	20.729		
1,000.0	1,000.0	994.5	992.0	2.1	2.3	-55.52	50.1	-73.0	89.0	84.7	4.33	20.538		
1,100.0	1,100.0	1,092.2	1,088.6	2.4	2.6	-49.85	64.1	-76.0	100.2	95.4	4.82	20.782		
1,200.0	1,200.0	1,189.4	1,184.5	2.6	3.0	-44.91	79.6	-79.4	113.7	108.3	5.33	21.320		
1,300.0	1,300.0	1,287.9	1,281.5	2.8	3.3	-40.78	96.2	-83.0	128.5	122.7	5.86	21.934		
1,400.0	1,400.0	1,386.4	1,378.5	3.0	3.7	-37.51	112.8	-86.6	143.9	137.5	6.40	22.489		
1,500.0	1,500.0	1,484.9	1,475.6	3.3	4.1	-34.88	129.4	-90.2	159.7	152.8	6.95	22.978		
1,600.0	1,600.0	1,583.4	1,572.6	3.5	4.4	-32.73	145.9	-93.8	175.8	168.3	7.51	23.410		
1,700.0	1,700.0	1,681.9	1,669.6	3.7	4.8	-30.93	162.5	-97.4	192.0	183.9	8.07	23.791		
1,800.0	1,800.0	1,780.4	1,766.7	3.9	5.2	-29.42	179.1	-101.0	208.4	199.8	8.64	24.129		
1,900.0	1,900.0	1,879.0	1,863.8	4.2	5.5	35.63	195.6	-104.6	224.2	215.7	8.58	26.149		
2,000.0	2,000.0	1,977.8	1,961.1	4.4	5.9	37.04	212.3	-108.2	238.8	229.8	9.03	26.451		
2,100.0	2,099.9	2,076.6	2,058.5	4.6	6.3	38.52	228.9	-111.8	252.2	242.7	9.48	26.595		
2,200.0	2,199.7	2,175.6	2,156.0	4.8	6.7	40.09	245.5	-115.4	264.3	254.4	9.94	26.605		
2,300.0	2,299.4	2,274.7	2,253.6	5.0	7.0	41.76	262.2	-119.0	275.4	265.0	10.39	26.502		
2,400.0	2,398.9	2,373.7	2,351.2	5.3	7.4	43.53	278.9	-122.6	285.5	274.7	10.86	26.300		
2,502.3	2,500.6	2,475.1	2,451.0	5.5	7.8	45.47	295.9	-126.3	294.8	283.5	11.34	26.004		
2,600.0	2,597.5	2,571.9	2,546.4	5.8	8.2	47.39	312.2	-129.9	303.5	291.7	11.81	25.693		
2,700.0	2,696.8	2,671.0	2,644.0	6.0	8.6	49.24	328.9	-133.5	312.6	300.3	12.31	25.405		
2,800.0	2,796.0	2,770.1	2,741.6	6.3	8.9	50.98	345.5	-137.1	322.1	309.3	12.81	25.141		
2,900.0	2,895.3	2,869.1	2,839.2	6.5	9.3	52.63	362.2	-140.7	331.9	318.6	13.33	24.899		
3,000.0	2,994.5	2,968.2	2,936.8	6.8	9.7	54.18	378.9	-144.4	341.9	328.0	13.86	24.676		
3,100.0	3,093.8	3,067.3	3,034.4	7.1	10.1	55.64	395.5	-148.0	352.2	337.8	14.39	24.470		
3,200.0	3,193.0	3,166.4	3,132.0	7.4	10.5	57.02	412.2	-151.6	362.6	347.7	14.94	24.279		
3,300.0	3,292.3	3,265.5	3,229.6	7.7	10.9	58.32	428.9	-155.2	373.3	357.8	15.49	24.101		
3,400.0	3,391.5	3,364.5	3,327.2	8.0	11.2	59.55	445.5	-158.8	384.1	368.1	16.05	23.935		
3,500.0	3,490.8	3,463.6	3,424.8	8.2	11.6	60.71	462.2	-162.5	395.1	378.5	16.62	23.781		
3,600.0	3,590.0	3,562.7	3,522.4	8.5	12.0	61.81	478.9	-166.1	406.3	389.1	17.19	23.637		
3,700.0	3,689.3	3,661.8	3,620.0	8.8	12.4	62.85	495.5	-169.7	417.6	399.8	17.77	23.502		
3,800.0	3,788.5	3,760.9	3,717.6	9.1	12.8	63.84	512.2	-173.3	429.1	410.7	18.35	23.376		
3,900.0	3,887.8	3,859.9	3,815.2	9.4	13.2	64.77	528.9	-176.9	440.6	421.7	18.94	23.258		
4,000.0	3,987.0	3,959.0	3,912.8	9.7	13.5	65.66	545.5	-180.5	452.3	432.7	19.54	23.148		
4,100.0	4,086.3	4,058.1	4,010.4	10.0	13.9	66.50	562.2	-184.2	464.0	443.9	20.14	23.044		
4,163.9	4,149.7	4,121.4	4,072.8	10.2	14.2	67.01	572.9	-186.5	471.6	451.1	20.52	22.981		
4,200.0	4,185.5	4,157.2	4,108.0	10.3	14.3	67.35	578.9	-187.8	476.0	455.3	20.72	22.969		
4,300.0	4,285.1	4,256.2	4,205.6	10.5	14.7	68.03	595.5	-191.4	489.1	467.8	21.22	23.045		
4,400.0	4,384.9	4,355.2	4,303.0	10.7	15.1	68.34	612.2	-195.0	503.4	481.7	21.68	23.221		
4,500.0	4,484.9	4,453.9	4,400.3	10.9	15.5	68.31	628.8	-198.6	519.1	497.0	22.10	23.492		
4,515.1	4,500.0	4,468.8	4,415.0	10.9	15.5	4.55	631.3	-199.2	521.6	496.4	25.13	20.758		
4,600.0	4,584.9	4,552.4	4,497.3	11.1	15.8	4.10	645.3	-202.2	535.6	509.9	25.63	20.895		
4,700.0	4,684.9	4,650.9	4,594.4	11.3	16.2	3.60	661.9	-205.8	552.1	525.9	26.24	21.039		

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

Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	Local Co-ordinate Reference:	Well Loloff Farms 26I-312
Project:	SEC.26-T5N-R64W	TVD Reference:	WELL @ 4701.0ft (RKB - 23')
Reference Site:	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	MD Reference:	WELL @ 4701.0ft (RKB - 23')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Loloff Farms 26I-312	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Extension Plan #1 (1-29-16)	Offset TVD Reference:	Offset Datum

