

# PETROLEUM DEVELOPMENT CORP Weld County CO

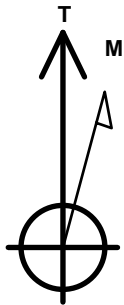
Well Name: **Hunt Federal 28X-314**

Surface Location: Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W  
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone  
Ground Elevation: 4761.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	344203.08	3202599.69	40.275960	-104.773880	
Original Well Elev WELL @ 4776.0ft (Original Well Elev)						

## WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 226'FSL, 252'FEL, SEC.28	1.0	0.0	0.0	Point
BHL 1544'FSL, 2550'FWL, SEC.29	7126.0	1323.7	-7793.0	Point



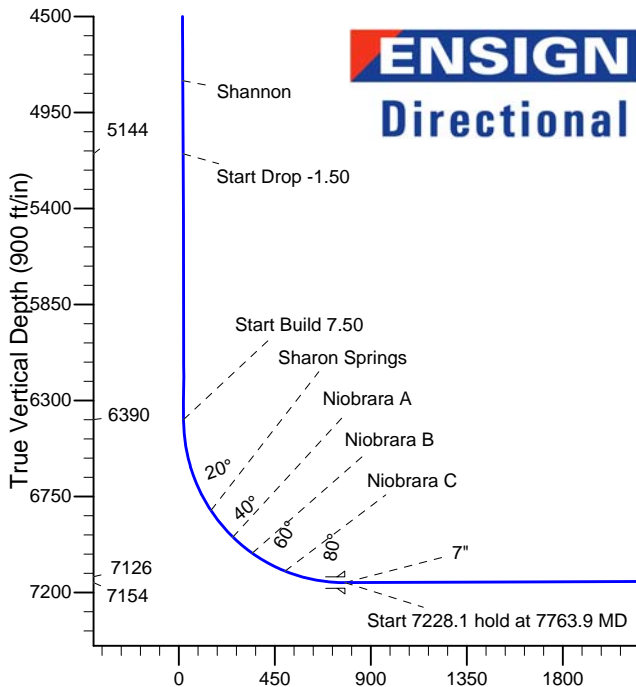
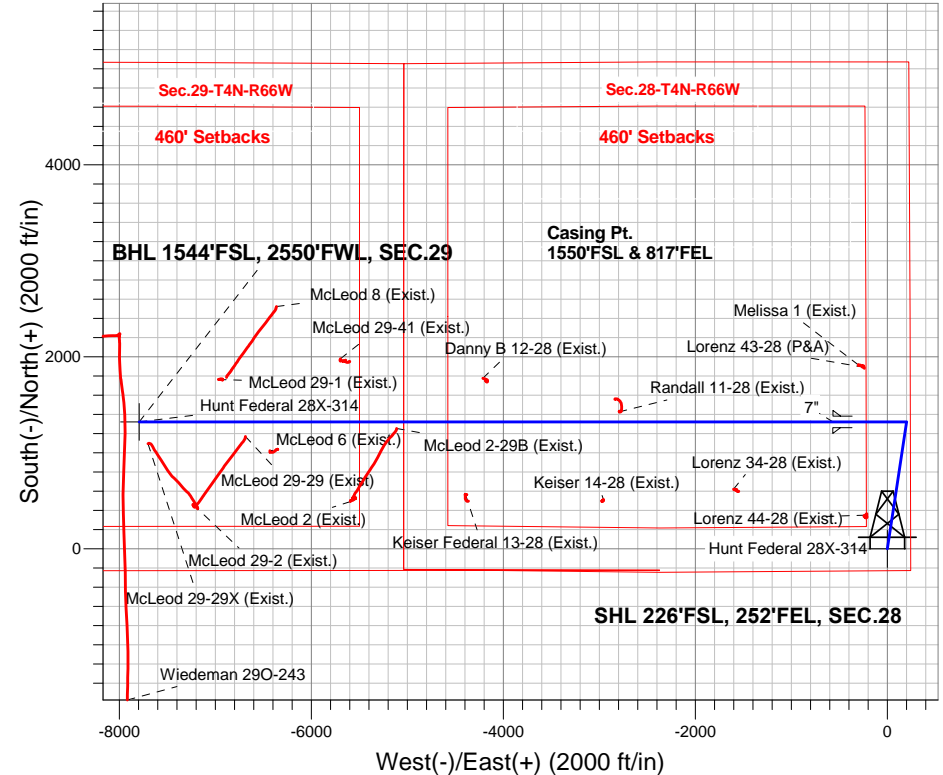
Azimuths to True North  
Magnetic North: 8.37°

Magnetic Field  
Strength: 52684.7snT  
Dip Angle: 66.82°  
Date: 1/27/2015  
Model: IGRF2010

Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W  
Hunt Federal 28X-314  
Plan #1 (1-27-15)  
14:13, February 03 2015

## ANNOTATIONS

TVD	MD	Annotation
200.0	200.0	KOP - Start Build 1.00
5143.8	5301.0	Start Drop -1.50
6389.8	6561.0	Start Build 7.50
7153.8	7763.9	Start 7228.1 hold at 7763.9 MD
7126.0	14992.1	TD at 14992.1



## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	Target	VSec
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	1805.3	16.05	8.68	1784.4	220.9	33.7	1.00	8.68	3.8	
4	5301.0	16.05	8.68	5143.8	1176.4	179.5	0.00	0.00	20.0	
5	6371.2	0.00	0.00	6200.0	1323.7	202.0	1.50	180.00	22.5	
6	6561.0	0.00	0.00	6389.8	1323.7	202.0	0.00	0.00	22.5	
7	7763.9	90.22	270.00	7153.8	1323.7	-564.9	7.50	270.00	778.6	
8	14992.1	90.22	270.00	7126.0	1323.7	-7793.0	0.00	0.00	7904.6	BHL 1544'FSL, 2550'FWL, SEC.29

Vertical Section at 279.64° (900 ft/in)



# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.28-T4N-R66W**

**Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W**

**Hunt Federal 28X-314**

**Wellbore #1**

**Plan: Plan #1 (1-27-15)**

## **Standard Planning Report**

**03 February, 2015**

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Hunt Federal 28X-314
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Project:</b>	SEC.28-T4N-R66W	<b>MD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Site:</b>	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Hunt Federal 28X-314	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (1-27-15)		

<b>Project</b>	SEC.28-T4N-R66W, Weld County, Colorado		
<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		Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W			
Site Position:		Northing:	1,344,202.84 ft	Latitude:	40.275960
From:	Lat/Long	Easting:	3,202,569.00 ft	Longitude:	-104.773990
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.47 °

Well	Hunt Federal 28X-314					
Well Position	+N-S	0.0 ft	Northing:	1,344,203.08 ft	Latitude:	40.275960
	+E-W	30.7 ft	Easting:	3,202,599.69 ft	Longitude:	-104.773880
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,761.0 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	1/27/2015	8.37	66.82	52,685

<b>Design</b>	Plan #1 (1-27-15)			
<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	279.64

<b>Plan Sections</b>										
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	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,805.3	16.05	8.68	1,784.4	220.9	33.7	1.00	1.00	0.00	8.68	
5,301.0	16.05	8.68	5,143.8	1,176.4	179.5	0.00	0.00	0.00	0.00	
6,371.2	0.00	0.00	6,200.0	1,323.7	202.0	1.50	-1.50	0.00	180.00	
6,561.0	0.00	0.00	6,389.8	1,323.7	202.0	0.00	0.00	0.00	0.00	
7,763.9	90.22	270.00	7,153.8	1,323.7	-564.9	7.50	7.50	0.00	270.00	
14,992.1	90.22	270.00	7,126.0	1,323.7	-7,793.0	0.00	0.00	0.00	0.00	BHL 1544'FSL, 255

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Hunt Federal 28X-314
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Project:</b>	SEC.28-T4N-R66W	<b>MD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Site:</b>	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Hunt Federal 28X-314	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (1-27-15)		

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
1.0	0.00	0.00	1.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>SHL 226'FSL, 252'FEL, SEC.28</b>									
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
<b>KOP - Start Build 1.00</b>									
300.0	1.00	8.68	300.0	0.9	0.1	0.0	1.00	1.00	0.00
400.0	2.00	8.68	400.0	3.5	0.5	0.1	1.00	1.00	0.00
500.0	3.00	8.68	499.9	7.8	1.2	0.1	1.00	1.00	0.00
600.0	4.00	8.68	599.7	13.8	2.1	0.2	1.00	1.00	0.00
700.0	5.00	8.68	699.4	21.6	3.3	0.4	1.00	1.00	0.00
800.0	6.00	8.68	798.9	31.0	4.7	0.5	1.00	1.00	0.00
900.0	7.00	8.68	898.3	42.2	6.4	0.7	1.00	1.00	0.00
1,000.0	8.00	8.68	997.4	55.1	8.4	0.9	1.00	1.00	0.00
1,100.0	9.00	8.68	1,096.3	69.7	10.6	1.2	1.00	1.00	0.00
1,200.0	10.00	8.68	1,194.9	86.0	13.1	1.5	1.00	1.00	0.00
1,300.0	11.00	8.68	1,293.3	104.1	15.9	1.8	1.00	1.00	0.00
1,400.0	12.00	8.68	1,391.2	123.8	18.9	2.1	1.00	1.00	0.00
1,500.0	13.00	8.68	1,488.9	145.2	22.2	2.5	1.00	1.00	0.00
1,600.0	14.00	8.68	1,586.1	168.2	25.7	2.9	1.00	1.00	0.00
1,700.0	15.00	8.68	1,682.9	193.0	29.5	3.3	1.00	1.00	0.00
1,800.0	16.00	8.68	1,779.3	219.4	33.5	3.7	1.00	1.00	0.00
1,805.3	16.05	8.68	1,784.4	220.9	33.7	3.8	1.00	1.00	0.00
1,900.0	16.05	8.68	1,875.4	246.7	37.7	4.2	0.00	0.00	0.00
2,000.0	16.05	8.68	1,971.5	274.1	41.8	4.7	0.00	0.00	0.00
2,100.0	16.05	8.68	2,067.6	301.4	46.0	5.1	0.00	0.00	0.00
2,200.0	16.05	8.68	2,163.7	328.8	50.2	5.6	0.00	0.00	0.00
2,300.0	16.05	8.68	2,259.8	356.1	54.3	6.1	0.00	0.00	0.00
2,400.0	16.05	8.68	2,355.9	383.4	58.5	6.5	0.00	0.00	0.00
2,500.0	16.05	8.68	2,452.0	410.8	62.7	7.0	0.00	0.00	0.00
2,600.0	16.05	8.68	2,548.1	438.1	66.9	7.4	0.00	0.00	0.00
2,700.0	16.05	8.68	2,644.2	465.4	71.0	7.9	0.00	0.00	0.00
2,800.0	16.05	8.68	2,740.3	492.8	75.2	8.4	0.00	0.00	0.00
2,900.0	16.05	8.68	2,836.4	520.1	79.4	8.8	0.00	0.00	0.00
3,000.0	16.05	8.68	2,932.5	547.4	83.5	9.3	0.00	0.00	0.00
3,100.0	16.05	8.68	3,028.6	574.8	87.7	9.8	0.00	0.00	0.00
3,200.0	16.05	8.68	3,124.7	602.1	91.9	10.2	0.00	0.00	0.00
3,300.0	16.05	8.68	3,220.8	629.4	96.1	10.7	0.00	0.00	0.00
3,400.0	16.05	8.68	3,316.9	656.8	100.2	11.2	0.00	0.00	0.00
3,500.0	16.05	8.68	3,413.0	684.1	104.4	11.6	0.00	0.00	0.00
3,600.0	16.05	8.68	3,509.1	711.5	108.6	12.1	0.00	0.00	0.00
3,700.0	16.05	8.68	3,605.2	738.8	112.7	12.6	0.00	0.00	0.00
3,790.3	16.05	8.68	3,692.0	763.5	116.5	13.0	0.00	0.00	0.00
<b>Parkman</b>									
3,800.0	16.05	8.68	3,701.3	766.1	116.9	13.0	0.00	0.00	0.00
3,900.0	16.05	8.68	3,797.4	793.5	121.1	13.5	0.00	0.00	0.00
4,000.0	16.05	8.68	3,893.5	820.8	125.3	14.0	0.00	0.00	0.00
4,100.0	16.05	8.68	3,989.6	848.1	129.4	14.4	0.00	0.00	0.00
4,200.0	16.05	8.68	4,085.7	875.5	133.6	14.9	0.00	0.00	0.00
4,300.0	16.05	8.68	4,181.8	902.8	137.8	15.4	0.00	0.00	0.00
4,400.0	16.05	8.68	4,277.9	930.1	141.9	15.8	0.00	0.00	0.00
4,468.8	16.05	8.68	4,344.0	948.9	144.8	16.1	0.00	0.00	0.00

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<b>Project:</b>	SEC.28-T4N-R66W	<b>MD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Site:</b>	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Hunt Federal 28X-314	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (1-27-15)		

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)
<b>Sussex</b>									
4,500.0	16.05	8.68	4,374.0	957.5	146.1	16.3	0.00	0.00	0.00
4,600.0	16.05	8.68	4,470.1	984.8	150.3	16.7	0.00	0.00	0.00
4,700.0	16.05	8.68	4,566.2	1,012.1	154.5	17.2	0.00	0.00	0.00
4,800.0	16.05	8.68	4,662.3	1,039.5	158.6	17.7	0.00	0.00	0.00
4,900.0	16.05	8.68	4,758.4	1,066.8	162.8	18.1	0.00	0.00	0.00
4,944.3	16.05	8.68	4,801.0	1,078.9	164.7	18.3	0.00	0.00	0.00
<b>Shannon</b>									
5,000.0	16.05	8.68	4,854.5	1,094.2	167.0	18.6	0.00	0.00	0.00
5,100.0	16.05	8.68	4,950.6	1,121.5	171.1	19.1	0.00	0.00	0.00
5,200.0	16.05	8.68	5,046.7	1,148.8	175.3	19.5	0.00	0.00	0.00
5,300.0	16.05	8.68	5,142.8	1,176.2	179.5	20.0	0.00	0.00	0.00
5,301.0	16.05	8.68	5,143.8	1,176.4	179.5	20.0	0.00	0.00	0.00
<b>Start Drop -1.50</b>									
5,400.0	14.57	8.68	5,239.3	1,202.3	183.5	20.4	1.50	-1.50	0.00
5,500.0	13.07	8.68	5,336.4	1,225.9	187.1	20.8	1.50	-1.50	0.00
5,600.0	11.57	8.68	5,434.1	1,247.0	190.3	21.2	1.50	-1.50	0.00
5,700.0	10.07	8.68	5,532.3	1,265.5	193.1	21.5	1.50	-1.50	0.00
5,800.0	8.57	8.68	5,631.0	1,281.5	195.6	21.8	1.50	-1.50	0.00
5,900.0	7.07	8.68	5,730.0	1,295.0	197.6	22.0	1.50	-1.50	0.00
6,000.0	5.57	8.68	5,829.4	1,305.9	199.3	22.2	1.50	-1.50	0.00
6,100.0	4.07	8.68	5,929.1	1,314.2	200.5	22.3	1.50	-1.50	0.00
6,200.0	2.57	8.68	6,028.9	1,319.9	201.4	22.4	1.50	-1.50	0.00
6,300.0	1.07	8.68	6,128.8	1,323.0	201.9	22.5	1.50	-1.50	0.00
6,371.2	0.00	0.00	6,200.0	1,323.7	202.0	22.5	1.50	-1.50	0.00
6,400.0	0.00	0.00	6,228.8	1,323.7	202.0	22.5	0.00	0.00	0.00
6,500.0	0.00	0.00	6,328.8	1,323.7	202.0	22.5	0.00	0.00	0.00
6,561.0	0.00	0.00	6,389.8	1,323.7	202.0	22.5	0.00	0.00	0.00
<b>Start Build 7.50</b>									
6,600.0	2.93	270.00	6,428.8	1,323.7	201.0	23.5	7.50	7.50	0.00
6,700.0	10.43	270.00	6,528.1	1,323.7	189.4	34.9	7.50	7.50	0.00
6,800.0	17.93	270.00	6,624.9	1,323.7	164.9	59.1	7.50	7.50	0.00
6,900.0	25.43	270.00	6,717.8	1,323.7	128.0	95.5	7.50	7.50	0.00
7,000.0	32.93	270.00	6,805.1	1,323.7	79.3	143.5	7.50	7.50	0.00
7,011.9	33.82	270.00	6,815.0	1,323.7	72.7	149.9	7.50	7.50	0.00
<b>Sharon Springs</b>									
7,100.0	40.43	270.00	6,885.2	1,323.7	19.6	202.3	7.50	7.50	0.00
7,175.3	46.07	270.00	6,940.0	1,323.7	-31.9	253.1	7.50	7.50	0.00
<b>Niobrara A</b>									
7,200.0	47.93	270.00	6,956.9	1,323.7	-50.0	271.0	7.50	7.50	0.00
7,295.0	55.05	270.00	7,016.0	1,323.7	-124.3	344.2	7.50	7.50	0.00
<b>Niobrara B</b>									
7,300.0	55.43	270.00	7,018.8	1,323.7	-128.4	348.3	7.50	7.50	0.00
7,400.0	62.93	270.00	7,070.0	1,323.7	-214.2	432.9	7.50	7.50	0.00
7,472.7	68.38	270.00	7,100.0	1,323.7	-280.4	498.1	7.50	7.50	0.00
<b>Niobrara C</b>									
7,500.0	70.43	270.00	7,109.6	1,323.7	-306.0	523.3	7.50	7.50	0.00
7,600.0	77.93	270.00	7,136.9	1,323.7	-402.1	618.1	7.50	7.50	0.00
7,700.0	85.43	270.00	7,151.3	1,323.7	-501.0	715.6	7.50	7.50	0.00
7,763.9	90.22	270.00	7,153.8	1,323.7	-564.9	778.5	7.50	7.50	0.00
<b>Start 7228.1 hold at 7763.9 MD - 7"</b>									

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<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Project:</b>	SEC.28-T4N-R66W	<b>MD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Site:</b>	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Hunt Federal 28X-314	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (1-27-15)		

