

# PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Loloff Farms 26H-232**

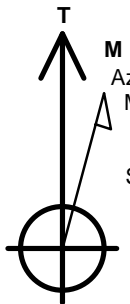
Surface Location: Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W  
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone  
Ground Elevation: 4678.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1376854.31	3271570.21	40.363770	-104.525420	

Ensign Rig #123 RKB - 15' WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')

## WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 236'FSL & 260'FWL, Sec. 26	1.0	0.0	0.0	Point
BHL 822'FSL & 2142'FWL, Sec.25	6568.0	594.9	7156.1	Point



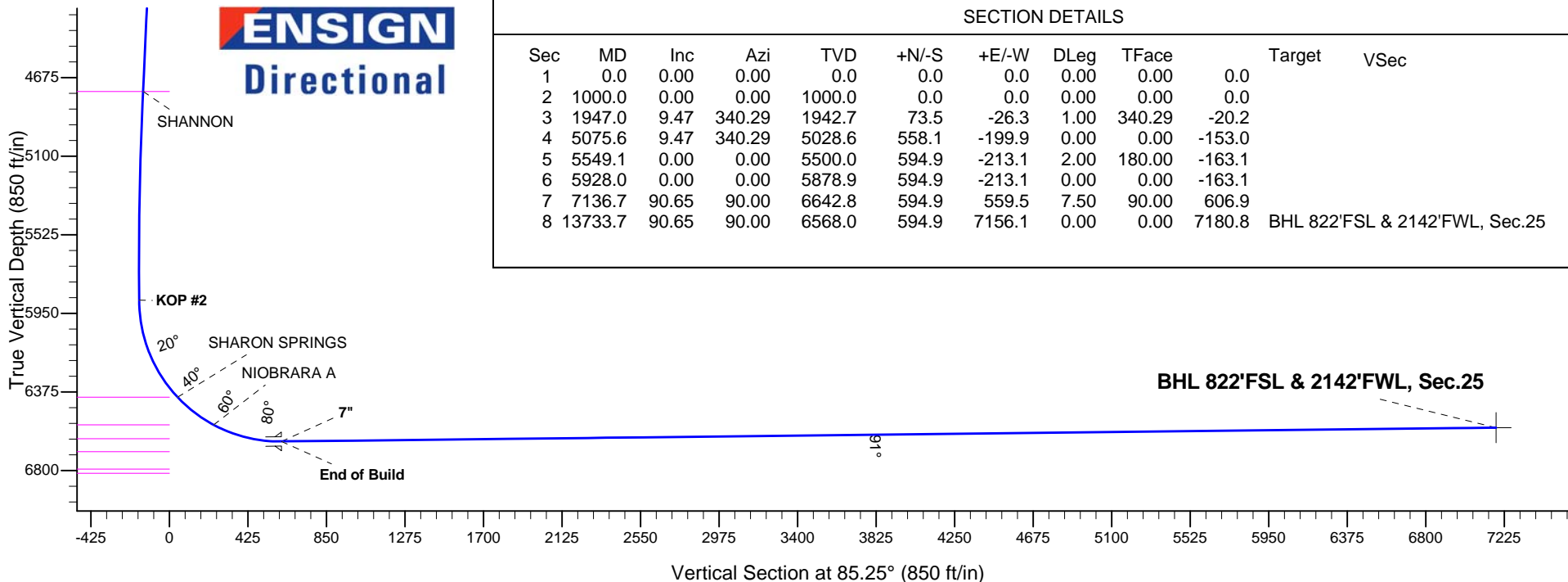
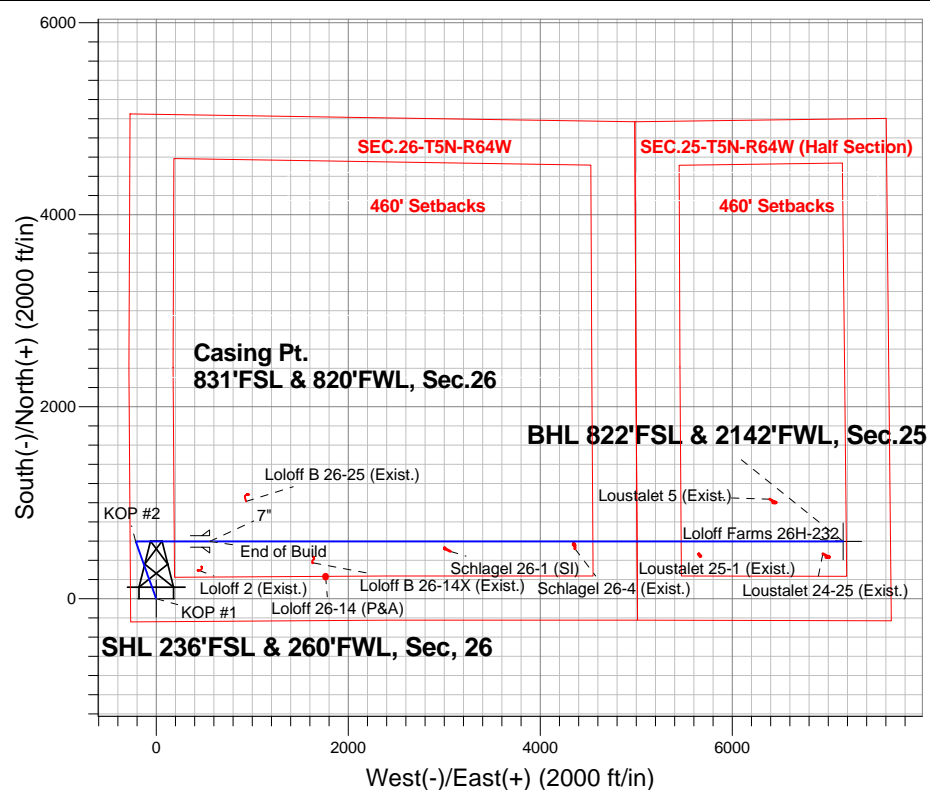
Azimuths to True North  
Magnetic North: 8.25°

Magnetic Field  
Strength: 52764.8snT  
Dip Angle: 66.94°  
Date: 12/31/2014  
Model: IGRF2010

## ANNOTATIONS

TVD	MD	Annotation
1000.0	1000.0	KOP #1
5878.9	5928.0	KOP #2
6642.8	7136.7	End of Build

Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W  
Loloff Farms 26H-232  
Plan #3 (3-16-15)





# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.26-T5N-R64W**

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

**Loloff Farms 26H-232**

**Wellbore #1**

**Plan: Plan #3 (3-16-15)**

## **Standard Planning Report**

**16 March, 2015**

<b>Database:</b>	landmark	<b>Local Co-ordinate Reference:</b>	Well Loloff Farms 26H-232
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')
<b>Project:</b>	SEC.26-T5N-R64W	<b>MD Reference:</b>	WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')
<b>Site:</b>	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Loloff Farms 26H-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #3 (3-16-15)		

<b>Project</b>	SEC.26-T5N-R64W, Weld County, CO		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		Using Well Reference Point
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

Site						Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W											
Site Position:						Northing:			1,376,850.35 ft			Latitude:			40.363760		
From:			Lat/Long			Easting:			3,271,539.60 ft			Longitude:			-104.525530		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			0.63 °		

Well	Loloff Farms 26H-232					
Well Position	+N/-S	3.6 ft	Northing:	1,376,854.31 ft	Latitude:	40.363770
	+E/-W	30.7 ft	Easting:	3,271,570.21 ft	Longitude:	-104.525420
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,678.0 ft

<b>Wellbore</b>	Wellbore #1			
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/31/2014	8.25	66.94	52,765

<b>Design</b>	Plan #3 (3-16-15)			
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<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	85.25

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,947.0	9.47	340.29	1,942.7	73.5	-26.3	1.00	1.00	0.00	340.29	
5,075.6	9.47	340.29	5,028.6	558.1	-199.9	0.00	0.00	0.00	0.00	
5,549.1	0.00	0.00	5,500.0	594.9	-213.1	2.00	-2.00	0.00	180.00	
5,928.0	0.00	0.00	5,878.9	594.9	-213.1	0.00	0.00	0.00	0.00	
7,136.7	90.65	90.00	6,642.8	594.9	559.5	7.50	7.50	0.00	90.00	
13,733.7	90.65	90.00	6,568.0	594.9	7,156.1	0.00	0.00	0.00	0.00	BHL 822'FSL & 214

<b>Database:</b>	landmark	<b>Local Co-ordinate Reference:</b>	Well Loloff Farms 26H-232
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')
<b>Project:</b>	SEC.26-T5N-R64W	<b>MD Reference:</b>	WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')
<b>Site:</b>	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Loloff Farms 26H-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #3 (3-16-15)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>KOP #1</b>									
1,100.0	1.00	340.29	1,100.0	0.8	-0.3	-0.2	1.00	1.00	0.00
1,200.0	2.00	340.29	1,200.0	3.3	-1.2	-0.9	1.00	1.00	0.00
1,300.0	3.00	340.29	1,299.9	7.4	-2.6	-2.0	1.00	1.00	0.00
1,400.0	4.00	340.29	1,399.7	13.1	-4.7	-3.6	1.00	1.00	0.00
1,500.0	5.00	340.29	1,499.4	20.5	-7.4	-5.6	1.00	1.00	0.00
1,600.0	6.00	340.29	1,598.9	29.5	-10.6	-8.1	1.00	1.00	0.00
1,700.0	7.00	340.29	1,698.3	40.2	-14.4	-11.0	1.00	1.00	0.00
1,800.0	8.00	340.29	1,797.4	52.5	-18.8	-14.4	1.00	1.00	0.00
1,900.0	9.00	340.29	1,896.3	66.4	-23.8	-18.2	1.00	1.00	0.00
1,947.0	9.47	340.29	1,942.7	73.5	-26.3	-20.2	1.00	1.00	0.00
2,000.0	9.47	340.29	1,995.0	81.7	-29.3	-22.4	0.00	0.00	0.00
2,100.0	9.47	340.29	2,093.6	97.2	-34.8	-26.6	0.00	0.00	0.00
2,200.0	9.47	340.29	2,192.2	112.7	-40.4	-30.9	0.00	0.00	0.00
2,300.0	9.47	340.29	2,290.9	128.2	-45.9	-35.1	0.00	0.00	0.00
2,400.0	9.47	340.29	2,389.5	143.7	-51.5	-39.4	0.00	0.00	0.00
2,500.0	9.47	340.29	2,488.2	159.2	-57.0	-43.6	0.00	0.00	0.00
2,600.0	9.47	340.29	2,586.8	174.7	-62.6	-47.9	0.00	0.00	0.00
2,700.0	9.47	340.29	2,685.4	190.1	-68.1	-52.1	0.00	0.00	0.00
2,800.0	9.47	340.29	2,784.1	205.6	-73.7	-56.4	0.00	0.00	0.00
2,900.0	9.47	340.29	2,882.7	221.1	-79.2	-60.6	0.00	0.00	0.00
3,000.0	9.47	340.29	2,981.3	236.6	-84.8	-64.9	0.00	0.00	0.00
3,100.0	9.47	340.29	3,080.0	252.1	-90.3	-69.1	0.00	0.00	0.00
3,200.0	9.47	340.29	3,178.6	267.6	-95.9	-73.4	0.00	0.00	0.00
3,300.0	9.47	340.29	3,277.3	283.1	-101.4	-77.6	0.00	0.00	0.00
3,400.0	9.47	340.29	3,375.9	298.6	-107.0	-81.9	0.00	0.00	0.00
3,500.0	9.47	340.29	3,474.5	314.1	-112.5	-86.1	0.00	0.00	0.00
3,549.1	9.47	340.29	3,523.0	321.7	-115.2	-88.2	0.00	0.00	0.00
<b>PARKMAN</b>									
3,600.0	9.47	340.29	3,573.2	329.6	-118.1	-90.3	0.00	0.00	0.00
3,700.0	9.47	340.29	3,671.8	345.0	-123.6	-94.6	0.00	0.00	0.00
3,800.0	9.47	340.29	3,770.4	360.5	-129.2	-98.8	0.00	0.00	0.00
3,900.0	9.47	340.29	3,869.1	376.0	-134.7	-103.1	0.00	0.00	0.00
4,000.0	9.47	340.29	3,967.7	391.5	-140.3	-107.3	0.00	0.00	0.00
4,100.0	9.47	340.29	4,066.4	407.0	-145.8	-111.6	0.00	0.00	0.00
4,200.0	9.47	340.29	4,165.0	422.5	-151.3	-115.8	0.00	0.00	0.00
4,201.0	9.47	340.29	4,166.0	422.7	-151.4	-115.9	0.00	0.00	0.00
<b>SUSSEX</b>									
4,300.0	9.47	340.29	4,263.6	438.0	-156.9	-120.1	0.00	0.00	0.00
4,400.0	9.47	340.29	4,362.3	453.5	-162.4	-124.3	0.00	0.00	0.00

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<b>Project:</b>	SEC.26-T5N-R64W	<b>MD Reference:</b>	WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')
<b>Site:</b>	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Loloff Farms 26H-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #3 (3-16-15)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,500.0	9.47	340.29	4,460.9	469.0	-168.0	-128.6	0.00	0.00	0.00
4,600.0	9.47	340.29	4,559.5	484.5	-173.5	-132.8	0.00	0.00	0.00
4,700.0	9.47	340.29	4,658.2	499.9	-179.1	-137.1	0.00	0.00	0.00
4,793.1	9.47	340.29	4,750.0	514.4	-184.3	-141.0	0.00	0.00	0.00
<b>SHANNON</b>									
4,800.0	9.47	340.29	4,756.8	515.4	-184.6	-141.3	0.00	0.00	0.00
4,900.0	9.47	340.29	4,855.4	530.9	-190.2	-145.6	0.00	0.00	0.00
5,000.0	9.47	340.29	4,954.1	546.4	-195.7	-149.8	0.00	0.00	0.00
5,075.6	9.47	340.29	5,028.6	558.1	-199.9	-153.0	0.00	0.00	0.00
5,100.0	8.98	340.29	5,052.7	561.8	-201.3	-154.0	2.00	-2.00	0.00
5,200.0	6.98	340.29	5,151.8	574.9	-205.9	-157.6	2.00	-2.00	0.00
5,300.0	4.98	340.29	5,251.2	584.7	-209.5	-160.3	2.00	-2.00	0.00
5,400.0	2.98	340.29	5,351.0	591.2	-211.8	-162.1	2.00	-2.00	0.00
5,500.0	0.98	340.29	5,450.9	594.5	-213.0	-163.0	2.00	-2.00	0.00
5,549.1	0.00	0.00	5,500.0	594.9	-213.1	-163.1	2.00	-2.00	0.00
5,600.0	0.00	0.00	5,550.9	594.9	-213.1	-163.1	0.00	0.00	0.00
5,700.0	0.00	0.00	5,650.9	594.9	-213.1	-163.1	0.00	0.00	0.00
5,800.0	0.00	0.00	5,750.9	594.9	-213.1	-163.1	0.00	0.00	0.00
5,900.0	0.00	0.00	5,850.9	594.9	-213.1	-163.1	0.00	0.00	0.00
5,928.0	0.00	0.00	5,878.9	594.9	-213.1	-163.1	0.00	0.00	0.00
<b>KOP #2</b>									
6,000.0	5.40	90.00	5,950.8	594.9	-209.7	-159.7	7.50	7.50	0.00
6,100.0	12.90	90.00	6,049.5	594.9	-193.8	-143.9	7.50	7.50	0.00
6,200.0	20.40	90.00	6,145.2	594.9	-165.2	-115.4	7.50	7.50	0.00
6,300.0	27.90	90.00	6,236.4	594.9	-124.3	-74.6	7.50	7.50	0.00
6,400.0	35.40	90.00	6,321.4	594.9	-71.9	-22.4	7.50	7.50	0.00
6,500.0	42.90	90.00	6,398.9	594.9	-8.8	40.5	7.50	7.50	0.00
6,505.6	43.31	90.00	6,403.0	594.9	-5.0	44.3	7.50	7.50	0.00
<b>SHARON SPRINGS</b>									
6,600.0	50.40	90.00	6,467.5	594.9	63.9	112.9	7.50	7.50	0.00
6,700.0	57.90	90.00	6,526.1	594.9	144.8	193.6	7.50	7.50	0.00
6,753.7	61.93	90.00	6,553.0	594.9	191.3	239.9	7.50	7.50	0.00
<b>NIOBRARA A</b>									
6,800.0	65.40	90.00	6,573.5	594.9	232.8	281.3	7.50	7.50	0.00
6,900.0	72.90	90.00	6,609.1	594.9	326.2	374.3	7.50	7.50	0.00
6,977.0	78.67	90.00	6,628.0	594.9	400.8	448.7	7.50	7.50	0.00
<b>NIOBRARA B</b>									
7,000.0	80.40	90.00	6,632.2	594.9	423.4	471.2	7.50	7.50	0.00
7,100.0	87.90	90.00	6,642.4	594.9	522.8	570.3	7.50	7.50	0.00
7,136.7	90.65	90.00	6,642.8	594.9	559.5	606.9	7.50	7.50	0.00
<b>End of Build - 7"</b>									
7,200.0	90.65	90.00	6,642.1	594.9	622.8	669.9	0.00	0.00	0.00
7,300.0	90.65	90.00	6,641.0	594.9	722.8	769.6	0.00	0.00	0.00
7,400.0	90.65	90.00	6,639.9	594.9	822.8	869.2	0.00	0.00	0.00
7,500.0	90.65	90.00	6,638.7	594.9	922.8	968.9	0.00	0.00	0.00
7,600.0	90.65	90.00	6,637.6	594.9	1,022.8	1,068.5	0.00	0.00	0.00
7,700.0	90.65	90.00	6,636.4	594.9	1,122.8	1,168.2	0.00	0.00	0.00
7,800.0	90.65	90.00	6,635.3	594.9	1,222.8	1,267.8	0.00	0.00	0.00
7,900.0	90.65	90.00	6,634.2	594.9	1,322.8	1,367.5	0.00	0.00	0.00
8,000.0	90.65	90.00	6,633.0	594.9	1,422.7	1,467.1	0.00	0.00	0.00