Offset Design														Offset Site Error:	0.0 ft
Survey Program: 0-MWD														Offset Well Error:	0.0 ft
Reference															
Offset															
Semi Major Axis															
Distance															
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning		
4,800.0	4,784.9	4,749.5	4,691.4	11.5	16.6	3.13	678.5	-209.4	568.7	541.9	26.86	21.177			
4,900.0	4,884.9	4,848.0	4,788.4	11.7	17.0	2.68	695.1	-213.0	585.4	557.9	27.47	21.311			
5,000.0	4,984.9	4,946.5	4,885.5	11.9	17.4	2.26	711.6	-216.6	602.0	573.9	28.08	21.441			
5,100.0	5,084.9	5,045.0	4,982.5	12.1	17.8	1.86	728.2	-220.2	618.7	590.0	28.69	21.567			
5,200.0	5,184.9	5,143.5	5,079.6	12.3	18.1	1.48	744.8	-223.8	635.4	606.1	29.30	21.689			
5,300.0	5,284.9	5,242.0	5,176.6	12.5	18.5	1.12	761.3	-227.4	652.2	622.3	29.91	21.806			
5,400.0	5,384.9	5,340.5	5,273.6	12.7	18.9	0.78	777.9	-231.0	669.0	638.4	30.52	21.921			
5,500.0	5,484.9	5,458.7	5,390.3	12.9	19.3	0.42	796.6	-235.1	684.8	653.7	31.13	21.999			
5,600.0	5,584.9	5,588.6	5,519.2	13.1	19.6	0.13	811.9	-238.4	696.6	664.9	31.69	21.985			
5,700.0	5,684.9	5,719.6	5,649.8	13.3	19.9	-0.04	821.5	-240.5	703.9	671.8	32.17	21.882			
5,800.0	5,784.9	5,851.3	5,781.4	13.5	20.1	-0.10	825.3	-241.3	706.8	674.2	32.59	21.690			
5,900.0	5,884.9	5,955.7	5,885.9	13.7	20.2	-0.11	825.4	-241.3	706.9	673.9	32.94	21.457			
5,977.4	5,962.3	6,033.2	5,963.4	13.9	20.3	-0.10	825.4	-241.2	706.9	673.7	33.22	21.280			
6,000.0	5,984.9	6,055.8	5,985.9	13.9	20.3	-90.07	825.4	-240.6	706.9	678.4	28.50	24.799			
6,050.0	6,034.8	6,105.8	6,035.8	14.0	20.4	-90.02	825.4	-236.8	706.9	678.2	28.66	24.665			
6,069.8	6,054.5	6,125.6	6,055.5	14.0	20.4	-89.99	825.4	-234.3	706.9	678.2	28.71	24.618			
6,100.0	6,084.4	6,155.8	6,085.3	14.1	20.4	-89.96	825.4	-229.7	706.9	678.1	28.79	24.549			
6,150.0	6,133.4	6,205.7	6,134.1	14.1	20.5	-89.90	825.4	-219.4	706.9	678.0	28.91	24.449			
6,200.0	6,181.8	6,255.6	6,182.2	14.2	20.5	-89.85	825.4	-206.0	706.9	677.9	29.02	24.360			
6,250.0	6,229.1	6,305.5	6,229.2	14.2	20.6	-89.79	825.4	-189.5	706.9	677.8	29.12	24.276			
6,300.0	6,275.4	6,355.3	6,275.0	14.2	20.6	-89.73	825.4	-169.9	706.9	677.7	29.22	24.188			
6,350.0	6,320.3	6,405.0	6,319.4	14.3	20.6	-89.68	825.4	-147.5	706.9	677.5	29.35	24.087			
6,400.0	6,363.7	6,454.8	6,362.2	14.3	20.6	-89.63	825.4	-122.2	706.9	677.4	29.50	23.962			
6,450.0	6,405.3	6,504.4	6,403.3	14.4	20.6	-89.58	825.4	-94.2	706.9	677.2	29.70	23.801			
6,500.0	6,445.1	6,554.1	6,442.4	14.5	20.7	-89.53	825.4	-63.7	706.9	676.9	29.97	23.590			
6,550.0	6,482.8	6,603.7	6,479.4	14.7	20.7	-89.48	825.4	-30.7	706.9	676.6	30.32	23.317			
6,600.0	6,518.2	6,653.2	6,514.1	14.9	20.8	-89.44	825.4	4.7	706.9	676.1	30.77	22.972			
6,650.0	6,551.3	6,702.8	6,546.5	15.1	20.8	-89.39	825.4	42.1	706.9	675.6	31.35	22.549			
6,700.0	6,581.9	6,752.3	6,576.4	15.5	20.9	-89.35	825.4	81.6	706.9	674.8	32.07	22.045			
6,750.0	6,609.8	6,801.7	6,603.6	15.9	21.0	-89.32	825.4	122.9	706.9	674.0	32.93	21.464			
6,800.0	6,634.9	6,851.2	6,628.1	16.4	21.1	-89.28	825.4	165.8	706.9	673.0	33.96	20.816			
6,850.0	6,657.2	6,900.6	6,649.7	17.0	21.3	-89.25	825.4	210.2	706.9	671.8	35.15	20.113			
6,900.0	6,676.5	6,950.0	6,668.5	17.7	21.6	-89.22	825.4	255.9	706.9	670.4	36.49	19.371			
6,950.0	6,692.7	6,999.3	6,684.2	18.5	22.0	-89.20	825.4	302.7	706.9	668.9	37.99	18.608			
7,000.0	6,705.8	7,048.7	6,696.9	19.3	22.5	-89.18	825.4	350.4	706.9	667.3	39.63	17.839			
7,050.0	6,715.7	7,098.0	6,706.4	20.2	23.1	-89.16	825.4	398.8	706.9	665.6	41.39	17.081			
7,100.0	6,722.4	7,147.4	6,712.9	21.1	23.8	-89.14	825.4	447.7	706.9	663.7	43.26	16.344			
7,150.0	6,725.8	7,196.7	6,716.1	22.1	24.6	-89.13	825.4	496.9	706.9	661.7	45.21	15.638			
7,184.9	6,726.2	7,231.1	6,716.5	22.8	25.2	-89.13	825.4	531.3	706.9	660.3	46.61	15.166			
7,200.0	6,726.1	7,246.2	6,716.4	23.1	25.5	-89.13	825.4	546.4	706.9	659.7	47.24	14.966			
7,300.0	6,725.1	7,346.2	6,715.5	25.3	27.5	-89.14	825.4	646.4	706.9	655.4	51.52	13.722			
7,400.0	6,724.1	7,446.2	6,714.6	27.6	29.6	-89.15	825.4	746.4	706.9	650.9	56.02	12.618			
7,500.0	6,723.2	7,546.2	6,713.8	29.9	31.8	-89.16	825.4	846.4	706.9	646.2	60.72	11.643			
7,600.0	6,722.2	7,646.2	6,712.9	32.4	34.1	-89.16	825.4	946.4	706.9	641.4	65.56	10.784			
7,700.0	6,721.2	7,746.2	6,712.0	34.9	36.5	-89.17	825.4	1,046.4	706.9	636.4	70.51	10.026			
7,800.0	6,720.2	7,846.2	6,711.1	37.4	39.0	-89.18	825.4	1,146.4	706.9	631.4	75.56	9.356			
7,900.0	6,719.3	7,946.2	6,710.3	40.0	41.5	-89.19	825.4	1,246.4	706.9	626.2	80.68	8.762			
8,000.0	6,718.3	8,046.2	6,709.4	42.6	44.0	-89.20	825.4	1,346.4	706.9	621.1	85.87	8.232			
8,100.0	6,717.3	8,146.2	6,708.5	45.2	46.6	-89.21	825.4	1,446.4	706.9	615.8	91.11	7.759			
8,200.0	6,716.3	8,246.2	6,707.6	47.8	49.2	-89.22	825.4	1,546.4	706.9	610.5	96.39	7.334			

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

Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	Local Co-ordinate Reference:	Well Loloff Farms 26I-312
Project:	SEC.26-T5N-R64W	TVD Reference:	WELL @ 4701.0ft (RKB - 23')
Reference Site:	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	MD Reference:	WELL @ 4701.0ft (RKB - 23')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Loloff Farms 26I-312	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Extension Plan #1 (1-29-16)	Offset TVD Reference:	Offset Datum