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)
7,800.0	90.22	270.00	7,153.6	1,323.7	-601.0	814.1	0.00	0.00	0.00
7,900.0	90.22	270.00	7,153.2	1,323.7	-701.0	912.7	0.00	0.00	0.00
8,000.0	90.22	270.00	7,152.8	1,323.7	-801.0	1,011.3	0.00	0.00	0.00
8,100.0	90.22	270.00	7,152.5	1,323.7	-901.0	1,109.9	0.00	0.00	0.00
8,200.0	90.22	270.00	7,152.1	1,323.7	-1,001.0	1,208.5	0.00	0.00	0.00
8,300.0	90.22	270.00	7,151.7	1,323.7	-1,101.0	1,307.1	0.00	0.00	0.00
8,400.0	90.22	270.00	7,151.3	1,323.7	-1,201.0	1,405.6	0.00	0.00	0.00
8,500.0	90.22	270.00	7,150.9	1,323.7	-1,301.0	1,504.2	0.00	0.00	0.00
8,600.0	90.22	270.00	7,150.5	1,323.7	-1,401.0	1,602.8	0.00	0.00	0.00
8,700.0	90.22	270.00	7,150.2	1,323.7	-1,501.0	1,701.4	0.00	0.00	0.00
8,800.0	90.22	270.00	7,149.8	1,323.7	-1,600.9	1,800.0	0.00	0.00	0.00
8,900.0	90.22	270.00	7,149.4	1,323.7	-1,700.9	1,898.6	0.00	0.00	0.00
9,000.0	90.22	270.00	7,149.0	1,323.7	-1,800.9	1,997.2	0.00	0.00	0.00
9,100.0	90.22	270.00	7,148.6	1,323.7	-1,900.9	2,095.8	0.00	0.00	0.00
9,200.0	90.22	270.00	7,148.2	1,323.7	-2,000.9	2,194.3	0.00	0.00	0.00
9,300.0	90.22	270.00	7,147.9	1,323.7	-2,100.9	2,292.9	0.00	0.00	0.00
9,400.0	90.22	270.00	7,147.5	1,323.7	-2,200.9	2,391.5	0.00	0.00	0.00
9,500.0	90.22	270.00	7,147.1	1,323.7	-2,300.9	2,490.1	0.00	0.00	0.00
9,600.0	90.22	270.00	7,146.7	1,323.7	-2,400.9	2,588.7	0.00	0.00	0.00
9,700.0	90.22	270.00	7,146.3	1,323.7	-2,500.9	2,687.3	0.00	0.00	0.00
9,800.0	90.22	270.00	7,145.9	1,323.7	-2,600.9	2,785.9	0.00	0.00	0.00
9,900.0	90.22	270.00	7,145.6	1,323.7	-2,700.9	2,884.5	0.00	0.00	0.00
10,000.0	90.22	270.00	7,145.2	1,323.7	-2,800.9	2,983.0	0.00	0.00	0.00
10,100.0	90.22	270.00	7,144.8	1,323.7	-2,900.9	3,081.6	0.00	0.00	0.00
10,200.0	90.22	270.00	7,144.4	1,323.7	-3,000.9	3,180.2	0.00	0.00	0.00
10,300.0	90.22	270.00	7,144.0	1,323.7	-3,100.9	3,278.8	0.00	0.00	0.00
10,400.0	90.22	270.00	7,143.6	1,323.7	-3,200.9	3,377.4	0.00	0.00	0.00
10,500.0	90.22	270.00	7,143.2	1,323.7	-3,300.9	3,476.0	0.00	0.00	0.00
10,600.0	90.22	270.00	7,142.9	1,323.7	-3,400.9	3,574.6	0.00	0.00	0.00
10,700.0	90.22	270.00	7,142.5	1,323.7	-3,500.9	3,673.2	0.00	0.00	0.00
10,800.0	90.22	270.00	7,142.1	1,323.7	-3,600.9	3,771.7	0.00	0.00	0.00
10,900.0	90.22	270.00	7,141.7	1,323.7	-3,700.9	3,870.3	0.00	0.00	0.00
11,000.0	90.22	270.00	7,141.3	1,323.7	-3,800.9	3,968.9	0.00	0.00	0.00
11,100.0	90.22	270.00	7,140.9	1,323.7	-3,900.9	4,067.5	0.00	0.00	0.00
11,200.0	90.22	270.00	7,140.6	1,323.7	-4,000.9	4,166.1	0.00	0.00	0.00
11,300.0	90.22	270.00	7,140.2	1,323.7	-4,100.9	4,264.7	0.00	0.00	0.00
11,400.0	90.22	270.00	7,139.8	1,323.7	-4,200.9	4,363.3	0.00	0.00	0.00
11,500.0	90.22	270.00	7,139.4	1,323.7	-4,300.9	4,461.9	0.00	0.00	0.00
11,600.0	90.22	270.00	7,139.0	1,323.7	-4,400.9	4,560.4	0.00	0.00	0.00
11,700.0	90.22	270.00	7,138.6	1,323.7	-4,500.9	4,659.0	0.00	0.00	0.00
11,800.0	90.22	270.00	7,138.3	1,323.7	-4,600.9	4,757.6	0.00	0.00	0.00
11,900.0	90.22	270.00	7,137.9	1,323.7	-4,700.9	4,856.2	0.00	0.00	0.00
12,000.0	90.22	270.00	7,137.5	1,323.7	-4,800.9	4,954.8	0.00	0.00	0.00
12,100.0	90.22	270.00	7,137.1	1,323.7	-4,900.9	5,053.4	0.00	0.00	0.00
12,200.0	90.22	270.00	7,136.7	1,323.7	-5,000.9	5,152.0	0.00	0.00	0.00
12,300.0	90.22	270.00	7,136.3	1,323.7	-5,100.9	5,250.6	0.00	0.00	0.00
12,400.0	90.22	270.00	7,136.0	1,323.7	-5,200.9	5,349.1	0.00	0.00	0.00
12,500.0	90.22	270.00	7,135.6	1,323.7	-5,300.9	5,447.7	0.00	0.00	0.00
12,600.0	90.22	270.00	7,135.2	1,323.7	-5,400.9	5,546.3	0.00	0.00	0.00
12,700.0	90.22	270.00	7,134.8	1,323.7	-5,500.9	5,644.9	0.00	0.00	0.00
12,800.0	90.22	270.00	7,134.4	1,323.7	-5,600.9	5,743.5	0.00	0.00	0.00
12,900.0	90.22	270.00	7,134.0	1,323.7	-5,700.9	5,842.1	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Hunt Federal 28X-314
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Project:</b>	SEC.28-T4N-R66W	<b>MD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Site:</b>	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Hunt Federal 28X-314	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (1-27-15)		

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)
13,000.0	90.22	270.00	7,133.6	1,323.7	-5,800.9	5,940.7	0.00	0.00	0.00
13,100.0	90.22	270.00	7,133.3	1,323.7	-5,900.9	6,039.2	0.00	0.00	0.00
13,200.0	90.22	270.00	7,132.9	1,323.7	-6,000.9	6,137.8	0.00	0.00	0.00
13,300.0	90.22	270.00	7,132.5	1,323.7	-6,100.9	6,236.4	0.00	0.00	0.00
13,400.0	90.22	270.00	7,132.1	1,323.7	-6,200.9	6,335.0	0.00	0.00	0.00
13,500.0	90.22	270.00	7,131.7	1,323.7	-6,300.9	6,433.6	0.00	0.00	0.00
13,600.0	90.22	270.00	7,131.3	1,323.7	-6,400.9	6,532.2	0.00	0.00	0.00
13,700.0	90.22	270.00	7,131.0	1,323.7	-6,500.9	6,630.8	0.00	0.00	0.00
13,800.0	90.22	270.00	7,130.6	1,323.7	-6,600.9	6,729.4	0.00	0.00	0.00
13,900.0	90.22	270.00	7,130.2	1,323.7	-6,700.9	6,827.9	0.00	0.00	0.00
14,000.0	90.22	270.00	7,129.8	1,323.7	-6,800.9	6,926.5	0.00	0.00	0.00
14,100.0	90.22	270.00	7,129.4	1,323.7	-6,900.9	7,025.1	0.00	0.00	0.00
14,200.0	90.22	270.00	7,129.0	1,323.7	-7,000.9	7,123.7	0.00	0.00	0.00
14,300.0	90.22	270.00	7,128.7	1,323.7	-7,100.9	7,222.3	0.00	0.00	0.00
14,400.0	90.22	270.00	7,128.3	1,323.7	-7,200.9	7,320.9	0.00	0.00	0.00
14,500.0	90.22	270.00	7,127.9	1,323.7	-7,300.9	7,419.5	0.00	0.00	0.00
14,600.0	90.22	270.00	7,127.5	1,323.7	-7,400.9	7,518.1	0.00	0.00	0.00
14,700.0	90.22	270.00	7,127.1	1,323.7	-7,500.9	7,616.6	0.00	0.00	0.00
14,800.0	90.22	270.00	7,126.7	1,323.7	-7,600.9	7,715.2	0.00	0.00	0.00
14,900.0	90.22	270.00	7,126.4	1,323.7	-7,700.9	7,813.8	0.00	0.00	0.00
14,992.1	90.22	270.00	7,126.0	1,323.7	-7,793.0	7,904.6	0.00	0.00	0.00
BHL 1544'FSL, 2550'FWL, SEC.29									

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
BHL 1544'FSL, 2550'f - hit/miss target - plan hits target center - Shape	0.00	0.00	7,126.0	1,323.7	-7,793.0	1,345,462.83	3,194,796.50	40.279590	-104.801810
SHL 226'FSL, 252'FE - plan hits target center - Point	0.00	0.00	1.0	0.0	0.0	1,344,203.09	3,202,599.69	40.275960	-104.773880

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,763.9	7,153.8	7"	7	7-1/2

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Hunt Federal 28X-314
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Project:</b>	SEC.28-T4N-R66W	<b>MD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Site:</b>	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Hunt Federal 28X-314	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (1-27-15)		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,790.3	3,692.0	Parkman				
4,468.8	4,344.0	Sussex				
4,944.3	4,801.0	Shannon				
7,011.9	6,815.0	Sharon Springs				
7,175.3	6,940.0	Niobrara A				
7,295.0	7,016.0	Niobrara B				
7,472.7	7,100.0	Niobrara C				
	7,219.0	Fort Hays				
	7,243.0	Codell				

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
200.0	200.0	0.0	0.0	KOP - Start Build 1.00
5,301.0	5,143.8	220.9	33.7	Start Drop -1.50
6,561.0	6,389.8	1,176.4	179.5	Start Build 7.50
7,763.9	7,153.8	1,323.7	202.0	Start 7228.1 hold at 7763.9 MD
14,992.1	7,126.0	1,323.7	202.0	TD at 14992.1





# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.28-T4N-R66W**

**Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W**

**Hunt Federal 28X-314**

**Wellbore #1**

**Plan #1 (1-27-15)**

## **Anticollision Report**

**03 February, 2015**



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Hunt Federal 28X-314
<b>Project:</b>	SEC.28-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Reference Site:</b>	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	<b>MD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Hunt Federal 28X-314	<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 #1 (1-27-15)	<b>Offset TVD Reference:</b>	Offset Datum

Reference	Plan #1 (1-27-15)		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,000.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program		Date	2/3/2015		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	14,992.1	Plan #1 (1-27-15) (Wellbore #1)	MWD	MWD - Standard	

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Existing Wells Pad Sec.29-T4-R66W						
Danny B 12-28 (Exist.) - Wellbore #1 - Wellbore #1	11,407.1	7,113.2	451.3	318.2	3.391	CC, ES, SF
Keiser 14-28 (Exist.) - Wellbore #1 - Wellbore #1	10,159.8	7,128.4	809.9	711.0	8.193	CC
Keiser 14-28 (Exist.) - Wellbore #1 - Wellbore #1	10,200.0	7,127.9	810.8	710.9	8.113	ES
Keiser 14-28 (Exist.) - Wellbore #1 - Wellbore #1	10,300.0	7,126.6	821.9	719.2	8.004	SF
Keiser Federal 13-28 (Exist.) - Wellbore #1 - Wellbore #1	11,594.2	7,119.6	759.3	620.3	5.462	CC
Keiser Federal 13-28 (Exist.) - Wellbore #1 - Wellbore #1	11,600.0	7,119.5	759.3	620.2	5.456	ES
Keiser Federal 13-28 (Exist.) - Wellbore #1 - Wellbore #1	11,700.0	7,118.1	766.7	624.7	5.401	SF
Lorenz 34-28 (Exist.) - Wellbore #1 - Wellbore #1	8,799.0	7,135.6	703.3	638.9	10.916	CC
Lorenz 34-28 (Exist.) - Wellbore #1 - Wellbore #1	8,800.0	7,135.6	703.3	638.9	10.911	ES
Lorenz 34-28 (Exist.) - Wellbore #1 - Wellbore #1	9,000.0	7,135.4	731.5	661.8	10.494	SF
Lorenz 43-28 (P&A) - Wellbore #1 - Wellbore #1	7,428.6	7,050.6	567.1	406.4	3.528	CC
Lorenz 43-28 (P&A) - Wellbore #1 - Wellbore #1	7,450.0	7,059.3	567.4	406.3	3.523	ES, SF
Lorenz 44-28 (Exist.) - Wellbore #1 - Wellbore #1	2,159.8	2,110.4	271.1	259.8	23.931	CC
Lorenz 44-28 (Exist.) - Wellbore #1 - Wellbore #1	2,200.0	2,148.9	271.4	259.7	23.339	ES
Lorenz 44-28 (Exist.) - Wellbore #1 - Wellbore #1	2,600.0	2,536.8	296.7	282.7	21.125	SF
McLeod 2 (Exist.) - Wellbore #1 - Wellbore #1	12,792.3	7,104.9	826.7	653.6	4.776	CC
McLeod 2 (Exist.) - Wellbore #1 - Wellbore #1	12,800.0	7,104.9	826.7	653.4	4.770	ES
McLeod 2 (Exist.) - Wellbore #1 - Wellbore #1	12,900.0	7,104.4	833.6	657.6	4.734	SF
McLeod 2-29B (Exist.) - Wellbore #1 - Wellbore #1	12,310.7	7,204.1	75.3	-88.0	0.461	Level 1, CC, ES, SF
McLeod 29-1 (Exist.) - Wellbore #1 - Wellbore #1	14,164.1	7,124.6	441.7	230.0	2.086	CC, ES
McLeod 29-1 (Exist.) - Wellbore #1 - Wellbore #1	14,200.0	7,124.7	443.2	230.5	2.083	SF
McLeod 29-2 (Exist.) - Wellbore #1 - Wellbore #1	14,431.9	7,132.4	862.6	644.4	3.953	CC, ES
McLeod 29-2 (Exist.) - Wellbore #1 - Wellbore #1	14,500.0	7,132.4	865.3	645.1	3.931	SF
McLeod 29-29 (Exist.) - Wellbore #1 - Wellbore #1	13,884.1	7,239.5	155.4	-50.2	0.756	Level 1, CC, ES, SF
McLeod 29-29X (Exist.) - Wellbore #1 - Wellbore #1	14,892.3	7,202.8	223.9	-9.4	0.960	Level 1, CC
McLeod 29-29X (Exist.) - Wellbore #1 - Wellbore #1	14,900.0	7,202.9	224.1	-9.4	0.960	Level 1, ES, SF
McLeod 29-41 (Exist.) - Wellbore #1 - Wellbore #1	12,897.1	7,113.0	651.4	474.5	3.681	CC
McLeod 29-41 (Exist.) - Wellbore #1 - Wellbore #1	12,900.0	7,112.9	651.4	474.4	3.680	ES
McLeod 29-41 (Exist.) - Wellbore #1 - Wellbore #1	13,000.0	7,112.1	659.5	479.7	3.667	SF
McLeod 6 (Exist.) - Wellbore #1 - Wellbore #1	13,630.5	7,131.5	309.2	112.1	1.569	CC, ES, SF
McLeod 8 (Exist.) - Wellbore #1 - Wellbore #1						Out of range
Melissa 1 (Exist.) - Wellbore #1 - Wellbore #1	7,495.4	7,078.2	592.2	558.1	17.394	CC
Melissa 1 (Exist.) - Wellbore #1 - Wellbore #1	7,500.0	7,079.8	592.2	558.1	17.366	ES
Melissa 1 (Exist.) - Wellbore #1 - Wellbore #1	7,700.0	7,122.1	624.6	587.4	16.785	SF
Randall 11-28 (Exist.) - Wellbore #1 - Wellbore #1	9,992.4	7,128.7	105.2	10.7	1.114	Level 2, CC, ES, SF

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 Hunt Federal 28X-314
<b>Project:</b>	SEC.28-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Reference Site:</b>	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	<b>MD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Hunt Federal 28X-314	<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 #1 (1-27-15)	<b>Offset TVD Reference:</b>	Offset Datum

Summary						
Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Existing Wells Sec.27-T4N-R66W						
UPRC 27-13F (Exist.) - Wellbore #1 - Wellbore #1	3,562.5	3,457.6	804.6	782.5	36.463	CC
UPRC 27-13F (Exist.) - Wellbore #1 - Wellbore #1	3,600.0	3,492.9	804.6	782.3	36.010	ES
UPRC 27-13F (Exist.) - Wellbore #1 - Wellbore #1	5,301.0	5,130.6	940.1	907.0	28.402	SF
Heitman K27-62-1HN Sec.27-T4N-R66W						
Heitman K27-62-1HN - Wellbore #1 - Plan A - Rev 0	3,117.1	3,080.3	762.1	742.2	38.279	CC, ES
Heitman K27-62-1HN - Wellbore #1 - Plan A - Rev 0	4,100.0	3,986.0	852.4	825.9	32.226	SF
Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W						
Hunt Federal 28X-234 - Wellbore #1 - Plan #1 (1-27-15)	200.0	201.0	30.7	30.0	45.368	CC
Hunt Federal 28X-234 - Wellbore #1 - Plan #1 (1-27-15)	300.0	301.0	30.8	29.7	27.396	ES
Hunt Federal 28X-234 - Wellbore #1 - Plan #1 (1-27-15)	14,992.1	14,798.2	568.2	134.0	1.309	Level 3, SF
Hunt Federal 28Y-214 - Wellbore #1 - Plan #1 (1-27-15)	200.0	201.0	92.1	91.4	136.104	CC
Hunt Federal 28Y-214 - Wellbore #1 - Plan #1 (1-27-15)	300.0	301.0	92.2	91.1	81.926	ES
Hunt Federal 28Y-214 - Wellbore #1 - Plan #1 (1-27-15)	1,200.0	1,195.9	135.9	130.5	25.244	SF
Hunt Federal 28Y-314 - Wellbore #1 - Plan #1 (1-27-15)	200.0	201.0	61.4	60.7	90.736	CC
Hunt Federal 28Y-314 - Wellbore #1 - Plan #1 (1-27-15)	300.0	301.0	61.5	60.4	54.659	ES
Hunt Federal 28Y-314 - Wellbore #1 - Plan #1 (1-27-15)	1,000.0	998.4	88.9	84.6	20.296	SF
Hunt Federal 28Y-404 - Wellbore #1 - Plan #1 (1-27-15)	200.0	201.0	120.0	119.3	177.348	CC
Hunt Federal 28Y-404 - Wellbore #1 - Plan #1 (1-27-15)	400.0	401.0	120.6	119.0	76.516	ES
Hunt Federal 28Y-404 - Wellbore #1 - Plan #1 (1-27-15)	1,300.0	1,294.3	171.1	165.2	28.902	SF
Nelson Federal K27-65-1HN Pad Sec.27-T4N-R66W						
Nelson Federal K27-65-1HN - Wellbore #1 - Plan A - Rev	5,832.6	5,598.0	751.8	722.0	25.181	CC, ES
Nelson Federal K27-65-1HN - Wellbore #1 - Plan A - Rev	6,561.0	6,434.7	769.1	723.4	16.831	SF
Nelson Federal K27-65HN - Wellbore #1 - Plan A - Rev C						Out of range
Wiedeman 29K-HZ Pad Sec.29-T4N-R66W						
Wiedeman 29O-243 - Wellbore #1 - Wellbore #1	14,992.1	7,880.4	152.1	80.7	2.129	CC, ES, SF

<b>Offset Design</b> Existing Wells Pad Sec.29-T4-R66W - Danny B 12-28 (Exist.) - Wellbore #1 - Wellbore #1											
Survey Program: 100-NS-GYRO-MS											
Reference Offset Semi Major Axis											
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)
10,600.0	7,142.9	7,105.7	7,104.9	99.0	12.8	88.37	1,774.9	-4,207.9	924.7	813.9	110.78
10,700.0	7,142.5	7,106.6	7,105.8	101.7	12.8	88.48	1,774.9	-4,207.9	838.8	725.3	113.54
10,800.0	7,142.1	7,107.5	7,106.7	104.5	12.8	88.59	1,774.9	-4,207.9	756.4	640.1	116.30
10,900.0	7,141.7	7,108.4	7,107.6	107.2	12.8	88.70	1,774.9	-4,207.9	678.8	559.7	119.07
11,000.0	7,141.3	7,109.3	7,108.5	109.9	12.8	88.82	1,774.9	-4,207.9	607.8	485.9	121.83
11,100.0	7,140.9	7,110.2	7,109.4	112.7	12.8	88.94	1,774.9	-4,207.9	545.9	421.3	124.60
11,200.0	7,140.6	7,111.1	7,110.3	115.4	12.8	89.06	1,774.9	-4,207.9	496.6	369.2	127.37
11,300.0	7,140.2	7,112.1	7,111.3	118.2	12.8	89.18	1,775.0	-4,208.0	463.9	333.7	130.14
11,400.0	7,139.8	7,113.1	7,112.3	120.9	12.8	89.30	1,775.0	-4,208.0	451.4	318.5	132.91
11,407.1	7,139.8	7,113.2	7,112.4	121.1	12.8	89.31	1,775.0	-4,208.0	451.3	318.2	133.10
11,500.0	7,139.4	7,114.1	7,113.3	123.7	12.8	89.43	1,775.0	-4,208.0	460.8	325.1	135.68
11,600.0	7,139.0	7,115.1	7,114.3	126.5	12.8	89.56	1,775.0	-4,208.0	490.8	352.4	138.45
11,700.0	7,138.6	7,116.1	7,115.3	129.2	12.8	89.69	1,775.0	-4,208.0	538.1	396.8	141.23
11,800.0	7,138.3	7,117.2	7,116.4	132.0	12.8	89.83	1,775.0	-4,208.0	598.4	454.4	144.00