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<b>Project:</b>	SEC.26-T5N-R64W	<b>MD Reference:</b>	WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')
<b>Site:</b>	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Loloff Farms 26H-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #3 (3-16-15)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,100.0	90.65	90.00	6,631.9	594.9	1,522.7	1,566.8	0.00	0.00	0.00
8,200.0	90.65	90.00	6,630.8	594.9	1,622.7	1,666.4	0.00	0.00	0.00
8,300.0	90.65	90.00	6,629.6	594.9	1,722.7	1,766.1	0.00	0.00	0.00
8,400.0	90.65	90.00	6,628.5	594.9	1,822.7	1,865.7	0.00	0.00	0.00
8,500.0	90.65	90.00	6,627.4	594.9	1,922.7	1,965.4	0.00	0.00	0.00
8,600.0	90.65	90.00	6,626.2	594.9	2,022.7	2,065.0	0.00	0.00	0.00
8,700.0	90.65	90.00	6,625.1	594.9	2,122.7	2,164.7	0.00	0.00	0.00
8,800.0	90.65	90.00	6,624.0	594.9	2,222.7	2,264.3	0.00	0.00	0.00
8,900.0	90.65	90.00	6,622.8	594.9	2,322.7	2,364.0	0.00	0.00	0.00
9,000.0	90.65	90.00	6,621.7	594.9	2,422.7	2,463.6	0.00	0.00	0.00
9,100.0	90.65	90.00	6,620.6	594.9	2,522.7	2,563.3	0.00	0.00	0.00
9,200.0	90.65	90.00	6,619.4	594.9	2,622.7	2,662.9	0.00	0.00	0.00
9,300.0	90.65	90.00	6,618.3	594.9	2,722.7	2,762.6	0.00	0.00	0.00
9,400.0	90.65	90.00	6,617.2	594.9	2,822.7	2,862.2	0.00	0.00	0.00
9,500.0	90.65	90.00	6,616.0	594.9	2,922.6	2,961.9	0.00	0.00	0.00
9,600.0	90.65	90.00	6,614.9	594.9	3,022.6	3,061.5	0.00	0.00	0.00
9,700.0	90.65	90.00	6,613.8	594.9	3,122.6	3,161.2	0.00	0.00	0.00
9,800.0	90.65	90.00	6,612.6	594.9	3,222.6	3,260.8	0.00	0.00	0.00
9,900.0	90.65	90.00	6,611.5	594.9	3,322.6	3,360.5	0.00	0.00	0.00
10,000.0	90.65	90.00	6,610.4	594.9	3,422.6	3,460.1	0.00	0.00	0.00
10,100.0	90.65	90.00	6,609.2	594.9	3,522.6	3,559.8	0.00	0.00	0.00
10,200.0	90.65	90.00	6,608.1	594.9	3,622.6	3,659.4	0.00	0.00	0.00
10,300.0	90.65	90.00	6,607.0	594.9	3,722.6	3,759.1	0.00	0.00	0.00
10,400.0	90.65	90.00	6,605.8	594.9	3,822.6	3,858.7	0.00	0.00	0.00
10,500.0	90.65	90.00	6,604.7	594.9	3,922.6	3,958.4	0.00	0.00	0.00
10,600.0	90.65	90.00	6,603.6	594.9	4,022.6	4,058.0	0.00	0.00	0.00
10,700.0	90.65	90.00	6,602.4	594.9	4,122.6	4,157.7	0.00	0.00	0.00
10,800.0	90.65	90.00	6,601.3	594.9	4,222.6	4,257.3	0.00	0.00	0.00
10,900.0	90.65	90.00	6,600.1	594.9	4,322.6	4,357.0	0.00	0.00	0.00
11,000.0	90.65	90.00	6,599.0	594.9	4,422.6	4,456.6	0.00	0.00	0.00
11,100.0	90.65	90.00	6,597.9	594.9	4,522.5	4,556.3	0.00	0.00	0.00
11,200.0	90.65	90.00	6,596.7	594.9	4,622.5	4,655.9	0.00	0.00	0.00
11,300.0	90.65	90.00	6,595.6	594.9	4,722.5	4,755.6	0.00	0.00	0.00
11,400.0	90.65	90.00	6,594.5	594.9	4,822.5	4,855.2	0.00	0.00	0.00
11,500.0	90.65	90.00	6,593.3	594.9	4,922.5	4,954.9	0.00	0.00	0.00
11,600.0	90.65	90.00	6,592.2	594.9	5,022.5	5,054.5	0.00	0.00	0.00
11,700.0	90.65	90.00	6,591.1	594.9	5,122.5	5,154.2	0.00	0.00	0.00
11,800.0	90.65	90.00	6,589.9	594.9	5,222.5	5,253.8	0.00	0.00	0.00
11,900.0	90.65	90.00	6,588.8	594.9	5,322.5	5,353.5	0.00	0.00	0.00
12,000.0	90.65	90.00	6,587.7	594.9	5,422.5	5,453.1	0.00	0.00	0.00
12,100.0	90.65	90.00	6,586.5	594.9	5,522.5	5,552.8	0.00	0.00	0.00
12,200.0	90.65	90.00	6,585.4	594.9	5,622.5	5,652.4	0.00	0.00	0.00
12,300.0	90.65	90.00	6,584.3	594.9	5,722.5	5,752.1	0.00	0.00	0.00
12,400.0	90.65	90.00	6,583.1	594.9	5,822.5	5,851.7	0.00	0.00	0.00
12,500.0	90.65	90.00	6,582.0	594.9	5,922.5	5,951.4	0.00	0.00	0.00
12,600.0	90.65	90.00	6,580.9	594.9	6,022.4	6,051.0	0.00	0.00	0.00
12,700.0	90.65	90.00	6,579.7	594.9	6,122.4	6,150.7	0.00	0.00	0.00
12,800.0	90.65	90.00	6,578.6	594.9	6,222.4	6,250.3	0.00	0.00	0.00
12,900.0	90.65	90.00	6,577.5	594.9	6,322.4	6,350.0	0.00	0.00	0.00
13,000.0	90.65	90.00	6,576.3	594.9	6,422.4	6,449.6	0.00	0.00	0.00
13,100.0	90.65	90.00	6,575.2	594.9	6,522.4	6,549.3	0.00	0.00	0.00

<b>Database:</b>	landmark	<b>Local Co-ordinate Reference:</b>	Well Loloff Farms 26H-232
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')
<b>Project:</b>	SEC.26-T5N-R64W	<b>MD Reference:</b>	WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')
<b>Site:</b>	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Loloff Farms 26H-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #3 (3-16-15)		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
13,200.0	90.65	90.00	6,574.1	594.9	6,622.4	6,648.9	0.00	0.00	0.00	
13,300.0	90.65	90.00	6,572.9	594.9	6,722.4	6,748.6	0.00	0.00	0.00	
13,400.0	90.65	90.00	6,571.8	594.9	6,822.4	6,848.2	0.00	0.00	0.00	
13,500.0	90.65	90.00	6,570.7	594.9	6,922.4	6,947.9	0.00	0.00	0.00	
13,600.0	90.65	90.00	6,569.5	594.9	7,022.4	7,047.5	0.00	0.00	0.00	
13,700.0	90.65	90.00	6,568.4	594.9	7,122.4	7,147.2	0.00	0.00	0.00	
13,733.7	90.65	90.00	6,568.0	594.9	7,156.1	7,180.8	0.00	0.00	0.00	

Targets										
Target Name	- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
SHL 236'FSL & 260'F	- plan hits target	0.00	0.00	1.0	0.0	0.0	1,376,854.33	3,271,570.21	40.363770	-104.525420
- Point										
BHL 822'FSL & 2142'I	- plan hits target	0.00	0.00	6,568.0	594.9	7,156.1	1,377,527.77	3,278,719.04	40.365400	-104.499740
- Point										

Casing Points						
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")		
7,136.7	6,642.8	7"	7	7-1/2		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,549.1	3,523.0	PARKMAN		0.00		
4,201.0	4,166.0	SUSSEX		0.00		
4,793.1	4,750.0	SHANNON		0.00		
6,505.6	6,403.0	SHARON SPRINGS		0.00		
6,753.7	6,553.0	NIOBRARA A		0.00		
6,977.0	6,628.0	NIOBRARA B		0.00		
	6,698.0	NIOBRARA C		0.00		
	6,793.0	FT. HAYS		0.00		
	6,815.0	CODELL		0.00		

<b>Database:</b>	landmark	<b>Local Co-ordinate Reference:</b>	Well Loloff Farms 26H-232
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')
<b>Project:</b>	SEC.26-T5N-R64W	<b>MD Reference:</b>	WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')
<b>Site:</b>	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Loloff Farms 26H-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #3 (3-16-15)		

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
1,000.0	1,000.0	0.0	0.0	KOP #1	
5,928.0	5,878.9	73.5	-26.3	KOP #2	
7,136.7	6,642.8	558.1	-199.9	End of Build	





# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.26-T5N-R64W**

**Loloff Farms 5N64W26l Pad Sec.26-T5N-R64W**

**Loloff Farms 26H-232**

**Wellbore #1**

**Plan #3 (3-16-15)**

## **Anticollision Report**

**16 March, 2015**



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Loloff Farms 26H-232
<b>Project:</b>	SEC.26-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')
<b>Reference Site:</b>	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	<b>MD Reference:</b>	WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Loloff Farms 26H-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #3 (3-16-15)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Plan #3 (3-16-15)		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	MD Interval 100.0ft	<b>Error Model:</b>	ISCWSA
<b>Depth Range:</b>	Unlimited	<b>Scan Method:</b>	Closest Approach 3D
<b>Results Limited by:</b>	Maximum center-center distance of 1,000.0ft	<b>Error Surface:</b>	Elliptical Conic
<b>Warning Levels Evaluated at:</b>	2.00 Sigma		

<b>Survey Tool Program</b>	<b>Date</b>	3/16/2015		
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.0	13,733.7	Plan #3 (3-16-15) (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
<b>Offset Well - Wellbore - Design</b>						
Existing Wells Pad Sec.26-T5N-R64W						
Loloff 26-14 (P&A) - Wellbore #1 - Wellbore #1	8,341.2	6,581.2	361.7	176.9	1.958	CC, ES, SF
Loustalet 24-25 (Exist.) - Wellbore #1 - Wellbore #1	13,570.4	6,474.8	153.8	-55.4	0.735	Level 1, CC, ES, SF
Loustalet 25-1 (Exist.) - Wellbore #1 - Wellbore #1	12,231.5	6,482.7	130.4	-42.3	0.755	Level 1, CC, ES, SF
Loustalet 5 (Exist.) - Wellbore #1 - Wellbore #1	13,018.8	6,447.0	413.7	219.9	2.135	CC, ES, SF
Schlagel 26-1 (SI) - Wellbore #1 - Wellbore #1	9,633.7	6,532.3	98.9	-1.2	0.988	Level 1, CC, ES, SF
Schlagel 26-4 (Exist.) - Wellbore #1 - Wellbore #1	10,939.1	6,497.5	73.9	-64.5	0.534	Level 1, CC, ES, SF
Existing Wells Pad Sec.26-T5N-R64W (Grid)						
Loloff 2 (Exist.) - Wellbore #1 - Wellbore #1	7,018.7	6,603.8	299.8	267.6	9.294	CC, ES
Loloff 2 (Exist.) - Wellbore #1 - Wellbore #1	7,100.0	6,612.7	310.5	276.6	9.170	SF
Loloff B 26-14X (Exist.) - Wellbore #1 - Wellbore #1	8,210.2	6,597.7	223.8	162.1	3.630	CC, ES, SF
Loloff B 26-25 (Exist.) - Wellbore #1 - Wellbore #1	7,509.9	6,612.4	431.9	388.2	9.877	CC, ES
Loloff B 26-25 (Exist.) - Wellbore #1 - Wellbore #1	7,600.0	6,612.6	441.2	395.3	9.605	SF
Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W						
Loloff Farms 26H-332 - Wellbore #1 - Plan #2 (3-9-15)	166.3	167.3	30.9	30.3	58.776	CC
Loloff Farms 26H-332 - Wellbore #1 - Plan #2 (3-9-15)	13,733.7	13,838.0	256.9	-129.1	0.666	Level 1, ES, SF
Loloff Farms 26I-312 - Wellbore #1 - Plan #2 (3-9-15)	1,000.0	1,000.0	30.7	26.4	7.178	CC
Loloff Farms 26I-312 - Wellbore #1 - Plan #2 (3-9-15)	13,733.7	13,783.1	423.3	24.6	1.062	Level 2, ES, SF
Loloff Farms 26I-402 - Wellbore #1 - Plan #2 (3-9-15)	1,000.0	999.0	58.5	54.3	13.711	CC
Loloff Farms 26I-402 - Wellbore #1 - Plan #2 (3-9-15)	1,100.0	1,099.0	58.8	54.1	12.471	ES
Loloff Farms 26I-402 - Wellbore #1 - Plan #2 (3-9-15)	13,733.7	13,859.4	769.0	374.2	1.948	SF

<b>Offset Design</b>												
Existing Wells Pad Sec.26-T5N-R64W - Loloff 26-14 (P&A) - Wellbore #1 - Wellbore #1												
Survey Program: 6970-UNKNOWN												
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
7,500.0	6,638.7	6,590.7	6,590.7	31.8	131.8	91.51	233.2	1,764.0	915.6	752.5	163.15	5.612
7,600.0	6,637.6	6,589.6	6,589.6	34.2	131.8	91.33	233.2	1,764.0	824.7	659.1	165.58	4.981
7,700.0	6,636.4	6,588.4	6,588.4	36.7	131.8	91.15	233.2	1,764.0	736.2	568.1	168.07	4.380
7,800.0	6,635.3	6,587.3	6,587.3	39.2	131.7	90.97	233.2	1,764.0	650.9	480.3	170.60	3.816