Offset Design		Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W - Loloff Farms 26H-332 - Wellbore #1 - Extension Plan											Offset Site Error:		0.0 ft
Survey Program:		0-MWD											Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor			
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)				
8,300.0	6,715.3	8,346.2	6,706.8	50.5	51.8	-89.22	825.4	1,646.4	706.9	605.2	101.71	6.951			
8,400.0	6,714.4	8,446.2	6,705.9	53.2	54.5	-89.23	825.4	1,746.4	706.9	599.9	107.05	6.603			
8,500.0	6,713.4	8,546.2	6,705.0	55.9	57.1	-89.24	825.4	1,846.4	706.9	594.5	112.43	6.288			
8,600.0	6,712.4	8,646.2	6,704.2	58.6	59.8	-89.25	825.4	1,946.4	706.9	589.1	117.83	6.000			
8,700.0	6,711.4	8,746.2	6,703.3	61.3	62.5	-89.26	825.4	2,046.4	706.9	583.7	123.24	5.736			
8,800.0	6,710.5	8,846.2	6,702.4	64.0	65.2	-89.27	825.4	2,146.3	706.9	578.2	128.68	5.494			
8,900.0	6,709.5	8,946.2	6,701.5	66.7	67.9	-89.27	825.4	2,246.3	706.9	572.8	134.13	5.270			
9,000.0	6,708.5	9,046.2	6,700.7	69.5	70.6	-89.28	825.4	2,346.3	706.9	567.3	139.59	5.064			
9,100.0	6,707.5	9,146.2	6,699.8	72.2	73.3	-89.29	825.4	2,446.3	706.9	561.8	145.07	4.873			
9,200.0	6,706.6	9,246.2	6,698.9	75.0	76.0	-89.30	825.4	2,546.3	706.9	556.3	150.55	4.695			
9,300.0	6,705.6	9,346.2	6,698.0	77.7	78.7	-89.31	825.4	2,646.3	706.9	550.8	156.05	4.530			
9,400.0	6,704.6	9,446.2	6,697.2	80.5	81.5	-89.32	825.4	2,746.3	706.9	545.3	161.55	4.376			
9,500.0	6,703.6	9,546.2	6,696.3	83.2	84.2	-89.33	825.4	2,846.3	706.9	539.8	167.06	4.231			
9,600.0	6,702.6	9,646.2	6,695.4	86.0	87.0	-89.33	825.3	2,946.3	706.9	534.3	172.58	4.096			
9,700.0	6,701.7	9,746.2	6,694.6	88.8	89.7	-89.34	825.3	3,046.3	706.9	528.8	178.11	3.969			
9,800.0	6,700.7	9,846.2	6,693.7	91.5	92.5	-89.35	825.3	3,146.3	706.9	523.2	183.64	3.849			
9,900.0	6,699.7	9,946.2	6,692.8	94.3	95.2	-89.36	825.3	3,246.3	706.9	517.7	189.17	3.737			
10,000.0	6,698.7	10,046.2	6,691.9	97.1	98.0	-89.37	825.3	3,346.3	706.9	512.2	194.71	3.630			
10,100.0	6,697.8	10,146.2	6,691.1	99.8	100.7	-89.38	825.3	3,446.3	706.9	506.6	200.26	3.530			
10,200.0	6,696.8	10,246.2	6,690.2	102.6	103.5	-89.38	825.3	3,546.3	706.9	501.1	205.81	3.435			
10,300.0	6,695.8	10,346.2	6,689.3	105.4	106.3	-89.39	825.3	3,646.3	706.9	495.5	211.36	3.344			
10,400.0	6,694.8	10,446.2	6,688.4	108.2	109.0	-89.40	825.3	3,746.3	706.9	489.9	216.92	3.259			
10,500.0	6,693.8	10,546.2	6,687.6	111.0	111.8	-89.41	825.3	3,846.3	706.9	484.4	222.48	3.177			
10,600.0	6,692.9	10,646.2	6,686.7	113.7	114.6	-89.42	825.3	3,946.3	706.9	478.8	228.04	3.100			
10,700.0	6,691.9	10,746.2	6,685.8	116.5	117.4	-89.43	825.3	4,046.3	706.9	473.3	233.61	3.026			
10,800.0	6,690.9	10,846.2	6,685.0	119.3	120.1	-89.44	825.3	4,146.3	706.9	467.7	239.17	2.955			
10,900.0	6,689.9	10,946.2	6,684.1	122.1	122.9	-89.44	825.3	4,246.3	706.9	462.1	244.74	2.888			
11,000.0	6,689.0	11,046.2	6,683.2	124.9	125.7	-89.45	825.3	4,346.3	706.9	456.5	250.32	2.824			
11,100.0	6,688.0	11,146.2	6,682.3	127.7	128.5	-89.46	825.3	4,446.3	706.9	451.0	255.89	2.762			
11,200.0	6,687.0	11,246.2	6,681.5	130.5	131.3	-89.47	825.3	4,546.3	706.8	445.4	261.47	2.703			
11,300.0	6,686.0	11,346.2	6,680.6	133.2	134.0	-89.48	825.3	4,646.3	706.8	439.8	267.05	2.647			
11,400.0	6,685.0	11,446.2	6,679.7	136.0	136.8	-89.49	825.3	4,746.2	706.8	434.2	272.63	2.593			
11,500.0	6,684.1	11,546.2	6,678.8	138.8	139.6	-89.50	825.3	4,846.2	706.8	428.6	278.21	2.541			
11,600.0	6,683.1	11,646.2	6,678.0	141.6	142.4	-89.50	825.3	4,946.2	706.8	423.1	283.79	2.491			
11,700.0	6,682.1	11,746.2	6,677.1	144.4	145.2	-89.51	825.3	5,046.2	706.8	417.5	289.37	2.443			
11,800.0	6,681.1	11,846.2	6,676.2	147.2	148.0	-89.52	825.3	5,146.2	706.8	411.9	294.96	2.396			
11,900.0	6,680.2	11,946.2	6,675.4	150.0	150.8	-89.53	825.3	5,246.2	706.8	406.3	300.55	2.352			
12,000.0	6,679.2	12,046.2	6,674.5	152.8	153.6	-89.54	825.3	5,346.2	706.8	400.7	306.14	2.309			
12,100.0	6,678.2	12,146.2	6,673.6	155.6	156.3	-89.55	825.3	5,446.2	706.8	395.1	311.73	2.267			
12,200.0	6,677.2	12,246.2	6,672.7	158.4	159.1	-89.55	825.3	5,546.2	706.8	389.5	317.32	2.228			
12,300.0	6,676.3	12,346.2	6,671.9	161.2	161.9	-89.56	825.3	5,646.2	706.8	383.9	322.91	2.189			
12,400.0	6,675.3	12,446.2	6,671.0	164.0	164.7	-89.57	825.3	5,746.2	706.8	378.3	328.50	2.152			
12,500.0	6,674.3	12,546.2	6,670.1	166.8	167.5	-89.58	825.3	5,846.2	706.8	372.7	334.09	2.116			
12,600.0	6,673.3	12,646.2	6,669.2	169.6	170.3	-89.59	825.3	5,946.2	706.8	367.1	339.69	2.081			
12,700.0	6,672.3	12,746.2	6,668.4	172.4	173.1	-89.60	825.3	6,046.2	706.8	361.5	345.28	2.047			
12,800.0	6,671.4	12,846.2	6,667.5	175.2	175.9	-89.61	825.3	6,146.2	706.8	355.9	350.88	2.014			
12,900.0	6,670.4	12,946.2	6,666.6	178.0	178.7	-89.61	825.3	6,246.2	706.8	350.3	356.48	1.983			
13,000.0	6,669.4	13,046.2	6,665.8	180.8	181.5	-89.62	825.3	6,346.2	706.8	344.7	362.07	1.952			
13,100.0	6,668.4	13,146.2	6,664.9	183.6	184.3	-89.63	825.3	6,446.2	706.8	339.1	367.67	1.922			
13,200.0	6,667.5	13,246.2	6,664.0	186.4	187.1	-89.64	825.3	6,546.2	706.8	333.5	373.27	1.894			
13,300.0	6,666.5	13,346.2	6,663.1	189.2	189.9	-89.65	825.3	6,646.2	706.8	327.9	378.87	1.866			

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

Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	Local Co-ordinate Reference:	Well Loloff Farms 26I-312
Project:	SEC.26-T5N-R64W	TVD Reference:	WELL @ 4701.0ft (RKB - 23')
Reference Site:	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	MD Reference:	WELL @ 4701.0ft (RKB - 23')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Loloff Farms 26I-312	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Extension Plan #1 (1-29-16)	Offset TVD Reference:	Offset Datum