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 Hunt Federal 28X-314
<b>Project:</b>	SEC.28-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Reference Site:</b>	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	<b>MD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Hunt Federal 28X-314	<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 #1 (1-27-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Pad Sec.29-T4-R66W - Danny B 12-28 (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		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)						
11,900.0	7,137.9	7,118.3	7,117.5	134.7	12.8	89.96	1,775.0	-4,208.0	668.3	521.6	146.78	4.553		
12,000.0	7,137.5	7,119.4	7,118.6	137.5	12.8	90.10	1,775.0	-4,208.1	745.1	595.6	149.56	4.982		
12,100.0	7,137.1	7,120.5	7,119.7	140.3	12.8	90.25	1,775.1	-4,208.1	826.9	674.6	152.33	5.429		
12,200.0	7,136.7	7,121.7	7,120.9	143.0	12.8	90.39	1,775.1	-4,208.1	912.4	757.2	155.11	5.882		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Hunt Federal 28X-314
<b>Project:</b>	SEC.28-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Reference Site:</b>	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	<b>MD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Hunt Federal 28X-314	<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 #1 (1-27-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Pad Sec.29-T4-R66W - Keiser 14-28 (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	
9,600.0	7,146.7	7,135.9	7,135.3	72.0	13.0	-90.98	513.9	-2,960.7	984.5	900.9	83.62	11.773	
9,700.0	7,146.3	7,134.5	7,133.9	74.7	13.0	-90.88	513.9	-2,960.7	931.3	844.9	86.33	10.788	
9,800.0	7,145.9	7,133.1	7,132.5	77.3	13.0	-90.78	513.9	-2,960.7	886.2	797.1	89.04	9.952	
9,900.0	7,145.6	7,131.8	7,131.2	80.0	13.0	-90.68	513.9	-2,960.8	850.5	758.7	91.76	9.269	
10,000.0	7,145.2	7,130.4	7,129.9	82.7	13.0	-90.59	513.9	-2,960.8	825.5	731.0	94.49	8.736	
10,100.0	7,144.8	7,129.1	7,128.6	85.4	13.0	-90.50	513.8	-2,960.8	812.1	714.8	97.22	8.353	
10,159.8	7,144.6	7,128.4	7,127.8	87.0	13.0	-90.44	513.8	-2,960.8	809.9	711.0	98.85	8.193 CC	
10,200.0	7,144.4	7,127.9	7,127.3	88.1	13.0	-90.41	513.8	-2,960.8	810.8	710.9	99.95	8.113 ES	
10,300.0	7,144.0	7,126.6	7,126.1	90.8	13.0	-90.32	513.8	-2,960.8	821.9	719.2	102.69	8.004 SF	
10,400.0	7,143.6	7,125.4	7,124.8	93.5	12.9	-90.23	513.8	-2,960.8	844.7	739.3	105.43	8.012	
10,500.0	7,143.2	7,124.2	7,123.6	96.3	12.9	-90.15	513.8	-2,960.8	878.4	770.2	108.18	8.120	
10,600.0	7,142.9	7,123.0	7,122.5	99.0	12.9	-90.06	513.8	-2,960.8	921.7	810.8	110.93	8.309	
10,700.0	7,142.5	7,121.9	7,121.3	101.7	12.9	-89.98	513.8	-2,960.8	973.5	859.8	113.68	8.563	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Hunt Federal 28X-314
<b>Project:</b>	SEC.28-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Reference Site:</b>	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	<b>MD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Hunt Federal 28X-314	<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 #1 (1-27-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Pad Sec.29-T4-R66W - Keiser Federal 13-28 (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			
11,000.0	7,141.3	7,127.9	7,125.9	109.9	13.6	-90.14	564.3	-4,395.0	964.1	841.5	122.60	7.864			
11,100.0	7,140.9	7,126.5	7,124.4	112.7	13.6	-90.03	564.3	-4,395.0	905.9	780.6	125.36	7.227			
11,200.0	7,140.6	7,125.0	7,123.0	115.4	13.6	-89.92	564.3	-4,395.0	855.5	727.4	128.12	6.677			
11,300.0	7,140.2	7,123.6	7,121.6	118.2	13.6	-89.82	564.3	-4,395.0	814.3	683.4	130.89	6.221			
11,400.0	7,139.8	7,122.2	7,120.2	120.9	13.6	-89.71	564.4	-4,395.1	783.7	650.1	133.65	5.864			
11,500.0	7,139.4	7,120.8	7,118.8	123.7	13.6	-89.61	564.4	-4,395.1	765.1	628.7	136.42	5.609			
11,594.2	7,139.0	7,119.6	7,117.5	126.3	13.6	-89.51	564.4	-4,395.1	759.3	620.3	139.03	5.462 CC			
11,600.0	7,139.0	7,119.5	7,117.5	126.5	13.6	-89.50	564.4	-4,395.1	759.3	620.2	139.19	5.456 ES			
11,700.0	7,138.6	7,118.1	7,116.1	129.2	13.6	-89.40	564.4	-4,395.1	766.7	624.7	141.96	5.401 SF			
11,800.0	7,138.3	7,116.8	7,114.8	132.0	13.6	-89.30	564.4	-4,395.1	786.7	642.0	144.72	5.436			
11,900.0	7,137.9	7,115.5	7,113.5	134.7	13.6	-89.21	564.4	-4,395.1	818.6	671.1	147.50	5.550			
12,000.0	7,137.5	7,114.2	7,112.2	137.5	13.6	-89.11	564.4	-4,395.1	860.9	710.7	150.27	5.729			
12,100.0	7,137.1	7,113.0	7,111.0	140.3	13.6	-89.01	564.4	-4,395.1	912.3	759.3	153.04	5.962			
12,200.0	7,136.7	7,111.7	7,109.7	143.0	13.6	-88.92	564.4	-4,395.2	971.3	815.5	155.81	6.234			

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Hunt Federal 28X-314
<b>Project:</b>	SEC.28-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Reference Site:</b>	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	<b>MD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Hunt Federal 28X-314	<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 #1 (1-27-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Pad Sec.29-T4-R66W - Lorenz 34-28 (Exist.) - Wellbore #1 - Wellbore #1												Offset Site Error:		0.0 ft	
Survey Program: 100-NS-GYRO-MS												Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor			
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)				
8,100.0	7,152.5	7,136.2	7,135.7	35.6	15.2	-90.48	620.4	-1,599.9	991.6	944.5	47.11	21.049			
8,200.0	7,152.1	7,136.1	7,135.6	37.6	15.2	-90.47	620.4	-1,599.9	923.8	874.4	49.44	18.687			
8,300.0	7,151.7	7,136.0	7,135.5	39.7	15.2	-90.47	620.4	-1,599.9	862.3	810.5	51.83	16.638			
8,400.0	7,151.3	7,135.9	7,135.4	41.9	15.2	-90.46	620.4	-1,599.9	808.6	754.3	54.28	14.897			
8,500.0	7,150.9	7,135.9	7,135.3	44.1	15.2	-90.45	620.4	-1,599.9	764.2	707.5	56.77	13.461			
8,600.0	7,150.5	7,135.8	7,135.2	46.5	15.2	-90.44	620.4	-1,599.9	730.9	671.6	59.31	12.325			
8,700.0	7,150.2	7,135.7	7,135.1	48.9	15.2	-90.44	620.4	-1,599.9	710.3	648.4	61.87	11.480			
8,799.0	7,149.8	7,135.6	7,135.0	51.3	15.2	-90.43	620.4	-1,599.9	703.3	638.9	64.43	10.916	CC		
8,800.0	7,149.8	7,135.6	7,135.0	51.4	15.2	-90.43	620.4	-1,599.9	703.3	638.9	64.46	10.911	ES		
8,900.0	7,149.4	7,135.5	7,134.9	53.9	15.2	-90.42	620.4	-1,599.9	710.5	643.5	67.07	10.594			
9,000.0	7,149.0	7,135.4	7,134.9	56.4	15.2	-90.41	620.4	-1,599.9	731.5	661.8	69.70	10.494	SF		
9,100.0	7,148.6	7,135.3	7,134.8	58.9	15.2	-90.41	620.4	-1,599.9	765.0	692.7	72.35	10.574			
9,200.0	7,148.2	7,135.2	7,134.7	61.5	15.2	-90.40	620.4	-1,599.9	809.6	734.6	75.02	10.793			
9,300.0	7,147.9	7,135.1	7,134.6	64.1	15.2	-90.39	620.4	-1,599.9	863.5	785.8	77.69	11.115			
9,400.0	7,147.5	7,135.0	7,134.5	66.7	15.2	-90.38	620.4	-1,599.9	925.1	844.8	80.38	11.510			
9,500.0	7,147.1	7,134.9	7,134.4	69.4	15.2	-90.38	620.4	-1,599.9	993.0	910.0	83.08	11.953			



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Hunt Federal 28X-314
<b>Project:</b>	SEC.28-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Reference Site:</b>	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	<b>MD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Hunt Federal 28X-314	<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 #1 (1-27-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Existing Wells Pad Sec.29-T4-R66W - Lorenz 43-28 (P&A) - Wellbore #1 - Wellbore #1											Offset Site Error:	0.0 ft
Survey Program: 7340-UNKNOWN													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
4,600.0	4,470.1	4,438.1	4,438.1	21.0	88.8	-33.01	1,890.7	-239.9	986.4	884.6	101.78	9.692		
4,700.0	4,566.2	4,534.2	4,534.2	21.6	90.7	-33.90	1,890.7	-239.9	963.1	858.8	104.23	9.240		
4,800.0	4,662.3	4,630.3	4,630.3	22.1	92.6	-34.83	1,890.7	-239.9	940.0	833.3	106.70	8.810		
4,900.0	4,758.4	4,726.4	4,726.4	22.7	94.5	-35.80	1,890.7	-239.9	917.1	807.9	109.19	8.399		
5,000.0	4,854.5	4,822.5	4,822.5	23.2	96.5	-36.82	1,890.7	-239.9	894.5	782.8	111.70	8.008		
5,100.0	4,950.6	4,918.6	4,918.6	23.8	98.4	-37.90	1,890.7	-239.9	872.2	758.0	114.24	7.635		
5,200.0	5,046.7	5,014.7	5,014.7	24.3	100.3	-39.02	1,890.7	-239.9	850.2	733.4	116.81	7.279		
5,301.0	5,143.8	5,111.8	5,111.8	24.9	102.2	-40.22	1,890.7	-239.9	828.4	708.9	119.43	6.936		
5,400.0	5,239.3	5,207.3	5,207.3	25.4	104.1	-41.19	1,890.7	-239.9	808.3	685.9	122.31	6.608		
5,500.0	5,336.4	5,304.4	5,304.4	25.8	106.1	-42.14	1,890.7	-239.9	790.2	665.1	125.12	6.315		
5,600.0	5,434.1	5,402.1	5,402.1	26.1	108.0	-43.02	1,890.7	-239.9	774.3	646.4	127.87	6.056		
5,700.0	5,532.3	5,500.3	5,500.3	26.5	110.0	-43.83	1,890.7	-239.9	760.6	630.0	130.54	5.826		
5,800.0	5,631.0	5,599.0	5,599.0	26.8	112.0	-44.56	1,890.7	-239.9	748.9	615.7	133.15	5.625		
5,900.0	5,730.0	5,698.0	5,698.0	27.0	114.0	-45.19	1,890.7	-239.9	739.2	603.5	135.67	5.448		
6,000.0	5,829.4	5,797.4	5,797.4	27.3	115.9	-45.72	1,890.7	-239.9	731.5	593.3	138.11	5.296		
6,100.0	5,929.1	5,897.1	5,897.1	27.5	117.9	-46.13	1,890.7	-239.9	725.6	585.1	140.48	5.165		
6,200.0	6,028.9	5,996.9	5,996.9	27.6	119.9	-46.42	1,890.7	-239.9	721.6	578.8	142.75	5.055		
6,300.0	6,128.8	6,096.8	6,096.8	27.8	121.9	-46.57	1,890.7	-239.9	719.4	574.5	144.94	4.963		
6,371.2	6,200.0	6,168.0	6,168.0	27.8	123.4	-37.93	1,890.7	-239.9	719.0	573.1	145.81	4.931		
6,400.0	6,228.8	6,196.8	6,196.8	27.9	123.9	-37.93	1,890.7	-239.9	719.0	572.5	146.42	4.910		
6,500.0	6,328.8	6,296.8	6,296.8	28.0	125.9	-37.93	1,890.7	-239.9	719.0	570.4	148.55	4.840		
6,561.0	6,389.8	6,357.8	6,357.8	28.0	127.2	-37.93	1,890.7	-239.9	719.0	569.1	149.85	4.798		
6,600.0	6,428.8	6,396.8	6,396.8	28.1	127.9	52.17	1,890.7	-239.9	718.3	567.1	151.25	4.749		
6,650.0	6,478.6	6,446.6	6,446.6	28.1	128.9	52.58	1,890.7	-239.9	715.8	563.9	151.92	4.711		
6,700.0	6,528.1	6,496.1	6,496.1	28.1	129.9	53.33	1,890.7	-239.9	711.3	559.0	152.28	4.671		
6,750.0	6,576.9	6,544.9	6,544.9	28.2	130.9	54.40	1,890.7	-239.9	704.9	552.5	152.35	4.627		
6,800.0	6,624.9	6,592.9	6,592.9	28.2	131.9	55.81	1,890.7	-239.9	696.8	544.5	152.22	4.577		
6,850.0	6,672.0	6,640.0	6,640.0	28.2	132.8	57.56	1,890.7	-239.9	687.1	535.1	151.99	4.521		
6,900.0	6,717.8	6,685.8	6,685.8	28.2	133.7	59.63	1,890.7	-239.9	676.0	524.2	151.76	4.454		
6,950.0	6,762.2	6,730.2	6,730.2	28.2	134.6	62.02	1,890.7	-239.9	663.8	512.1	151.64	4.377		
7,000.0	6,805.1	6,773.1	6,773.1	28.3	135.5	64.71	1,890.7	-239.9	650.8	499.0	151.75	4.288		
7,050.0	6,846.1	6,814.1	6,814.1	28.3	136.3	67.65	1,890.7	-239.9	637.2	485.1	152.17	4.188		
7,100.0	6,885.2	6,853.2	6,853.2	28.3	137.1	70.79	1,890.7	-239.9	623.7	470.7	152.91	4.079		
7,150.0	6,922.2	6,890.2	6,890.2	28.3	137.8	74.05	1,890.7	-239.9	610.4	456.5	153.95	3.965		
7,200.0	6,956.9	6,924.9	6,924.9	28.3	138.5	77.35	1,890.7	-239.9	598.0	442.8	155.21	3.853		
7,250.0	6,989.1	6,957.1	6,957.1	28.4	139.1	80.58	1,890.7	-239.9	587.0	430.5	156.57	3.749		
7,300.0	7,018.8	6,986.8	6,986.8	28.5	139.7	83.63	1,890.7	-239.9	577.9	420.0	157.90	3.660		
7,350.0	7,045.8	7,013.8	7,013.8	28.5	140.3	86.41	1,890.7	-239.9	571.3	412.2	159.12	3.591		
7,400.0	7,070.0	7,038.0	7,038.0	28.6	140.8	88.82	1,890.7	-239.9	567.7	407.5	160.17	3.544		
7,428.6	7,082.6	7,050.6	7,050.6	28.7	141.0	90.00	1,890.7	-239.9	567.1	406.4	160.72	3.528 CC		
7,450.0	7,091.3	7,059.3	7,059.3	28.8	141.2	90.78	1,890.7	-239.9	567.4	406.3	161.08	3.523 ES, SF		
7,500.0	7,109.6	7,077.6	7,077.6	28.9	141.6	92.23	1,890.7	-239.9	570.9	409.0	161.91	3.526		
7,550.0	7,124.8	7,092.8	7,092.8	29.1	141.9	93.13	1,890.7	-239.9	578.4	415.6	162.74	3.554		
7,600.0	7,136.9	7,104.9	7,104.9	29.4	142.1	93.42	1,890.7	-239.9	589.8	426.2	163.65	3.604		
7,650.0	7,145.7	7,113.7	7,113.7	29.7	142.3	93.09	1,890.7	-239.9	605.2	440.5	164.68	3.675		
7,700.0	7,151.3	7,119.3	7,119.3	30.1	142.4	92.10	1,890.7	-239.9	624.3	458.5	165.81	3.765		
7,750.0	7,153.7	7,121.7	7,121.7	30.5	142.4	90.45	1,890.7	-239.9	646.8	479.8	166.97	3.874		
7,763.9	7,153.8	7,121.8	7,121.8	30.7	142.4	89.87	1,890.7	-239.9	653.6	486.3	167.27	3.907		
7,800.0	7,153.6	7,121.6	7,121.6	31.1	142.4	89.86	1,890.7	-239.9	672.2	504.3	167.96	4.002		
7,900.0	7,153.2	7,121.2	7,121.2	32.3	142.4	89.82	1,890.7	-239.9	730.8	560.9	169.97	4.300		
8,000.0	7,152.8	7,120.8	7,120.8	33.9	142.4	89.78	1,890.7	-239.9	797.7	625.6	172.10	4.635		

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 Hunt Federal 28X-314
<b>Project:</b>	SEC.28-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Reference Site:</b>	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	<b>MD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Hunt Federal 28X-314	<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 #1 (1-27-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Pad Sec.29-T4-R66W - Lorenz 43-28 (P&A) - Wellbore #1 - Wellbore #1													Offset Site Error:		0.0 ft
Survey Program: 7340-UNKNOWN													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
8,100.0	7,152.5	7,120.5	7,120.5	35.6	142.4	89.74	1,890.7	-239.9	870.9	696.6	174.34	4.995			
8,200.0	7,152.1	7,120.1	7,120.1	37.6	142.4	89.70	1,890.7	-239.9	949.1	772.4	176.67	5.372			

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Hunt Federal 28X-314
<b>Project:</b>	SEC.28-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Reference Site:</b>	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	<b>MD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Hunt Federal 28X-314	<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 #1 (1-27-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Pad Sec.29-T4-R66W - Lorenz 44-28 (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)	+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	-30.53	364.3	-214.9	423.2					
100.0	100.0	86.7	86.7	0.1	0.1	-30.56	364.1	-214.9	422.8	422.5	0.23	1,858.520		
200.0	200.0	187.6	187.6	0.3	0.4	-30.60	363.4	-214.9	422.3	421.6	0.69	613.631		
300.0	300.0	285.8	285.8	0.6	0.6	-39.35	363.1	-214.7	421.1	420.0	1.12	377.267		
400.0	400.0	386.0	386.0	0.8	0.8	-39.56	363.1	-214.4	418.9	417.4	1.56	269.155		
500.0	499.9	486.8	486.8	1.0	1.0	-39.94	362.9	-214.0	415.2	413.2	2.04	204.014		
600.0	599.7	587.1	587.1	1.3	1.3	-40.50	362.5	-213.6	410.0	407.5	2.53	162.203		
700.0	699.4	684.5	684.5	1.5	1.5	-41.23	362.3	-213.3	403.7	400.8	2.95	136.980		
800.0	798.9	783.6	783.6	1.8	1.5	-42.18	362.4	-213.3	396.6	393.3	3.28	121.069		
900.0	898.3	883.1	883.1	2.0	1.7	-43.35	362.4	-213.3	388.3	384.7	3.63	106.852		
1,000.0	997.4	980.8	980.8	2.3	1.8	-44.75	362.5	-213.4	379.1	375.1	4.03	94.169		
1,100.0	1,096.3	1,079.5	1,079.5	2.7	1.9	-46.48	362.7	-214.0	369.2	364.8	4.42	83.617		
1,200.0	1,194.9	1,177.8	1,177.8	3.0	2.0	-48.51	362.9	-214.6	358.5	353.7	4.84	74.005		
1,300.0	1,293.3	1,275.8	1,275.8	3.4	2.1	-50.90	363.1	-215.4	347.3	342.0	5.33	65.216		
1,400.0	1,391.2	1,374.0	1,374.0	3.8	2.3	-53.75	363.1	-216.5	335.7	329.8	5.86	57.276		
1,500.0	1,488.9	1,471.9	1,471.9	4.2	2.5	-57.03	362.9	-217.5	323.8	317.4	6.45	50.195		
1,600.0	1,586.1	1,569.3	1,569.3	4.6	2.7	-60.81	362.7	-218.4	312.1	305.0	7.10	43.970		
1,700.0	1,682.9	1,666.8	1,666.7	5.1	2.9	-65.20	362.1	-219.5	301.0	293.2	7.80	38.563		
1,805.3	1,784.4	1,770.2	1,770.1	5.6	3.1	-70.49	361.3	-220.1	290.1	281.5	8.60	33.742		
1,900.0	1,875.4	1,862.5	1,862.5	6.1	3.3	-75.54	360.5	-220.0	281.6	272.3	9.33	30.183		
2,000.0	1,971.5	1,958.0	1,957.9	6.7	3.5	-81.10	359.2	-219.7	275.1	265.0	10.11	27.218		
2,100.0	2,067.6	2,053.3	2,053.3	7.2	3.7	-86.78	358.2	-219.7	271.7	260.8	10.88	24.976		
2,159.8	2,125.0	2,110.4	2,110.4	7.5	3.8	-90.27	357.5	-219.7	271.1	259.8	11.33	23.931 CC		
2,200.0	2,163.7	2,148.9	2,148.8	7.7	3.9	-92.62	356.9	-219.7	271.4	259.7	11.63	23.339 ES		
2,300.0	2,259.8	2,244.6	2,244.5	8.3	4.1	-98.42	355.6	-219.8	274.2	261.8	12.34	22.222		
2,400.0	2,355.9	2,341.9	2,341.8	8.8	4.3	-104.16	354.3	-219.8	279.8	266.9	12.99	21.542		
2,500.0	2,452.0	2,440.6	2,440.5	9.4	4.5	-109.71	353.1	-218.7	287.3	273.7	13.55	21.194		
2,600.0	2,548.1	2,536.8	2,536.7	9.9	4.7	-114.65	353.0	-217.4	296.7	282.7	14.05	21.125 SF		
2,700.0	2,644.2	2,630.5	2,630.4	10.5	4.8	-119.29	352.1	-216.3	308.9	294.3	14.51	21.290		
2,800.0	2,740.3	2,725.4	2,725.2	11.0	5.0	-123.70	350.5	-215.5	323.6	308.7	14.96	21.635		
2,900.0	2,836.4	2,821.4	2,821.2	11.6	5.3	-127.83	348.6	-214.4	340.2	324.8	15.38	22.117		
3,000.0	2,932.5	2,914.5	2,914.3	12.1	5.5	-131.47	346.7	-213.7	358.7	342.9	15.79	22.718		
3,100.0	3,028.6	3,006.7	3,006.5	12.7	5.7	-134.71	344.4	-213.7	379.4	363.2	16.19	23.435		
3,200.0	3,124.7	3,108.0	3,107.8	13.2	5.9	-137.95	342.0	-213.2	400.9	384.4	16.58	24.183		
3,300.0	3,220.8	3,203.2	3,202.9	13.8	6.2	-140.64	340.3	-212.5	422.8	405.9	16.97	24.912		
3,400.0	3,316.9	3,297.9	3,297.6	14.3	6.4	-142.99	338.9	-212.2	445.7	428.3	17.38	25.645		
3,500.0	3,413.0	3,393.6	3,393.3	14.9	6.6	-145.13	337.5	-212.0	469.4	451.6	17.79	26.380		
3,600.0	3,509.1	3,490.0	3,489.7	15.4	6.9	-147.12	335.9	-211.6	493.5	475.3	18.21	27.109		
3,700.0	3,605.2	3,584.4	3,584.0	16.0	7.1	-148.90	334.2	-211.1	518.3	499.6	18.62	27.830		
3,800.0	3,701.3	3,676.7	3,676.4	16.5	7.4	-150.47	332.5	-211.1	543.8	524.8	19.05	28.552		
3,900.0	3,797.4	3,771.1	3,770.8	17.1	7.6	-151.88	330.6	-211.7	570.2	550.7	19.48	29.273		
4,000.0	3,893.5	3,864.7	3,864.3	17.7	7.8	-153.12	328.8	-212.6	597.0	577.1	19.91	29.981		
4,100.0	3,989.6	3,960.2	3,959.8	18.2	8.0	-154.27	326.8	-213.8	624.4	604.1	20.36	30.674		
4,200.0	4,085.7	4,061.3	4,060.9	18.8	8.3	-155.38	325.0	-215.0	651.6	630.8	20.79	31.339		
4,300.0	4,181.8	4,165.3	4,164.9	19.3	8.4	-156.34	324.8	-216.3	677.9	656.7	21.19	31.991		
4,400.0	4,277.9	4,260.6	4,260.2	19.9	8.6	-157.14	325.2	-217.3	703.6	682.0	21.56	32.631		
4,500.0	4,374.0	4,354.5	4,354.0	20.4	8.7	-157.89	325.1	-218.4	729.9	707.9	21.96	33.231		
4,600.0	4,470.1	4,448.5	4,448.0	21.0	8.9	-158.62	324.8	-219.2	756.4	734.0	22.39	33.776		
4,700.0	4,566.2	4,540.3	4,539.8	21.6	9.1	-159.26	324.3	-220.5	783.5	760.6	22.84	34.300		
4,800.0	4,662.3	4,636.0	4,635.6	22.1	9.3	-159.92	323.1	-221.6	811.1	787.8	23.30	34.817		
4,900.0	4,758.4	4,738.8	4,738.3	22.7	9.5	-160.53	322.8	-223.1	838.2	814.4	23.75	35.297		