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Loloff Farms 26H-232
<b>Project:</b>	SEC.26-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')
<b>Reference Site:</b>	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	<b>MD Reference:</b>	WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Loloff Farms 26H-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #3 (3-16-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Pad Sec.26-T5N-R64W - Loloff 26-14 (P&A) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 6970-UNKNOWN													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
7,900.0	6,634.2	6,586.2	6,586.2	41.8	131.7	90.79	233.2	1,764.0	570.5	397.3	173.16	3.295		
8,000.0	6,633.0	6,585.0	6,585.0	44.4	131.7	90.61	233.2	1,764.0	497.2	321.5	175.75	2.829		
8,100.0	6,631.9	6,583.9	6,583.9	47.0	131.7	90.43	233.2	1,764.0	434.7	256.4	178.36	2.437		
8,200.0	6,630.8	6,582.8	6,582.8	49.6	131.7	90.25	233.2	1,764.0	388.3	207.3	180.98	2.145		
8,300.0	6,629.6	6,581.6	6,581.6	52.3	131.6	90.07	233.2	1,764.0	364.0	180.4	183.63	1.982		
8,341.2	6,629.2	6,581.2	6,581.2	53.4	131.6	90.00	233.2	1,764.0	361.7	176.9	184.72	1.958 CC, ES, SF		
8,400.0	6,628.5	6,580.5	6,580.5	54.9	131.6	89.89	233.2	1,764.0	366.4	180.1	186.28	1.967		
8,500.0	6,627.4	6,579.4	6,579.4	57.6	131.6	89.71	233.2	1,764.0	395.0	206.0	188.94	2.090		
8,600.0	6,626.2	6,578.2	6,578.2	60.3	131.6	89.53	233.2	1,764.0	444.7	253.1	191.62	2.321		
8,700.0	6,625.1	6,577.1	6,577.1	63.0	131.5	89.36	233.2	1,764.0	509.4	315.1	194.30	2.622		
8,800.0	6,624.0	6,576.0	6,576.0	65.7	131.5	89.18	233.2	1,764.0	584.1	387.2	196.99	2.965		
8,900.0	6,622.8	6,574.8	6,574.8	68.5	131.5	89.00	233.2	1,764.0	665.5	465.9	199.68	3.333		
9,000.0	6,621.7	6,573.7	6,573.7	71.2	131.5	88.82	233.2	1,764.0	751.5	549.1	202.37	3.713		
9,100.0	6,620.6	6,572.6	6,572.6	73.9	131.5	88.64	233.2	1,764.0	840.5	635.4	205.07	4.099		
9,200.0	6,619.4	6,571.4	6,571.4	76.7	131.4	88.46	233.2	1,764.0	931.7	724.0	207.77	4.484		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Loloff Farms 26H-232
<b>Project:</b>	SEC.26-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')
<b>Reference Site:</b>	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	<b>MD Reference:</b>	WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Loloff Farms 26H-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #3 (3-16-15)	<b>Offset TVD Reference:</b>	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
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning		
12,600.0	6,580.9	6,582.4	6,579.8	171.1	11.5	127.81	446.9	6,982.2	976.7	828.4	148.30	6.586			
12,700.0	6,579.7	6,571.3	6,568.8	173.9	11.4	124.95	446.3	6,983.3	878.6	723.2	155.46	5.652			
12,800.0	6,578.6	6,560.2	6,557.8	176.7	11.4	121.90	445.7	6,984.4	781.0	618.3	162.74	4.799			
12,900.0	6,577.5	6,549.1	6,546.8	179.5	11.4	118.66	445.2	6,985.5	683.8	513.8	170.04	4.022			
13,000.0	6,576.3	6,538.0	6,535.8	182.3	11.4	115.24	444.6	6,986.6	587.4	410.2	177.23	3.314			
13,100.0	6,575.2	6,527.0	6,524.8	185.1	11.3	111.64	444.0	6,987.7	492.2	308.0	184.19	2.672			
13,200.0	6,574.1	6,515.9	6,513.8	187.9	11.3	107.88	443.4	6,988.8	399.0	208.2	190.77	2.092			
13,300.0	6,572.9	6,504.8	6,502.7	190.7	11.3	103.98	442.8	6,989.9	309.7	112.9	196.80	1.574			
13,400.0	6,571.8	6,493.7	6,491.7	193.5	11.3	99.98	442.3	6,991.0	228.8	26.7	202.13	1.132	Level 2		
13,500.0	6,570.7	6,482.6	6,480.7	196.3	11.3	95.91	441.7	6,992.1	169.0	-37.6	206.65	0.818	Level 1		
13,570.4	6,569.9	6,474.8	6,473.0	198.3	11.2	93.03	441.3	6,992.9	153.8	-55.4	209.27	0.735	Level 1, CC, ES, SF		
13,600.0	6,569.5	6,471.6	6,469.7	199.1	11.2	91.81	441.1	6,993.2	156.6	-53.6	210.23	0.745	Level 1		
13,700.0	6,568.4	6,460.5	6,458.7	201.9	11.2	87.73	440.5	6,994.3	200.6	-12.2	212.83	0.943	Level 1		
13,733.7	6,568.0	6,456.7	6,455.0	202.9	11.2	86.36	440.3	6,994.7	223.6	10.1	213.48	1.047	Level 2		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Loloff Farms 26H-232
<b>Project:</b>	SEC.26-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')
<b>Reference Site:</b>	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	<b>MD Reference:</b>	WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Loloff Farms 26H-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #3 (3-16-15)	<b>Offset TVD Reference:</b>	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	
11,300.0	6,595.6	6,497.5	6,497.1	134.8	12.0	96.15	464.4	5,653.9	940.4	794.4	146.08	6.438		
11,400.0	6,594.5	6,496.0	6,495.5	137.6	12.0	95.46	464.4	5,653.9	841.5	692.5	149.00	5.648		
11,500.0	6,593.3	6,494.4	6,493.9	140.4	12.0	94.77	464.5	5,653.9	742.9	591.0	151.91	4.890		
11,600.0	6,592.2	6,492.8	6,492.3	143.2	12.0	94.08	464.5	5,653.9	644.7	489.9	154.80	4.165		
11,700.0	6,591.1	6,491.2	6,490.7	146.0	11.9	93.38	464.5	5,653.9	547.2	389.5	157.68	3.470		
11,800.0	6,589.9	6,489.6	6,489.2	148.8	11.9	92.68	464.5	5,653.9	450.7	290.1	160.54	2.807		
11,900.0	6,588.8	6,488.0	6,487.6	151.6	11.9	91.99	464.5	5,653.9	356.1	192.8	163.39	2.180		
12,000.0	6,587.7	6,486.4	6,486.0	154.4	11.9	91.29	464.5	5,653.9	265.6	99.4	166.21	1.598		
12,100.0	6,586.5	6,484.8	6,484.4	157.2	11.9	90.59	464.5	5,653.9	185.1	16.1	169.01	1.095	Level 2	
12,200.0	6,585.4	6,483.2	6,482.8	160.0	11.9	89.89	464.5	5,653.9	134.1	-37.7	171.79	0.781	Level 1	
12,231.5	6,585.0	6,482.7	6,482.3	160.8	11.9	89.67	464.5	5,653.9	130.4	-42.3	172.66	0.755	Level 1, CC, ES, SF	
12,300.0	6,584.3	6,481.6	6,481.2	162.8	11.9	89.19	464.5	5,653.9	147.3	-27.3	174.55	0.844	Level 1	
12,400.0	6,583.1	6,480.0	6,479.6	165.6	11.9	88.49	464.5	5,654.0	213.0	35.8	177.28	1.202	Level 2	
12,500.0	6,582.0	6,478.5	6,478.0	168.3	11.9	87.79	464.5	5,654.0	298.5	118.5	179.98	1.658		
12,600.0	6,580.9	6,476.9	6,476.4	171.1	11.9	87.10	464.6	5,654.0	390.9	208.2	182.66	2.140		
12,700.0	6,579.7	6,475.3	6,474.8	173.9	11.9	86.40	464.6	5,654.0	486.3	301.0	185.32	2.624		
12,800.0	6,578.6	6,473.7	6,473.3	176.7	11.9	85.70	464.6	5,654.0	583.2	395.3	187.94	3.103		
12,900.0	6,577.5	6,472.1	6,471.7	179.5	11.9	85.01	464.6	5,654.0	681.0	490.5	190.53	3.574		
13,000.0	6,576.3	6,470.5	6,470.1	182.3	11.9	84.31	464.6	5,654.0	779.4	586.3	193.09	4.036		
13,100.0	6,575.2	6,468.9	6,468.5	185.1	11.9	83.62	464.6	5,654.0	878.1	682.5	195.62	4.489		
13,200.0	6,574.1	6,467.3	6,466.9	187.9	11.9	82.93	464.6	5,654.0	977.1	779.0	198.12	4.932		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Loloff Farms 26H-232
<b>Project:</b>	SEC.26-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')
<b>Reference Site:</b>	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	<b>MD Reference:</b>	WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Loloff Farms 26H-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #3 (3-16-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Pad Sec.26-T5N-R64W - Loustalet 5 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
12,200.0	6,585.4	6,537.7	6,535.4	160.0	11.4	-99.27	1,012.7	6,432.0	912.9	744.0	168.90	5.405		
12,300.0	6,584.3	6,526.6	6,524.4	162.8	11.3	-97.81	1,012.2	6,433.1	825.5	653.2	172.29	4.791		
12,400.0	6,583.1	6,515.5	6,513.4	165.6	11.3	-96.33	1,011.6	6,434.2	741.2	565.6	175.60	4.221		
12,500.0	6,582.0	6,504.4	6,502.4	168.3	11.3	-94.84	1,011.0	6,435.3	661.1	482.2	178.82	3.697		
12,600.0	6,580.9	6,493.4	6,491.4	171.1	11.3	-93.34	1,010.4	6,436.4	586.8	404.9	181.95	3.225		
12,700.0	6,579.7	6,482.3	6,480.4	173.9	11.3	-91.83	1,009.8	6,437.5	521.1	336.1	184.97	2.817		
12,800.0	6,578.6	6,471.2	6,469.4	176.7	11.2	-90.31	1,009.2	6,438.6	467.4	279.5	187.87	2.488		
12,900.0	6,577.5	6,460.1	6,458.4	179.5	11.2	-88.79	1,008.7	6,439.7	430.2	239.5	190.65	2.256		
13,000.0	6,576.3	6,449.0	6,447.3	182.3	11.2	-87.26	1,008.1	6,440.8	414.1	220.8	193.31	2.142		
13,018.8	6,576.1	6,447.0	6,445.3	182.9	11.2	-86.97	1,008.0	6,441.0	413.7	219.9	193.80	2.135 CC, ES, SF		
13,100.0	6,575.2	6,438.0	6,436.3	185.1	11.2	-85.74	1,007.5	6,441.9	421.5	225.6	195.83	2.152		
13,200.0	6,574.1	6,426.9	6,425.3	187.9	11.2	-84.21	1,006.9	6,443.0	451.2	252.9	198.22	2.276		
13,300.0	6,572.9	6,415.8	6,414.3	190.7	11.1	-82.69	1,006.3	6,444.1	499.2	298.8	200.46	2.490		
13,400.0	6,571.8	6,404.7	6,403.3	193.5	11.1	-81.18	1,005.8	6,445.2	560.9	358.4	202.56	2.769		
13,500.0	6,570.7	6,400.0	6,398.6	196.3	11.1	-80.54	1,005.5	6,445.7	632.3	427.3	205.00	3.085		
13,600.0	6,569.5	6,400.0	6,398.6	199.1	11.1	-80.54	1,005.5	6,445.7	710.7	502.9	207.76	3.421		
13,700.0	6,568.4	6,381.3	6,380.0	201.9	11.1	-78.01	1,004.6	6,447.4	793.5	584.6	208.95	3.798		
13,733.7	6,568.0	6,379.1	6,377.8	202.9	11.1	-77.71	1,004.5	6,447.6	822.4	612.7	209.66	3.922		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Loloff Farms 26H-232
<b>Project:</b>	SEC.26-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')
<b>Reference Site:</b>	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	<b>MD Reference:</b>	WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Loloff Farms 26H-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #3 (3-16-15)	<b>Offset TVD Reference:</b>	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							
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	
8,700.0	6,625.1	6,517.4	6,516.2	63.0	11.6	80.62	496.2	3,055.9	938.8	865.5	73.26	12.815		
8,800.0	6,624.0	6,519.0	6,517.8	65.7	11.6	81.53	496.2	3,056.0	839.4	763.3	76.15	11.024		
8,900.0	6,622.8	6,520.6	6,519.4	68.5	11.6	82.44	496.2	3,056.0	740.2	661.2	79.04	9.366		
9,000.0	6,621.7	6,522.2	6,521.0	71.2	11.6	83.35	496.1	3,056.0	641.3	559.4	81.93	7.827		
9,100.0	6,620.6	6,523.8	6,522.6	73.9	11.6	84.27	496.1	3,056.1	542.7	457.9	84.81	6.399		
9,200.0	6,619.4	6,525.4	6,524.2	76.7	11.6	85.19	496.1	3,056.1	444.8	357.1	87.69	5.072		
9,300.0	6,618.3	6,527.0	6,525.8	79.4	11.6	86.11	496.1	3,056.2	348.0	257.4	90.56	3.843		
9,400.0	6,617.2	6,528.6	6,527.4	82.2	11.7	87.03	496.1	3,056.2	253.7	160.3	93.42	2.716		
9,500.0	6,616.0	6,530.2	6,529.0	84.9	11.7	87.96	496.0	3,056.3	166.3	70.0	96.27	1.727		
9,600.0	6,614.9	6,531.8	6,530.6	87.7	11.7	88.88	496.0	3,056.3	104.5	5.4	99.09	1.054 Level 2		
9,633.7	6,614.5	6,532.3	6,531.1	88.6	11.7	89.19	496.0	3,056.3	98.9	-1.2	100.04	0.988 Level 1, CC, ES, SF		
9,700.0	6,613.8	6,533.4	6,532.2	90.4	11.7	89.81	496.0	3,056.3	119.1	17.2	101.90	1.168 Level 2		
9,800.0	6,612.6	6,534.9	6,533.8	93.2	11.7	90.73	496.0	3,056.4	193.5	88.8	104.69	1.848		
9,900.0	6,611.5	6,536.5	6,535.4	96.0	11.7	91.66	495.9	3,056.4	284.0	176.6	107.45	2.643		
10,000.0	6,610.4	6,538.1	6,537.0	98.7	11.7	92.58	495.9	3,056.5	379.4	269.2	110.19	3.443		
10,100.0	6,609.2	6,539.7	6,538.6	101.5	11.7	93.50	495.9	3,056.5	476.6	363.7	112.90	4.222		
10,200.0	6,608.1	6,541.3	6,540.2	104.3	11.7	94.42	495.9	3,056.6	574.8	459.2	115.58	4.973		
10,300.0	6,607.0	6,542.9	6,541.8	107.0	11.7	95.34	495.9	3,056.6	673.5	555.3	118.22	5.697		
10,400.0	6,605.8	6,544.5	6,543.4	109.8	11.7	96.25	495.8	3,056.6	772.6	651.7	120.84	6.393		
10,500.0	6,604.7	6,546.1	6,545.0	112.6	11.7	97.16	495.8	3,056.7	871.8	748.4	123.42	7.064		
10,600.0	6,603.6	6,547.7	6,546.5	115.4	11.7	98.06	495.8	3,056.7	971.2	845.3	125.96	7.711		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Loloff Farms 26H-232
<b>Project:</b>	SEC.26-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')
<b>Reference Site:</b>	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	<b>MD Reference:</b>	WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Loloff Farms 26H-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #3 (3-16-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Pad Sec.26-T5N-R64W - Schlagel 26-4 (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)			
10,000.0	6,610.4	6,503.0	6,502.1	98.7	13.7	94.19	521.0	4,361.7	942.0	829.9	112.10	8.403		
10,100.0	6,609.2	6,502.3	6,501.5	101.5	13.7	93.72	521.0	4,361.7	842.3	727.4	114.91	7.330		
10,200.0	6,608.1	6,501.7	6,500.9	104.3	13.7	93.25	521.0	4,361.7	742.8	625.0	117.72	6.309		
10,300.0	6,607.0	6,501.1	6,500.3	107.0	13.7	92.79	521.0	4,361.7	643.3	522.8	120.53	5.337		
10,400.0	6,605.8	6,500.6	6,499.7	109.8	13.7	92.33	521.0	4,361.7	544.1	420.8	123.34	4.412		
10,500.0	6,604.7	6,500.0	6,499.2	112.6	13.7	91.91	521.0	4,361.7	445.3	319.1	126.14	3.530		
10,600.0	6,603.6	6,499.4	6,498.6	115.4	13.7	91.45	521.0	4,361.7	347.0	218.1	128.93	2.692		
10,700.0	6,602.4	6,498.9	6,498.0	118.1	13.7	91.02	521.0	4,361.7	250.2	118.5	131.72	1.900		
10,800.0	6,601.3	6,498.3	6,497.5	120.9	13.7	90.58	521.0	4,361.7	157.5	23.0	134.51	1.171	Level 2	
10,900.0	6,600.1	6,497.7	6,496.9	123.7	13.7	90.15	521.0	4,361.6	83.6	-53.7	137.29	0.609	Level 1	
10,939.1	6,599.7	6,497.5	6,496.7	124.8	13.7	89.97	521.0	4,361.6	73.9	-64.5	138.37	0.534	Level 1, CC, ES, SF	
11,000.0	6,599.0	6,497.2	6,496.3	126.5	13.7	89.71	521.0	4,361.6	95.8	-44.3	140.06	0.684	Level 1	
11,100.0	6,597.9	6,496.6	6,495.8	129.3	13.7	89.27	521.0	4,361.6	177.1	34.2	142.83	1.240	Level 2	
11,200.0	6,596.7	6,496.0	6,495.2	132.1	13.7	88.83	521.0	4,361.6	271.2	125.6	145.59	1.863		
11,300.0	6,595.6	6,495.5	6,494.6	134.8	13.7	88.40	521.0	4,361.6	368.4	220.1	148.34	2.483		
11,400.0	6,594.5	6,494.9	6,494.1	137.6	13.7	87.96	521.0	4,361.6	466.8	315.7	151.08	3.090		
11,500.0	6,593.3	6,494.3	6,493.5	140.4	13.7	87.52	521.0	4,361.6	565.7	411.9	153.81	3.678		
11,600.0	6,592.2	6,493.8	6,492.9	143.2	13.7	87.08	521.0	4,361.6	665.0	508.5	156.54	4.248		
11,700.0	6,591.1	6,493.2	6,492.4	146.0	13.7	86.64	521.0	4,361.6	764.5	605.2	159.25	4.800		
11,800.0	6,589.9	6,492.6	6,491.8	148.8	13.7	86.20	521.0	4,361.6	864.1	702.1	161.95	5.335		
11,900.0	6,588.8	6,492.1	6,491.2	151.6	13.7	85.76	521.0	4,361.6	963.7	799.1	164.65	5.853		