Offset Design														Offset Site Error:	0.0 ft
Survey Program: 0-MWD														Offset Well Error:	0.0 ft
Reference															
Offset															
Semi Major Axis															
Distance															
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning		
13,400.0	6,665.5	13,446.2	6,662.3	192.0	192.7	-89.66	825.3	6,746.2	706.8	322.3	384.47	1.838			
13,500.0	6,664.5	13,546.2	6,661.4	194.8	195.5	-89.67	825.3	6,846.2	706.8	316.7	390.07	1.812			
13,600.0	6,663.5	13,646.2	6,660.5	197.6	198.3	-89.67	825.3	6,946.2	706.8	311.1	395.67	1.786			
13,700.0	6,662.6	13,746.2	6,659.6	200.4	201.1	-89.68	825.3	7,046.2	706.8	305.5	401.27	1.761			
13,800.0	6,661.6	13,846.2	6,658.8	203.2	203.9	-89.69	825.3	7,146.2	706.8	299.9	406.87	1.737			
13,900.0	6,660.6	13,946.2	6,657.9	206.0	206.7	-89.70	825.3	7,246.2	706.8	294.3	412.48	1.714			
14,000.0	6,659.6	14,046.2	6,657.0	208.8	209.5	-89.71	825.3	7,346.1	706.8	288.7	418.08	1.691			
14,100.0	6,658.7	14,146.2	6,656.2	211.6	212.3	-89.72	825.3	7,446.1	706.8	283.1	423.68	1.668			
14,200.0	6,657.7	14,246.2	6,655.3	214.4	215.1	-89.72	825.3	7,546.1	706.8	277.5	429.29	1.646			
14,300.0	6,656.7	14,346.2	6,654.4	217.2	217.9	-89.73	825.3	7,646.1	706.8	271.9	434.89	1.625			
14,400.0	6,655.7	14,446.2	6,653.5	220.0	220.7	-89.74	825.3	7,746.1	706.8	266.3	440.50	1.605			
14,500.0	6,654.8	14,546.2	6,652.7	222.8	223.5	-89.75	825.3	7,846.1	706.8	260.7	446.10	1.584			
14,600.0	6,653.8	14,646.2	6,651.8	225.6	226.3	-89.76	825.3	7,946.1	706.8	255.1	451.71	1.565			
14,700.0	6,652.8	14,746.2	6,650.9	228.4	229.1	-89.77	825.3	8,046.1	706.8	249.5	457.31	1.546			
14,800.0	6,651.8	14,846.2	6,650.0	231.2	231.9	-89.78	825.3	8,146.1	706.8	243.9	462.92	1.527			
14,900.0	6,650.8	14,946.2	6,649.2	234.0	234.7	-89.78	825.3	8,246.1	706.8	238.3	468.53	1.509			
15,000.0	6,649.9	15,046.2	6,648.3	236.8	237.5	-89.79	825.3	8,346.1	706.8	232.6	474.13	1.491	Level 3		
15,100.0	6,648.9	15,146.2	6,647.4	239.6	240.3	-89.80	825.3	8,446.1	706.8	227.0	479.74	1.473	Level 3		
15,200.0	6,647.9	15,246.2	6,646.6	242.4	243.1	-89.81	825.3	8,546.1	706.8	221.4	485.35	1.456	Level 3		
15,300.0	6,646.9	15,346.2	6,645.7	245.2	245.9	-89.82	825.3	8,646.1	706.8	215.8	490.95	1.440	Level 3		
15,400.0	6,646.0	15,446.2	6,644.8	248.0	248.7	-89.83	825.3	8,746.1	706.8	210.2	496.56	1.423	Level 3		
15,500.0	6,645.0	15,546.2	6,643.9	250.8	251.5	-89.83	825.3	8,846.1	706.8	204.6	502.17	1.407	Level 3		
15,600.0	6,644.0	15,646.2	6,643.1	253.6	254.3	-89.84	825.3	8,946.1	706.8	199.0	507.78	1.392	Level 3		
15,700.0	6,643.0	15,746.2	6,642.2	256.4	257.1	-89.85	825.3	9,046.1	706.8	193.4	513.39	1.377	Level 3		
15,800.0	6,642.0	15,846.2	6,641.3	259.2	259.9	-89.86	825.3	9,146.1	706.8	187.8	519.00	1.362	Level 3		
15,900.0	6,641.1	15,946.2	6,640.4	262.1	262.7	-89.87	825.3	9,246.1	706.8	182.2	524.61	1.347	Level 3		
16,000.0	6,640.1	16,046.2	6,639.6	264.9	265.5	-89.88	825.3	9,346.1	706.8	176.5	530.21	1.333	Level 3		
16,100.0	6,639.1	16,146.2	6,638.7	267.7	268.3	-89.89	825.3	9,446.1	706.8	170.9	535.82	1.319	Level 3		
16,200.0	6,638.1	16,246.2	6,637.8	270.5	271.1	-89.89	825.3	9,546.1	706.8	165.3	541.43	1.305	Level 3		
16,300.0	6,637.2	16,346.2	6,637.0	273.3	273.9	-89.90	825.3	9,646.1	706.8	159.7	547.04	1.292	Level 3		
16,400.0	6,636.2	16,446.2	6,636.1	276.1	276.7	-89.91	825.3	9,746.1	706.8	154.1	552.65	1.279	Level 3		
16,409.9	6,636.1	16,456.1	6,636.0	276.4	277.0	-89.91	825.3	9,756.0	706.8	153.5	553.21	1.278	Level 3		
16,418.5	6,636.0	16,456.1	6,636.0	276.6	277.0	-89.91	825.3	9,756.0	706.8	153.4	553.45	1.277	Level 3, SF		

Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	Local Co-ordinate Reference:	Well Loloff Farms 26I-312
Project:	SEC.26-T5N-R64W	TVD Reference:	WELL @ 4701.0ft (RKB - 23')
Reference Site:	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	MD Reference:	WELL @ 4701.0ft (RKB - 23')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Loloff Farms 26I-312	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Extension Plan #1 (1-29-16)	Offset TVD Reference:	Offset Datum