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 Hunt Federal 28X-314
<b>Project:</b>	SEC.28-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Reference Site:</b>	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	<b>MD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Hunt Federal 28X-314	<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 #1 (1-27-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Pad Sec.29-T4-R66W - Lorenz 44-28 (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	
5,000.0	4,854.5	4,836.2	4,835.7	23.2	9.7	-161.06	322.9	-224.3	864.8	840.6	24.17	35.780	
5,100.0	4,950.6	4,935.6	4,935.1	23.8	9.8	-161.59	323.0	-225.4	891.6	867.0	24.59	36.257	
5,200.0	5,046.7	5,044.7	5,044.1	24.3	10.0	-162.11	324.4	-226.4	917.2	892.2	24.97	36.726	
5,301.0	5,143.8	5,145.8	5,145.2	24.9	10.0	-162.57	326.5	-226.8	942.3	916.9	25.32	37.211	
5,400.0	5,239.3	5,235.2	5,234.7	25.4	10.1	-163.07	328.0	-226.7	965.8	940.1	25.69	37.593	
5,500.0	5,336.4	5,323.0	5,322.4	25.8	10.2	-163.50	328.5	-227.1	988.3	962.3	26.05	37.939	
7,200.0	6,956.9	6,964.6	6,963.8	28.3	12.9	-83.41	345.4	-242.9	997.4	966.8	30.54	32.660	
7,250.0	6,989.1	6,995.4	6,994.6	28.4	12.9	-85.35	345.9	-242.4	990.0	959.1	30.92	32.019	
7,300.0	7,018.8	7,023.2	7,022.3	28.5	12.9	-87.12	346.4	-241.9	984.0	952.6	31.35	31.386	
7,350.0	7,045.8	7,048.2	7,047.4	28.5	12.9	-88.70	346.8	-241.5	979.6	947.7	31.83	30.773	
7,400.0	7,070.0	7,070.5	7,069.6	28.6	13.0	-90.05	347.2	-241.0	977.0	944.6	32.36	30.187	
7,436.1	7,085.7	7,084.9	7,084.0	28.7	13.0	-90.86	347.4	-240.8	976.4	943.6	32.79	29.776	
7,450.0	7,091.3	7,090.0	7,089.1	28.8	13.0	-91.13	347.4	-240.7	976.5	943.5	32.95	29.632	
7,500.0	7,109.6	7,106.9	7,106.0	28.9	13.0	-91.92	347.7	-240.4	978.3	944.7	33.61	29.109	
7,550.0	7,124.8	7,121.1	7,120.3	29.1	13.0	-92.41	347.8	-240.1	982.5	948.1	34.32	28.623	
7,600.0	7,136.9	7,132.3	7,131.4	29.4	13.0	-92.54	348.0	-239.9	989.1	954.0	35.10	28.179	
7,650.0	7,145.7	7,140.2	7,139.3	29.7	13.0	-92.30	348.1	-239.7	998.3	962.4	35.93	27.785	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Hunt Federal 28X-314
<b>Project:</b>	SEC.28-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Reference Site:</b>	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	<b>MD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Hunt Federal 28X-314	<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 #1 (1-27-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Pad Sec.29-T4-R66W - McLeod 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									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	
12,300.0	7,136.3	7,107.4	7,106.7	145.8	14.4	-88.84	497.2	-5,593.1	962.1	802.7	159.41	6.036	
12,400.0	7,136.0	7,106.9	7,106.2	148.6	14.4	-88.80	497.2	-5,593.1	915.0	752.8	162.19	5.642	
12,500.0	7,135.6	7,106.4	7,105.7	151.4	14.4	-88.77	497.2	-5,593.1	876.8	711.8	164.97	5.315	
12,600.0	7,135.2	7,105.9	7,105.2	154.1	14.4	-88.73	497.2	-5,593.1	848.7	681.0	167.75	5.059	
12,700.0	7,134.8	7,105.4	7,104.7	156.9	14.4	-88.70	497.2	-5,593.1	831.8	661.3	170.53	4.878	
12,792.3	7,134.4	7,104.9	7,104.2	159.5	14.4	-88.67	497.2	-5,593.1	826.7	653.6	173.10	4.776 CC	
12,800.0	7,134.4	7,104.9	7,104.1	159.7	14.4	-88.66	497.2	-5,593.1	826.7	653.4	173.31	4.770 ES	
12,900.0	7,134.0	7,104.4	7,103.6	162.5	14.4	-88.63	497.2	-5,593.1	833.6	657.6	176.10	4.734 SF	
13,000.0	7,133.6	7,103.8	7,103.1	165.3	14.4	-88.59	497.3	-5,593.1	852.4	673.5	178.88	4.765	
13,100.0	7,133.3	7,103.3	7,102.5	168.0	14.4	-88.55	497.3	-5,593.1	882.1	700.4	181.66	4.856	
13,200.0	7,132.9	7,102.8	7,102.0	170.8	14.4	-88.51	497.3	-5,593.1	921.7	737.3	184.45	4.997	
13,300.0	7,132.5	7,102.2	7,101.4	173.6	14.4	-88.47	497.3	-5,593.1	970.1	782.9	187.23	5.181	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Hunt Federal 28X-314
<b>Project:</b>	SEC.28-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Reference Site:</b>	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	<b>MD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Hunt Federal 28X-314	<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 #1 (1-27-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Pad Sec.29-T4-R66W - McLeod 2-29B (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	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
11,400.0	7,139.8	7,208.5	7,130.9	120.9	18.7	-94.28		1,248.4	-5,111.6	913.8	775.9	137.93	6.625		
11,500.0	7,139.4	7,208.1	7,130.4	123.7	18.7	-93.91		1,248.4	-5,111.6	814.2	673.4	140.73	5.785		
11,600.0	7,139.0	7,207.6	7,130.0	126.5	18.7	-93.55		1,248.4	-5,111.6	714.7	571.1	143.52	4.980		
11,700.0	7,138.6	7,207.1	7,129.5	129.2	18.7	-93.18		1,248.4	-5,111.6	615.3	469.0	146.31	4.206		
11,800.0	7,138.3	7,206.6	7,129.0	132.0	18.7	-92.82		1,248.4	-5,111.6	516.2	367.1	149.10	3.462		
11,900.0	7,137.9	7,206.1	7,128.5	134.7	18.7	-92.45		1,248.4	-5,111.6	417.5	265.7	151.88	2.749		
12,000.0	7,137.5	7,205.6	7,128.0	137.5	18.7	-92.09		1,248.4	-5,111.6	319.7	165.0	154.67	2.067		
12,100.0	7,137.1	7,205.2	7,127.6	140.3	18.7	-91.72		1,248.4	-5,111.6	223.7	66.3	157.44	1.421 Level 3		
12,200.0	7,136.7	7,204.7	7,127.1	143.0	18.7	-91.35		1,248.4	-5,111.6	133.9	-26.3	160.22	0.836 Level 1		
12,300.0	7,136.3	7,204.2	7,126.6	145.8	18.7	-90.99		1,248.4	-5,111.6	76.1	-86.9	162.99	0.467 Level 1		
12,310.7	7,136.3	7,204.1	7,126.5	146.1	18.7	-90.95		1,248.4	-5,111.6	75.3	-88.0	163.29	0.461 Level 1, CC, ES, SF		
12,400.0	7,136.0	7,203.7	7,126.1	148.6	18.7	-90.62		1,248.4	-5,111.6	116.8	-48.9	165.75	0.705 Level 1		
12,500.0	7,135.6	7,203.2	7,125.6	151.4	18.7	-90.26		1,248.4	-5,111.6	203.7	35.2	168.52	1.209 Level 2		
12,600.0	7,135.2	7,202.8	7,125.1	154.1	18.7	-89.89		1,248.3	-5,111.6	298.9	127.7	171.27	1.745		
12,700.0	7,134.8	7,202.3	7,124.7	156.9	18.7	-89.52		1,248.3	-5,111.6	396.5	222.5	174.02	2.279		
12,800.0	7,134.4	7,201.8	7,124.2	159.7	18.7	-89.16		1,248.3	-5,111.6	495.1	318.3	176.76	2.801		
12,900.0	7,134.0	7,201.3	7,123.7	162.5	18.7	-88.79		1,248.3	-5,111.6	594.1	414.6	179.50	3.310		
13,000.0	7,133.6	7,200.8	7,123.2	165.3	18.7	-88.43		1,248.3	-5,111.6	693.4	511.2	182.23	3.805		
13,100.0	7,133.3	7,200.4	7,122.7	168.0	18.7	-88.06		1,248.3	-5,111.6	792.9	607.9	184.95	4.287		
13,200.0	7,132.9	7,199.9	7,122.3	170.8	18.7	-87.69		1,248.3	-5,111.6	892.5	704.8	187.67	4.756		
13,300.0	7,132.5	7,199.4	7,121.8	173.6	18.7	-87.33		1,248.3	-5,111.6	992.2	801.8	190.38	5.212		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Hunt Federal 28X-314
<b>Project:</b>	SEC.28-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Reference Site:</b>	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	<b>MD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Hunt Federal 28X-314	<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 #1 (1-27-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Pad Sec.29-T4-R66W - McLeod 29-1 (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		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
13,300.0	7,132.5	7,121.9	7,121.4	173.6	14.6	89.64	1,765.4	-6,965.0	970.5	782.9	187.59	5.173		
13,400.0	7,132.1	7,122.2	7,121.7	176.4	14.6	89.68	1,765.4	-6,965.0	882.6	692.2	190.39	4.636		
13,500.0	7,131.7	7,122.5	7,122.1	179.2	14.6	89.72	1,765.4	-6,965.0	797.6	604.4	193.18	4.129		
13,600.0	7,131.3	7,122.8	7,122.4	181.9	14.6	89.77	1,765.4	-6,965.0	716.5	520.5	195.97	3.656		
13,700.0	7,131.0	7,123.1	7,122.7	184.7	14.6	89.81	1,765.4	-6,965.0	640.7	442.0	198.76	3.224		
13,800.0	7,130.6	7,123.4	7,123.0	187.5	14.6	89.85	1,765.4	-6,965.0	572.5	370.9	201.55	2.840		
13,900.0	7,130.2	7,123.8	7,123.3	190.3	14.6	89.89	1,765.4	-6,965.0	514.7	310.3	204.35	2.519		
14,000.0	7,129.8	7,124.1	7,123.7	193.1	14.6	89.93	1,765.4	-6,965.0	471.2	264.1	207.14	2.275		
14,100.0	7,129.4	7,124.4	7,124.0	195.9	14.6	89.97	1,765.4	-6,965.0	446.4	236.4	209.93	2.126		
14,164.1	7,129.2	7,124.6	7,124.2	197.7	14.6	90.00	1,765.4	-6,965.0	441.7	230.0	211.72	2.086	CC, ES	
14,200.0	7,129.0	7,124.7	7,124.3	198.7	14.6	90.02	1,765.4	-6,965.0	443.2	230.5	212.73	2.083	SF	
14,300.0	7,128.7	7,125.1	7,124.6	201.5	14.6	90.06	1,765.4	-6,965.0	462.1	246.6	215.52	2.144		
14,400.0	7,128.3	7,125.4	7,125.0	204.2	14.6	90.10	1,765.4	-6,965.0	500.8	282.4	218.32	2.294		
14,500.0	7,127.9	7,125.7	7,125.3	207.0	14.6	90.15	1,765.4	-6,965.0	554.9	333.8	221.11	2.510		
14,600.0	7,127.5	7,126.1	7,125.6	209.8	14.6	90.19	1,765.4	-6,965.0	620.6	396.7	223.90	2.772		
14,700.0	7,127.1	7,126.4	7,126.0	212.6	14.6	90.23	1,765.4	-6,965.0	694.5	467.8	226.70	3.063		
14,800.0	7,126.7	7,126.7	7,126.3	215.4	14.6	90.27	1,765.4	-6,965.0	774.2	544.8	229.49	3.374		
14,900.0	7,126.4	7,127.1	7,126.6	218.2	14.6	90.32	1,765.4	-6,965.0	858.3	626.0	232.29	3.695		
14,992.1	7,126.0	7,127.4	7,126.9	220.8	14.6	90.36	1,765.4	-6,965.0	938.4	703.5	234.86	3.996		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Hunt Federal 28X-314
<b>Project:</b>	SEC.28-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Reference Site:</b>	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	<b>MD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Hunt Federal 28X-314	<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 #1 (1-27-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Pad Sec.29-T4-R66W - McLeod 29-2 (Exist.) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)		
14,000.0	7,129.8	7,132.3	7,131.9	193.1	13.6	-90.45	461.1	-7,232.8	964.7	758.5	206.15	4.679	
14,100.0	7,129.4	7,132.3	7,131.9	195.9	13.6	-90.45	461.1	-7,232.8	924.2	715.3	208.95	4.423	
14,200.0	7,129.0	7,132.3	7,131.9	198.7	13.6	-90.45	461.1	-7,232.8	893.2	681.5	211.74	4.218	
14,300.0	7,128.7	7,132.4	7,131.9	201.5	13.6	-90.45	461.1	-7,232.8	872.6	658.1	214.54	4.067	
14,400.0	7,128.3	7,132.4	7,131.9	204.2	13.6	-90.45	461.1	-7,232.8	863.2	645.8	217.34	3.972	
14,431.9	7,128.2	7,132.4	7,131.9	205.1	13.6	-90.45	461.1	-7,232.8	862.6	644.4	218.23	3.953 CC, ES	
14,500.0	7,127.9	7,132.4	7,131.9	207.0	13.6	-90.45	461.1	-7,232.8	865.3	645.1	220.13	3.931 SF	
14,600.0	7,127.5	7,132.4	7,131.9	209.8	13.6	-90.45	461.1	-7,232.8	878.8	655.9	222.93	3.942	
14,700.0	7,127.1	7,132.4	7,131.9	212.6	13.6	-90.45	461.1	-7,232.8	903.3	677.6	225.72	4.002	
14,800.0	7,126.7	7,132.4	7,131.9	215.4	13.6	-90.45	461.1	-7,232.8	937.8	709.3	228.52	4.104	
14,900.0	7,126.4	7,132.4	7,131.9	218.2	13.6	-90.45	461.1	-7,232.8	981.4	750.1	231.32	4.243	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Hunt Federal 28X-314
<b>Project:</b>	SEC.28-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Reference Site:</b>	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	<b>MD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Hunt Federal 28X-314	<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 #1 (1-27-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Pad Sec.29-T4-R66W - McLeod 29-29 (Exist) - Wellbore #1 - Wellbore #1														Offset Site Error: 0.0 ft
Survey Program: 2508-NS-GYRO-MS														Offset Well Error: 0.0 ft
Reference	Offset	Semi Major Axis		Distance		Warning								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
12,900.0	7,134.0	7,248.4	7,115.6	162.5	17.3	-94.19	1,168.4	-6,685.0	996.3	818.3	177.96	5.598		
13,000.0	7,133.6	7,247.6	7,114.7	165.3	17.3	-93.86	1,168.4	-6,685.0	897.7	716.9	180.78	4.965		
13,100.0	7,133.3	7,246.7	7,113.8	168.0	17.3	-93.53	1,168.4	-6,685.0	799.4	615.8	183.60	4.354		
13,200.0	7,132.9	7,245.8	7,112.9	170.8	17.3	-93.20	1,168.4	-6,685.0	701.5	515.1	186.41	3.763		
13,300.0	7,132.5	7,244.9	7,112.0	173.6	17.3	-92.87	1,168.4	-6,685.0	604.4	415.2	189.22	3.194		
13,400.0	7,132.1	7,244.0	7,111.1	176.4	17.3	-92.53	1,168.4	-6,685.0	508.4	316.4	192.02	2.648		
13,500.0	7,131.7	7,243.0	7,110.2	179.2	17.3	-92.20	1,168.4	-6,685.0	414.4	219.5	194.82	2.127		
13,600.0	7,131.3	7,242.1	7,109.3	181.9	17.3	-91.87	1,168.3	-6,685.0	323.8	126.2	197.62	1.639		
13,700.0	7,131.0	7,241.2	7,108.4	184.7	17.3	-91.53	1,168.3	-6,685.1	240.9	40.5	200.41	1.202 Level 2		
13,800.0	7,130.6	7,240.3	7,107.5	187.5	17.3	-91.19	1,168.3	-6,685.1	176.7	-26.5	203.20	0.870 Level 1		
13,884.1	7,130.3	7,239.5	7,106.7	189.9	17.3	-90.91	1,168.3	-6,685.1	155.4	-50.2	205.54	0.756 Level 1, CC, ES, SF		
13,900.0	7,130.2	7,239.4	7,106.6	190.3	17.3	-90.86	1,168.3	-6,685.1	156.2	-49.8	205.98	0.758 Level 1		
14,000.0	7,129.8	7,238.5	7,105.7	193.1	17.3	-90.52	1,168.3	-6,685.1	193.8	-14.9	208.75	0.928 Level 1		
14,100.0	7,129.4	7,237.6	7,104.7	195.9	17.3	-90.18	1,168.3	-6,685.1	266.0	54.4	211.52	1.257 Level 3		
14,200.0	7,129.0	7,236.6	7,103.8	198.7	17.3	-89.84	1,168.3	-6,685.1	352.0	137.7	214.29	1.643		
14,300.0	7,128.7	7,235.7	7,102.9	201.5	17.3	-89.49	1,168.2	-6,685.1	443.9	226.9	217.04	2.045		
14,400.0	7,128.3	7,234.8	7,102.0	204.2	17.3	-89.15	1,168.2	-6,685.1	538.7	318.9	219.79	2.451		
14,500.0	7,127.9	7,233.8	7,101.0	207.0	17.3	-88.81	1,168.2	-6,685.1	635.1	412.6	222.53	2.854		
14,600.0	7,127.5	7,232.9	7,100.1	209.8	17.3	-88.47	1,168.2	-6,685.1	732.5	507.2	225.26	3.252		
14,700.0	7,127.1	7,232.0	7,099.2	212.6	17.3	-88.12	1,168.2	-6,685.1	830.5	602.5	227.99	3.643		
14,800.0	7,126.7	7,231.0	7,098.2	215.4	17.3	-87.78	1,168.2	-6,685.1	928.9	698.2	230.70	4.026		