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Loloff Farms 26H-232
<b>Project:</b>	SEC.26-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')
<b>Reference Site:</b>	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	<b>MD Reference:</b>	WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Loloff Farms 26H-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #3 (3-16-15)	<b>Offset TVD Reference:</b>	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		Minimum Separation		Separation Factor		Warning				
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	55.77	324.3	476.5	577.2					
100.0	100.0	70.6	70.6	0.1	0.1	55.77	324.2	476.5	576.3	576.1	0.21	2,796.091		
200.0	200.0	172.2	172.2	0.3	0.3	55.81	323.8	476.5	576.1	575.5	0.66	878.085		
300.0	300.0	272.4	272.4	0.6	0.6	55.84	323.2	476.4	575.7	574.5	1.14	504.478		
378.1	378.1	348.1	348.1	0.7	0.7	55.86	323.0	476.3	575.5	574.0	1.47	392.648		
400.0	400.0	369.0	369.0	0.8	0.8	55.87	322.9	476.4	575.5	573.9	1.55	371.736		
500.0	500.0	469.4	469.4	1.0	0.9	55.88	323.0	476.6	575.8	573.8	1.94	296.208		
600.0	600.0	567.5	567.5	1.2	1.1	55.87	323.1	476.7	575.9	573.6	2.32	248.101		
700.0	700.0	667.8	667.8	1.5	1.2	55.81	323.9	476.9	576.5	573.8	2.65	217.224		
800.0	800.0	768.5	768.5	1.7	1.3	55.77	324.4	476.8	576.7	573.7	2.99	192.677		
900.0	900.0	869.2	869.2	1.9	1.4	55.68	325.3	476.5	577.0	573.6	3.36	171.742		
1,000.0	1,000.0	968.7	968.7	2.1	1.6	55.64	325.7	476.4	577.1	573.3	3.76	153.659		
1,100.0	1,100.0	1,070.1	1,070.1	2.4	1.8	75.42	325.9	476.4	577.0	572.9	4.17	138.469		
1,200.0	1,200.0	1,169.3	1,169.3	2.6	2.0	75.65	326.1	476.3	576.4	571.8	4.58	125.824		
1,300.0	1,299.9	1,268.7	1,268.7	2.8	2.2	76.05	326.5	476.3	575.5	570.5	5.02	114.746		
1,400.0	1,399.7	1,369.6	1,369.6	3.0	2.4	76.62	326.9	476.2	574.2	568.7	5.46	105.083		
1,500.0	1,499.4	1,470.8	1,470.8	3.3	2.6	77.33	327.5	475.7	572.3	566.4	5.92	96.721		
1,600.0	1,598.9	1,570.8	1,570.8	3.5	2.9	78.16	328.4	474.7	569.9	563.5	6.38	89.334		
1,700.0	1,698.3	1,670.5	1,670.5	3.8	3.1	79.14	329.7	473.5	567.3	560.5	6.86	82.690		
1,800.0	1,797.4	1,768.8	1,768.7	4.0	3.3	80.27	331.0	472.4	564.6	557.3	7.36	76.713		
1,900.0	1,896.3	1,867.1	1,867.0	4.3	3.6	81.61	332.2	471.5	562.1	554.2	7.88	71.303		
2,000.0	1,995.0	1,965.1	1,965.0	4.6	3.8	83.12	333.1	470.9	559.8	551.4	8.43	66.418		
2,100.0	2,093.6	2,063.3	2,063.2	4.9	4.0	84.70	333.7	470.7	558.1	549.1	8.97	62.215		
2,200.0	2,192.2	2,163.0	2,162.9	5.3	4.2	86.38	333.7	470.7	556.8	547.4	9.46	58.866		
2,300.0	2,290.9	2,261.7	2,261.6	5.6	4.3	88.09	333.3	470.7	555.8	546.0	9.89	56.230		
2,387.6	2,377.3	2,346.7	2,346.7	5.9	4.4	89.58	332.9	470.8	555.5	545.3	10.25	54.211		
2,400.0	2,389.5	2,358.7	2,358.6	5.9	4.4	89.80	332.8	470.9	555.5	545.2	10.30	53.940		
2,500.0	2,488.2	2,454.5	2,454.4	6.3	4.5	91.53	331.9	471.6	556.1	545.4	10.73	51.839		
2,600.0	2,586.8	2,551.4	2,551.2	6.6	4.6	93.36	330.3	473.0	557.8	546.6	11.17	49.920		
2,700.0	2,685.4	2,649.8	2,649.7	7.0	4.7	95.25	328.3	474.6	560.0	548.4	11.63	48.146		
2,800.0	2,784.1	2,749.1	2,748.9	7.3	4.8	97.15	326.3	476.1	562.8	550.7	12.10	46.509		
2,900.0	2,882.7	2,849.4	2,849.2	7.7	5.0	99.05	324.1	477.3	566.0	553.4	12.58	44.989		
3,000.0	2,981.3	2,950.7	2,950.4	8.0	5.1	100.92	322.1	478.1	569.3	556.2	13.07	43.569		
3,100.0	3,080.0	3,051.2	3,050.9	8.4	5.3	102.71	320.3	478.3	572.7	559.1	13.56	42.241		
3,200.0	3,178.6	3,150.4	3,150.1	8.7	5.4	104.44	318.8	478.2	576.3	562.3	14.05	41.021		
3,300.0	3,277.3	3,249.5	3,249.2	9.1	5.6	106.17	317.0	478.0	580.5	565.9	14.55	39.902		
3,400.0	3,375.9	3,350.2	3,349.9	9.5	5.8	107.94	314.9	477.7	584.9	569.8	15.05	38.867		
3,500.0	3,474.5	3,453.7	3,453.4	9.8	6.0	109.78	312.1	476.6	589.2	573.6	15.55	37.881		
3,600.0	3,573.2	3,556.2	3,555.8	10.2	6.1	111.62	308.9	474.6	593.2	577.1	16.06	36.940		
3,700.0	3,671.8	3,656.4	3,655.9	10.6	6.3	113.41	305.7	472.2	597.3	580.7	16.56	36.074		
3,800.0	3,770.4	3,754.4	3,753.9	10.9	6.5	115.15	302.4	469.6	601.7	584.7	17.05	35.290		
3,900.0	3,869.1	3,855.2	3,854.5	11.3	6.7	116.91	298.9	466.9	606.8	589.2	17.55	34.580		
4,000.0	3,967.7	3,957.4	3,956.7	11.7	6.9	118.59	296.4	463.6	611.6	593.5	18.04	33.895		
4,100.0	4,066.4	4,057.7	4,056.9	12.0	7.2	120.16	294.6	460.0	616.5	598.0	18.53	33.263		
4,200.0	4,165.0	4,158.3	4,157.3	12.4	7.4	121.67	293.1	456.2	621.5	602.5	19.02	32.676		
4,300.0	4,263.6	4,257.9	4,256.9	12.8	7.6	123.14	291.9	452.1	626.7	607.2	19.51	32.132		
4,400.0	4,362.3	4,356.1	4,355.0	13.1	7.8	124.51	291.1	448.2	632.3	612.3	19.98	31.638		
4,500.0	4,460.9	4,453.9	4,452.7	13.5	8.0	125.87	290.2	444.4	638.3	617.9	20.46	31.197		
4,600.0	4,559.5	4,552.6	4,551.3	13.9	8.2	127.19	289.6	440.7	644.8	623.9	20.94	30.798		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Loloff Farms 26H-232
<b>Project:</b>	SEC.26-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')
<b>Reference Site:</b>	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	<b>MD Reference:</b>	WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Loloff Farms 26H-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #3 (3-16-15)	<b>Offset TVD Reference:</b>	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
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning	
Reference	Offset	Reference	Offset	Reference	Offset		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
4,700.0	4,658.2	4,647.9	4,646.6	14.3	8.4	128.38	289.5	437.4	651.7	630.3	21.40	30.448		
4,800.0	4,756.8	4,740.2	4,738.9	14.6	8.6	129.45	289.9	435.3	659.8	638.0	21.86	30.186		
4,900.0	4,855.4	4,835.6	4,834.2	15.0	8.8	130.46	290.7	434.2	669.0	646.7	22.30	29.994		
5,000.0	4,954.1	4,935.2	4,933.8	15.4	9.0	131.45	292.0	433.2	678.5	655.8	22.75	29.830		
5,100.0	5,052.7	5,032.8	5,031.4	15.7	9.1	132.42	293.2	432.2	688.1	664.9	23.18	29.685		
5,200.0	5,151.8	5,128.9	5,127.5	16.0	9.3	133.32	294.0	431.5	696.6	673.1	23.56	29.568		
5,300.0	5,251.2	5,227.1	5,225.7	16.2	9.5	133.98	294.8	431.0	703.0	679.1	23.92	29.390		
5,400.0	5,351.0	5,321.0	5,319.6	16.4	9.6	134.34	295.8	431.2	707.7	683.4	24.23	29.209		
5,500.0	5,450.9	5,419.1	5,417.7	16.6	9.7	134.51	296.5	431.9	710.4	685.9	24.49	29.005		
5,600.0	5,550.9	5,519.2	5,517.8	16.8	9.9	114.80	296.5	432.5	711.2	686.3	24.84	28.633		
5,700.0	5,650.9	5,620.6	5,619.2	16.9	10.0	114.79	296.6	432.8	711.5	686.3	25.14	28.298		
5,800.0	5,750.9	5,720.5	5,719.1	17.1	10.1	114.78	296.6	433.1	711.8	686.3	25.45	27.964		
5,900.0	5,850.9	5,820.9	5,819.5	17.2	10.3	114.75	296.8	433.4	711.9	686.2	25.77	27.623		
6,000.0	5,950.8	5,917.8	5,916.4	17.4	10.4	24.95	296.7	433.8	709.3	683.4	25.84	27.451		
6,100.0	6,049.5	6,014.4	6,013.0	17.5	10.5	25.93	296.4	434.5	695.7	670.1	25.60	27.176		
6,200.0	6,145.2	6,112.3	6,110.9	17.5	10.7	27.89	296.2	435.3	670.7	645.6	25.04	26.783		
6,300.0	6,236.4	6,204.0	6,202.6	17.6	10.8	30.99	296.3	436.0	634.9	610.6	24.26	26.166		
6,400.0	6,321.4	6,285.9	6,284.5	17.6	10.9	35.48	296.4	436.9	589.9	566.4	23.48	25.124		
6,500.0	6,398.9	6,362.5	6,361.1	17.6	11.1	41.91	296.3	438.0	537.4	514.4	23.07	23.298		
6,600.0	6,467.5	6,431.4	6,430.0	17.7	11.2	50.64	296.1	439.2	479.8	456.2	23.55	20.377		
6,700.0	6,526.1	6,491.0	6,489.5	17.8	11.3	61.47	295.9	440.2	420.3	395.2	25.19	16.686		
6,800.0	6,573.5	6,539.2	6,537.8	18.3	11.4	72.92	295.6	441.1	364.7	337.1	27.55	13.238		
6,900.0	6,609.1	6,575.9	6,574.5	19.4	11.4	82.69	295.3	441.7	321.1	291.3	29.85	10.758		
7,000.0	6,632.2	6,600.5	6,599.0	21.0	11.5	88.80	295.1	442.2	300.4	268.5	31.88	9.423		
7,018.7	6,635.1	6,603.8	6,602.3	21.4	11.5	89.47	295.1	442.3	299.8	267.6	32.26	9.294 CC, ES		
7,100.0	6,642.4	6,612.7	6,611.3	22.9	11.5	90.35	295.0	442.4	310.5	276.6	33.86	9.170 SF		
7,200.0	6,642.1	6,614.2	6,612.8	24.9	11.5	89.73	295.0	442.4	350.0	314.0	35.91	9.745		
7,300.0	6,641.0	6,614.8	6,613.4	27.1	11.5	89.85	295.0	442.5	410.5	372.4	38.12	10.770		
7,400.0	6,639.9	6,615.4	6,613.9	29.4	11.5	89.96	295.0	442.5	484.4	443.9	40.43	11.980		
7,500.0	6,638.7	6,616.0	6,614.5	31.8	11.5	90.06	295.0	442.5	566.3	523.5	42.82	13.223		
7,600.0	6,637.6	6,616.5	6,615.0	34.2	11.5	90.17	295.0	442.5	653.3	608.0	45.28	14.426		
7,700.0	6,636.4	6,617.0	6,615.6	36.7	11.5	90.27	295.0	442.5	743.5	695.7	47.79	15.557		
7,800.0	6,635.3	6,617.6	6,616.1	39.2	11.5	90.37	295.0	442.5	836.0	785.6	50.34	16.606		
7,900.0	6,634.2	6,618.1	6,616.6	41.8	11.5	90.46	295.0	442.5	930.0	877.1	52.93	17.572		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Loloff Farms 26H-232
<b>Project:</b>	SEC.26-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')
<b>Reference Site:</b>	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	<b>MD Reference:</b>	WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Loloff Farms 26H-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #3 (3-16-15)	<b>Offset TVD Reference:</b>	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
Measured Depth (ft)	Vertical Reference Depth (ft)	Measured Depth (ft)	Vertical Offset Depth (ft)	Semi Major Axis Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
7,300.0	6,641.0	6,600.0	6,599.1	27.1	12.1	90.61	371.1	1,633.0	937.4	898.7	38.71	24.213		
7,400.0	6,639.9	6,600.0	6,599.1	29.4	12.1	90.61	371.1	1,633.0	840.6	799.6	41.02	20.492		
7,500.0	6,638.7	6,600.0	6,599.1	31.8	12.1	90.61	371.1	1,633.0	744.7	701.3	43.41	17.154		
7,600.0	6,637.6	6,600.0	6,599.1	34.2	12.1	90.61	371.1	1,633.0	650.0	604.1	45.86	14.172		
7,700.0	6,636.4	6,600.0	6,599.1	36.7	12.1	90.61	371.1	1,633.0	557.2	508.8	48.37	11.519		
7,800.0	6,635.3	6,598.6	6,597.7	39.2	12.1	90.26	371.1	1,633.0	467.3	416.4	50.91	9.180		
7,900.0	6,634.2	6,598.4	6,597.4	41.8	12.1	90.20	371.1	1,633.0	382.6	329.1	53.49	7.152		
8,000.0	6,633.0	6,598.2	6,597.2	44.4	12.1	90.14	371.1	1,633.0	307.1	251.0	56.09	5.474		
8,100.0	6,631.9	6,597.9	6,597.0	47.0	12.1	90.08	371.1	1,633.0	249.5	190.8	58.72	4.248		
8,200.0	6,630.8	6,597.7	6,596.7	49.6	12.1	90.02	371.1	1,633.0	224.0	162.7	61.37	3.650		
8,210.2	6,630.7	6,597.7	6,596.7	49.9	12.1	90.01	371.1	1,633.0	223.8	162.1	61.65	3.630 CC, ES, SF		
8,300.0	6,629.6	6,597.4	6,596.5	52.3	12.1	89.96	371.1	1,633.0	241.1	177.1	64.04	3.765		
8,400.0	6,628.5	6,597.2	6,596.3	54.9	12.1	89.90	371.1	1,633.0	293.4	226.7	66.72	4.397		
8,500.0	6,627.4	6,597.0	6,596.0	57.6	12.1	89.83	371.1	1,633.0	366.1	296.7	69.41	5.274		
8,600.0	6,626.2	6,596.7	6,595.8	60.3	12.1	89.77	371.1	1,633.0	449.4	377.3	72.12	6.232		
8,700.0	6,625.1	6,596.5	6,595.5	63.0	12.1	89.71	371.1	1,633.0	538.4	463.6	74.83	7.196		
8,800.0	6,624.0	6,596.2	6,595.3	65.7	12.1	89.65	371.1	1,633.0	630.8	553.2	77.55	8.134		
8,900.0	6,622.8	6,596.0	6,595.0	68.5	12.1	89.58	371.1	1,633.0	725.1	644.9	80.27	9.033		
9,000.0	6,621.7	6,595.7	6,594.8	71.2	12.1	89.52	371.1	1,633.0	820.8	737.8	83.01	9.889		
9,100.0	6,620.6	6,595.5	6,594.5	73.9	12.1	89.45	371.1	1,633.0	917.4	831.7	85.75	10.700		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Loloff Farms 26H-232
<b>Project:</b>	SEC.26-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')
<b>Reference Site:</b>	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	<b>MD Reference:</b>	WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Loloff Farms 26H-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #3 (3-16-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Pad Sec.26-T5N-R64W (Grid) - Loloff B 26-25 (Exist.) - Wellbore #1 - Wellbore #1														Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS														Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Semi Major Axis			Distance			Minimum Separation			Warning		
Reference	Offset	Reference	Offset	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Separation Factor				
6,600.0	6,467.5	6,439.2	6,437.4	17.7	12.0	-39.75	1,040.0	928.8	973.0	948.9	24.14	40.301			
6,700.0	6,526.1	6,495.4	6,493.3	17.8	12.1	-47.55	1,034.4	930.5	900.4	875.7	24.74	36.395			
6,800.0	6,573.5	6,541.7	6,539.4	18.3	12.2	-57.68	1,030.6	931.7	823.8	797.0	26.77	30.771			
6,900.0	6,609.1	6,576.3	6,573.9	19.4	12.2	-69.37	1,028.2	932.4	745.3	715.6	29.73	25.070			
7,000.0	6,632.2	6,600.0	6,597.6	21.0	12.3	-80.95	1,026.9	932.8	668.1	635.5	32.55	20.523			
7,100.0	6,642.4	6,610.5	6,608.0	22.9	12.3	-90.21	1,026.3	932.9	595.5	560.8	34.64	17.189			
7,200.0	6,642.1	6,611.6	6,609.2	24.9	12.3	-92.86	1,026.2	932.9	531.6	495.0	36.60	14.526			
7,300.0	6,641.0	6,611.9	6,609.4	27.1	12.3	-92.90	1,026.2	933.0	480.2	441.4	38.79	12.378			
7,400.0	6,639.9	6,612.1	6,609.7	29.4	12.3	-92.93	1,026.2	933.0	445.7	404.6	41.10	10.844			
7,500.0	6,638.7	6,612.4	6,609.9	31.8	12.3	-92.96	1,026.2	933.0	432.0	388.5	43.48	9.935			
7,509.9	6,638.6	6,612.4	6,610.0	32.0	12.3	-92.97	1,026.2	933.0	431.9	388.2	43.73	9.877 CC, ES			
7,600.0	6,637.6	6,612.6	6,610.2	34.2	12.3	-93.00	1,026.2	933.0	441.2	395.3	45.94	9.605 SF			
7,700.0	6,636.4	6,612.8	6,610.4	36.7	12.3	-93.03	1,026.2	933.0	471.9	423.4	48.44	9.742			
7,800.0	6,635.3	6,613.1	6,610.7	39.2	12.3	-93.06	1,026.2	933.0	520.3	469.3	50.98	10.205			
7,900.0	6,634.2	6,613.3	6,610.9	41.8	12.3	-93.09	1,026.2	933.0	582.0	528.4	53.56	10.867			
8,000.0	6,633.0	6,613.5	6,611.1	44.4	12.3	-93.12	1,026.1	933.0	653.2	597.1	56.16	11.632			
8,100.0	6,631.9	6,613.8	6,611.3	47.0	12.3	-93.15	1,026.1	933.0	731.2	672.5	58.79	12.439			
8,200.0	6,630.8	6,614.0	6,611.6	49.6	12.3	-93.18	1,026.1	933.0	814.1	752.7	61.43	13.251			
8,300.0	6,629.6	6,614.2	6,611.8	52.3	12.3	-93.21	1,026.1	933.0	900.4	836.3	64.10	14.048			
8,400.0	6,628.5	6,614.4	6,612.0	54.9	12.3	-93.24	1,026.1	933.0	989.3	922.6	66.77	14.816			