Offset Design														Offset Site Error:	0.0 ft
Survey Program: 0-MWD														Offset Well Error:	0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	89.97	0.0	27.9	27.9						
100.0	100.0	99.0	99.0	0.1	0.1	89.97	0.0	27.9	27.9	27.6	0.22	124.605			
200.0	200.0	199.0	199.0	0.3	0.3	89.97	0.0	27.9	27.9	27.2	0.67	41.466			
300.0	300.0	299.0	299.0	0.6	0.6	89.97	0.0	27.9	27.9	26.7	1.12	24.846			
400.0	400.0	399.0	399.0	0.8	0.8	89.97	0.0	27.9	27.9	26.3	1.57	17.737			
500.0	500.0	499.0	499.0	1.0	1.0	89.97	0.0	27.9	27.9	25.8	2.02	13.791			
600.0	600.0	599.0	599.0	1.2	1.2	89.97	0.0	27.9	27.9	25.4	2.47	11.281			
700.0	700.0	699.0	699.0	1.5	1.5	89.97	0.0	27.9	27.9	24.9	2.92	9.544			
800.0	800.0	799.0	799.0	1.7	1.7	89.97	0.0	27.9	27.9	24.5	3.37	8.271			
900.0	900.0	899.0	899.0	1.9	1.9	89.97	0.0	27.9	27.9	24.0	3.82	7.297			
1,000.0	1,000.0	999.0	999.0	2.1	2.1	89.97	0.0	27.9	27.9	23.6	4.27	6.529			
1,100.0	1,100.0	1,099.0	1,099.0	2.4	2.4	89.97	0.0	27.9	27.9	23.1	4.72	5.907			
1,200.0	1,200.0	1,199.0	1,199.0	2.6	2.6	89.97	0.0	27.9	27.9	22.7	5.17	5.393			
1,300.0	1,300.0	1,299.0	1,299.0	2.8	2.8	89.97	0.0	27.9	27.9	22.3	5.62	4.961			
1,400.0	1,400.0	1,399.0	1,399.0	3.0	3.0	89.97	0.0	27.9	27.9	21.8	6.07	4.594			
1,500.0	1,500.0	1,499.0	1,499.0	3.3	3.3	89.97	0.0	27.9	27.9	21.4	6.52	4.277			
1,600.0	1,600.0	1,599.0	1,599.0	3.5	3.5	89.97	0.0	27.9	27.9	20.9	6.97	4.001			
1,700.0	1,700.0	1,699.0	1,699.0	3.7	3.7	89.97	0.0	27.9	27.9	20.5	7.42	3.758			
1,800.0	1,800.0	1,799.0	1,799.0	3.9	3.9	89.97	0.0	27.9	27.9	20.0	7.86	3.543 CC			
1,900.0	1,900.0	1,899.0	1,899.0	4.2	4.2	154.46	0.0	27.9	28.7	20.3	8.31	3.450			
2,000.0	2,000.0	1,999.0	1,999.0	4.4	4.4	156.53	0.0	27.9	31.0	22.3	8.74	3.552			
2,100.0	2,099.9	2,098.9	2,098.9	4.6	4.6	159.36	0.0	27.9	35.1	25.9	9.17	3.826			
2,200.0	2,199.7	2,198.7	2,198.7	4.8	4.8	162.36	0.0	27.9	40.8	31.3	9.60	4.256			
2,300.0	2,299.4	2,298.4	2,298.4	5.0	5.1	165.16	0.0	27.9	48.4	38.4	10.02	4.827			
2,400.0	2,398.9	2,397.9	2,397.9	5.3	5.3	167.57	0.0	27.9	57.7	47.3	10.45	5.522			
2,502.3	2,500.6	2,499.6	2,499.6	5.5	5.5	169.62	0.0	27.9	69.1	58.2	10.88	6.348			
2,600.0	2,597.5	2,597.4	2,597.4	5.8	5.7	171.61	-0.4	27.2	80.3	69.0	11.29	7.114			
2,700.0	2,696.8	2,697.7	2,697.7	6.0	5.9	174.00	-1.8	25.0	90.9	79.2	11.69	7.770			
2,800.0	2,796.0	2,798.1	2,798.0	6.3	6.1	176.71	-4.1	21.3	100.5	88.4	12.10	8.306			
2,900.0	2,895.3	2,898.6	2,898.3	6.5	6.3	179.71	-7.3	16.1	109.4	96.9	12.52	8.740			
3,000.0	2,994.5	2,999.1	2,998.4	6.8	6.5	-177.00	-11.5	9.5	117.7	104.8	12.94	9.093			
3,100.0	3,093.8	3,099.4	3,098.3	7.1	6.7	-173.43	-16.6	1.3	125.6	112.2	13.38	9.382			
3,200.0	3,193.0	3,199.7	3,197.9	7.4	6.9	-169.60	-22.6	-8.3	133.2	119.4	13.84	9.623			
3,300.0	3,292.3	3,299.7	3,297.1	7.7	7.1	-165.53	-29.6	-19.3	140.8	126.5	14.32	9.833			
3,400.0	3,391.5	3,399.1	3,395.4	8.0	7.4	-161.41	-37.2	-31.5	148.8	134.0	14.83	10.034			
3,500.0	3,490.8	3,498.2	3,493.5	8.2	7.6	-157.69	-44.8	-43.7	157.4	142.1	15.35	10.253			
3,600.0	3,590.0	3,597.3	3,591.6	8.5	7.9	-154.37	-52.5	-55.8	166.6	150.7	15.89	10.486			
3,700.0	3,689.3	3,696.5	3,689.7	8.8	8.1	-151.40	-60.1	-68.0	176.4	159.9	16.44	10.726			
3,800.0	3,788.5	3,795.6	3,787.8	9.1	8.4	-148.74	-67.8	-80.2	186.5	169.5	17.00	10.968			
3,900.0	3,887.8	3,894.7	3,885.9	9.4	8.7	-146.36	-75.4	-92.4	197.0	179.4	17.57	11.211			
4,000.0	3,987.0	3,993.9	3,983.9	9.7	9.0	-144.23	-83.0	-104.6	207.8	189.7	18.15	11.450			
4,100.0	4,086.3	4,093.0	4,082.0	10.0	9.3	-142.30	-90.7	-116.8	218.9	200.1	18.73	11.685			
4,163.9	4,149.7	4,156.4	4,144.7	10.2	9.5	-141.17	-95.6	-124.6	226.1	207.0	19.10	11.833			
4,200.0	4,185.5	4,192.1	4,180.1	10.3	9.6	-140.58	-98.3	-129.0	230.0	210.7	19.32	11.906			
4,300.0	4,285.1	4,291.3	4,278.3	10.5	9.9	-138.65	-106.0	-141.2	239.2	219.3	19.86	12.045			
4,400.0	4,384.9	4,390.6	4,376.4	10.7	10.2	-136.31	-113.6	-153.3	246.2	225.8	20.39	12.075			
4,500.0	4,484.9	4,489.6	4,474.5	10.9	10.5	-133.52	-121.2	-165.5	251.2	230.3	20.90	12.020			
4,515.1	4,500.0	4,504.6	4,489.3	10.9	10.5	163.22	-122.4	-167.4	251.8	231.8	19.97	12.607			
4,600.0	4,584.9	4,588.6	4,572.4	11.1	10.8	165.86	-128.9	-177.7	255.4	235.1	20.30	12.578			
4,700.0	4,684.9	4,687.5	4,670.3	11.3	11.1	168.87	-136.5	-189.9	260.2	239.5	20.72	12.558			
4,800.0	4,784.9	4,786.5	4,768.2	11.5	11.4	171.77	-144.1	-202.0	265.8	244.7	21.16	12.561			