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Hunt Federal 28X-314
<b>Project:</b>	SEC.28-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Reference Site:</b>	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	<b>MD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Hunt Federal 28X-314	<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 #1 (1-27-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Pad Sec.29-T4-R66W - McLeod 29-29X (Exist.) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 635-NS-GYRO-MS												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)		
14,000.0	7,129.8	7,183.5	7,098.4	193.1	16.7	-84.63	1,099.9	-7,692.7	919.8	712.7	207.05	4.442	
14,100.0	7,129.4	7,185.7	7,100.6	195.9	16.7	-85.20	1,099.9	-7,692.8	823.2	613.1	210.06	3.919	
14,200.0	7,129.0	7,187.9	7,102.8	198.7	16.7	-85.76	1,099.8	-7,692.8	727.5	514.4	213.05	3.415	
14,300.0	7,128.7	7,190.1	7,105.0	201.5	16.7	-86.32	1,099.8	-7,692.9	633.1	417.1	216.02	2.931	
14,400.0	7,128.3	7,192.3	7,107.2	204.2	16.7	-86.88	1,099.8	-7,692.9	540.7	321.8	218.98	2.469	
14,500.0	7,127.9	7,194.5	7,109.3	207.0	16.8	-87.43	1,099.8	-7,693.0	451.6	229.7	221.92	2.035	
14,600.0	7,127.5	7,196.6	7,111.5	209.8	16.8	-87.98	1,099.8	-7,693.0	368.2	143.3	224.85	1.637	
14,700.0	7,127.1	7,198.7	7,113.6	212.6	16.8	-88.52	1,099.8	-7,693.1	295.1	67.4	227.76	1.296 Level 3	
14,800.0	7,126.7	7,200.8	7,115.7	215.4	16.8	-89.06	1,099.8	-7,693.1	242.2	11.6	230.64	1.050 Level 2	
14,892.3	7,126.4	7,202.8	7,117.6	218.0	16.8	-89.55	1,099.7	-7,693.2	223.9	-9.4	233.29	0.960 Level 1, CC	
14,900.0	7,126.4	7,202.9	7,117.8	218.2	16.8	-89.59	1,099.7	-7,693.2	224.1	-9.4	233.52	0.960 Level 1, ES, SF	
14,992.1	7,126.0	7,204.8	7,119.7	220.8	16.8	-90.08	1,099.7	-7,693.2	245.1	9.0	236.14	1.038 Level 2	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Hunt Federal 28X-314
<b>Project:</b>	SEC.28-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Reference Site:</b>	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	<b>MD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Hunt Federal 28X-314	<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 #1 (1-27-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Pad Sec.29-T4-R66W - McLeod 29-41 (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	7,136.7	7,119.0	7,117.1	143.0	15.2	89.39	1,975.1	-5,697.9	954.1	796.5	157.54	6.056	
12,300.0	7,136.3	7,118.1	7,116.3	145.8	15.2	89.32	1,975.1	-5,697.9	883.7	723.3	160.33	5.512	
12,400.0	7,136.0	7,117.2	7,115.4	148.6	15.2	89.24	1,975.1	-5,697.9	819.4	656.3	163.11	5.024	
12,500.0	7,135.6	7,116.4	7,114.5	151.4	15.2	89.16	1,975.0	-5,697.9	762.9	597.0	165.90	4.599	
12,600.0	7,135.2	7,115.5	7,113.7	154.1	15.2	89.09	1,975.0	-5,697.9	716.0	547.3	168.68	4.244	
12,700.0	7,134.8	7,114.7	7,112.8	156.9	15.2	89.01	1,975.0	-5,697.9	680.6	509.1	171.47	3.969	
12,800.0	7,134.4	7,113.8	7,112.0	159.7	15.2	88.94	1,975.0	-5,697.9	658.6	484.4	174.26	3.780	
12,897.1	7,134.0	7,113.0	7,111.1	162.4	15.2	88.86	1,975.0	-5,697.9	651.4	474.5	176.96	3.681 CC	
12,900.0	7,134.0	7,112.9	7,111.1	162.5	15.2	88.86	1,975.0	-5,697.9	651.4	474.4	177.05	3.680 ES	
13,000.0	7,133.6	7,112.1	7,110.2	165.3	15.2	88.78	1,975.0	-5,697.9	659.5	479.7	179.83	3.667 SF	
13,100.0	7,133.3	7,111.2	7,109.4	168.0	15.2	88.71	1,974.9	-5,698.0	682.3	499.7	182.62	3.736	
13,200.0	7,132.9	7,110.3	7,108.5	170.8	15.2	88.63	1,974.9	-5,698.0	718.4	533.0	185.41	3.875	
13,300.0	7,132.5	7,109.5	7,107.6	173.6	15.2	88.56	1,974.9	-5,698.0	766.0	577.8	188.20	4.070	
13,400.0	7,132.1	7,108.6	7,106.8	176.4	15.2	88.48	1,974.9	-5,698.0	823.0	632.0	190.98	4.309	
13,500.0	7,131.7	7,107.7	7,105.9	179.2	15.1	88.40	1,974.9	-5,698.0	887.6	693.8	193.77	4.581	
13,600.0	7,131.3	7,106.9	7,105.0	181.9	15.1	88.33	1,974.9	-5,698.0	958.4	761.8	196.56	4.876	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Hunt Federal 28X-314
<b>Project:</b>	SEC.28-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Reference Site:</b>	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	<b>MD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Hunt Federal 28X-314	<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 #1 (1-27-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Pad Sec.29-T4-R66W - McLeod 6 (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	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
12,700.0	7,134.8	7,137.6	7,136.5	156.9	14.8	-92.27		1,014.7	-6,431.5	980.5	809.4	171.11	5.730		
12,800.0	7,134.4	7,137.0	7,135.8	159.7	14.8	-92.14		1,014.7	-6,431.5	886.2	712.3	173.90	5.096		
12,900.0	7,134.0	7,136.3	7,135.1	162.5	14.8	-92.02		1,014.6	-6,431.5	793.3	616.6	176.70	4.489		
13,000.0	7,133.6	7,135.6	7,134.5	165.3	14.8	-91.90		1,014.6	-6,431.5	702.2	522.8	179.49	3.912		
13,100.0	7,133.3	7,135.0	7,133.8	168.0	14.8	-91.78		1,014.6	-6,431.5	614.0	431.8	182.28	3.369		
13,200.0	7,132.9	7,134.3	7,133.1	170.8	14.8	-91.65		1,014.6	-6,431.5	530.0	345.0	185.08	2.864		
13,300.0	7,132.5	7,133.7	7,132.5	173.6	14.8	-91.53		1,014.6	-6,431.5	452.6	264.7	187.87	2.409		
13,400.0	7,132.1	7,133.0	7,131.8	176.4	14.8	-91.41		1,014.6	-6,431.5	385.7	195.0	190.66	2.023		
13,500.0	7,131.7	7,132.3	7,131.2	179.2	14.8	-91.29		1,014.6	-6,431.5	335.6	142.1	193.46	1.735		
13,600.0	7,131.3	7,131.7	7,130.5	181.9	14.8	-91.17		1,014.6	-6,431.5	310.7	114.4	196.25	1.583		
13,630.5	7,131.2	7,131.5	7,130.3	182.8	14.8	-91.13		1,014.6	-6,431.5	309.2	112.1	197.10	1.569	CC, ES, SF	
13,700.0	7,131.0	7,131.0	7,129.9	184.7	14.8	-91.04		1,014.5	-6,431.5	316.9	117.8	199.04	1.592		
13,800.0	7,130.6	7,130.4	7,129.2	187.5	14.8	-90.92		1,014.5	-6,431.5	352.6	150.7	201.83	1.747		
13,900.0	7,130.2	7,129.7	7,128.6	190.3	14.8	-90.80		1,014.5	-6,431.5	410.1	205.5	204.63	2.004		
14,000.0	7,129.8	7,129.1	7,127.9	193.1	14.8	-90.68		1,014.5	-6,431.5	481.8	274.3	207.42	2.323		
14,100.0	7,129.4	7,128.4	7,127.3	195.9	14.8	-90.56		1,014.5	-6,431.5	562.1	351.9	210.21	2.674		
14,200.0	7,129.0	7,127.8	7,126.6	198.7	14.8	-90.44		1,014.5	-6,431.5	648.0	435.0	213.00	3.042		
14,300.0	7,128.7	7,127.1	7,126.0	201.5	14.8	-90.32		1,014.5	-6,431.5	737.4	521.6	215.79	3.417		
14,400.0	7,128.3	7,126.5	7,125.3	204.2	14.8	-90.20		1,014.5	-6,431.5	829.2	610.7	218.58	3.794		
14,500.0	7,127.9	7,125.8	7,124.7	207.0	14.8	-90.08		1,014.4	-6,431.5	922.8	701.4	221.37	4.168		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Hunt Federal 28X-314
<b>Project:</b>	SEC.28-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Reference Site:</b>	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	<b>MD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Hunt Federal 28X-314	<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 #1 (1-27-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Pad Sec.29-T4-R66W - Melissa 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						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	
4,700.0	4,566.2	4,516.3	4,515.7	21.6	8.2	-34.96	1,910.5	-272.7	995.0	970.9	24.13	41.229	
4,800.0	4,662.3	4,600.0	4,599.3	22.1	8.4	-35.81	1,912.3	-274.6	975.1	950.2	24.84	39.257	
4,900.0	4,758.4	4,700.3	4,699.6	22.7	8.6	-36.92	1,914.5	-277.8	955.9	930.3	25.64	37.281	
5,000.0	4,854.5	4,814.6	4,813.8	23.2	8.8	-38.29	1,915.4	-281.7	935.9	909.4	26.54	35.259	
5,100.0	4,950.6	4,922.6	4,921.7	23.8	9.1	-39.67	1,914.5	-284.7	914.7	887.3	27.45	33.321	
5,200.0	5,046.7	5,017.9	5,017.1	24.3	9.3	-40.90	1,913.6	-286.3	893.3	865.0	28.31	31.552	
5,301.0	5,143.8	5,110.3	5,109.4	24.9	9.5	-42.13	1,913.2	-288.0	872.6	843.4	29.19	29.898	
5,400.0	5,239.3	5,215.7	5,214.8	25.4	9.8	-43.36	1,912.0	-289.9	853.2	823.1	30.07	28.377	
5,500.0	5,336.4	5,311.3	5,310.3	25.8	10.0	-44.37	1,910.8	-291.1	835.3	804.5	30.81	27.108	
5,600.0	5,434.1	5,400.0	5,399.1	26.1	10.2	-45.22	1,910.5	-292.1	820.4	788.9	31.49	26.049	
5,700.0	5,532.3	5,493.1	5,492.1	26.5	10.4	-46.05	1,910.7	-293.8	808.4	776.2	32.16	25.133	
5,800.0	5,631.0	5,600.0	5,599.0	26.8	10.7	-46.97	1,910.5	-295.8	798.2	765.3	32.86	24.292	
5,900.0	5,730.0	5,700.8	5,699.8	27.0	10.8	-47.63	1,910.6	-296.4	789.3	755.9	33.40	23.635	
6,000.0	5,829.4	5,800.0	5,799.0	27.3	10.9	-48.07	1,911.3	-295.9	782.2	748.4	33.79	23.146	
6,100.0	5,929.1	5,894.5	5,893.5	27.5	11.1	-48.40	1,912.3	-295.6	777.1	743.0	34.16	22.751	
6,200.0	6,028.9	5,995.1	5,994.1	27.6	11.2	-48.64	1,913.4	-295.7	774.2	739.7	34.51	22.434	
6,300.0	6,128.8	6,094.3	6,093.3	27.8	11.4	-48.75	1,914.6	-295.7	773.1	738.3	34.81	22.206	
6,315.3	6,144.2	6,109.7	6,108.7	27.8	11.4	-48.75	1,914.7	-295.8	773.1	738.2	34.86	22.178	
6,371.2	6,200.0	6,166.4	6,165.4	27.8	11.5	-40.08	1,915.3	-295.9	773.3	739.8	33.54	23.059	
6,400.0	6,228.8	6,195.7	6,194.7	27.9	11.6	-40.07	1,915.6	-296.0	773.5	739.9	33.62	23.005	
6,500.0	6,328.8	6,294.9	6,293.9	28.0	11.8	-40.06	1,916.3	-296.3	774.4	740.4	33.96	22.806	
6,561.0	6,389.8	6,357.0	6,356.0	28.0	11.9	-40.07	1,916.7	-296.8	774.9	740.7	34.17	22.675	
6,600.0	6,428.8	6,396.8	6,395.8	28.1	12.0	50.00	1,916.8	-297.0	774.5	738.7	35.77	21.651	
6,650.0	6,478.6	6,448.1	6,447.1	28.1	12.1	50.36	1,916.8	-297.4	772.1	736.3	35.82	21.557	
6,700.0	6,528.1	6,499.1	6,498.1	28.1	12.2	51.04	1,916.7	-297.8	767.5	731.8	35.70	21.497	
6,750.0	6,576.9	6,549.1	6,548.1	28.2	12.3	52.03	1,916.5	-298.2	760.9	725.5	35.44	21.469	
6,800.0	6,624.9	6,598.3	6,597.3	28.2	12.5	53.35	1,916.3	-298.6	752.3	717.3	35.05	21.462	
6,850.0	6,672.0	6,646.1	6,645.1	28.2	12.6	54.99	1,915.9	-298.9	742.0	707.4	34.56	21.470	
6,900.0	6,717.8	6,692.7	6,691.7	28.2	12.7	56.95	1,915.6	-299.3	730.0	696.0	34.00	21.474	
6,950.0	6,762.2	6,735.7	6,734.6	28.2	12.8	59.17	1,915.3	-299.6	716.8	683.3	33.41	21.453	
7,000.0	6,805.1	6,776.7	6,775.7	28.3	12.8	61.65	1,915.1	-300.0	702.5	669.7	32.85	21.390	
7,050.0	6,846.1	6,816.5	6,815.5	28.3	12.9	64.41	1,914.9	-300.4	687.7	655.3	32.35	21.258	
7,100.0	6,885.2	6,855.0	6,853.9	28.3	13.0	67.40	1,914.9	-300.8	672.5	640.5	31.97	21.035	
7,150.0	6,922.2	6,891.3	6,890.3	28.3	13.1	70.56	1,914.9	-301.2	657.3	625.6	31.74	20.708	
7,200.0	6,956.9	6,925.6	6,924.6	28.3	13.2	73.81	1,915.0	-301.6	642.6	610.9	31.68	20.281	
7,250.0	6,989.1	6,957.5	6,956.5	28.4	13.3	77.04	1,915.1	-301.8	628.9	597.1	31.80	19.775	
7,300.0	7,018.8	6,986.9	6,985.8	28.5	13.3	80.16	1,915.3	-302.1	616.6	584.5	32.07	19.227	
7,350.0	7,045.8	7,014.0	7,013.0	28.5	13.4	83.09	1,915.5	-302.3	606.3	573.8	32.46	18.678	
7,400.0	7,070.0	7,038.9	7,037.9	28.6	13.5	85.76	1,915.6	-302.4	598.5	565.6	32.94	18.167	
7,450.0	7,091.3	7,060.9	7,059.8	28.8	13.5	88.03	1,915.7	-302.6	593.6	560.2	33.49	17.724	
7,495.4	7,108.1	7,078.2	7,077.2	28.9	13.5	89.70	1,915.8	-302.8	592.2	558.1	34.04	17.394 CC	
7,500.0	7,109.6	7,079.8	7,078.8	28.9	13.5	89.85	1,915.8	-302.8	592.2	558.1	34.10	17.366 ES	
7,550.0	7,124.8	7,095.7	7,094.6	29.1	13.6	91.13	1,915.9	-302.9	594.4	559.6	34.76	17.099	
7,600.0	7,136.9	7,107.8	7,106.7	29.4	13.6	91.80	1,916.0	-303.0	600.5	565.0	35.49	16.920	
7,650.0	7,145.7	7,116.5	7,115.5	29.7	13.6	91.86	1,916.0	-303.1	610.6	574.3	36.31	16.819	
7,700.0	7,151.3	7,122.1	7,121.1	30.1	13.6	91.31	1,916.0	-303.1	624.6	587.4	37.21	16.785 SF	
7,750.0	7,153.7	7,124.6	7,123.6	30.5	13.6	90.14	1,916.1	-303.1	642.1	603.9	38.20	16.809	
7,763.9	7,153.8	7,124.8	7,123.7	30.7	13.6	89.71	1,916.1	-303.1	647.6	609.1	38.49	16.825	
7,800.0	7,153.6	7,124.9	7,123.8	31.1	13.6	89.72	1,916.1	-303.1	663.0	623.9	39.18	16.923	
7,900.0	7,153.2	7,125.1	7,124.1	32.3	13.6	89.74	1,916.1	-303.1	713.6	672.4	41.19	17.323	
8,000.0	7,152.8	7,125.3	7,124.3	33.9	13.6	89.76	1,916.1	-303.1	773.8	730.5	43.33	17.857	