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Loloff Farms 26H-232
<b>Project:</b>	SEC.26-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')
<b>Reference Site:</b>	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	<b>MD Reference:</b>	WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Loloff Farms 26H-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #3 (3-16-15)	<b>Offset TVD Reference:</b>	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		Warning								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	1.0	1.0	0.0	0.0	-96.76	-3.6	-30.7	30.9	30.9	0.00	N/A		
100.0	100.0	101.0	101.0	0.1	0.1	-96.76	-3.6	-30.7	30.9	30.6	0.23	135.977		
166.3	166.3	167.3	167.3	0.3	0.3	-96.76	-3.6	-30.7	30.9	30.3	0.53	58.776 CC		
200.0	200.0	201.0	201.0	0.3	0.3	-96.76	-3.6	-30.7	30.9	30.2	0.68	45.627		
300.0	300.0	300.9	300.9	0.6	0.6	-95.13	-2.8	-30.8	31.0	29.8	1.13	27.517		
400.0	400.0	400.8	400.8	0.8	0.8	-90.36	-0.2	-31.4	31.4	29.8	1.58	19.936		
500.0	500.0	500.6	500.4	1.0	1.0	-82.84	4.1	-32.3	32.6	30.6	2.03	16.071		
600.0	600.0	600.0	599.7	1.2	1.3	-73.46	10.0	-33.7	35.1	32.6	2.49	14.137		
700.0	700.0	699.5	698.8	1.5	1.5	-63.50	17.6	-35.3	39.5	36.6	2.94	13.433		
800.0	800.0	798.5	797.4	1.7	1.8	-54.28	26.9	-37.4	46.2	42.8	3.40	13.578		
900.0	900.0	897.2	895.4	1.9	2.0	-46.49	37.7	-39.8	55.1	51.2	3.86	14.291		
1,000.0	1,000.0	995.4	992.9	2.1	2.3	-40.25	50.2	-42.5	66.3	62.0	4.31	15.371		
1,100.0	1,100.0	1,093.3	1,089.7	2.4	2.6	-15.78	64.2	-45.6	78.7	73.9	4.80	16.411		
1,200.0	1,200.0	1,191.0	1,186.1	2.6	3.0	-12.22	79.9	-49.0	91.5	86.3	5.26	17.403		
1,300.0	1,299.9	1,289.8	1,283.4	2.8	3.3	-9.49	96.8	-52.7	103.9	98.2	5.72	18.164		
1,400.0	1,399.7	1,389.2	1,381.2	3.0	3.7	-7.44	113.8	-56.5	114.9	108.7	6.19	18.567		
1,500.0	1,499.4	1,488.7	1,479.1	3.3	4.1	-5.83	130.8	-60.2	124.2	117.5	6.65	18.667		
1,600.0	1,598.9	1,588.3	1,577.3	3.5	4.5	-4.51	147.9	-64.0	131.8	124.7	7.12	18.514		
1,700.0	1,698.3	1,688.1	1,675.5	3.8	4.8	-3.38	165.0	-67.7	137.8	130.2	7.59	18.156		
1,800.0	1,797.4	1,788.0	1,773.8	4.0	5.2	-2.38	182.1	-71.5	142.1	134.0	8.06	17.626		
1,900.0	1,896.3	1,887.9	1,872.2	4.3	5.6	-1.45	199.3	-75.3	144.7	136.2	8.54	16.952		
2,000.0	1,995.0	1,987.9	1,970.6	4.6	6.0	-0.56	216.4	-79.0	145.8	136.8	9.02	16.173		
2,100.0	2,093.6	2,087.9	2,069.0	4.9	6.4	0.31	233.5	-82.8	146.8	137.3	9.50	15.443		
2,200.0	2,192.2	2,187.9	2,167.5	5.3	6.8	1.17	250.7	-86.6	147.8	137.8	10.00	14.784		
2,300.0	2,290.9	2,287.8	2,265.9	5.6	7.1	2.03	267.8	-90.3	148.8	138.3	10.49	14.188		
2,400.0	2,389.5	2,387.8	2,364.3	5.9	7.5	2.87	284.9	-94.1	149.9	138.9	10.98	13.645		
2,500.0	2,488.2	2,487.8	2,462.7	6.3	7.9	3.69	302.1	-97.9	151.0	139.5	11.48	13.149		
2,600.0	2,586.8	2,587.7	2,561.1	6.6	8.3	4.51	319.2	-101.7	152.1	140.1	11.98	12.695		
2,700.0	2,685.4	2,687.7	2,659.6	7.0	8.7	5.31	336.3	-105.4	153.3	140.8	12.48	12.276		
2,800.0	2,784.1	2,787.7	2,758.0	7.3	9.1	6.10	353.5	-109.2	154.4	141.5	12.99	11.890		
2,900.0	2,882.7	2,887.6	2,856.4	7.7	9.5	6.88	370.6	-113.0	155.7	142.2	13.50	11.532		
3,000.0	2,981.3	2,987.6	2,954.8	8.0	9.9	7.65	387.7	-116.7	156.9	142.9	14.01	11.200		
3,100.0	3,080.0	3,087.6	3,053.2	8.4	10.3	8.40	404.9	-120.5	158.2	143.7	14.52	10.890		
3,200.0	3,178.6	3,187.6	3,151.6	8.7	10.7	9.14	422.0	-124.3	159.5	144.4	15.04	10.602		
3,300.0	3,277.3	3,287.5	3,250.1	9.1	11.0	9.87	439.2	-128.0	160.8	145.2	15.56	10.331		
3,400.0	3,375.9	3,387.5	3,348.5	9.5	11.4	10.59	456.3	-131.8	162.2	146.1	16.09	10.078		
3,500.0	3,474.5	3,487.5	3,446.9	9.8	11.8	11.30	473.4	-135.6	163.5	146.9	16.62	9.840		
3,600.0	3,573.2	3,587.4	3,545.3	10.2	12.2	11.99	490.6	-139.3	164.9	147.8	17.15	9.616		
3,700.0	3,671.8	3,687.4	3,643.7	10.6	12.6	12.67	507.7	-143.1	166.4	148.7	17.69	9.404		
3,800.0	3,770.4	3,787.4	3,742.2	10.9	13.0	13.34	524.8	-146.9	167.8	149.6	18.23	9.205		
3,900.0	3,869.1	3,887.3	3,840.6	11.3	13.4	14.00	542.0	-150.6	169.3	150.5	18.78	9.016		
4,000.0	3,967.7	3,987.3	3,939.0	11.7	13.8	14.65	559.1	-154.4	170.8	151.4	19.32	8.837		
4,100.0	4,066.4	4,087.3	4,037.4	12.0	14.2	15.29	576.2	-158.2	172.3	152.4	19.88	8.667		
4,200.0	4,165.0	4,187.3	4,135.8	12.4	14.6	15.91	593.4	-161.9	173.8	153.4	20.44	8.506		
4,300.0	4,263.6	4,287.2	4,234.3	12.8	15.0	16.53	610.5	-165.7	175.4	154.4	21.00	8.353		
4,400.0	4,362.3	4,387.2	4,332.7	13.1	15.4	17.13	627.6	-169.5	177.0	155.4	21.56	8.207		
4,500.0	4,460.9	4,487.2	4,431.1	13.5	15.8	17.72	644.8	-173.2	178.5	156.4	22.13	8.068		
4,600.0	4,559.5	4,587.1	4,529.5	13.9	16.2	18.30	661.9	-177.0	180.2	157.5	22.70	7.935		
4,700.0	4,658.2	4,687.1	4,627.9	14.3	16.5	18.88	679.0	-180.8	181.8	158.5	23.28	7.808		

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Loloff Farms 26H-232
<b>Project:</b>	SEC.26-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')
<b>Reference Site:</b>	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	<b>MD Reference:</b>	WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Loloff Farms 26H-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #3 (3-16-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W - Loloff Farms 26H-332 - Wellbore #1 - Plan #2 (3-9-15)										Offset Site Error:		0.0 ft
Survey Program: 0-MWD												Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
4,800.0	4,756.8	4,787.1	4,726.4	14.6	16.9	19.44	696.2	-184.5	183.4	159.6	23.86	7.687		
4,900.0	4,855.4	4,887.1	4,824.8	15.0	17.3	19.99	713.3	-188.3	185.1	160.7	24.45	7.571		
5,000.0	4,954.1	4,987.0	4,923.2	15.4	17.7	20.53	730.4	-192.1	186.8	161.8	25.04	7.460		
5,100.0	5,052.7	5,087.0	5,021.6	15.7	18.1	21.05	747.6	-195.9	188.6	163.0	25.62	7.360		
5,200.0	5,151.8	5,186.9	5,120.0	16.0	18.5	21.32	764.7	-199.6	192.7	166.6	26.12	7.379		
5,300.0	5,251.2	5,286.6	5,218.1	16.2	18.9	21.24	781.8	-203.4	200.1	173.6	26.54	7.540		
5,400.0	5,351.0	5,387.5	5,317.5	16.4	19.3	20.83	799.0	-207.2	210.7	183.8	26.89	7.835		
5,500.0	5,450.9	5,494.7	5,423.5	16.6	19.6	20.28	814.7	-210.6	222.1	194.9	27.14	8.183		
5,600.0	5,550.9	5,602.5	5,530.5	16.8	19.9	-0.03	826.6	-213.2	232.7	196.8	35.90	6.481		
5,700.0	5,650.9	5,710.9	5,638.7	16.9	20.1	-0.45	834.5	-215.0	240.0	203.7	36.31	6.610		
5,800.0	5,750.9	5,819.9	5,747.5	17.1	20.2	-0.65	838.5	-215.9	243.7	207.0	36.66	6.647		
5,900.0	5,850.9	5,924.2	5,851.9	17.2	20.4	-0.67	839.0	-216.0	244.1	207.1	36.96	6.604		
5,924.3	5,875.2	5,948.6	5,876.2	17.3	20.4	-90.73	839.0	-216.0	244.1	215.5	28.56	8.546		
6,000.0	5,950.8	6,024.1	5,951.8	17.4	20.5	-91.46	839.0	-216.0	244.2	215.4	28.77	8.487		
6,100.0	6,049.5	6,125.0	6,052.5	17.5	20.6	-93.88	839.0	-210.3	244.7	215.8	28.82	8.489		
6,200.0	6,145.2	6,227.4	6,153.0	17.5	20.7	-96.24	839.0	-191.2	245.6	216.7	28.87	8.507		
6,300.0	6,236.4	6,331.3	6,251.4	17.6	20.8	-98.50	839.0	-158.2	246.8	217.9	28.97	8.521		
6,400.0	6,321.4	6,436.5	6,345.6	17.6	20.8	-100.60	839.0	-111.5	248.4	219.2	29.19	8.507		
6,500.0	6,398.9	6,543.2	6,433.6	17.6	20.9	-102.50	839.0	-51.4	250.1	220.4	29.64	8.436		
6,600.0	6,467.5	6,651.1	6,513.3	17.7	20.9	-104.17	839.0	21.3	251.8	221.4	30.42	8.278		
6,700.0	6,526.1	6,760.2	6,582.6	17.8	21.1	-105.57	839.0	105.4	253.4	221.8	31.65	8.006		
6,800.0	6,573.5	6,870.3	6,639.7	18.3	21.3	-106.69	839.0	199.4	254.8	221.4	33.44	7.620		
6,900.0	6,609.1	6,981.1	6,683.0	19.4	21.9	-107.50	839.0	301.3	255.9	220.1	35.83	7.144		
7,000.0	6,632.2	7,092.5	6,711.1	21.0	23.0	-107.99	839.0	409.0	256.6	217.9	38.78	6.617		
7,100.0	6,642.4	7,204.2	6,723.4	22.9	24.6	-108.16	839.0	519.9	256.9	214.6	42.24	6.082		
7,200.0	6,643.6	7,308.0	6,723.1	24.9	26.5	-107.82	839.0	623.7	256.4	210.2	46.21	5.548		
7,200.0	6,642.1	7,308.0	6,723.1	24.9	26.5	-108.14	839.0	623.7	256.9	210.7	46.11	5.570		
7,300.0	6,641.0	7,408.0	6,721.9	27.1	28.6	-108.14	839.0	723.7	256.9	206.6	50.30	5.107		
7,400.0	6,639.9	7,508.0	6,720.8	29.4	30.7	-108.14	839.0	823.7	256.9	202.2	54.69	4.697		
7,500.0	6,638.7	7,608.0	6,719.7	31.8	33.0	-108.14	839.0	923.7	256.9	197.6	59.23	4.336		
7,600.0	6,637.6	7,708.0	6,718.5	34.2	35.4	-108.14	839.0	1,023.7	256.9	192.9	63.91	4.019		
7,700.0	6,636.4	7,808.0	6,717.4	36.7	37.8	-108.14	839.0	1,123.7	256.9	188.2	68.68	3.740		
7,800.0	6,635.3	7,908.0	6,716.3	39.2	40.3	-108.14	839.0	1,223.7	256.9	183.3	73.53	3.493		
7,900.0	6,634.2	8,008.0	6,715.1	41.8	42.8	-108.14	839.0	1,323.7	256.9	178.4	78.45	3.274		
8,000.0	6,633.0	8,108.0	6,714.0	44.4	45.3	-108.14	839.0	1,423.7	256.9	173.4	83.42	3.079		
8,100.0	6,631.9	8,208.0	6,712.9	47.0	47.9	-108.14	839.0	1,523.6	256.9	168.4	88.44	2.904		
8,200.0	6,630.8	8,308.0	6,711.7	49.6	50.5	-108.14	839.0	1,623.6	256.9	163.4	93.49	2.747		
8,300.0	6,629.6	8,408.0	6,710.6	52.3	53.2	-108.14	839.0	1,723.6	256.9	158.3	98.58	2.606		
8,400.0	6,628.5	8,508.0	6,709.5	54.9	55.8	-108.14	839.0	1,823.6	256.9	153.2	103.69	2.477		
8,500.0	6,627.4	8,608.0	6,708.3	57.6	58.5	-108.14	839.0	1,923.6	256.9	148.0	108.83	2.360		
8,600.0	6,626.2	8,708.0	6,707.2	60.3	61.1	-108.14	839.0	2,023.6	256.9	142.9	113.98	2.253		
8,700.0	6,625.1	8,808.0	6,706.1	63.0	63.8	-108.14	839.0	2,123.6	256.9	137.7	119.16	2.156		
8,800.0	6,624.0	8,908.0	6,704.9	65.7	66.5	-108.14	839.0	2,223.6	256.9	132.5	124.35	2.066		
8,900.0	6,622.8	9,008.0	6,703.8	68.5	69.2	-108.14	839.0	2,323.6	256.9	127.3	129.55	1.983		
9,000.0	6,621.7	9,108.0	6,702.7	71.2	71.9	-108.14	839.0	2,423.6	256.9	122.1	134.76	1.906		
9,100.0	6,620.6	9,208.0	6,701.5	73.9	74.7	-108.14	839.0	2,523.6	256.9	116.9	139.99	1.835		
9,200.0	6,619.4	9,308.0	6,700.4	76.7	77.4	-108.14	839.0	2,623.6	256.9	111.6	145.22	1.769		
9,300.0	6,618.3	9,408.0	6,699.3	79.4	80.1	-108.14	839.0	2,723.6	256.9	106.4	150.47	1.707		
9,400.0	6,617.2	9,508.0	6,698.1	82.2	82.9	-108.14	839.0	2,823.6	256.9	101.1	155.72	1.649		