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

Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	Local Co-ordinate Reference:	Well Loloff Farms 26I-312
Project:	SEC.26-T5N-R64W	TVD Reference:	WELL @ 4701.0ft (RKB - 23')
Reference Site:	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	MD Reference:	WELL @ 4701.0ft (RKB - 23')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Loloff Farms 26I-312	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Extension Plan #1 (1-29-16)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference														
Offset														
Semi Major Axis														
Distance														
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
4,900.0	4,884.9	4,885.4	4,866.0	11.7	11.7	174.54	-151.8	-214.2	272.1	250.5	21.62	12.584		
5,000.0	4,984.9	4,988.4	4,968.1	11.9	12.0	177.07	-159.0	-225.8	278.3	256.3	22.09	12.603		
5,100.0	5,084.9	5,093.1	5,072.3	12.1	12.3	178.88	-164.5	-234.5	283.3	260.7	22.54	12.567		
5,200.0	5,184.9	5,198.4	5,177.4	12.3	12.5	179.98	-167.9	-239.9	286.5	263.5	22.98	12.465		
5,300.0	5,284.9	5,304.0	5,283.0	12.5	12.7	-179.58	-169.3	-242.1	287.8	264.4	23.41	12.294		
5,400.0	5,384.9	5,404.9	5,383.9	12.7	12.9	-179.58	-169.3	-242.1	287.8	264.0	23.82	12.082		
5,500.0	5,484.9	5,504.9	5,483.9	12.9	13.1	-179.58	-169.3	-242.1	287.8	263.6	24.24	11.874		
5,600.0	5,584.9	5,604.9	5,583.9	13.1	13.3	-179.58	-169.3	-242.1	287.8	263.1	24.66	11.672		
5,700.0	5,684.9	5,704.9	5,683.9	13.3	13.5	-179.58	-169.3	-242.1	287.8	262.7	25.08	11.476		
5,800.0	5,784.9	5,804.9	5,783.9	13.5	13.7	-179.58	-169.3	-242.1	287.8	262.3	25.50	11.287		
5,900.0	5,884.9	5,904.9	5,883.9	13.7	13.9	-179.58	-169.3	-242.1	287.8	261.9	25.92	11.103		
5,977.4	5,962.3	5,982.4	5,961.3	13.9	14.0	-179.58	-169.3	-242.1	287.8	261.5	26.25	10.964		
6,000.0	5,984.9	6,004.9	5,983.9	13.9	14.1	90.49	-169.3	-242.1	287.8	260.3	27.53	10.454		
6,050.0	6,034.8	6,054.8	6,033.8	14.0	14.2	91.11	-169.3	-242.1	287.8	260.1	27.70	10.391		
6,100.0	6,084.4	6,105.0	6,084.0	14.1	14.2	92.13	-169.3	-241.0	288.0	260.1	27.85	10.342		
6,150.0	6,133.4	6,155.6	6,134.4	14.1	14.3	93.17	-169.3	-236.5	288.2	260.3	27.96	10.309		
6,200.0	6,181.8	6,206.6	6,184.7	14.2	14.4	94.19	-169.3	-228.6	288.6	260.5	28.05	10.289		
6,250.0	6,229.1	6,257.9	6,234.8	14.2	14.4	95.19	-169.3	-217.3	289.0	260.9	28.12	10.278		
6,300.0	6,275.4	6,309.6	6,284.3	14.2	14.4	96.17	-169.3	-202.5	289.5	261.3	28.17	10.275		
6,350.0	6,320.3	6,361.7	6,333.1	14.3	14.5	97.12	-169.3	-184.3	290.0	261.8	28.23	10.274		
6,400.0	6,363.7	6,414.1	6,380.8	14.3	14.5	98.05	-169.3	-162.7	290.7	262.4	28.30	10.272		
6,450.0	6,405.3	6,466.9	6,427.3	14.4	14.5	98.93	-169.3	-137.6	291.3	263.0	28.39	10.261		
6,500.0	6,445.1	6,520.0	6,472.1	14.5	14.5	99.78	-169.3	-109.3	292.1	263.5	28.53	10.236		
6,550.0	6,482.8	6,573.5	6,515.2	14.7	14.6	100.58	-169.3	-77.6	292.8	264.1	28.74	10.187		
6,600.0	6,518.2	6,627.2	6,556.2	14.9	14.7	101.33	-169.3	-42.8	293.5	264.5	29.04	10.109		
6,650.0	6,551.3	6,681.3	6,594.9	15.1	14.9	102.03	-169.3	-5.0	294.3	264.8	29.45	9.994		
6,700.0	6,581.9	6,735.7	6,630.9	15.5	15.1	102.68	-169.3	35.7	295.0	265.0	29.99	9.837		
6,750.0	6,609.8	6,790.4	6,664.2	15.9	15.4	103.27	-169.3	79.1	295.7	265.0	30.69	9.635		
6,800.0	6,634.9	6,845.3	6,694.4	16.4	15.9	103.79	-169.3	124.9	296.3	264.8	31.56	9.390		
6,850.0	6,657.2	6,900.4	6,721.3	17.0	16.4	104.25	-169.3	173.0	296.9	264.3	32.61	9.106		
6,900.0	6,676.5	6,955.8	6,744.7	17.7	17.1	104.65	-169.3	223.1	297.5	263.6	33.85	8.788		
6,950.0	6,692.7	7,011.3	6,764.6	18.5	17.9	104.98	-169.3	275.0	297.9	262.6	35.27	8.447		
7,000.0	6,705.8	7,066.9	6,780.6	19.3	18.8	105.24	-169.3	328.2	298.3	261.4	36.86	8.093		
7,050.0	6,715.7	7,122.7	6,792.8	20.2	19.7	105.42	-169.3	382.6	298.5	259.9	38.60	7.734		
7,100.0	6,722.4	7,178.5	6,800.9	21.1	20.8	105.54	-169.3	437.8	298.7	258.2	40.48	7.380		
7,150.0	6,725.8	7,234.3	6,805.0	22.1	21.9	105.59	-169.3	493.5	298.8	256.3	42.47	7.035		
7,182.8	6,726.3	7,270.7	6,805.5	22.8	22.6	105.58	-169.3	529.8	298.8	254.9	43.82	6.818		
7,184.9	6,726.2	7,272.8	6,805.5	22.8	22.6	105.58	-169.3	532.0	298.8	254.9	43.90	6.805		
7,200.0	6,726.1	7,287.9	6,805.4	23.1	23.0	105.59	-169.3	547.1	298.8	254.3	44.51	6.713		
7,300.0	6,725.1	7,387.9	6,804.7	25.3	25.1	105.64	-169.3	647.1	298.9	250.2	48.65	6.143		
7,400.0	6,724.1	7,487.9	6,804.0	27.6	27.4	105.69	-169.3	747.1	298.9	245.9	53.02	5.638		
7,500.0	6,723.2	7,587.9	6,803.3	29.9	29.7	105.74	-169.3	847.1	299.0	241.4	57.56	5.194		
7,600.0	6,722.2	7,687.9	6,802.6	32.4	32.2	105.80	-169.3	947.0	299.1	236.8	62.25	4.805		
7,700.0	6,721.2	7,787.9	6,801.9	34.9	34.7	105.85	-169.3	1,047.0	299.2	232.1	67.04	4.463		
7,800.0	6,720.2	7,887.9	6,801.2	37.4	37.2	105.90	-169.3	1,147.0	299.2	227.3	71.91	4.161		
7,900.0	6,719.3	7,987.9	6,800.5	40.0	39.8	105.95	-169.3	1,247.0	299.3	222.5	76.86	3.894		
8,000.0	6,718.3	8,087.9	6,799.8	42.6	42.4	106.00	-169.3	1,347.0	299.4	217.5	81.86	3.657		
8,100.0	6,717.3	8,187.9	6,799.1	45.2	45.0	106.05	-169.3	1,447.0	299.5	212.6	86.91	3.446		
8,200.0	6,716.3	8,287.9	6,798.4	47.8	47.6	106.10	-169.3	1,547.0	299.5	207.6	91.99	3.256		
8,300.0	6,715.3	8,387.9	6,797.7	50.5	50.3	106.16	-169.3	1,647.0	299.6	202.5	97.11	3.085		

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

Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	Local Co-ordinate Reference:	Well Loloff Farms 26I-312
Project:	SEC.26-T5N-R64W	TVD Reference:	WELL @ 4701.0ft (RKB - 23')
Reference Site:	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	MD Reference:	WELL @ 4701.0ft (RKB - 23')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Loloff Farms 26I-312	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Extension Plan #1 (1-29-16)	Offset TVD Reference:	Offset Datum