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 Hunt Federal 28X-314
<b>Project:</b>	SEC.28-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Reference Site:</b>	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	<b>MD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Hunt Federal 28X-314	<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 #1 (1-27-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Pad Sec.29-T4-R66W - Melissa 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							Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
8,100.0	7,152.5	7,125.6	7,124.5	35.6	13.6	89.78	1,916.1	-303.1	841.6	796.0	45.58	18.466		
8,200.0	7,152.1	7,125.8	7,124.8	37.6	13.6	89.81	1,916.1	-303.1	915.4	867.5	47.90	19.108		
8,300.0	7,151.7	7,126.0	7,125.0	39.7	13.6	89.83	1,916.1	-303.1	993.7	943.4	50.30	19.756		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Hunt Federal 28X-314
<b>Project:</b>	SEC.28-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Reference Site:</b>	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	<b>MD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Hunt Federal 28X-314	<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 #1 (1-27-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Pad Sec.29-T4-R66W - Randall 11-28 (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		
9,000.0	7,149.0	7,127.7	7,122.3	56.4	13.2	89.52	1,428.8	-2,793.3	998.0	930.3	67.70	14.741		
9,100.0	7,148.6	7,127.8	7,122.4	58.9	13.2	89.58	1,428.8	-2,793.3	898.6	828.2	70.35	12.774		
9,200.0	7,148.2	7,127.9	7,122.5	61.5	13.2	89.64	1,428.8	-2,793.3	799.3	726.3	73.01	10.949		
9,300.0	7,147.9	7,128.0	7,122.6	64.1	13.2	89.69	1,428.8	-2,793.3	700.3	624.7	75.68	9.254		
9,400.0	7,147.5	7,128.1	7,122.7	66.7	13.2	89.75	1,428.8	-2,793.3	601.7	523.3	78.37	7.678		
9,500.0	7,147.1	7,128.2	7,122.8	69.4	13.2	89.81	1,428.8	-2,793.3	503.5	422.4	81.06	6.212		
9,600.0	7,146.7	7,128.3	7,122.9	72.0	13.2	89.86	1,428.8	-2,793.3	406.2	322.5	83.76	4.850		
9,700.0	7,146.3	7,128.4	7,123.0	74.7	13.2	89.92	1,428.8	-2,793.3	310.7	224.3	86.47	3.593		
9,800.0	7,145.9	7,128.5	7,123.2	77.3	13.2	89.97	1,428.8	-2,793.3	219.3	130.1	89.19	2.458		
9,900.0	7,145.6	7,128.6	7,123.3	80.0	13.2	90.03	1,428.8	-2,793.3	140.0	48.1	91.92	1.523		
9,992.4	7,145.2	7,128.7	7,123.3	82.5	13.2	90.08	1,428.8	-2,793.3	105.2	10.7	94.44	1.114 Level 2, CC, ES, SF		
10,000.0	7,145.2	7,128.7	7,123.4	82.7	13.2	90.09	1,428.8	-2,793.3	105.4	10.8	94.64	1.114 Level 2		
10,100.0	7,144.8	7,128.8	7,123.5	85.4	13.2	90.14	1,428.8	-2,793.3	150.5	53.1	97.38	1.545		
10,200.0	7,144.4	7,128.9	7,123.6	88.1	13.2	90.20	1,428.8	-2,793.3	232.7	132.6	100.12	2.324		
10,300.0	7,144.0	7,129.0	7,123.7	90.8	13.2	90.25	1,428.8	-2,793.3	325.1	222.2	102.86	3.160		
10,400.0	7,143.6	7,129.1	7,123.8	93.5	13.2	90.31	1,428.8	-2,793.3	420.9	315.3	105.61	3.986		
10,500.0	7,143.2	7,129.2	7,123.9	96.3	13.2	90.36	1,428.8	-2,793.3	518.4	410.0	108.36	4.784		
10,600.0	7,142.9	7,129.3	7,124.0	99.0	13.2	90.41	1,428.8	-2,793.3	616.6	505.5	111.11	5.550		
10,700.0	7,142.5	7,129.4	7,124.1	101.7	13.2	90.47	1,428.8	-2,793.3	715.4	601.5	113.86	6.283		
10,800.0	7,142.1	7,129.5	7,124.2	104.5	13.2	90.52	1,428.8	-2,793.3	814.4	697.8	116.62	6.983		
10,900.0	7,141.7	7,129.6	7,124.3	107.2	13.2	90.58	1,428.8	-2,793.3	913.7	794.3	119.38	7.653		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Hunt Federal 28X-314
<b>Project:</b>	SEC.28-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Reference Site:</b>	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	<b>MD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Hunt Federal 28X-314	<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 #1 (1-27-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Sec.27-T4N-R66W - UPRC 27-13F (Exist.) - Wellbore #1 - Wellbore #1														Offset Site Error:	0.0 ft
Survey Program: 100-Reference														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		
1,500.0	1,488.9	1,471.6	1,471.6	4.2	2.8	55.87	582.4	912.9	992.3	985.5	6.77	146.607			
1,600.0	1,586.1	1,569.4	1,569.3	4.6	3.1	57.07	582.8	912.8	979.2	971.8	7.42	131.935			
1,700.0	1,682.9	1,670.9	1,670.8	5.1	3.3	58.45	583.0	912.4	965.3	957.2	8.11	119.034			
1,805.3	1,784.4	1,778.1	1,778.1	5.6	3.6	60.06	583.0	911.5	949.6	940.8	8.84	107.404			
1,900.0	1,875.4	1,872.2	1,872.2	6.1	3.7	61.46	582.5	910.3	935.1	925.6	9.50	98.449			
2,000.0	1,971.5	1,966.5	1,966.4	6.7	3.9	62.92	581.7	909.2	920.4	910.2	10.18	90.416			
2,100.0	2,067.6	2,060.3	2,060.3	7.2	4.0	64.44	580.6	908.4	906.5	895.7	10.86	83.484			
2,200.0	2,163.7	2,155.1	2,155.1	7.7	4.2	66.01	579.7	907.7	893.5	882.0	11.56	77.284			
2,300.0	2,259.8	2,250.5	2,250.4	8.3	4.4	67.61	579.1	907.0	881.3	869.0	12.30	71.654			
2,400.0	2,355.9	2,346.5	2,346.5	8.8	4.6	69.26	578.6	906.3	870.0	856.9	13.06	66.620			
2,500.0	2,452.0	2,440.9	2,440.8	9.4	4.7	70.94	577.7	905.6	859.3	845.5	13.80	62.255			
2,600.0	2,548.1	2,534.8	2,534.7	9.9	4.9	72.67	576.6	905.4	849.9	835.4	14.54	58.462			
2,700.0	2,644.2	2,630.9	2,630.8	10.5	5.0	74.46	575.6	905.0	841.3	826.0	15.28	55.049			
2,800.0	2,740.3	2,724.6	2,724.5	11.0	5.2	76.23	575.0	904.9	833.8	817.7	16.04	51.996			
2,900.0	2,836.4	2,821.7	2,821.6	11.6	5.4	78.04	574.8	904.7	827.1	810.3	16.82	49.186			
3,000.0	2,932.5	2,916.2	2,916.1	12.1	5.6	79.82	574.9	904.6	821.5	803.9	17.58	46.736			
3,100.0	3,028.6	3,017.2	3,017.1	12.7	5.8	81.75	574.9	904.1	816.4	798.1	18.36	44.459			
3,200.0	3,124.7	3,112.2	3,112.1	13.2	6.0	83.59	574.9	903.6	812.2	793.0	19.18	42.342			
3,300.0	3,220.8	3,208.9	3,208.8	13.8	6.2	85.47	575.0	903.0	808.8	788.8	20.00	40.444			
3,400.0	3,316.9	3,306.5	3,306.4	14.3	6.5	87.38	575.1	902.3	806.3	785.4	20.81	38.740			
3,500.0	3,413.0	3,400.0	3,399.9	14.9	6.7	89.23	575.0	901.8	804.8	783.2	21.60	37.263			
3,562.5	3,473.1	3,457.6	3,457.5	15.2	6.8	90.37	574.8	901.6	804.6	782.5	22.06	36.463 CC			
3,600.0	3,509.1	3,492.9	3,492.8	15.4	6.9	91.08	574.7	901.5	804.6	782.3	22.34	36.010 ES			
3,700.0	3,605.2	3,591.2	3,591.1	16.0	7.1	93.04	574.3	901.2	805.5	782.4	23.09	34.887			
3,800.0	3,701.3	3,685.5	3,685.4	16.5	7.3	94.93	573.8	900.8	807.2	783.4	23.81	33.898			
3,900.0	3,797.4	3,782.9	3,782.7	17.1	7.5	96.86	573.4	900.6	810.0	785.4	24.54	33.003			
4,000.0	3,893.5	3,882.3	3,882.2	17.7	7.8	98.81	573.2	900.0	813.4	788.1	25.28	32.170			
4,100.0	3,989.6	3,977.2	3,977.0	18.2	8.0	100.67	572.7	899.2	817.5	791.5	26.00	31.449			
4,200.0	4,085.7	4,071.3	4,071.2	18.8	8.2	102.54	571.7	898.4	822.9	796.2	26.67	30.850			
4,300.0	4,181.8	4,166.2	4,166.1	19.3	8.4	104.42	570.3	897.6	829.4	802.0	27.33	30.349			
4,400.0	4,277.9	4,263.7	4,263.6	19.9	8.6	106.31	569.1	896.8	836.8	808.8	27.97	29.913			
4,500.0	4,374.0	4,357.2	4,357.0	20.4	8.8	108.06	568.3	896.2	845.0	816.4	28.59	29.557			
4,600.0	4,470.1	4,452.6	4,452.4	21.0	9.0	109.79	567.8	896.0	854.4	825.3	29.18	29.283			
4,700.0	4,566.2	4,550.1	4,549.9	21.6	9.2	111.53	567.1	895.6	864.5	834.7	29.77	29.040			
4,800.0	4,662.3	4,646.1	4,646.0	22.1	9.5	113.22	566.3	895.0	875.3	844.9	30.36	28.834			
4,900.0	4,758.4	4,742.1	4,741.9	22.7	9.7	114.88	565.4	894.3	886.9	855.9	30.93	28.674			
5,000.0	4,854.5	4,838.5	4,838.3	23.2	9.9	116.51	564.4	893.5	899.2	867.7	31.49	28.557			
5,100.0	4,950.6	4,935.1	4,934.9	23.8	10.1	118.11	563.4	892.6	912.1	880.1	32.04	28.471			
5,200.0	5,046.7	5,030.6	5,030.4	24.3	10.4	119.66	562.3	891.6	925.8	893.3	32.57	28.426			
5,301.0	5,143.8	5,130.6	5,130.4	24.9	10.6	121.23	561.2	890.4	940.1	907.0	33.10	28.402 SF			
5,400.0	5,239.3	5,225.9	5,225.6	25.4	10.9	122.80	560.4	889.2	954.0	920.4	33.55	28.432			
5,500.0	5,336.4	5,321.8	5,321.6	25.8	11.1	124.19	559.6	888.1	967.1	933.2	33.95	28.491			
5,600.0	5,434.1	5,420.4	5,420.2	26.1	11.4	125.44	558.9	887.1	979.3	945.0	34.33	28.525			
5,700.0	5,532.3	5,523.3	5,523.0	26.5	11.6	126.56	558.4	885.7	989.8	955.1	34.71	28.514			
5,800.0	5,631.0	5,619.6	5,619.4	26.8	11.9	127.44	558.2	884.7	999.0	963.9	35.08	28.477			

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Hunt Federal 28X-314
<b>Project:</b>	SEC.28-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Reference Site:</b>	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	<b>MD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Hunt Federal 28X-314	<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 #1 (1-27-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design														Offset Site Error:	0.0 ft
Survey Program: 0-Reference														Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Semi Major Axis 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		
1,300.0	1,293.3	1,292.3	1,292.3	3.4	2.8	56.37	531.9	915.2	995.9	989.9	6.02	165.498			
1,400.0	1,391.2	1,390.2	1,390.2	3.8	3.0	57.42	531.9	915.2	984.9	978.3	6.60	149.255			
1,500.0	1,488.9	1,510.8	1,510.8	4.2	3.3	58.89	530.5	914.4	972.2	964.9	7.23	134.445			
1,600.0	1,586.1	1,631.5	1,631.3	4.6	3.5	60.68	525.9	911.6	956.5	948.6	7.88	121.455			
1,700.0	1,682.9	1,749.3	1,748.8	5.1	3.7	62.77	518.2	907.0	938.3	929.7	8.56	109.584			
1,805.3	1,784.4	1,869.9	1,868.7	5.6	3.9	65.31	507.1	900.4	916.7	907.4	9.34	98.198			
1,900.0	1,875.4	1,958.8	1,956.9	6.1	4.1	67.23	497.6	894.7	896.8	886.8	10.02	89.459			
2,000.0	1,971.5	2,051.0	2,048.3	6.7	4.4	69.30	487.7	888.8	876.9	866.2	10.77	81.426			
2,100.0	2,067.6	2,143.1	2,139.8	7.2	4.6	71.45	477.8	882.9	858.4	846.9	11.54	74.396			
2,200.0	2,163.7	2,235.2	2,231.2	7.7	4.8	73.68	467.9	877.0	841.2	828.9	12.33	68.237			
2,300.0	2,259.8	2,327.4	2,322.6	8.3	5.1	75.99	458.1	871.0	825.5	812.4	13.13	62.850			
2,400.0	2,355.9	2,419.5	2,414.0	8.8	5.3	78.37	448.2	865.1	811.4	797.4	13.96	58.138			
2,500.0	2,452.0	2,511.7	2,505.5	9.4	5.6	80.82	438.3	859.2	798.9	784.1	14.79	54.021			
2,600.0	2,548.1	2,603.8	2,596.9	9.9	5.8	83.33	428.4	853.3	788.1	772.5	15.63	50.431			
2,700.0	2,644.2	2,696.0	2,688.3	10.5	6.1	85.90	418.5	847.4	779.1	762.6	16.47	47.307			
2,800.0	2,740.3	2,788.1	2,779.7	11.0	6.4	88.51	408.6	841.5	772.0	754.7	17.31	44.599			
2,900.0	2,836.4	2,880.3	2,871.2	11.6	6.7	91.16	398.8	835.6	766.7	748.6	18.14	42.261			
3,000.0	2,932.5	2,972.4	2,962.6	12.1	6.9	93.84	388.9	829.7	763.4	744.5	18.96	40.255			
3,100.0	3,028.6	3,064.6	3,054.0	12.7	7.2	96.52	379.0	823.8	762.1	742.3	19.77	38.544			
3,117.1	3,045.0	3,080.3	3,069.6	12.8	7.3	96.98	377.3	822.8	762.1	742.2	19.91	38.279 CC, ES			
3,200.0	3,124.7	3,156.7	3,145.4	13.2	7.5	99.22	369.1	817.8	762.8	742.2	20.56	37.098			
3,300.0	3,220.8	3,248.9	3,236.9	13.8	7.8	101.90	359.2	811.9	765.4	744.1	21.33	35.889			
3,400.0	3,316.9	3,341.0	3,328.3	14.3	8.0	104.55	349.3	806.0	770.0	747.9	22.07	34.892			
3,500.0	3,413.0	3,433.2	3,419.7	14.9	8.3	107.18	339.4	800.1	776.5	753.7	22.78	34.085			
3,600.0	3,509.1	3,525.3	3,511.1	15.4	8.6	109.76	329.6	794.2	784.8	761.4	23.46	33.448			
3,700.0	3,605.2	3,617.5	3,602.6	16.0	8.9	112.30	319.7	788.3	795.0	770.9	24.12	32.962			
3,800.0	3,701.3	3,709.6	3,694.0	16.5	9.2	114.77	309.8	782.4	806.9	782.2	24.74	32.612			
3,900.0	3,797.4	3,801.7	3,785.4	17.1	9.5	117.17	299.9	776.5	820.5	795.2	25.34	32.381			
4,000.0	3,893.5	3,893.9	3,876.8	17.7	9.8	119.51	290.0	770.6	835.7	809.8	25.91	32.257			
4,100.0	3,989.6	3,986.0	3,968.3	18.2	10.1	121.77	280.1	764.6	852.4	825.9	26.45	32.226 SF			
4,200.0	4,085.7	4,078.2	4,059.7	18.8	10.4	123.94	270.2	758.7	870.5	843.5	26.97	32.279			
4,300.0	4,181.8	4,170.3	4,151.1	19.3	10.7	126.04	260.4	752.8	889.9	862.4	27.46	32.404			
4,400.0	4,277.9	4,262.5	4,242.5	19.9	11.0	128.06	250.5	746.9	910.6	882.6	27.94	32.593			
4,500.0	4,374.0	4,354.6	4,334.0	20.4	11.2	129.99	240.6	741.0	932.4	904.0	28.39	32.837			
4,600.0	4,470.1	4,446.8	4,425.4	21.0	11.5	131.84	230.7	735.1	955.3	926.5	28.84	33.128			
4,700.0	4,566.2	4,538.9	4,516.8	21.6	11.8	133.62	220.8	729.2	979.2	949.9	29.26	33.461			



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Hunt Federal 28X-314
<b>Project:</b>	SEC.28-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Reference Site:</b>	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	<b>MD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Hunt Federal 28X-314	<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 #1 (1-27-15)	<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	-89.98	0.0	-30.7	30.7	30.7	0.00	N/A		
100.0	100.0	101.0	101.0	0.1	0.1	-89.98	0.0	-30.7	30.7	30.5	0.23	135.206		
200.0	200.0	201.0	201.0	0.3	0.3	-89.98	0.0	-30.7	30.7	30.0	0.68	45.368 CC		
300.0	300.0	301.0	301.0	0.6	0.6	-100.26	0.0	-30.7	30.8	29.7	1.13	27.396 ES		
400.0	400.0	401.0	401.0	0.8	0.8	-104.96	0.0	-30.7	31.4	29.8	1.58	19.933		
500.0	499.9	501.1	501.1	1.0	1.0	-110.99	0.9	-30.4	32.4	30.3	2.03	15.949		
600.0	599.7	601.4	601.4	1.3	1.2	-116.82	3.4	-29.7	33.4	30.9	2.49	13.438		
700.0	699.4	701.7	701.6	1.5	1.5	-122.49	7.6	-28.4	34.6	31.7	2.96	11.717		
800.0	798.9	802.1	801.7	1.8	1.7	-128.00	13.5	-26.6	35.9	32.5	3.43	10.476		
900.0	898.3	902.5	901.8	2.0	1.9	-133.35	21.1	-24.3	37.4	33.5	3.91	9.554		
1,000.0	997.4	1,002.9	1,001.8	2.3	2.2	-138.55	30.3	-21.5	39.0	34.6	4.40	8.859		
1,100.0	1,096.3	1,103.5	1,101.7	2.7	2.5	-143.60	41.3	-18.1	40.7	35.8	4.89	8.333		
1,200.0	1,194.9	1,204.0	1,201.4	3.0	2.8	-148.50	53.9	-14.3	42.6	37.3	5.37	7.937		
1,300.0	1,293.3	1,304.7	1,300.9	3.4	3.1	-153.24	68.2	-9.9	44.7	38.9	5.85	7.644		
1,400.0	1,391.2	1,405.4	1,400.2	3.8	3.4	-157.82	84.2	-5.1	47.0	40.6	6.32	7.430		
1,500.0	1,488.9	1,505.8	1,499.0	4.2	3.8	-162.23	101.7	0.2	49.5	42.7	6.79	7.292		
1,600.0	1,586.1	1,605.6	1,597.1	4.6	4.1	-166.57	119.5	5.7	53.6	46.4	7.26	7.389		
1,700.0	1,682.9	1,705.4	1,695.0	5.1	4.5	-170.56	137.3	11.1	59.7	52.0	7.73	7.723		
1,805.3	1,784.4	1,810.2	1,798.1	5.6	4.9	-174.12	156.0	16.8	68.2	60.0	8.25	8.275		
1,900.0	1,875.4	1,904.5	1,890.7	6.1	5.3	-176.67	172.8	21.9	77.0	68.2	8.75	8.801		
2,000.0	1,971.5	2,004.0	1,988.5	6.7	5.7	-178.81	190.5	27.3	86.3	77.0	9.28	9.296		
2,100.0	2,067.6	2,103.5	2,086.2	7.2	6.0	179.48	208.3	32.7	95.7	85.9	9.83	9.735		
2,200.0	2,163.7	2,203.1	2,184.0	7.7	6.4	178.07	226.0	38.1	105.2	94.8	10.39	10.126		
2,300.0	2,259.8	2,302.6	2,281.8	8.3	6.8	176.90	243.8	43.5	114.8	103.8	10.96	10.476		
2,400.0	2,355.9	2,402.1	2,379.6	8.8	7.2	175.90	261.5	48.9	124.4	112.9	11.53	10.789		
2,500.0	2,452.0	2,501.6	2,477.3	9.4	7.6	175.05	279.2	54.3	134.0	121.9	12.10	11.071		
2,600.0	2,548.1	2,601.1	2,575.1	9.9	8.0	174.31	297.0	59.7	143.7	131.0	12.68	11.326		
2,700.0	2,644.2	2,700.6	2,672.9	10.5	8.4	173.67	314.7	65.1	153.3	140.1	13.27	11.557		
2,800.0	2,740.3	2,800.2	2,770.6	11.0	8.8	173.10	332.5	70.4	163.0	149.2	13.85	11.767		
2,900.0	2,836.4	2,899.7	2,868.4	11.6	9.2	172.60	350.2	75.8	172.7	158.3	14.44	11.959		
3,000.0	2,932.5	2,999.2	2,966.2	12.1	9.6	172.15	368.0	81.2	182.4	167.4	15.03	12.136		
3,100.0	3,028.6	3,098.7	3,064.0	12.7	10.0	171.74	385.7	86.6	192.2	176.5	15.63	12.298		
3,200.0	3,124.7	3,198.2	3,161.7	13.2	10.4	171.38	403.5	92.0	201.9	185.7	16.22	12.447		
3,300.0	3,220.8	3,297.7	3,259.5	13.8	10.8	171.05	421.2	97.4	211.6	194.8	16.82	12.585		
3,400.0	3,316.9	3,397.3	3,357.3	14.3	11.2	170.74	438.9	102.8	221.4	204.0	17.41	12.713		
3,500.0	3,413.0	3,496.8	3,455.1	14.9	11.6	170.47	456.7	108.2	231.1	213.1	18.01	12.832		
3,600.0	3,509.1	3,596.3	3,552.8	15.4	12.0	170.21	474.4	113.6	240.9	222.3	18.61	12.943		
3,700.0	3,605.2	3,695.8	3,650.6	16.0	12.4	169.98	492.2	119.0	250.7	231.5	19.21	13.046		
3,800.0	3,701.3	3,795.3	3,748.4	16.5	12.8	169.76	509.9	124.4	260.4	240.6	19.81	13.143		
3,900.0	3,797.4	3,894.8	3,846.2	17.1	13.3	169.56	527.7	129.8	270.2	249.8	20.42	13.234		
4,000.0	3,893.5	3,994.4	3,943.9	17.7	13.7	169.37	545.4	135.2	280.0	259.0	21.02	13.320		
4,100.0	3,989.6	4,093.9	4,041.7	18.2	14.1	169.20	563.1	140.6	289.7	268.1	21.62	13.400		
4,200.0	4,085.7	4,193.4	4,139.5	18.8	14.5	169.03	580.9	146.0	299.5	277.3	22.23	13.476		
4,300.0	4,181.8	4,292.9	4,237.3	19.3	14.9	168.88	598.6	151.4	309.3	286.5	22.83	13.547		
4,400.0	4,277.9	4,392.4	4,335.0	19.9	15.3	168.74	616.4	156.8	319.1	295.7	23.44	13.615		
4,500.0	4,374.0	4,492.0	4,432.8	20.4	15.7	168.60	634.1	162.2	328.9	304.8	24.04	13.679		
4,600.0	4,470.1	4,591.5	4,530.6	21.0	16.1	168.47	651.9	167.6	338.7	314.0	24.65	13.739		
4,700.0	4,566.2	4,691.0	4,628.3	21.6	16.5	168.35	669.6	173.0	348.4	323.2	25.26	13.797		
4,800.0	4,662.3	4,790.5	4,726.1	22.1	16.9	168.24	687.3	178.4	358.2	332.4	25.86	13.852		
4,900.0	4,758.4	4,887.0	4,821.0	22.7	17.3	168.14	704.4	183.6	368.2	341.7	26.45	13.920		
5,000.0	4,854.5	4,977.9	4,910.6	23.2	17.6	168.15	718.9	188.0	379.9	352.9	26.96	14.092		