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Loloff Farms 26H-232
<b>Project:</b>	SEC.26-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')
<b>Reference Site:</b>	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	<b>MD Reference:</b>	WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Loloff Farms 26H-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #3 (3-16-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference														
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
9,500.0	6,616.0	9,608.0	6,697.0	84.9	85.6	-108.14		839.0	2,923.6	256.9	95.9	160.98	1.596	
9,600.0	6,614.9	9,708.0	6,695.9	87.7	88.3	-108.14		839.0	3,023.5	256.9	90.6	166.24	1.545	
9,700.0	6,613.8	9,808.0	6,694.7	90.4	91.1	-108.14		839.0	3,123.5	256.9	85.3	171.51	1.498 Level 3	
9,800.0	6,612.6	9,908.0	6,693.6	93.2	93.8	-108.14		839.0	3,223.5	256.9	80.1	176.78	1.453 Level 3	
9,900.0	6,611.5	10,008.0	6,692.4	96.0	96.6	-108.14		839.0	3,323.5	256.9	74.8	182.06	1.411 Level 3	
10,000.0	6,610.4	10,108.0	6,691.3	98.7	99.4	-108.14		839.0	3,423.5	256.9	69.5	187.35	1.371 Level 3	
10,100.0	6,609.2	10,208.0	6,690.2	101.5	102.1	-108.14		839.0	3,523.5	256.9	64.2	192.64	1.333 Level 3	
10,200.0	6,608.1	10,308.0	6,689.0	104.3	104.9	-108.14		839.0	3,623.5	256.9	58.9	197.93	1.298 Level 3	
10,300.0	6,607.0	10,408.0	6,687.9	107.0	107.6	-108.14		839.0	3,723.5	256.9	53.6	203.22	1.264 Level 3	
10,400.0	6,605.8	10,508.0	6,686.8	109.8	110.4	-108.14		839.0	3,823.5	256.9	48.3	208.52	1.232 Level 2	
10,500.0	6,604.7	10,608.0	6,685.6	112.6	113.2	-108.14		839.0	3,923.5	256.9	43.0	213.82	1.201 Level 2	
10,600.0	6,603.6	10,708.0	6,684.5	115.4	116.0	-108.14		839.0	4,023.5	256.9	37.7	219.12	1.172 Level 2	
10,700.0	6,602.4	10,808.0	6,683.4	118.1	118.7	-108.14		839.0	4,123.5	256.9	32.4	224.43	1.144 Level 2	
10,800.0	6,601.3	10,908.0	6,682.2	120.9	121.5	-108.14		839.0	4,223.5	256.9	27.1	229.74	1.118 Level 2	
10,900.0	6,600.1	11,008.0	6,681.1	123.7	124.3	-108.14		839.0	4,323.5	256.9	21.8	235.05	1.093 Level 2	
11,000.0	6,599.0	11,108.0	6,680.0	126.5	127.1	-108.14		839.0	4,423.5	256.9	16.5	240.36	1.069 Level 2	
11,100.0	6,597.9	11,208.0	6,678.8	129.3	129.8	-108.14		839.0	4,523.5	256.9	11.2	245.67	1.046 Level 2	
11,200.0	6,596.7	11,308.0	6,677.7	132.1	132.6	-108.14		839.0	4,623.4	256.9	5.9	250.99	1.023 Level 2	
11,300.0	6,595.6	11,408.0	6,676.6	134.8	135.4	-108.14		839.0	4,723.4	256.9	0.5	256.31	1.002 Level 2	
11,400.0	6,594.5	11,508.0	6,675.4	137.6	138.2	-108.14		839.0	4,823.4	256.9	-4.8	261.63	0.982 Level 1	
11,500.0	6,593.3	11,608.0	6,674.3	140.4	141.0	-108.14		839.0	4,923.4	256.9	-10.1	266.95	0.962 Level 1	
11,600.0	6,592.2	11,708.0	6,673.2	143.2	143.8	-108.14		839.0	5,023.4	256.9	-15.4	272.27	0.943 Level 1	
11,700.0	6,591.1	11,808.0	6,672.0	146.0	146.6	-108.14		839.0	5,123.4	256.9	-20.7	277.59	0.925 Level 1	
11,800.0	6,589.9	11,908.0	6,670.9	148.8	149.3	-108.14		839.0	5,223.4	256.9	-26.1	282.91	0.908 Level 1	
11,900.0	6,588.8	12,008.0	6,669.8	151.6	152.1	-108.14		839.0	5,323.4	256.9	-31.4	288.24	0.891 Level 1	
12,000.0	6,587.7	12,108.0	6,668.6	154.4	154.9	-108.14		839.0	5,423.4	256.9	-36.7	293.57	0.875 Level 1	
12,100.0	6,586.5	12,208.0	6,667.5	157.2	157.7	-108.14		839.0	5,523.4	256.9	-42.0	298.89	0.859 Level 1	
12,200.0	6,585.4	12,308.0	6,666.4	160.0	160.5	-108.14		839.0	5,623.4	256.9	-47.4	304.22	0.844 Level 1	
12,300.0	6,584.3	12,408.0	6,665.2	162.8	163.3	-108.14		839.0	5,723.4	256.9	-52.7	309.55	0.830 Level 1	
12,400.0	6,583.1	12,508.0	6,664.1	165.6	166.1	-108.14		839.0	5,823.4	256.9	-58.0	314.88	0.816 Level 1	
12,500.0	6,582.0	12,608.0	6,663.0	168.3	168.9	-108.14		839.0	5,923.4	256.9	-63.4	320.21	0.802 Level 1	
12,600.0	6,580.9	12,708.0	6,661.8	171.1	171.7	-108.14		839.0	6,023.4	256.9	-68.7	325.54	0.789 Level 1	
12,700.0	6,579.7	12,808.0	6,660.7	173.9	174.5	-108.14		839.0	6,123.3	256.9	-74.0	330.88	0.776 Level 1	
12,800.0	6,578.6	12,908.0	6,659.5	176.7	177.2	-108.14		839.0	6,223.3	256.9	-79.4	336.21	0.764 Level 1	
12,900.0	6,577.5	13,008.0	6,658.4	179.5	180.0	-108.14		839.0	6,323.3	256.9	-84.7	341.54	0.752 Level 1	
13,000.0	6,576.3	13,108.0	6,657.3	182.3	182.8	-108.14		839.0	6,423.3	256.9	-90.0	346.88	0.740 Level 1	
13,100.0	6,575.2	13,208.0	6,656.1	185.1	185.6	-108.14		839.0	6,523.3	256.9	-95.4	352.21	0.729 Level 1	
13,200.0	6,574.1	13,308.0	6,655.0	187.9	188.4	-108.14		839.0	6,623.3	256.9	-100.7	357.55	0.718 Level 1	
13,300.0	6,572.9	13,408.0	6,653.9	190.7	191.2	-108.14		839.0	6,723.3	256.9	-106.0	362.89	0.708 Level 1	
13,400.0	6,571.8	13,508.0	6,652.7	193.5	194.0	-108.14		839.0	6,823.3	256.9	-111.4	368.22	0.698 Level 1	
13,500.0	6,570.7	13,608.0	6,651.6	196.3	196.8	-108.14		839.0	6,923.3	256.9	-116.7	373.56	0.688 Level 1	
13,600.0	6,569.5	13,708.0	6,650.5	199.1	199.6	-108.14		839.0	7,023.3	256.9	-122.0	378.90	0.678 Level 1	
13,700.0	6,568.4	13,808.0	6,649.3	201.9	202.4	-108.14		839.0	7,123.3	256.9	-127.4	384.24	0.668 Level 1	
13,715.5	6,568.2	13,823.5	6,649.2	202.4	202.8	-108.14		839.0	7,138.8	256.9	-128.2	385.07	0.667 Level 1	
13,733.7	6,568.0	13,838.0	6,649.0	202.9	203.2	-108.14		839.0	7,153.2	256.9	-129.1	385.94	0.666 Level 1, ES, SF	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Loloff Farms 26H-232
<b>Project:</b>	SEC.26-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')
<b>Reference Site:</b>	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	<b>MD Reference:</b>	WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Loloff Farms 26H-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #3 (3-16-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design														Offset Site Error:	0.0 ft
Survey Program: 0-MWD														Offset Well Error:	0.0 ft
Reference															
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	90.01		0.0	30.7	30.7					
100.0	100.0	100.0	100.0	0.1	0.1	90.01		0.0	30.7	30.7	30.4	0.22	136.381		
200.0	200.0	200.0	200.0	0.3	0.3	90.01		0.0	30.7	30.7	30.0	0.67	45.460		
300.0	300.0	300.0	300.0	0.6	0.6	90.01		0.0	30.7	30.7	29.5	1.12	27.276		
400.0	400.0	400.0	400.0	0.8	0.8	90.01		0.0	30.7	30.7	29.1	1.57	19.483		
500.0	500.0	500.0	500.0	1.0	1.0	90.01		0.0	30.7	30.7	28.6	2.02	15.153		
600.0	600.0	600.0	600.0	1.2	1.2	90.01		0.0	30.7	30.7	28.2	2.47	12.398		
700.0	700.0	700.0	700.0	1.5	1.5	90.01		0.0	30.7	30.7	27.7	2.92	10.491		
800.0	800.0	800.0	800.0	1.7	1.7	90.01		0.0	30.7	30.7	27.3	3.37	9.092		
900.0	900.0	900.0	900.0	1.9	1.9	90.01		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	90.01		0.0	30.7	30.7	26.4	4.27	7.178 CC		
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	111.23		0.0	30.7	31.0	26.2	4.72	6.561		
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	115.60		0.0	30.7	32.0	26.8	5.17	6.195		
1,300.0	1,299.9	1,299.9	1,299.9	2.8	2.8	122.20		0.0	30.7	34.1	28.5	5.61	6.078		
1,400.0	1,399.7	1,399.7	1,399.7	3.0	3.0	130.03		0.0	30.7	37.7	31.7	6.06	6.225		
1,500.0	1,499.4	1,499.4	1,499.4	3.3	3.3	137.98		0.0	30.7	43.2	36.7	6.51	6.639		
1,600.0	1,598.9	1,598.9	1,598.9	3.5	3.5	145.19		0.0	30.7	50.7	43.8	6.95	7.298		
1,700.0	1,698.3	1,698.3	1,698.3	3.8	3.7	151.27		0.0	30.7	60.4	53.0	7.40	8.166		
1,800.0	1,797.4	1,797.4	1,797.4	4.0	3.9	156.21		0.0	30.7	72.1	64.3	7.84	9.203		
1,900.0	1,896.3	1,897.7	1,897.7	4.3	4.1	160.33		0.5	30.0	85.1	76.8	8.27	10.285		
2,000.0	1,995.0	1,998.2	1,998.2	4.6	4.4	163.92		2.0	27.9	98.1	89.4	8.71	11.266		
2,100.0	2,093.6	2,099.1	2,099.0	4.9	4.6	167.03		4.7	24.4	110.0	100.8	9.16	12.012		
2,200.0	2,192.2	2,200.3	2,200.0	5.3	4.8	169.86		8.3	19.4	120.5	110.9	9.61	12.540		
2,300.0	2,290.9	2,301.7	2,301.1	5.6	5.0	172.57		13.1	13.1	129.7	119.6	10.07	12.879		
2,400.0	2,389.5	2,403.3	2,402.2	5.9	5.3	175.28		19.0	5.2	137.6	127.0	10.54	13.056		
2,500.0	2,488.2	2,505.0	2,503.3	6.3	5.5	178.06		25.9	-4.1	144.2	133.2	11.01	13.092		
2,600.0	2,586.8	2,606.8	2,604.1	6.6	5.8	-179.03		33.9	-14.8	149.7	138.2	11.51	13.009		
2,700.0	2,685.4	2,706.7	2,703.0	7.0	6.1	-176.13		42.4	-26.2	154.6	142.6	12.01	12.874		
2,800.0	2,784.1	2,806.3	2,801.6	7.3	6.3	-173.42		50.9	-37.6	159.9	147.3	12.52	12.763		
2,900.0	2,882.7	2,905.9	2,900.1	7.7	6.6	-170.89		59.4	-49.1	165.5	152.4	13.06	12.672		
3,000.0	2,981.3	3,005.4	2,998.7	8.0	6.9	-168.53		67.9	-60.5	171.4	157.8	13.60	12.597		
3,100.0	3,080.0	3,105.0	3,097.3	8.4	7.2	-166.33		76.4	-71.9	177.6	163.4	14.16	12.535		
3,200.0	3,178.6	3,204.6	3,195.8	8.7	7.5	-164.27		84.9	-83.3	184.0	169.2	14.74	12.483		
3,300.0	3,277.3	3,304.2	3,294.4	9.1	7.8	-162.36		93.4	-94.7	190.6	175.3	15.32	12.439		
3,400.0	3,375.9	3,403.8	3,392.9	9.5	8.1	-160.58		101.9	-106.1	197.5	181.5	15.92	12.402		
3,500.0	3,474.5	3,503.4	3,491.5	9.8	8.4	-158.92		110.3	-117.5	204.5	188.0	16.53	12.371		
3,600.0	3,573.2	3,602.9	3,590.1	10.2	8.7	-157.37		118.8	-128.9	211.7	194.5	17.15	12.345		
3,700.0	3,671.8	3,702.5	3,688.6	10.6	9.0	-155.92		127.3	-140.3	219.0	201.2	17.77	12.323		
3,800.0	3,770.4	3,802.1	3,787.2	10.9	9.4	-154.57		135.8	-151.7	226.5	208.1	18.40	12.305		
3,900.0	3,869.1	3,901.7	3,885.8	11.3	9.7	-153.30		144.3	-163.1	234.0	215.0	19.04	12.290		
4,000.0	3,967.7	4,001.3	3,984.3	11.7	10.0	-152.11		152.8	-174.5	241.7	222.0	19.69	12.278		
4,100.0	4,066.4	4,100.9	4,082.9	12.0	10.3	-151.00		161.3	-185.9	249.5	229.2	20.34	12.268		
4,200.0	4,165.0	4,196.9	4,178.1	12.4	10.6	-150.26		168.7	-195.8	258.0	237.1	20.92	12.331		
4,300.0	4,263.6	4,292.4	4,273.2	12.8	10.8	-150.18		174.2	-203.1	268.0	246.6	21.41	12.516		
4,400.0	4,362.3	4,387.6	4,368.2	13.1	11.0	-150.69		177.7	-207.9	279.5	257.7	21.85	12.792		
4,500.0	4,460.9	4,482.2	4,462.7	13.5	11.2	-151.71		179.4	-210.2	292.6	270.4	22.24	13.160		
4,600.0	4,559.5	4,579.0	4,559.5	13.9	11.3	-153.09		179.5	-210.3	307.1	284.5	22.60	13.593		
4,700.0	4,658.2	4,677.6	4,658.2	14.3	11.5	-154.42		179.5	-210.3	321.9	298.9	22.98	14.010		
4,800.0	4,756.8	4,776.3	4,756.8	14.6	11.7	-155.62		179.5	-210.3	336.9	313.5	23.37	14.414		