Offset Design														Offset Site Error:	0.0 ft
Survey Program: 0-MWD														Offset Well Error:	0.0 ft
Reference															
Offset															
Semi Major Axis															
Distance															
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning		
8,400.0	6,714.4	8,487.9	6,797.0	53.2	53.0	106.21	-169.3	1,747.0	299.7	197.4	102.25	2.931			
8,500.0	6,713.4	8,587.9	6,796.3	55.9	55.7	106.26	-169.3	1,847.0	299.8	192.4	107.41	2.791			
8,600.0	6,712.4	8,687.9	6,795.6	58.6	58.4	106.31	-169.3	1,947.0	299.9	187.3	112.60	2.663			
8,700.0	6,711.4	8,787.9	6,794.9	61.3	61.1	106.36	-169.3	2,047.0	299.9	182.1	117.80	2.546			
8,800.0	6,710.5	8,887.9	6,794.2	64.0	63.8	106.41	-169.3	2,147.0	300.0	177.0	123.01	2.439			
8,900.0	6,709.5	8,987.9	6,793.5	66.7	66.5	106.46	-169.3	2,247.0	300.1	171.9	128.23	2.340			
9,000.0	6,708.5	9,087.9	6,792.8	69.5	69.3	106.51	-169.3	2,347.0	300.2	166.7	133.47	2.249			
9,100.0	6,707.5	9,187.9	6,792.1	72.2	72.0	106.56	-169.3	2,447.0	300.2	161.5	138.71	2.165			
9,200.0	6,706.6	9,287.9	6,791.4	75.0	74.8	106.62	-169.3	2,547.0	300.3	156.4	143.96	2.086			
9,300.0	6,705.6	9,387.9	6,790.7	77.7	77.5	106.67	-169.3	2,647.0	300.4	151.2	149.21	2.013			
9,400.0	6,704.6	9,487.9	6,790.0	80.5	80.3	106.72	-169.3	2,747.0	300.5	146.0	154.47	1.945			
9,500.0	6,703.6	9,587.9	6,789.3	83.2	83.0	106.77	-169.3	2,847.0	300.6	140.8	159.74	1.882			
9,600.0	6,702.6	9,687.9	6,788.6	86.0	85.8	106.82	-169.3	2,947.0	300.7	135.6	165.00	1.822			
9,700.0	6,701.7	9,787.9	6,787.9	88.8	88.6	106.87	-169.3	3,047.0	300.7	130.5	170.28	1.766			
9,800.0	6,700.7	9,887.9	6,787.2	91.5	91.3	106.92	-169.3	3,147.0	300.8	125.3	175.55	1.714			
9,900.0	6,699.7	9,987.9	6,786.5	94.3	94.1	106.97	-169.3	3,247.0	300.9	120.1	180.83	1.664			
10,000.0	6,698.7	10,087.9	6,785.8	97.1	96.9	107.02	-169.3	3,347.0	301.0	114.9	186.10	1.617			
10,100.0	6,697.8	10,187.9	6,785.1	99.8	99.6	107.07	-169.3	3,447.0	301.1	109.7	191.38	1.573			
10,200.0	6,696.8	10,287.9	6,784.4	102.6	102.4	107.12	-169.3	3,547.0	301.1	104.5	196.66	1.531			
10,300.0	6,695.8	10,387.9	6,783.7	105.4	105.2	107.18	-169.3	3,647.0	301.2	99.3	201.94	1.492 Level 3			
10,400.0	6,694.8	10,487.9	6,783.1	108.2	108.0	107.23	-169.3	3,747.0	301.3	94.1	207.22	1.454 Level 3			
10,500.0	6,693.8	10,587.9	6,782.4	111.0	110.8	107.28	-169.3	3,847.0	301.4	88.9	212.50	1.418 Level 3			
10,600.0	6,692.9	10,687.9	6,781.7	113.7	113.5	107.33	-169.3	3,947.0	301.5	83.7	217.78	1.384 Level 3			
10,700.0	6,691.9	10,787.9	6,781.0	116.5	116.3	107.38	-169.3	4,047.0	301.6	78.5	223.06	1.352 Level 3			
10,800.0	6,690.9	10,887.9	6,780.3	119.3	119.1	107.43	-169.3	4,147.0	301.6	73.3	228.34	1.321 Level 3			
10,900.0	6,689.9	10,987.9	6,779.6	122.1	121.9	107.48	-169.3	4,247.0	301.7	68.1	233.62	1.292 Level 3			
11,000.0	6,689.0	11,087.9	6,778.9	124.9	124.7	107.53	-169.3	4,347.0	301.8	62.9	238.90	1.263 Level 3			
11,100.0	6,688.0	11,187.9	6,778.2	127.7	127.5	107.58	-169.3	4,447.0	301.9	57.7	244.18	1.236 Level 2			
11,200.0	6,687.0	11,287.9	6,777.5	130.5	130.3	107.63	-169.3	4,546.9	302.0	52.5	249.45	1.211 Level 2			
11,300.0	6,686.0	11,387.9	6,776.8	133.2	133.0	107.68	-169.3	4,646.9	302.1	47.3	254.73	1.186 Level 2			
11,400.0	6,685.0	11,487.9	6,776.1	136.0	135.8	107.73	-169.3	4,746.9	302.1	42.1	260.00	1.162 Level 2			
11,500.0	6,684.1	11,587.9	6,775.4	138.8	138.6	107.78	-169.3	4,846.9	302.2	37.0	265.27	1.139 Level 2			
11,600.0	6,683.1	11,687.9	6,774.7	141.6	141.4	107.83	-169.3	4,946.9	302.3	31.8	270.54	1.117 Level 2			
11,700.0	6,682.1	11,787.9	6,774.0	144.4	144.2	107.88	-169.3	5,046.9	302.4	26.6	275.81	1.096 Level 2			
11,800.0	6,681.1	11,887.9	6,773.3	147.2	147.0	107.93	-169.3	5,146.9	302.5	21.4	281.08	1.076 Level 2			
11,900.0	6,680.2	11,987.9	6,772.6	150.0	149.8	107.98	-169.3	5,246.9	302.6	16.2	286.34	1.057 Level 2			
12,000.0	6,679.2	12,087.9	6,771.9	152.8	152.6	108.03	-169.3	5,346.9	302.7	11.1	291.61	1.038 Level 2			
12,100.0	6,678.2	12,187.9	6,771.2	155.6	155.4	108.08	-169.3	5,446.9	302.7	5.9	296.87	1.020 Level 2			
12,200.0	6,677.2	12,287.9	6,770.5	158.4	158.2	108.13	-169.3	5,546.9	302.8	0.7	302.13	1.002 Level 2			
12,300.0	6,676.3	12,387.9	6,769.8	161.2	161.0	108.18	-169.3	5,646.9	302.9	-4.5	307.38	0.985 Level 1			
12,400.0	6,675.3	12,487.9	6,769.1	164.0	163.8	108.23	-169.3	5,746.9	303.0	-9.6	312.64	0.969 Level 1			
12,500.0	6,674.3	12,587.9	6,768.4	166.8	166.6	108.28	-169.3	5,846.9	303.1	-14.8	317.89	0.953 Level 1			
12,600.0	6,673.3	12,687.9	6,767.7	169.6	169.4	108.33	-169.3	5,946.9	303.2	-20.0	323.14	0.938 Level 1			
12,700.0	6,672.3	12,787.9	6,767.0	172.4	172.2	108.38	-169.3	6,046.9	303.3	-25.1	328.39	0.924 Level 1			
12,800.0	6,671.4	12,887.9	6,766.3	175.2	175.0	108.43	-169.3	6,146.9	303.4	-30.3	333.64	0.909 Level 1			
12,900.0	6,670.4	12,987.9	6,765.6	178.0	177.8	108.48	-169.3	6,246.9	303.5	-35.4	338.88	0.895 Level 1			
13,000.0	6,669.4	13,087.9	6,764.9	180.8	180.6	108.53	-169.3	6,346.9	303.5	-40.6	344.12	0.882 Level 1			
13,100.0	6,668.4	13,187.9	6,764.2	183.6	183.4	108.58	-169.3	6,446.9	303.6	-45.7	349.36	0.869 Level 1			
13,200.0	6,667.5	13,287.9	6,763.5	186.4	186.2	108.63	-169.3	6,546.9	303.7	-50.9	354.60	0.857 Level 1			
13,300.0	6,666.5	13,387.9	6,762.8	189.2	189.0	108.68	-169.3	6,646.9	303.8	-56.0	359.83	0.844 Level 1			
13,400.0	6,665.5	13,487.9	6,762.1	192.0	191.8	108.73	-169.3	6,746.9	303.9	-61.2	365.06	0.832 Level 1			

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

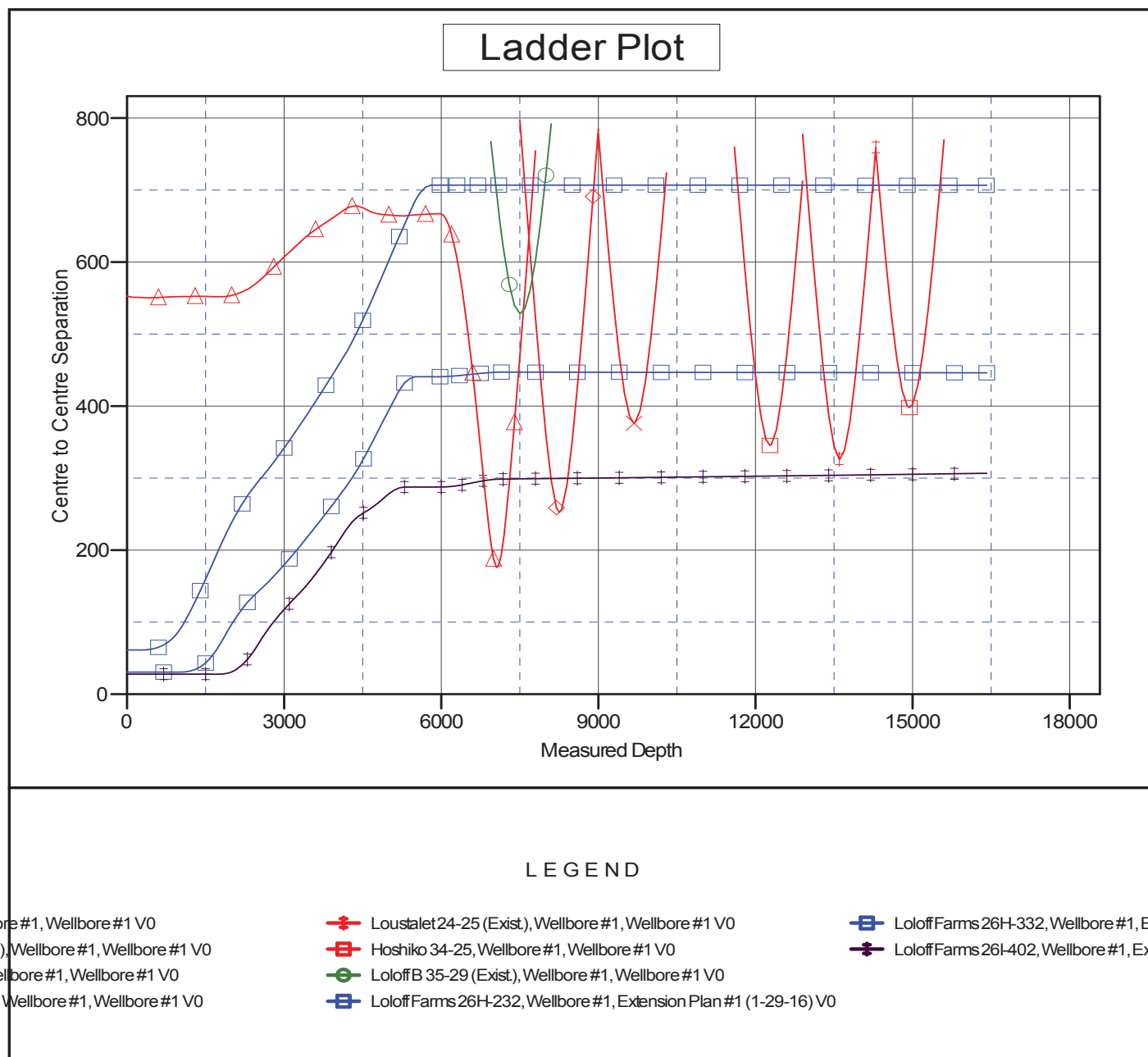
Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	Local Co-ordinate Reference:	Well Loloff Farms 26I-312
Project:	SEC.26-T5N-R64W	TVD Reference:	WELL @ 4701.0ft (RKB - 23')
Reference Site:	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	MD Reference:	WELL @ 4701.0ft (RKB - 23')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Loloff Farms 26I-312	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Extension Plan #1 (1-29-16)	Offset TVD Reference:	Offset Datum