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 Hunt Federal 28X-314
<b>Project:</b>	SEC.28-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Reference Site:</b>	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	<b>MD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Hunt Federal 28X-314	<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 #1 (1-27-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design										Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W - Hunt Federal 28X-234 - Wellbore #1 - Plan #1 (1-27)				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		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
							+N/-S (ft)	+E/-W (ft)								
5,100.0	4,950.6	5,068.3	5,000.1	23.8	17.8	168.26	731.2	191.7	393.8	366.4	27.44	14.352				
5,200.0	5,046.7	5,158.1	5,089.3	24.3	18.0	168.46	741.4	194.9	410.0	382.1	27.90	14.696				
5,301.0	5,143.8	5,248.1	5,178.8	24.9	18.2	168.75	749.7	197.4	428.5	400.1	28.33	15.123				
5,400.0	5,239.3	5,335.7	5,266.2	25.4	18.4	169.12	755.8	199.2	447.5	418.8	28.75	15.566				
5,500.0	5,336.4	5,423.9	5,354.2	25.8	18.6	169.49	760.0	200.5	466.4	437.3	29.11	16.021				
5,600.0	5,434.1	5,511.7	5,442.0	26.1	18.7	169.86	762.2	201.2	484.9	455.5	29.44	16.470				
5,700.0	5,532.3	5,603.0	5,533.3	26.5	18.8	170.24	762.6	201.3	503.0	473.2	29.75	16.906				
5,800.0	5,631.0	5,701.6	5,632.0	26.8	18.9	170.59	762.6	201.3	518.9	488.9	30.08	17.253				
5,900.0	5,730.0	5,800.7	5,731.0	27.0	19.1	170.86	762.6	201.3	532.4	502.0	30.39	17.517				
6,000.0	5,829.4	5,900.1	5,830.4	27.3	19.2	171.07	762.6	201.3	543.2	512.5	30.69	17.701				
6,100.0	5,929.1	5,999.7	5,930.1	27.5	19.4	171.22	762.6	201.3	551.5	520.6	30.97	17.809				
6,200.0	6,028.9	6,099.6	6,029.9	27.6	19.5	171.33	762.6	201.3	557.2	526.0	31.23	17.843				
6,300.0	6,128.8	6,199.5	6,129.8	27.8	19.7	171.38	762.6	201.3	560.4	528.9	31.47	17.805				
6,371.2	6,200.0	6,270.7	6,201.0	27.8	19.8	-179.93	762.6	201.3	561.0	514.1	46.97	11.944				
6,400.0	6,228.8	6,299.5	6,229.8	27.9	19.8	-179.93	762.6	201.3	561.0	514.0	47.05	11.925				
6,456.9	6,285.8	6,356.4	6,286.8	27.9	19.9	-179.93	762.6	201.3	561.0	513.8	47.19	11.889				
6,500.0	6,328.8	6,399.5	6,329.8	28.0	19.9	-179.87	762.6	200.8	561.0	513.7	47.30	11.861				
6,561.0	6,389.8	6,460.0	6,390.1	28.0	20.0	-179.39	762.6	196.1	561.1	513.6	47.49	11.815				
6,600.0	6,428.8	6,498.3	6,428.1	28.1	20.0	-88.93	762.6	190.6	561.1	528.9	32.28	17.385				
6,650.0	6,478.6	6,547.1	6,475.9	28.1	20.1	-88.35	762.6	181.0	561.3	529.0	32.32	17.366				
6,700.0	6,528.1	6,595.6	6,522.7	28.1	20.1	-87.77	762.6	168.4	561.5	529.1	32.36	17.353				
6,750.0	6,576.9	6,643.7	6,568.3	28.2	20.1	-87.21	762.6	153.0	561.7	529.3	32.39	17.343				
6,800.0	6,624.9	6,691.5	6,612.5	28.2	20.1	-86.66	762.6	134.8	562.0	529.6	32.43	17.331				
6,850.0	6,672.0	6,739.0	6,655.2	28.2	20.2	-86.12	762.6	114.1	562.3	529.9	32.48	17.313				
6,900.0	6,717.8	6,786.3	6,696.4	28.2	20.2	-85.60	762.6	90.9	562.7	530.2	32.56	17.283				
6,950.0	6,762.2	6,833.2	6,735.8	28.2	20.2	-85.11	762.6	65.4	563.1	530.4	32.67	17.235				
7,000.0	6,805.1	6,879.9	6,773.3	28.3	20.2	-84.63	762.6	37.7	563.5	530.7	32.83	17.165				
7,050.0	6,846.1	6,926.3	6,808.9	28.3	20.2	-84.17	762.6	7.8	564.0	530.9	33.04	17.067				
7,100.0	6,885.2	6,972.5	6,842.5	28.3	20.2	-83.74	762.6	-23.9	564.4	531.1	33.33	16.936				
7,150.0	6,922.2	7,018.5	6,873.9	28.3	20.2	-83.34	762.6	-57.5	564.9	531.2	33.69	16.764				
7,200.0	6,956.9	7,064.4	6,903.1	28.3	20.3	-82.96	762.6	-92.7	565.3	531.2	34.14	16.561				
7,250.0	6,989.1	7,110.0	6,930.1	28.4	20.3	-82.62	762.6	-129.5	565.8	531.1	34.69	16.310				
7,300.0	7,018.8	7,155.5	6,954.8	28.5	20.4	-82.30	762.6	-167.7	566.2	530.8	35.35	16.017				
7,350.0	7,045.8	7,200.0	6,976.7	28.5	20.5	-82.01	762.6	-206.5	566.6	530.4	36.11	15.689				
7,400.0	7,070.0	7,246.0	6,996.9	28.6	20.7	-81.75	762.6	-247.8	566.9	529.9	37.02	15.316				
7,450.0	7,091.3	7,291.0	7,014.2	28.8	21.0	-81.53	762.6	-289.4	567.2	529.2	38.03	14.915				
7,500.0	7,109.6	7,336.0	7,029.1	28.9	21.3	-81.33	762.6	-331.9	567.5	528.4	39.16	14.491				
7,550.0	7,124.8	7,380.9	7,041.4	29.1	21.8	-81.18	762.6	-375.0	567.8	527.4	40.41	14.051				
7,600.0	7,136.9	7,425.8	7,051.1	29.4	22.3	-81.05	762.6	-418.8	568.0	526.2	41.76	13.602				
7,650.0	7,145.7	7,470.5	7,058.2	29.7	22.9	-80.96	762.6	-463.0	568.1	524.9	43.20	13.150				
7,700.0	7,151.3	7,515.3	7,062.8	30.1	23.7	-80.91	762.6	-507.5	568.2	523.4	44.73	12.702				
7,750.0	7,153.7	7,560.0	7,064.7	30.5	24.4	-80.89	762.6	-552.2	568.2	521.9	46.34	12.263				
7,763.9	7,153.8	7,573.4	7,064.7	30.7	24.7	-80.89	762.6	-565.6	568.2	521.4	46.81	12.138				
7,770.8	7,153.7	7,579.2	7,064.7	30.7	24.8	-80.89	762.6	-571.4	568.2	521.2	47.05	12.076				
7,800.0	7,153.6	7,608.5	7,064.6	31.1	25.3	-80.89	762.6	-600.6	568.2	520.0	48.18	11.792				
7,900.0	7,153.2	7,708.5	7,064.2	32.3	27.3	-80.89	762.6	-700.6	568.2	516.0	52.24	10.878				
8,000.0	7,152.8	7,808.5	7,063.8	33.9	29.4	-80.89	762.6	-800.6	568.2	511.7	56.54	10.049				
8,100.0	7,152.5	7,908.5	7,063.5	35.6	31.7	-80.89	762.6	-900.6	568.2	507.2	61.05	9.307				
8,200.0	7,152.1	8,008.5	7,063.1	37.6	34.0	-80.89	762.6	-1,000.6	568.2	502.5	65.72	8.646				
8,300.0	7,151.7	8,108.5	7,062.7	39.7	36.4	-80.89	762.6	-1,100.6	568.2	497.7	70.51	8.059				

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 Hunt Federal 28X-314
<b>Project:</b>	SEC.28-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Reference Site:</b>	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	<b>MD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Hunt Federal 28X-314	<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 #1 (1-27-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W - Hunt Federal 28X-234 - Wellbore #1 - Plan #1 (1-27)										Offset Site Error:		0.0 ft
Survey Program: 0-MWDD												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		
8,400.0	7,151.3	8,208.5	7,062.3	41.9	38.8	-80.89	762.6	-1,200.6	568.2	492.8	75.41	7.535		
8,500.0	7,150.9	8,308.5	7,061.9	44.1	41.3	-80.89	762.6	-1,300.6	568.2	487.8	80.39	7.068		
8,600.0	7,150.5	8,408.5	7,061.5	46.5	43.9	-80.89	762.6	-1,400.6	568.2	482.8	85.44	6.650		
8,700.0	7,150.2	8,508.5	7,061.2	48.9	46.4	-80.89	762.6	-1,500.6	568.2	477.7	90.55	6.275		
8,800.0	7,149.8	8,608.5	7,060.8	51.4	49.0	-80.89	762.6	-1,600.6	568.2	472.5	95.71	5.937		
8,900.0	7,149.4	8,708.5	7,060.4	53.9	51.6	-80.89	762.6	-1,700.6	568.2	467.3	100.91	5.631		
9,000.0	7,149.0	8,808.5	7,060.0	56.4	54.3	-80.89	762.6	-1,800.6	568.2	462.1	106.15	5.353		
9,100.0	7,148.6	8,908.5	7,059.6	58.9	56.9	-80.89	762.6	-1,900.6	568.2	456.8	111.41	5.100		
9,200.0	7,148.2	9,008.5	7,059.2	61.5	59.6	-80.89	762.6	-2,000.6	568.2	451.5	116.70	4.869		
9,300.0	7,147.9	9,108.5	7,058.8	64.1	62.3	-80.89	762.6	-2,100.6	568.2	446.2	122.02	4.657		
9,400.0	7,147.5	9,208.5	7,058.5	66.7	64.9	-80.89	762.6	-2,200.6	568.2	440.9	127.35	4.462		
9,500.0	7,147.1	9,308.5	7,058.1	69.4	67.6	-80.89	762.6	-2,300.6	568.2	435.5	132.70	4.282		
9,600.0	7,146.7	9,408.5	7,057.7	72.0	70.3	-80.89	762.6	-2,400.6	568.2	430.1	138.07	4.115		
9,700.0	7,146.3	9,508.5	7,057.3	74.7	73.1	-80.89	762.6	-2,500.6	568.2	424.8	143.45	3.961		
9,800.0	7,145.9	9,608.5	7,056.9	77.3	75.8	-80.89	762.6	-2,600.6	568.2	419.4	148.84	3.818		
9,900.0	7,145.6	9,708.5	7,056.5	80.0	78.5	-80.89	762.6	-2,700.6	568.2	414.0	154.25	3.684		
10,000.0	7,145.2	9,808.5	7,056.2	82.7	81.2	-80.89	762.6	-2,800.6	568.2	408.6	159.66	3.559		
10,100.0	7,144.8	9,908.5	7,055.8	85.4	84.0	-80.89	762.6	-2,900.6	568.2	403.1	165.08	3.442		
10,200.0	7,144.4	10,008.5	7,055.4	88.1	86.7	-80.89	762.6	-3,000.6	568.2	397.7	170.51	3.332		
10,300.0	7,144.0	10,108.5	7,055.0	90.8	89.5	-80.89	762.6	-3,100.6	568.2	392.3	175.95	3.229		
10,400.0	7,143.6	10,208.5	7,054.6	93.5	92.2	-80.89	762.6	-3,200.6	568.2	386.8	181.40	3.132		
10,500.0	7,143.2	10,308.5	7,054.2	96.3	95.0	-80.89	762.6	-3,300.6	568.2	381.4	186.85	3.041		
10,600.0	7,142.9	10,408.5	7,053.9	99.0	97.7	-80.89	762.6	-3,400.6	568.2	375.9	192.30	2.955		
10,700.0	7,142.5	10,508.5	7,053.5	101.7	100.5	-80.89	762.6	-3,500.6	568.2	370.4	197.77	2.873		
10,800.0	7,142.1	10,608.5	7,053.1	104.5	103.2	-80.89	762.6	-3,600.6	568.2	365.0	203.23	2.796		
10,900.0	7,141.7	10,708.5	7,052.7	107.2	106.0	-80.89	762.6	-3,700.6	568.2	359.5	208.70	2.723		
11,000.0	7,141.3	10,808.5	7,052.3	109.9	108.8	-80.89	762.6	-3,800.6	568.2	354.0	214.18	2.653		
11,100.0	7,140.9	10,908.5	7,051.9	112.7	111.5	-80.89	762.6	-3,900.6	568.2	348.6	219.66	2.587		
11,200.0	7,140.6	11,008.5	7,051.6	115.4	114.3	-80.89	762.6	-4,000.6	568.2	343.1	225.14	2.524		
11,300.0	7,140.2	11,108.5	7,051.2	118.2	117.1	-80.89	762.6	-4,100.6	568.2	337.6	230.62	2.464		
11,400.0	7,139.8	11,208.5	7,050.8	120.9	119.8	-80.89	762.6	-4,200.6	568.2	332.1	236.11	2.407		
11,500.0	7,139.4	11,308.5	7,050.4	123.7	122.6	-80.89	762.6	-4,300.6	568.2	326.6	241.60	2.352		
11,600.0	7,139.0	11,408.5	7,050.0	126.5	125.4	-80.89	762.6	-4,400.6	568.2	321.1	247.09	2.300		
11,700.0	7,138.6	11,508.5	7,049.6	129.2	128.2	-80.89	762.6	-4,500.6	568.2	315.6	252.59	2.250		
11,800.0	7,138.3	11,608.5	7,049.2	132.0	131.0	-80.89	762.6	-4,600.6	568.2	310.1	258.08	2.202		
11,900.0	7,137.9	11,708.5	7,048.9	134.7	133.7	-80.89	762.6	-4,700.6	568.2	304.6	263.58	2.156		
12,000.0	7,137.5	11,808.5	7,048.5	137.5	136.5	-80.89	762.6	-4,800.6	568.2	299.1	269.09	2.112		
12,100.0	7,137.1	11,908.5	7,048.1	140.3	139.3	-80.89	762.6	-4,900.6	568.2	293.6	274.59	2.069		
12,200.0	7,136.7	12,008.5	7,047.7	143.0	142.1	-80.89	762.6	-5,000.6	568.2	288.1	280.09	2.029		
12,300.0	7,136.3	12,108.5	7,047.3	145.8	144.9	-80.89	762.6	-5,100.6	568.2	282.6	285.60	1.990		
12,400.0	7,136.0	12,208.5	7,046.9	148.6	147.7	-80.89	762.6	-5,200.6	568.2	277.1	291.11	1.952		
12,500.0	7,135.6	12,308.5	7,046.6	151.4	150.4	-80.89	762.6	-5,300.6	568.2	271.6	296.62	1.916		
12,600.0	7,135.2	12,408.5	7,046.2	154.1	153.2	-80.89	762.6	-5,400.6	568.2	266.1	302.13	1.881		
12,700.0	7,134.8	12,508.5	7,045.8	156.9	156.0	-80.89	762.6	-5,500.6	568.2	260.6	307.64	1.847		
12,800.0	7,134.4	12,608.5	7,045.4	159.7	158.8	-80.89	762.6	-5,600.6	568.2	255.1	313.16	1.814		
12,900.0	7,134.0	12,708.5	7,045.0	162.5	161.6	-80.89	762.6	-5,700.6	568.2	249.5	318.67	1.783		
13,000.0	7,133.6	12,808.5	7,044.6	165.3	164.4	-80.89	762.6	-5,800.6	568.2	244.0	324.19	1.753		
13,100.0	7,133.3	12,908.5	7,044.3	168.0	167.2	-80.89	762.6	-5,900.6	568.2	238.5	329.70	1.723		
13,200.0	7,132.9	13,008.5	7,043.9	170.8	170.0	-80.89	762.6	-6,000.6	568.2	233.0	335.22	1.695		
13,300.0	7,132.5	13,108.5	7,043.5	173.6	172.7	-80.89	762.6	-6,100.6	568.2	227.5	340.74	1.668		
13,400.0	7,132.1	13,208.5	7,043.1	176.4	175.5	-80.89	762.6	-6,200.6	568.2	222.0	346.26	1.641		