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



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Loloff Farms 26H-232
<b>Project:</b>	SEC.26-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')
<b>Reference Site:</b>	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	<b>MD Reference:</b>	WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Loloff Farms 26H-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #3 (3-16-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference														
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		
4,900.0	4,855.4	4,874.9	4,855.4	15.0	11.9	-156.72	179.5	-210.3	352.0	328.2	23.77	14.807		
5,000.0	4,954.1	4,973.5	4,954.1	15.4	12.1	-157.74	179.5	-210.3	367.2	343.0	24.17	15.189		
5,100.0	5,052.7	5,072.2	5,052.7	15.7	12.3	-158.69	179.5	-210.3	382.4	357.8	24.58	15.555		
5,200.0	5,151.8	5,171.2	5,151.8	16.0	12.5	-159.51	179.5	-210.3	395.4	370.4	24.96	15.837		
5,300.0	5,251.2	5,270.7	5,251.2	16.2	12.7	-160.10	179.5	-210.3	405.1	379.8	25.33	15.993		
5,400.0	5,351.0	5,370.4	5,351.0	16.4	12.9	-160.47	179.5	-210.3	411.7	386.0	25.68	16.029		
5,500.0	5,450.9	5,470.4	5,450.9	16.6	13.1	-160.65	179.5	-210.3	414.9	388.9	26.02	15.949		
5,600.0	5,550.9	5,570.4	5,550.9	16.8	13.3	179.62	179.5	-210.3	415.3	386.5	28.87	14.389		
5,700.0	5,650.9	5,670.4	5,650.9	16.9	13.5	179.62	179.5	-210.3	415.3	386.1	29.24	14.205		
5,800.0	5,750.9	5,770.4	5,750.9	17.1	13.7	179.62	179.5	-210.3	415.3	385.7	29.62	14.025		
5,900.0	5,850.9	5,870.4	5,850.9	17.2	13.9	179.62	179.5	-210.3	415.3	385.4	29.99	13.848		
5,979.3	5,930.2	5,949.6	5,930.2	17.3	14.1	90.03	179.5	-210.3	415.3	387.4	27.93	14.869		
6,000.0	5,950.8	5,970.2	5,950.8	17.4	14.1	90.09	179.5	-210.3	415.3	387.3	28.02	14.825		
6,100.0	6,049.5	6,070.5	6,050.8	17.5	14.3	91.53	179.5	-204.9	415.5	387.1	28.39	14.633		
6,200.0	6,145.2	6,172.1	6,150.6	17.5	14.4	92.96	179.5	-186.1	415.9	387.2	28.68	14.501		
6,300.0	6,236.4	6,275.2	6,248.4	17.6	14.5	94.35	179.5	-153.8	416.6	387.6	28.92	14.402		
6,400.0	6,321.4	6,379.7	6,342.2	17.6	14.5	95.67	179.5	-107.8	417.4	388.2	29.20	14.294		
6,500.0	6,398.9	6,485.7	6,430.0	17.6	14.6	96.90	179.5	-48.5	418.4	388.7	29.65	14.110		
6,600.0	6,467.5	6,593.0	6,509.7	17.7	14.9	98.00	179.5	23.2	419.4	389.0	30.45	13.774		
6,700.0	6,526.1	6,701.6	6,579.2	17.8	15.6	98.95	179.5	106.5	420.5	388.7	31.79	13.225		
6,800.0	6,573.5	6,811.3	6,636.8	18.3	16.6	99.75	179.5	199.7	421.4	387.6	33.83	12.456		
6,900.0	6,609.1	6,921.9	6,680.8	19.4	18.1	100.36	179.5	301.1	422.2	385.6	36.62	11.531		
7,000.0	6,632.2	7,033.2	6,709.8	21.0	19.9	100.78	179.5	408.4	422.8	382.7	40.09	10.547		
7,100.0	6,642.4	7,144.8	6,723.0	22.9	22.0	101.00	179.5	519.2	423.1	379.0	44.10	9.593		
7,200.0	6,642.1	7,249.4	6,723.0	24.9	24.2	101.02	179.5	623.7	423.1	374.8	48.31	8.760		
7,300.0	6,641.0	7,349.4	6,721.9	27.1	26.4	101.03	179.5	723.7	423.1	370.5	52.63	8.040		
7,400.0	6,639.9	7,449.4	6,720.8	29.4	28.7	101.03	179.5	823.7	423.2	366.0	57.16	7.403		
7,500.0	6,638.7	7,549.4	6,719.7	31.8	31.1	101.03	179.5	923.7	423.2	361.3	61.85	6.841		
7,600.0	6,637.6	7,649.4	6,718.6	34.2	33.6	101.03	179.5	1,023.7	423.2	356.5	66.68	6.347		
7,700.0	6,636.4	7,749.4	6,717.4	36.7	36.1	101.04	179.5	1,123.7	423.2	351.6	71.60	5.910		
7,800.0	6,635.3	7,849.4	6,716.3	39.2	38.6	101.04	179.5	1,223.7	423.2	346.6	76.60	5.524		
7,900.0	6,634.2	7,949.4	6,715.2	41.8	41.2	101.04	179.5	1,323.7	423.2	341.5	81.67	5.181		
8,000.0	6,633.0	8,049.4	6,714.1	44.4	43.8	101.04	179.5	1,423.7	423.2	336.4	86.80	4.875		
8,100.0	6,631.9	8,149.4	6,713.0	47.0	46.5	101.05	179.5	1,523.6	423.2	331.2	91.97	4.601		
8,200.0	6,630.8	8,249.4	6,711.9	49.6	49.1	101.05	179.5	1,623.6	423.2	326.0	97.18	4.354		
8,300.0	6,629.6	8,349.4	6,710.7	52.3	51.8	101.05	179.5	1,723.6	423.2	320.8	102.43	4.132		
8,400.0	6,628.5	8,449.4	6,709.6	54.9	54.5	101.05	179.5	1,823.6	423.2	315.5	107.70	3.929		
8,500.0	6,627.4	8,549.4	6,708.5	57.6	57.2	101.05	179.5	1,923.6	423.2	310.2	112.99	3.745		
8,600.0	6,626.2	8,649.4	6,707.4	60.3	59.9	101.06	179.5	2,023.6	423.2	304.9	118.31	3.577		
8,700.0	6,625.1	8,749.4	6,706.3	63.0	62.6	101.06	179.6	2,123.6	423.2	299.5	123.64	3.423		
8,800.0	6,624.0	8,849.4	6,705.2	65.7	65.3	101.06	179.6	2,223.6	423.2	294.2	128.99	3.281		
8,900.0	6,622.8	8,949.4	6,704.0	68.5	68.0	101.06	179.6	2,323.6	423.2	288.8	134.35	3.150		
9,000.0	6,621.7	9,049.4	6,702.9	71.2	70.8	101.07	179.6	2,423.6	423.2	283.5	139.73	3.029		
9,100.0	6,620.6	9,149.4	6,701.8	73.9	73.5	101.07	179.6	2,523.6	423.2	278.1	145.12	2.916		
9,200.0	6,619.4	9,249.4	6,700.7	76.7	76.3	101.07	179.6	2,623.6	423.2	272.7	150.51	2.812		
9,300.0	6,618.3	9,349.4	6,699.6	79.4	79.0	101.07	179.6	2,723.6	423.2	267.3	155.92	2.714		
9,400.0	6,617.2	9,449.4	6,698.5	82.2	81.8	101.08	179.6	2,823.6	423.2	261.9	161.33	2.623		
9,500.0	6,616.0	9,549.4	6,697.3	84.9	84.5	101.08	179.6	2,923.6	423.2	256.5	166.75	2.538		
9,600.0	6,614.9	9,649.4	6,696.2	87.7	87.3	101.08	179.6	3,023.6	423.2	251.0	172.18	2.458		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Loloff Farms 26H-232
<b>Project:</b>	SEC.26-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')
<b>Reference Site:</b>	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	<b>MD Reference:</b>	WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Loloff Farms 26H-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #3 (3-16-15)	<b>Offset TVD Reference:</b>	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	
9,700.0	6,613.8	9,749.4	6,695.1	90.4	90.1	101.08	179.6	3,123.5	423.2	245.6	177.61	2.383		
9,800.0	6,612.6	9,849.4	6,694.0	93.2	92.8	101.09	179.6	3,223.5	423.2	240.2	183.05	2.312		
9,900.0	6,611.5	9,949.4	6,692.9	96.0	95.6	101.09	179.6	3,323.5	423.2	234.7	188.49	2.245		
10,000.0	6,610.4	10,049.4	6,691.8	98.7	98.4	101.09	179.6	3,423.5	423.2	229.3	193.94	2.182		
10,100.0	6,609.2	10,149.4	6,690.6	101.5	101.1	101.09	179.6	3,523.5	423.2	223.8	199.39	2.123		
10,200.0	6,608.1	10,249.4	6,689.5	104.3	103.9	101.09	179.6	3,623.5	423.2	218.4	204.84	2.066		
10,300.0	6,607.0	10,349.4	6,688.4	107.0	106.7	101.10	179.6	3,723.5	423.2	212.9	210.30	2.013		
10,400.0	6,605.8	10,449.4	6,687.3	109.8	109.5	101.10	179.6	3,823.5	423.2	207.5	215.76	1.962		
10,500.0	6,604.7	10,549.4	6,686.2	112.6	112.3	101.10	179.6	3,923.5	423.2	202.0	221.22	1.913		
10,600.0	6,603.6	10,649.4	6,685.1	115.4	115.0	101.10	179.6	4,023.5	423.3	196.6	226.69	1.867		
10,700.0	6,602.4	10,749.4	6,683.9	118.1	117.8	101.11	179.6	4,123.5	423.3	191.1	232.16	1.823		
10,800.0	6,601.3	10,849.4	6,682.8	120.9	120.6	101.11	179.6	4,223.5	423.3	185.6	237.63	1.781		
10,900.0	6,600.1	10,949.4	6,681.7	123.7	123.4	101.11	179.6	4,323.5	423.3	180.2	243.10	1.741		
11,000.0	6,599.0	11,049.4	6,680.6	126.5	126.2	101.11	179.6	4,423.5	423.3	174.7	248.58	1.703		
11,100.0	6,597.9	11,149.4	6,679.5	129.3	129.0	101.12	179.6	4,523.5	423.3	169.2	254.05	1.666		
11,200.0	6,596.7	11,249.4	6,678.4	132.1	131.8	101.12	179.6	4,623.5	423.3	163.7	259.53	1.631		
11,300.0	6,595.6	11,349.4	6,677.2	134.8	134.5	101.12	179.6	4,723.4	423.3	158.3	265.01	1.597		
11,400.0	6,594.5	11,449.4	6,676.1	137.6	137.3	101.12	179.6	4,823.4	423.3	152.8	270.50	1.565		
11,500.0	6,593.3	11,549.4	6,675.0	140.4	140.1	101.12	179.6	4,923.4	423.3	147.3	275.98	1.534		
11,600.0	6,592.2	11,649.4	6,673.9	143.2	142.9	101.13	179.6	5,023.4	423.3	141.8	281.46	1.504		
11,700.0	6,591.1	11,749.4	6,672.8	146.0	145.7	101.13	179.6	5,123.4	423.3	136.3	286.95	1.475 Level 3		
11,800.0	6,589.9	11,849.4	6,671.7	148.8	148.5	101.13	179.6	5,223.4	423.3	130.9	292.44	1.447 Level 3		
11,900.0	6,588.8	11,949.4	6,670.5	151.6	151.3	101.13	179.6	5,323.4	423.3	125.4	297.93	1.421 Level 3		
12,000.0	6,587.7	12,049.4	6,669.4	154.4	154.1	101.14	179.6	5,423.4	423.3	119.9	303.42	1.395 Level 3		
12,100.0	6,586.5	12,149.4	6,668.3	157.2	156.9	101.14	179.6	5,523.4	423.3	114.4	308.91	1.370 Level 3		
12,200.0	6,585.4	12,249.4	6,667.2	160.0	159.7	101.14	179.6	5,623.4	423.3	108.9	314.40	1.346 Level 3		
12,300.0	6,584.3	12,349.4	6,666.1	162.8	162.5	101.14	179.6	5,723.4	423.3	103.4	319.89	1.323 Level 3		
12,400.0	6,583.1	12,449.4	6,665.0	165.6	165.3	101.15	179.6	5,823.4	423.3	97.9	325.38	1.301 Level 3		
12,500.0	6,582.0	12,549.4	6,663.8	168.3	168.1	101.15	179.6	5,923.4	423.3	92.4	330.88	1.279 Level 3		
12,600.0	6,580.9	12,649.4	6,662.7	171.1	170.9	101.15	179.6	6,023.4	423.3	86.9	336.37	1.258 Level 3		
12,700.0	6,579.7	12,749.4	6,661.6	173.9	173.7	101.15	179.6	6,123.4	423.3	81.4	341.87	1.238 Level 2		
12,800.0	6,578.6	12,849.4	6,660.5	176.7	176.5	101.15	179.6	6,223.4	423.3	76.0	347.36	1.219 Level 2		
12,900.0	6,577.5	12,949.4	6,659.4	179.5	179.3	101.16	179.6	6,323.3	423.3	70.5	352.86	1.200 Level 2		
13,000.0	6,576.3	13,049.4	6,658.2	182.3	182.1	101.16	179.6	6,423.3	423.3	65.0	358.36	1.181 Level 2		
13,100.0	6,575.2	13,149.4	6,657.1	185.1	184.9	101.16	179.6	6,523.3	423.3	59.5	363.85	1.163 Level 2		
13,200.0	6,574.1	13,249.4	6,656.0	187.9	187.7	101.16	179.6	6,623.3	423.3	54.0	369.35	1.146 Level 2		
13,300.0	6,572.9	13,349.4	6,654.9	190.7	190.5	101.17	179.6	6,723.3	423.3	48.5	374.85	1.129 Level 2		
13,400.0	6,571.8	13,449.4	6,653.8	193.5	193.3	101.17	179.6	6,823.3	423.3	43.0	380.35	1.113 Level 2		
13,500.0	6,570.7	13,549.4	6,652.7	196.3	196.1	101.17	179.6	6,923.3	423.3	37.5	385.85	1.097 Level 2		
13,600.0	6,569.5	13,649.4	6,651.5	199.1	198.9	101.17	179.6	7,023.3	423.3	32.0	391.35	1.082 Level 2		
13,700.0	6,568.4	13,749.4	6,650.4	201.9	201.7	101.18	179.6	7,123.3	423.3	26.5	396.85	1.067 Level 2		
13,733.7	6,568.0	13,783.1	6,650.1	202.9	202.6	101.18	179.6	7,157.0	423.3	24.6	398.71	1.062 Level 2, ES, SF		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Loloff Farms 26H-232
<b>Project:</b>	SEC.26-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')
<b>Reference Site:</b>	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	<b>MD Reference:</b>	WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Loloff Farms 26H-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #3 (3-16-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference														
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	89.99		0.0	58.5	58.5				
100.0	100.0	99.0	99.0	0.1	0.1	89.99		0.0	58.5	58.5	58.3	0.22	261.670	
200.0	200.0	199.0	199.0	0.3	0.3	89.99		0.0	58.5	58.5	57.8	0.67	87.078	
300.0	300.0	299.0	299.0	0.6	0.6	89.99		0.0	58.5	58.5	57.4	1.12	52.177	
400.0	400.0	399.0	399.0	0.8	0.8	89.99		0.0	58.5	58.5	56.9	1.57	37.248	
500.0	500.0	499.0	499.0	1.0	1.0	89.99		0.0	58.5	58.5	56.5	2.02	28.962	
600.0	600.0	599.0	599.0	1.2	1.2	89.99		0.0	58.5	58.5	56.1	2.47	23.691	
700.0	700.0	699.0	699.0	1.5	1.5	89.99		0.0	58.5	58.5	55.6	2.92	20.043	
800.0	800.0	799.0	799.0	1.7	1.7	89.99		0.0	58.5	58.5	55.2	3.37	17.369	
900.0	900.0	899.0	899.0	1.9	1.9	89.99		0.0	58.5	58.5	54.7	3.82	15.325	
1,000.0	1,000.0	999.0	999.0	2.1	2.1	89.99		0.0	58.5	58.5	54.3	4.27	13.711 CC	
1,100.0	1,100.0	1,099.0	1,099.0	2.4	2.4	110.50		0.0	58.5	58.8	54.1	4.72	12.471 ES	
1,200.0	1,200.0	1,199.0	1,199.0	2.6	2.6	112.84		0.0	58.5	59.8	54.6	5.16	11.579	
1,300.0	1,299.9	1,298.9	1,298.9	2.8	2.8	116.56		0.0	58.5	61.6	56.0	5.61	10.981	
1,400.0	1,399.7	1,398.7	1,398.7	3.0	3.0	121.38		0.0	58.5	64.6	58.5	6.06	10.657	
1,500.0	1,499.4	1,498.4	1,498.4	3.3	3.3	126.90		0.0	58.5	69.0	62.5	6.51	10.599	
1,600.0	1,598.9	1,597.9	1,597.9	3.5	3.5	132.70		0.0	58.5	75.2	68.2	6.96	10.798	
1,700.0	1,698.3	1,697.3	1,697.3	3.8	3.7	138.36		0.0	58.5	83.3	75.9	7.41	11.238	
1,800.0	1,797.4	1,796.4	1,796.4	4.0	3.9	143.61		0.0	58.5	93.5	85.6	7.86	11.893	
1,900.0	1,896.3	1,895.3	1,895.3	4.3	4.1	148.29		0.0	58.5	105.8	97.4	8.30	12.736	
2,000.0	1,995.0	1,994.0	1,994.0	4.6	4.4	152.33		0.0	58.5	119.9	111.2	8.75	13.701	
2,100.0	2,093.6	2,092.6	2,092.6	4.9	4.6	155.57		0.0	58.5	134.8	125.6	9.21	14.632	
2,200.0	2,192.2	2,191.2	2,191.2	5.3	4.8	158.17		0.0	58.5	149.9	140.3	9.67	15.509	
2,300.0	2,290.9	2,289.9	2,289.9	5.6	5.0	160.29		0.0	58.5	165.3	155.2	10.13	16.329	
2,400.0	2,389.5	2,388.5	2,388.5	5.9	5.3	162.04		0.0	58.5	180.9	170.4	10.58	17.094	
2,500.0	2,488.2	2,487.2	2,487.2	6.3	5.5	163.52		0.0	58.5	196.7	185.6	11.04	17.807	
2,600.0	2,586.8	2,586.1	2,586.1	6.6	5.7	164.96		-0.3	58.0	212.5	201.0	11.49	18.496	
2,700.0	2,685.4	2,684.9	2,684.9	7.0	5.9	166.62		-1.5	55.9	228.3	216.3	11.91	19.167	
2,800.0	2,784.1	2,783.5	2,783.4	7.3	6.1	168.47		-3.4	52.4	244.2	231.8	12.33	19.803	
2,900.0	2,882.7	2,881.9	2,881.6	7.7	6.2	170.46		-6.3	47.4	260.3	247.5	12.75	20.407	
3,000.0	2,981.3	2,979.9	2,979.4	8.0	6.4	172.57		-9.9	41.0	276.7	263.6	13.19	20.988	
3,100.0	3,080.0	3,077.6	3,076.6	8.4	6.6	174.76		-14.3	33.2	293.7	280.0	13.63	21.552	
3,200.0	3,178.6	3,174.8	3,173.2	8.7	6.9	177.01		-19.5	24.0	311.2	297.1	14.08	22.103	
3,300.0	3,277.3	3,271.5	3,269.2	9.1	7.1	179.30		-25.5	13.4	329.3	314.8	14.54	22.645	
3,400.0	3,375.9	3,368.6	3,365.3	9.5	7.3	-178.45		-32.1	1.7	348.2	333.2	15.03	23.175	
3,500.0	3,474.5	3,465.9	3,461.7	9.8	7.5	-176.41		-38.8	-10.1	367.6	352.1	15.52	23.683	
3,600.0	3,573.2	3,563.2	3,558.0	10.2	7.8	-174.57		-45.4	-21.9	387.4	371.4	16.03	24.171	
3,700.0	3,671.8	3,660.5	3,654.4	10.6	8.1	-172.91		-52.1	-33.7	407.5	391.0	16.54	24.636	
3,800.0	3,770.4	3,757.7	3,750.7	10.9	8.3	-171.41		-58.7	-45.4	428.0	410.9	17.06	25.079	
3,900.0	3,869.1	3,855.0	3,847.0	11.3	8.6	-170.04		-65.4	-57.2	448.7	431.1	17.59	25.502	
4,000.0	3,967.7	3,952.3	3,943.4	11.7	8.9	-168.79		-72.1	-69.0	469.6	451.5	18.13	25.903	
4,100.0	4,066.4	4,049.6	4,039.7	12.0	9.1	-167.65		-78.7	-80.8	490.7	472.1	18.67	26.285	
4,200.0	4,165.0	4,146.9	4,136.1	12.4	9.4	-166.60		-85.4	-92.6	512.0	492.8	19.21	26.649	
4,300.0	4,263.6	4,244.2	4,232.4	12.8	9.7	-165.63		-92.0	-104.3	533.5	513.7	19.76	26.995	
4,400.0	4,362.3	4,341.5	4,328.8	13.1	10.0	-164.74		-98.7	-116.1	555.1	534.7	20.31	27.324	
4,500.0	4,460.9	4,438.8	4,425.1	13.5	10.3	-163.92		-105.4	-127.9	576.8	555.9	20.87	27.638	
4,600.0	4,559.5	4,536.1	4,521.5	13.9	10.6	-163.16		-112.0	-139.7	598.6	577.1	21.43	27.937	
4,700.0	4,658.2	4,633.4	4,617.8	14.3	10.9	-162.44		-118.7	-151.4	620.5	598.5	21.99	28.222	
4,800.0	4,756.8	4,730.7	4,714.2	14.6	11.2	-161.78		-125.3	-163.2	642.5	619.9	22.55	28.494	