Offset Design														Offset Site Error:	0.0 ft
Survey Program: 0-MWD														Offset Well Error:	0.0 ft
Reference															
Offset															
Semi Major Axis															
Distance															
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning		
13,500.0	6,664.5	13,587.9	6,761.4	194.8	194.6	108.78	-169.3	6,846.9	304.0	-66.3	370.29	0.821	Level 1		
13,600.0	6,663.5	13,687.9	6,760.7	197.6	197.4	108.83	-169.3	6,946.9	304.1	-71.4	375.52	0.810	Level 1		
13,700.0	6,662.6	13,787.9	6,760.0	200.4	200.2	108.88	-169.3	7,046.9	304.2	-76.6	380.74	0.799	Level 1		
13,800.0	6,661.6	13,887.9	6,759.3	203.2	203.0	108.93	-169.3	7,146.9	304.3	-81.7	385.96	0.788	Level 1		
13,900.0	6,660.6	13,987.9	6,758.6	206.0	205.8	108.98	-169.3	7,246.9	304.4	-86.8	391.18	0.778	Level 1		
14,000.0	6,659.6	14,087.9	6,757.9	208.8	208.6	109.03	-169.3	7,346.9	304.4	-92.0	396.40	0.768	Level 1		
14,100.0	6,658.7	14,187.9	6,757.2	211.6	211.4	109.08	-169.3	7,446.9	304.5	-97.1	401.61	0.758	Level 1		
14,200.0	6,657.7	14,287.9	6,756.5	214.4	214.2	109.13	-169.3	7,546.9	304.6	-102.2	406.82	0.749	Level 1		
14,300.0	6,656.7	14,387.9	6,755.8	217.2	217.0	109.18	-169.3	7,646.9	304.7	-107.3	412.03	0.740	Level 1		
14,400.0	6,655.7	14,487.9	6,755.1	220.0	219.8	109.23	-169.3	7,746.9	304.8	-112.4	417.23	0.731	Level 1		
14,500.0	6,654.8	14,587.9	6,754.4	222.8	222.6	109.28	-169.3	7,846.9	304.9	-117.5	422.43	0.722	Level 1		
14,600.0	6,653.8	14,687.9	6,753.7	225.6	225.4	109.33	-169.3	7,946.9	305.0	-122.6	427.63	0.713	Level 1		
14,700.0	6,652.8	14,787.9	6,753.0	228.4	228.2	109.38	-169.3	8,046.8	305.1	-127.7	432.83	0.705	Level 1		
14,800.0	6,651.8	14,887.9	6,752.3	231.2	231.0	109.43	-169.3	8,146.8	305.2	-132.8	438.02	0.697	Level 1		
14,900.0	6,650.8	14,987.9	6,751.6	234.0	233.8	109.48	-169.3	8,246.8	305.3	-137.9	443.21	0.689	Level 1		
15,000.0	6,649.9	15,087.9	6,750.9	236.8	236.6	109.53	-169.3	8,346.8	305.4	-143.0	448.40	0.681	Level 1		
15,100.0	6,648.9	15,187.9	6,750.2	239.6	239.4	109.58	-169.3	8,446.8	305.5	-148.1	453.58	0.673	Level 1		
15,200.0	6,647.9	15,287.9	6,749.5	242.4	242.2	109.63	-169.3	8,546.8	305.6	-153.2	458.77	0.666	Level 1		
15,300.0	6,646.9	15,387.9	6,748.8	245.2	245.0	109.68	-169.3	8,646.8	305.6	-158.3	463.94	0.659	Level 1		
15,400.0	6,646.0	15,487.8	6,748.1	248.0	247.8	109.73	-169.3	8,746.8	305.7	-163.4	469.12	0.652	Level 1		
15,500.0	6,645.0	15,587.8	6,747.4	250.8	250.6	109.77	-169.3	8,846.8	305.8	-168.5	474.29	0.645	Level 1		
15,600.0	6,644.0	15,687.8	6,746.7	253.6	253.4	109.82	-169.3	8,946.8	305.9	-173.5	479.46	0.638	Level 1		
15,700.0	6,643.0	15,787.8	6,746.1	256.4	256.3	109.87	-169.3	9,046.8	306.0	-178.6	484.63	0.631	Level 1		
15,800.0	6,642.0	15,887.8	6,745.4	259.2	259.1	109.92	-169.3	9,146.8	306.1	-183.7	489.79	0.625	Level 1		
15,900.0	6,641.1	15,987.8	6,744.7	262.1	261.9	109.97	-169.3	9,246.8	306.2	-188.7	494.95	0.619	Level 1		
16,000.0	6,640.1	16,087.8	6,744.0	264.9	264.7	110.02	-169.3	9,346.8	306.3	-193.8	500.11	0.612	Level 1		
16,100.0	6,639.1	16,187.8	6,743.3	267.7	267.5	110.07	-169.3	9,446.8	306.4	-198.9	505.26	0.606	Level 1		
16,200.0	6,638.1	16,287.8	6,742.6	270.5	270.3	110.12	-169.3	9,546.8	306.5	-203.9	510.41	0.601	Level 1		
16,300.0	6,637.2	16,387.8	6,741.9	273.3	273.1	110.17	-169.3	9,646.8	306.6	-209.0	515.56	0.595	Level 1		
16,400.0	6,636.2	16,487.8	6,741.2	276.1	275.9	110.22	-169.3	9,746.8	306.7	-214.0	520.71	0.589	Level 1		
16,418.5	6,636.0	16,506.4	6,741.0	276.6	276.4	110.23	-169.3	9,765.3	306.7	-214.9	521.66	0.588	Level 1, ES, SF		

Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	Local Co-ordinate Reference:	Well Loloff Farms 26I-312
Project:	SEC.26-T5N-R64W	TVD Reference:	WELL @ 4701.0ft (RKB - 23')
Reference Site:	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	MD Reference:	WELL @ 4701.0ft (RKB - 23')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Loloff Farms 26I-312	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Extension Plan #1 (1-29-16)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4701.0ft (RKB - 23')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: Loloff Farms 26I-312
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.63°



Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	Local Co-ordinate Reference:	Well Loloff Farms 26I-312
Project:	SEC.26-T5N-R64W	TVD Reference:	WELL @ 4701.0ft (RKB - 23')
Reference Site:	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	MD Reference:	WELL @ 4701.0ft (RKB - 23')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Loloff Farms 26I-312	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Extension Plan #1 (1-29-16)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4701.0ft (RKB - 23')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: Loloff Farms 26I-312
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.63°