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Loloff Farms 26H-232
<b>Project:</b>	SEC.26-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')
<b>Reference Site:</b>	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	<b>MD Reference:</b>	WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Loloff Farms 26H-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #3 (3-16-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Loloff Farms 5N64W26l Pad Sec.26-T5N-R64W - Loloff Farms 26l-402 - Wellbore #1 - Plan #2 (3-9-15)										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)			
4,900.0	4,855.4	4,827.9	4,810.5	15.0	11.5	-161.16	-132.0	-175.0	664.5	641.4	23.11	28.753		
5,000.0	4,954.1	4,925.9	4,907.5	15.4	11.8	-160.58	-138.7	-186.9	686.7	663.0	23.68	29.001		
5,100.0	5,052.7	5,036.7	5,017.5	15.7	12.1	-160.17	-145.1	-198.2	707.7	683.5	24.24	29.196		
5,200.0	5,151.8	5,149.0	5,129.5	16.0	12.3	-160.08	-149.5	-206.0	724.7	699.9	24.74	29.289		
5,300.0	5,251.2	5,262.6	5,243.0	16.2	12.6	-160.17	-151.7	-209.9	736.4	711.2	25.19	29.236		
5,400.0	5,351.0	5,369.6	5,350.0	16.4	12.8	-160.38	-152.0	-210.4	743.2	717.6	25.57	29.062		
5,500.0	5,450.9	5,469.5	5,449.9	16.6	12.9	-160.49	-152.0	-210.4	746.5	720.5	25.92	28.798		
5,600.0	5,550.9	5,569.5	5,549.9	16.8	13.1	179.79	-152.0	-210.4	746.9	718.4	28.50	26.204		
5,700.0	5,650.9	5,669.5	5,649.9	16.9	13.3	179.79	-152.0	-210.4	746.9	718.0	28.87	25.870		
5,800.0	5,750.9	5,769.5	5,749.9	17.1	13.5	179.79	-152.0	-210.4	746.9	717.6	29.24	25.543		
5,900.0	5,850.9	5,869.5	5,849.9	17.2	13.7	179.79	-152.0	-210.4	746.9	717.2	29.61	25.223		
5,978.7	5,929.5	5,948.1	5,928.5	17.3	13.9	90.01	-152.0	-210.4	746.9	719.1	27.78	26.886		
6,000.0	5,950.8	5,969.4	5,949.8	17.4	13.9	90.05	-152.0	-210.4	746.9	719.0	27.86	26.807		
6,100.0	6,049.5	6,068.4	6,048.7	17.5	14.1	91.23	-152.0	-210.3	747.0	718.8	28.21	26.478		
6,200.0	6,145.2	6,169.8	6,149.7	17.5	14.3	92.78	-152.0	-201.8	747.8	719.3	28.49	26.246		
6,300.0	6,236.4	6,274.2	6,251.6	17.6	14.3	94.30	-152.0	-179.2	749.0	720.3	28.70	26.098		
6,400.0	6,321.4	6,381.7	6,352.2	17.6	14.4	95.76	-152.0	-141.7	750.8	721.9	28.92	25.962		
6,500.0	6,398.9	6,492.5	6,449.4	17.6	14.5	97.14	-152.0	-88.6	752.9	723.6	29.27	25.726		
6,600.0	6,467.5	6,606.5	6,540.3	17.7	14.6	98.40	-152.0	-20.0	755.2	725.2	29.92	25.237		
6,700.0	6,526.1	6,723.7	6,622.0	17.8	15.1	99.51	-152.0	63.9	757.5	726.3	31.11	24.348		
6,800.0	6,573.5	6,843.9	6,691.5	18.3	15.9	100.45	-152.0	161.7	759.6	726.6	33.01	23.011		
6,900.0	6,609.1	6,966.4	6,745.6	19.4	17.4	101.17	-152.0	271.5	761.4	725.6	35.75	21.296		
7,000.0	6,632.2	7,090.9	6,782.0	21.0	19.3	101.66	-152.0	390.4	762.6	723.3	39.30	19.407		
7,100.0	6,642.4	7,216.5	6,798.6	22.9	21.7	101.90	-152.0	514.8	763.3	719.8	43.50	17.548		
7,200.0	6,642.1	7,325.7	6,799.1	24.9	23.9	101.94	-152.0	624.0	763.4	715.6	47.75	15.987		
7,300.0	6,641.0	7,425.7	6,798.3	27.1	26.1	101.97	-152.0	724.0	763.5	711.4	52.05	14.667		
7,400.0	6,639.9	7,525.7	6,797.6	29.4	28.4	102.00	-152.0	824.0	763.5	707.0	56.56	13.499		
7,500.0	6,638.7	7,625.7	6,796.8	31.8	30.8	102.03	-152.0	924.0	763.6	702.4	61.24	12.470		
7,600.0	6,637.6	7,725.7	6,796.1	34.2	33.3	102.06	-152.0	1,024.0	763.7	697.7	66.04	11.565		
7,700.0	6,636.4	7,825.7	6,795.3	36.7	35.8	102.08	-152.0	1,124.0	763.8	692.8	70.94	10.767		
7,800.0	6,635.3	7,925.7	6,794.6	39.2	38.3	102.11	-152.0	1,224.0	763.9	687.9	75.92	10.062		
7,900.0	6,634.2	8,025.7	6,793.8	41.8	40.9	102.14	-152.0	1,324.0	763.9	683.0	80.97	9.435		
8,000.0	6,633.0	8,125.7	6,793.1	44.4	43.5	102.17	-152.0	1,424.0	764.0	678.0	86.07	8.877		
8,100.0	6,631.9	8,225.7	6,792.3	47.0	46.2	102.20	-152.0	1,524.0	764.1	672.9	91.21	8.377		
8,200.0	6,630.8	8,325.7	6,791.6	49.6	48.8	102.22	-152.0	1,623.9	764.2	667.8	96.40	7.927		
8,300.0	6,629.6	8,425.7	6,790.8	52.3	51.5	102.25	-152.0	1,723.9	764.3	662.6	101.61	7.521		
8,400.0	6,628.5	8,525.7	6,790.1	54.9	54.2	102.28	-152.0	1,823.9	764.3	657.5	106.86	7.153		
8,500.0	6,627.4	8,625.7	6,789.3	57.6	56.9	102.31	-152.0	1,923.9	764.4	652.3	112.12	6.818		
8,600.0	6,626.2	8,725.7	6,788.6	60.3	59.6	102.34	-152.0	2,023.9	764.5	647.1	117.41	6.512		
8,700.0	6,625.1	8,825.7	6,787.8	63.0	62.3	102.37	-152.0	2,123.9	764.6	641.9	122.71	6.231		
8,800.0	6,624.0	8,925.7	6,787.1	65.7	65.0	102.39	-152.0	2,223.9	764.7	636.6	128.03	5.973		
8,900.0	6,622.8	9,025.7	6,786.3	68.5	67.8	102.42	-152.0	2,323.9	764.8	631.4	133.35	5.735		
9,000.0	6,621.7	9,125.7	6,785.6	71.2	70.5	102.45	-152.0	2,423.9	764.8	626.1	138.69	5.515		
9,100.0	6,620.6	9,225.7	6,784.8	73.9	73.2	102.48	-152.0	2,523.9	764.9	620.9	144.05	5.310		
9,200.0	6,619.4	9,325.7	6,784.1	76.7	76.0	102.51	-152.0	2,623.9	765.0	615.6	149.40	5.120		
9,300.0	6,618.3	9,425.7	6,783.3	79.4	78.7	102.53	-152.0	2,723.9	765.1	610.3	154.77	4.943		
9,400.0	6,617.2	9,525.7	6,782.6	82.2	81.5	102.56	-152.0	2,823.9	765.2	605.0	160.14	4.778		
9,500.0	6,616.0	9,625.7	6,781.8	84.9	84.2	102.59	-152.0	2,923.9	765.3	599.7	165.52	4.623		
9,600.0	6,614.9	9,725.7	6,781.1	87.7	87.0	102.62	-152.0	3,023.9	765.3	594.4	170.91	4.478		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Loloff Farms 26H-232
<b>Project:</b>	SEC.26-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')
<b>Reference Site:</b>	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	<b>MD Reference:</b>	WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Loloff Farms 26H-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #3 (3-16-15)	<b>Offset TVD Reference:</b>	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	
9,700.0	6,613.8	9,825.7	6,780.3	90.4	89.8	102.65	-152.0	3,123.9	765.4	589.1	176.30	4.342		
9,800.0	6,612.6	9,925.7	6,779.6	93.2	92.5	102.67	-152.0	3,223.9	765.5	583.8	181.69	4.213		
9,900.0	6,611.5	10,025.7	6,778.8	96.0	95.3	102.70	-152.0	3,323.9	765.6	578.5	187.09	4.092		
10,000.0	6,610.4	10,125.7	6,778.1	98.7	98.1	102.73	-152.0	3,423.9	765.7	573.2	192.49	3.978		
10,100.0	6,609.2	10,225.7	6,777.3	101.5	100.9	102.76	-152.0	3,523.9	765.8	567.9	197.89	3.870		
10,200.0	6,608.1	10,325.7	6,776.6	104.3	103.6	102.79	-152.0	3,623.9	765.8	562.5	203.29	3.767		
10,300.0	6,607.0	10,425.7	6,775.8	107.0	106.4	102.81	-152.0	3,723.9	765.9	557.2	208.70	3.670		
10,400.0	6,605.8	10,525.7	6,775.1	109.8	109.2	102.84	-152.0	3,823.9	766.0	551.9	214.11	3.578		
10,500.0	6,604.7	10,625.7	6,774.3	112.6	112.0	102.87	-152.0	3,923.9	766.1	546.6	219.52	3.490		
10,600.0	6,603.6	10,725.7	6,773.6	115.4	114.8	102.90	-152.0	4,023.9	766.2	541.2	224.94	3.406		
10,700.0	6,602.4	10,825.7	6,772.8	118.1	117.5	102.93	-152.0	4,123.9	766.3	535.9	230.35	3.327		
10,800.0	6,601.3	10,925.7	6,772.1	120.9	120.3	102.95	-152.0	4,223.9	766.4	530.6	235.77	3.250		
10,900.0	6,600.1	11,025.7	6,771.3	123.7	123.1	102.98	-152.0	4,323.9	766.4	525.3	241.18	3.178		
11,000.0	6,599.0	11,125.7	6,770.6	126.5	125.9	103.01	-152.0	4,423.8	766.5	519.9	246.60	3.108		
11,100.0	6,597.9	11,225.7	6,769.8	129.3	128.7	103.04	-152.0	4,523.8	766.6	514.6	252.02	3.042		
11,200.0	6,596.7	11,325.7	6,769.1	132.1	131.5	103.07	-152.0	4,623.8	766.7	509.3	257.44	2.978		
11,300.0	6,595.6	11,425.7	6,768.3	134.8	134.3	103.09	-152.0	4,723.8	766.8	503.9	262.86	2.917		
11,400.0	6,594.5	11,525.7	6,767.6	137.6	137.1	103.12	-152.0	4,823.8	766.9	498.6	268.28	2.859		
11,500.0	6,593.3	11,625.7	6,766.8	140.4	139.9	103.15	-152.0	4,923.8	767.0	493.3	273.70	2.802		
11,600.0	6,592.2	11,725.7	6,766.1	143.2	142.6	103.18	-152.0	5,023.8	767.0	487.9	279.12	2.748		
11,700.0	6,591.1	11,825.7	6,765.3	146.0	145.4	103.21	-152.0	5,123.8	767.1	482.6	284.54	2.696		
11,800.0	6,589.9	11,925.7	6,764.6	148.8	148.2	103.23	-152.0	5,223.8	767.2	477.3	289.96	2.646		
11,900.0	6,588.8	12,025.7	6,763.8	151.6	151.0	103.26	-152.0	5,323.8	767.3	471.9	295.38	2.598		
12,000.0	6,587.7	12,125.7	6,763.1	154.4	153.8	103.29	-152.0	5,423.8	767.4	466.6	300.80	2.551		
12,100.0	6,586.5	12,225.7	6,762.3	157.2	156.6	103.32	-152.0	5,523.8	767.5	461.3	306.22	2.506		
12,200.0	6,585.4	12,325.7	6,761.6	160.0	159.4	103.35	-152.0	5,623.8	767.6	455.9	311.64	2.463		
12,300.0	6,584.3	12,425.7	6,760.8	162.8	162.2	103.37	-152.0	5,723.8	767.7	450.6	317.06	2.421		
12,400.0	6,583.1	12,525.7	6,760.1	165.6	165.0	103.40	-152.0	5,823.8	767.8	445.3	322.48	2.381		
12,500.0	6,582.0	12,625.7	6,759.3	168.3	167.8	103.43	-152.0	5,923.8	767.8	439.9	327.90	2.342		
12,600.0	6,580.9	12,725.7	6,758.6	171.1	170.6	103.46	-152.0	6,023.8	767.9	434.6	333.32	2.304		
12,700.0	6,579.7	12,825.7	6,757.8	173.9	173.4	103.48	-152.0	6,123.8	768.0	429.3	338.74	2.267		
12,800.0	6,578.6	12,925.7	6,757.1	176.7	176.2	103.51	-152.0	6,223.8	768.1	424.0	344.15	2.232		
12,900.0	6,577.5	13,025.7	6,756.3	179.5	179.0	103.54	-152.0	6,323.8	768.2	418.6	349.57	2.198		
13,000.0	6,576.3	13,125.7	6,755.6	182.3	181.8	103.57	-152.0	6,423.8	768.3	413.3	354.99	2.164		
13,100.0	6,575.2	13,225.7	6,754.8	185.1	184.6	103.60	-152.0	6,523.8	768.4	408.0	360.40	2.132		
13,200.0	6,574.1	13,325.7	6,754.1	187.9	187.4	103.62	-152.0	6,623.8	768.5	402.7	365.82	2.101		
13,300.0	6,572.9	13,425.7	6,753.3	190.7	190.2	103.65	-152.0	6,723.8	768.6	397.3	371.23	2.070		
13,400.0	6,571.8	13,525.7	6,752.6	193.5	193.0	103.68	-152.0	6,823.8	768.7	392.0	376.65	2.041		
13,500.0	6,570.7	13,625.7	6,751.8	196.3	195.8	103.71	-152.0	6,923.8	768.7	386.7	382.06	2.012		
13,600.0	6,569.5	13,725.7	6,751.1	199.1	198.6	103.73	-152.0	7,023.8	768.8	381.4	387.47	1.984		
13,700.0	6,568.4	13,825.7	6,750.3	201.9	201.4	103.76	-152.0	7,123.8	768.9	376.0	392.88	1.957		
13,733.7	6,568.0	13,859.4	6,750.1	202.9	202.3	103.77	-152.0	7,157.5	769.0	374.2	394.71	1.948 SF		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Loloff Farms 26H-232
<b>Project:</b>	SEC.26-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')
<b>Reference Site:</b>	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	<b>MD Reference:</b>	WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Loloff Farms 26H-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #3 (3-16-15)	<b>Offset TVD Reference:</b>	Offset Datum

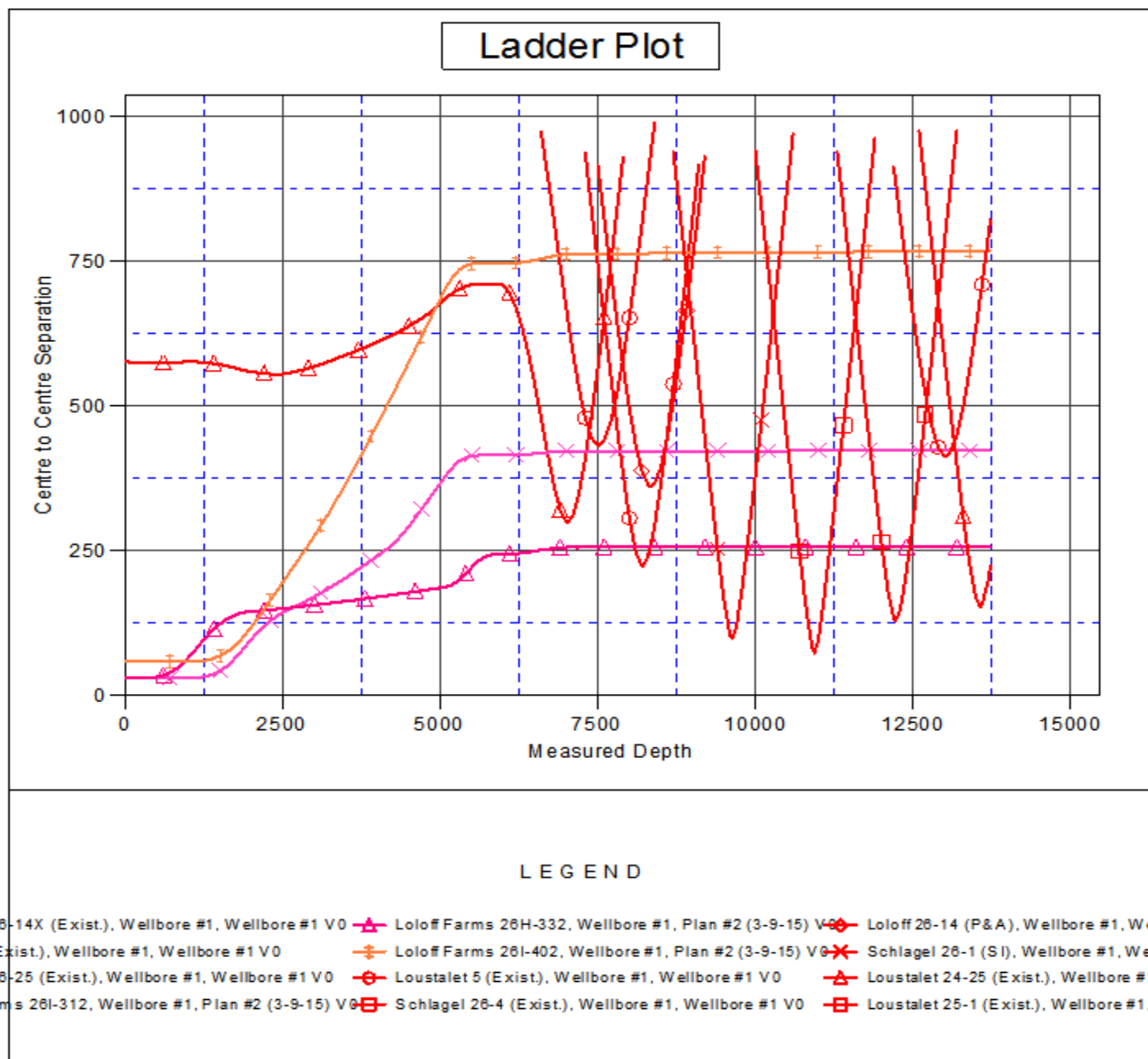
Reference Depths are relative to WELL @ 4693.0ft (Ensign Rig #123 RCoordinates are relative to: Loloff Farms 26H-232

Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.63°





<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Loloff Farms 26H-232
<b>Project:</b>	SEC.26-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')
<b>Reference Site:</b>	Loloff Farms 5N64W26I Pad Sec.26-T5N-R64W	<b>MD Reference:</b>	WELL @ 4693.0ft (Ensign Rig #123 RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Loloff Farms 26H-232	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #3 (3-16-15)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4693.0ft (Ensign Rig #123 RCoordinates are relative to: Loloff Farms 26H-232

Offset Depths are relative to Offset Datum

Coordinate System is US State Plane 1983, Colorado Northern Zone

Central Meridian is -105.500000 °

Grid Convergence at Surface is: 0.63°