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 Hunt Federal 28X-314
<b>Project:</b>	SEC.28-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Reference Site:</b>	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	<b>MD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Hunt Federal 28X-314	<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 #1 (1-27-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W - Hunt Federal 28X-234 - Wellbore #1 - Plan #1 (1-27)										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			
13,500.0	7,131.7	13,308.5	7,042.7	179.2	178.3	-80.89	762.6	-6,300.6	568.2	216.4	351.78	1.615			
13,600.0	7,131.3	13,408.5	7,042.3	181.9	181.1	-80.89	762.6	-6,400.6	568.2	210.9	357.30	1.590			
13,700.0	7,131.0	13,508.5	7,042.0	184.7	183.9	-80.89	762.6	-6,500.6	568.2	205.4	362.83	1.566			
13,800.0	7,130.6	13,608.5	7,041.6	187.5	186.7	-80.89	762.6	-6,600.6	568.2	199.9	368.35	1.543			
13,900.0	7,130.2	13,708.5	7,041.2	190.3	189.5	-80.89	762.6	-6,700.6	568.2	194.3	373.87	1.520			
14,000.0	7,129.8	13,808.5	7,040.8	193.1	192.3	-80.89	762.6	-6,800.6	568.2	188.8	379.40	1.498	Level 3		
14,100.0	7,129.4	13,908.5	7,040.4	195.9	195.1	-80.89	762.6	-6,900.6	568.2	183.3	384.92	1.476	Level 3		
14,200.0	7,129.0	14,008.5	7,040.0	198.7	197.9	-80.89	762.6	-7,000.6	568.2	177.8	390.45	1.455	Level 3		
14,300.0	7,128.7	14,108.5	7,039.6	201.5	200.7	-80.89	762.6	-7,100.6	568.2	172.2	395.98	1.435	Level 3		
14,400.0	7,128.3	14,208.5	7,039.3	204.2	203.5	-80.89	762.6	-7,200.6	568.2	166.7	401.50	1.415	Level 3		
14,500.0	7,127.9	14,308.5	7,038.9	207.0	206.3	-80.89	762.6	-7,300.6	568.2	161.2	407.03	1.396	Level 3		
14,600.0	7,127.5	14,408.5	7,038.5	209.8	209.1	-80.89	762.6	-7,400.6	568.2	155.7	412.56	1.377	Level 3		
14,700.0	7,127.1	14,508.5	7,038.1	212.6	211.9	-80.89	762.6	-7,500.6	568.2	150.1	418.09	1.359	Level 3		
14,800.0	7,126.7	14,608.5	7,037.7	215.4	214.7	-80.89	762.6	-7,600.6	568.2	144.6	423.62	1.341	Level 3		
14,900.0	7,126.4	14,708.5	7,037.3	218.2	217.5	-80.89	762.6	-7,700.6	568.2	139.1	429.15	1.324	Level 3		
14,955.0	7,126.1	14,763.5	7,037.1	219.7	219.0	-80.89	762.6	-7,755.6	568.2	136.0	432.19	1.315	Level 3		
14,992.1	7,126.0	14,798.2	7,037.0	220.8	220.0	-80.89	762.6	-7,790.3	568.2	134.0	434.18	1.309	Level 3, SF		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Hunt Federal 28X-314
<b>Project:</b>	SEC.28-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Reference Site:</b>	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	<b>MD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Hunt Federal 28X-314	<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 #1 (1-27-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W - Hunt Federal 28Y-214 - Wellbore #1 - Plan #1 (1-27)										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	-90.00	0.0	-92.1	92.1	92.1	0.00	N/A		
100.0	100.0	101.0	101.0	0.1	0.1	-90.00	0.0	-92.1	92.1	91.9	0.23	405.618		
200.0	200.0	201.0	201.0	0.3	0.3	-90.00	0.0	-92.1	92.1	91.4	0.68	136.104 CC		
300.0	300.0	301.0	301.0	0.6	0.6	-99.21	0.0	-92.1	92.2	91.1	1.13	81.926 ES		
400.0	400.0	401.0	401.0	0.8	0.8	-100.80	0.0	-92.1	92.7	91.1	1.58	58.815		
500.0	499.9	500.9	500.9	1.0	1.0	-103.41	0.0	-92.1	93.6	91.6	2.03	46.108		
600.0	599.7	600.7	600.7	1.3	1.2	-106.97	0.0	-92.1	95.2	92.7	2.49	38.220		
700.0	699.4	700.4	700.4	1.5	1.5	-111.33	0.0	-92.1	97.8	94.8	2.96	33.031		
800.0	798.9	799.9	799.9	1.8	1.7	-116.32	0.0	-92.1	101.7	98.2	3.44	29.571		
900.0	898.3	899.3	899.3	2.0	1.9	-121.68	0.0	-92.1	107.2	103.3	3.92	27.325		
1,000.0	997.4	998.4	998.4	2.3	2.1	-127.15	0.0	-92.1	114.6	110.2	4.41	25.985		
1,100.0	1,096.3	1,097.3	1,097.3	2.7	2.4	-132.49	0.0	-92.1	124.2	119.3	4.90	25.343		
1,200.0	1,194.9	1,195.9	1,195.9	3.0	2.6	-137.52	0.0	-92.1	135.9	130.5	5.38	25.244 SF		
1,300.0	1,293.3	1,294.3	1,294.3	3.4	2.8	-142.11	0.0	-92.1	149.9	144.1	5.86	25.567		
1,400.0	1,391.2	1,392.2	1,392.2	3.8	3.0	-146.22	0.0	-92.1	166.2	159.9	6.34	26.216		
1,500.0	1,488.9	1,489.9	1,489.9	4.2	3.2	-149.83	0.0	-92.1	184.7	177.9	6.81	27.114		
1,600.0	1,586.1	1,589.3	1,589.3	4.6	3.4	-153.21	0.1	-91.4	204.9	197.6	7.27	28.179		
1,700.0	1,682.9	1,688.7	1,688.7	5.1	3.7	-156.48	0.4	-89.0	226.1	218.4	7.71	29.324		
1,805.3	1,784.4	1,793.1	1,792.9	5.6	3.9	-159.81	1.1	-84.7	249.8	241.6	8.17	30.570		
1,900.0	1,875.4	1,886.8	1,886.5	6.1	4.1	-162.72	1.8	-79.2	271.5	262.9	8.60	31.577		
2,000.0	1,971.5	1,985.9	1,985.3	6.7	4.3	-165.59	2.9	-71.7	294.3	285.2	9.06	32.493		
2,100.0	2,067.6	2,084.1	2,083.1	7.2	4.5	-168.29	4.2	-62.7	316.8	307.3	9.52	33.280		
2,200.0	2,163.7	2,180.5	2,179.0	7.7	4.7	-170.65	5.5	-53.5	339.8	329.8	10.00	33.995		
2,300.0	2,259.8	2,276.9	2,275.0	8.3	5.0	-172.71	6.8	-44.3	363.2	352.8	10.48	34.653		
2,400.0	2,355.9	2,373.3	2,371.0	8.8	5.2	-174.53	8.1	-35.0	387.1	376.1	10.98	35.256		
2,500.0	2,452.0	2,469.8	2,467.0	9.4	5.5	-176.13	9.4	-25.8	411.3	399.8	11.49	35.802		
2,600.0	2,548.1	2,566.2	2,562.9	9.9	5.7	-177.56	10.7	-16.6	435.7	423.7	12.00	36.298		
2,700.0	2,644.2	2,662.6	2,658.9	10.5	6.0	-178.83	12.0	-7.4	460.4	447.8	12.53	36.747		
2,800.0	2,740.3	2,759.0	2,754.9	11.0	6.2	-179.98	13.3	1.9	485.2	472.2	13.06	37.155		
2,900.0	2,836.4	2,855.4	2,850.8	11.6	6.5	-178.98	14.6	11.1	510.3	496.7	13.60	37.524		
3,000.0	2,932.5	2,951.9	2,946.8	12.1	6.7	-178.04	15.9	20.3	535.5	521.3	14.14	37.859		
3,100.0	3,028.6	3,048.3	3,042.8	12.7	7.0	-177.19	17.2	29.6	560.8	546.1	14.69	38.164		
3,200.0	3,124.7	3,144.7	3,138.7	13.2	7.2	-176.41	18.5	38.8	586.2	570.9	15.25	38.443		
3,300.0	3,220.8	3,241.1	3,234.7	13.8	7.5	-175.69	19.8	48.0	611.7	595.9	15.81	38.697		
3,400.0	3,316.9	3,337.5	3,330.7	14.3	7.7	-175.03	21.1	57.2	637.3	620.9	16.37	38.929		
3,500.0	3,413.0	3,434.0	3,426.6	14.9	8.0	-174.42	22.4	66.5	662.9	646.0	16.94	39.143		
3,600.0	3,509.1	3,530.4	3,522.6	15.4	8.3	-173.85	23.7	75.7	688.6	671.1	17.51	39.339		
3,700.0	3,605.2	3,626.8	3,618.6	16.0	8.5	-173.33	25.0	84.9	714.4	696.3	18.08	39.520		
3,800.0	3,701.3	3,723.2	3,714.5	16.5	8.8	-172.84	26.3	94.1	740.2	721.6	18.65	39.687		
3,900.0	3,797.4	3,819.6	3,810.5	17.1	9.1	-172.39	27.6	103.4	766.1	746.9	19.23	39.842		
4,000.0	3,893.5	3,916.1	3,906.5	17.7	9.3	-171.96	28.9	112.6	792.1	772.2	19.81	39.985		
4,100.0	3,989.6	4,012.5	4,002.5	18.2	9.6	-171.57	30.2	121.8	818.0	797.6	20.39	40.119		
4,200.0	4,085.7	4,108.9	4,098.4	18.8	9.9	-171.19	31.5	131.0	844.0	823.0	20.97	40.243		
4,300.0	4,181.8	4,205.3	4,194.4	19.3	10.1	-170.84	32.8	140.3	870.0	848.5	21.56	40.358		
4,400.0	4,277.9	4,301.7	4,290.4	19.9	10.4	-170.51	34.2	149.5	896.1	873.9	22.14	40.467		
4,500.0	4,374.0	4,398.2	4,386.3	20.4	10.7	-170.20	35.5	158.7	922.2	899.4	22.73	40.568		
4,600.0	4,470.1	4,494.6	4,482.3	21.0	10.9	-169.90	36.8	167.9	948.3	925.0	23.32	40.663		
4,700.0	4,566.2	4,591.0	4,578.3	21.6	11.2	-169.62	38.1	177.2	974.4	950.5	23.91	40.752		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Hunt Federal 28X-314
<b>Project:</b>	SEC.28-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Reference Site:</b>	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	<b>MD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Hunt Federal 28X-314	<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 #1 (1-27-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W - Hunt Federal 28Y-314 - Wellbore #1 - Plan #1 (1-27)										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	-90.00	0.0	-61.4	61.4	61.4	0.00	N/A		
100.0	100.0	101.0	101.0	0.1	0.1	-90.00	0.0	-61.4	61.4	61.2	0.23	270.412		
200.0	200.0	201.0	201.0	0.3	0.3	-90.00	0.0	-61.4	61.4	60.7	0.68	90.736 CC		
300.0	300.0	301.0	301.0	0.6	0.6	-99.48	0.0	-61.4	61.5	60.4	1.13	54.659 ES		
400.0	400.0	401.0	401.0	0.8	0.8	-101.86	0.0	-61.4	62.0	60.4	1.58	39.355		
500.0	499.9	500.9	500.9	1.0	1.0	-105.73	0.0	-61.4	63.1	61.0	2.03	31.063		
600.0	599.7	600.7	600.7	1.3	1.2	-110.89	0.0	-61.4	65.0	62.5	2.49	26.090		
700.0	699.4	700.4	700.4	1.5	1.5	-117.02	0.0	-61.4	68.2	65.2	2.96	23.046		
800.0	798.9	799.9	799.9	1.8	1.7	-123.67	0.0	-61.4	73.0	69.6	3.43	21.285		
900.0	898.3	899.3	899.3	2.0	1.9	-130.36	0.0	-61.4	79.9	76.0	3.91	20.447		
1,000.0	997.4	998.4	998.4	2.3	2.1	-136.70	0.0	-61.4	88.9	84.6	4.38	20.296 SF		
1,100.0	1,096.3	1,099.0	1,099.0	2.7	2.4	-142.39	0.7	-60.9	99.4	94.6	4.85	20.487		
1,200.0	1,194.9	1,199.8	1,199.7	3.0	2.6	-147.34	2.9	-59.5	110.4	105.1	5.32	20.766		
1,300.0	1,293.3	1,300.8	1,300.6	3.4	2.8	-151.71	6.6	-57.0	121.9	116.1	5.78	21.082		
1,400.0	1,391.2	1,402.0	1,401.6	3.8	3.0	-155.63	11.8	-53.6	133.8	127.5	6.24	21.421		
1,500.0	1,488.9	1,503.3	1,502.7	4.2	3.3	-159.20	18.4	-49.2	146.0	139.3	6.71	21.775		
1,600.0	1,586.1	1,602.3	1,601.2	4.6	3.5	-162.37	25.8	-44.4	159.4	152.2	7.16	22.244		
1,700.0	1,682.9	1,700.7	1,699.3	5.1	3.7	-165.18	33.1	-39.6	174.8	167.2	7.62	22.923		
1,805.3	1,784.4	1,804.0	1,802.2	5.6	4.0	-167.76	40.8	-34.5	193.2	185.1	8.11	23.816		
1,900.0	1,875.4	1,896.8	1,894.6	6.1	4.2	-169.77	47.7	-29.9	211.0	202.4	8.58	24.600		
2,000.0	1,971.5	1,994.8	1,992.2	6.7	4.5	-171.56	55.0	-25.1	229.9	220.8	9.07	25.352		
2,100.0	2,067.6	2,092.7	2,089.7	7.2	4.7	-173.07	62.3	-20.3	249.0	239.4	9.57	26.031		
2,200.0	2,163.7	2,190.7	2,187.3	7.7	5.0	-174.37	69.6	-15.5	268.3	258.2	10.07	26.646		
2,300.0	2,259.8	2,288.6	2,284.9	8.3	5.3	-175.49	76.9	-10.7	287.7	277.1	10.57	27.203		
2,400.0	2,355.9	2,386.6	2,382.4	8.8	5.5	-176.47	84.2	-5.9	307.1	296.0	11.08	27.707		
2,500.0	2,452.0	2,484.6	2,480.0	9.4	5.8	-177.34	91.5	-1.1	326.7	315.1	11.60	28.166		
2,600.0	2,548.1	2,582.5	2,577.6	9.9	6.0	-178.10	98.8	3.7	346.3	334.2	12.11	28.584		
2,700.0	2,644.2	2,680.5	2,675.1	10.5	6.3	-178.79	106.1	8.5	366.0	353.3	12.63	28.966		
2,800.0	2,740.3	2,778.4	2,772.7	11.0	6.5	-179.40	113.4	13.3	385.7	372.5	13.16	29.315		
2,900.0	2,836.4	2,876.4	2,870.3	11.6	6.8	-179.96	120.7	18.1	405.4	391.7	13.68	29.636		
3,000.0	2,932.5	2,974.3	2,967.8	12.1	7.1	179.54	128.0	22.9	425.2	411.0	14.21	29.932		
3,100.0	3,028.6	3,072.3	3,065.4	12.7	7.3	179.08	135.3	27.7	445.0	430.3	14.73	30.204		
3,200.0	3,124.7	3,170.3	3,163.0	13.2	7.6	178.66	142.6	32.5	464.8	449.6	15.26	30.457		
3,300.0	3,220.8	3,268.2	3,260.5	13.8	7.9	178.27	149.9	37.3	484.7	468.9	15.79	30.690		
3,400.0	3,316.9	3,366.2	3,358.1	14.3	8.1	177.92	157.2	42.1	504.6	488.3	16.33	30.907		
3,500.0	3,413.0	3,464.1	3,455.7	14.9	8.4	177.59	164.5	47.0	524.5	507.6	16.86	31.110		
3,600.0	3,509.1	3,562.1	3,553.2	15.4	8.7	177.29	171.8	51.8	544.4	527.0	17.39	31.298		
3,700.0	3,605.2	3,660.1	3,650.8	16.0	8.9	177.00	179.0	56.6	564.3	546.4	17.93	31.475		
3,800.0	3,701.3	3,758.0	3,748.4	16.5	9.2	176.74	186.3	61.4	584.3	565.8	18.47	31.640		
3,900.0	3,797.4	3,856.0	3,846.0	17.1	9.5	176.49	193.6	66.2	604.2	585.2	19.00	31.795		
4,000.0	3,893.5	3,953.9	3,943.5	17.7	9.7	176.26	200.9	71.0	624.2	604.6	19.54	31.940		
4,100.0	3,989.6	4,051.9	4,041.1	18.2	10.0	176.05	208.2	75.8	644.1	624.0	20.08	32.077		
4,200.0	4,085.7	4,149.8	4,138.7	18.8	10.3	175.84	215.5	80.6	664.1	643.5	20.62	32.207		
4,300.0	4,181.8	4,247.8	4,236.2	19.3	10.5	175.65	222.8	85.4	684.1	662.9	21.16	32.328		
4,400.0	4,277.9	4,345.8	4,333.8	19.9	10.8	175.47	230.1	90.2	704.1	682.4	21.70	32.444		
4,500.0	4,374.0	4,443.7	4,431.4	20.4	11.1	175.30	237.4	95.0	724.1	701.8	22.24	32.553		
4,600.0	4,470.1	4,541.7	4,528.9	21.0	11.3	175.14	244.7	99.8	744.1	721.3	22.79	32.656		
4,700.0	4,566.2	4,639.6	4,626.5	21.6	11.6	174.99	252.0	104.6	764.1	740.8	23.33	32.755		
4,800.0	4,662.3	4,727.8	4,714.3	22.1	11.8	174.87	258.2	108.7	784.5	760.7	23.82	32.934		
4,900.0	4,758.4	4,810.3	4,796.7	22.7	12.0	174.83	262.6	111.6	806.7	782.4	24.27	33.238		
5,000.0	4,854.5	4,900.0	4,886.3	23.2	12.1	174.86	265.7	113.7	830.7	806.0	24.72	33.599		

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 Hunt Federal 28X-314
<b>Project:</b>	SEC.28-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Reference Site:</b>	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	<b>MD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Hunt Federal 28X-314	<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 #1 (1-27-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design										Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W - Hunt Federal 28Y-314 - Wellbore #1 - Plan #1 (1-27)				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)						
5,100.0	4,950.6	4,973.2	4,959.5	23.8	12.3	174.93	267.0	114.5	856.4	831.3	25.14	34.064					
5,200.0	5,046.7	5,061.4	5,047.7	24.3	12.4	175.07	267.2	114.6	883.7	858.2	25.59	34.536					
5,301.0	5,143.8	5,158.5	5,144.8	24.9	12.6	175.22	267.2	114.6	911.6	885.5	26.07	34.960					
5,400.0	5,239.3	5,254.0	5,240.3	25.4	12.8	175.39	267.2	114.6	937.6	911.1	26.59	35.259					
5,500.0	5,336.4	5,351.1	5,337.4	25.8	13.0	175.53	267.2	114.6	961.5	934.4	27.07	35.512					
5,600.0	5,434.1	5,448.8	5,435.1	26.1	13.2	175.65	267.2	114.6	982.7	955.2	27.53	35.691					



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Hunt Federal 28X-314
<b>Project:</b>	SEC.28-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Reference Site:</b>	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	<b>MD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Hunt Federal 28X-314	<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 #1 (1-27-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W - Hunt Federal 28Y-404 - Wellbore #1 - Plan #1 (1-27)										Offset Site Error:		0.0 ft
Survey Program: 0-MWD												Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
0.0	0.0	1.0	1.0	0.0	0.0	-90.00	0.0	-120.0	120.0	120.0	0.00	N/A		
100.0	100.0	101.0	101.0	0.1	0.1	-90.00	0.0	-120.0	120.0	119.8	0.23	528.532		
200.0	200.0	201.0	201.0	0.3	0.3	-90.00	0.0	-120.0	120.0	119.3	0.68	177.348 CC		
300.0	300.0	301.0	301.0	0.6	0.6	-99.09	0.0	-120.0	120.1	119.0	1.13	106.715		
400.0	400.0	401.0	401.0	0.8	0.8	-100.31	0.0	-120.0	120.6	119.0	1.58	76.516 ES		
500.0	499.9	500.9	500.9	1.0	1.0	-102.33	0.0	-120.0	121.4	119.4	2.03	59.820		
600.0	599.7	600.7	600.7	1.3	1.2	-105.09	0.0	-120.0	122.9	120.4	2.49	49.330		
700.0	699.4	700.4	700.4	1.5	1.5	-108.53	0.0	-120.0	125.1	122.2	2.96	42.267		
800.0	798.9	799.9	799.9	1.8	1.7	-112.54	0.0	-120.0	128.5	125.1	3.44	37.352		
900.0	898.3	899.3	899.3	2.0	1.9	-116.97	0.0	-120.0	133.3	129.4	3.93	33.916		
1,000.0	997.4	998.4	998.4	2.3	2.1	-121.66	0.0	-120.0	139.7	135.3	4.43	31.570		
1,100.0	1,096.3	1,097.3	1,097.3	2.7	2.4	-126.43	0.0	-120.0	148.1	143.2	4.93	30.063		
1,200.0	1,194.9	1,195.9	1,195.9	3.0	2.6	-131.12	0.0	-120.0	158.5	153.1	5.43	29.218		
1,300.0	1,293.3	1,294.3	1,294.3	3.4	2.8	-135.60	0.0	-120.0	171.1	165.2	5.92	28.902 SF		
1,400.0	1,391.2	1,392.2	1,392.2	3.8	3.0	-139.77	0.0	-120.0	186.0	179.6	6.41	29.007		
1,500.0	1,488.9	1,489.9	1,489.9	4.2	3.2	-143.57	0.0	-120.0	203.2	196.3	6.90	29.447		
1,600.0	1,586.1	1,587.1	1,587.1	4.6	3.5	-147.01	0.0	-120.0	222.5	215.2	7.38	30.152		
1,700.0	1,682.9	1,683.9	1,683.9	5.1	3.7	-150.08	0.0	-120.0	244.1	236.2	7.86	31.066		
1,805.3	1,784.4	1,785.4	1,785.4	5.6	3.9	-152.93	0.0	-120.0	269.1	260.7	8.36	32.205		
1,900.0	1,875.4	1,876.4	1,876.4	6.1	4.1	-155.25	0.0	-120.0	292.8	284.0	8.81	33.223		
2,000.0	1,971.5	1,972.5	1,972.5	6.7	4.3	-157.32	0.0	-120.0	318.3	309.0	9.30	34.237		
2,100.0	2,067.6	2,068.6	2,068.6	7.2	4.5	-159.09	0.0	-120.0	344.1	334.3	9.78	35.185		
2,200.0	2,163.7	2,164.7	2,164.7	7.7	4.8	-160.61	0.0	-120.0	370.2	359.9	10.26	36.067		
2,300.0	2,259.8	2,260.8	2,260.8	8.3	5.0	-161.93	0.0	-120.0	396.5	385.7	10.75	36.886		
2,400.0	2,355.9	2,356.9	2,356.9	8.8	5.2	-163.09	0.0	-120.0	422.9	411.7	11.23	37.646		
2,500.0	2,452.0	2,453.0	2,453.0	9.4	5.4	-164.11	0.0	-120.0	449.6	437.8	11.72	38.352		
2,600.0	2,548.1	2,549.3	2,549.3	9.9	5.6	-165.05	-0.1	-119.8	476.3	464.1	12.20	39.038		
2,700.0	2,644.2	2,645.6	2,645.6	10.5	5.8	-166.05	-0.6	-118.2	503.0	490.4	12.66	39.742		
2,800.0	2,740.3	2,741.7	2,741.6	11.0	6.0	-167.14	-1.8	-115.2	529.9	516.8	13.10	40.441		
2,900.0	2,836.4	2,837.4	2,837.2	11.6	6.2	-168.28	-3.5	-110.7	557.0	543.4	13.55	41.108		
3,000.0	2,932.5	2,932.8	2,932.3	12.1	6.4	-169.48	-5.7	-104.7	584.3	570.3	14.00	41.745		
3,100.0	3,028.6	3,027.7	3,026.9	12.7	6.6	-170.72	-8.4	-97.2	611.8	597.4	14.45	42.352		
3,200.0	3,124.7	3,122.1	3,120.9	13.2	6.8	-171.99	-11.7	-88.3	639.7	624.8	14.90	42.929		
3,300.0	3,220.8	3,216.1	3,214.2	13.8	7.0	-173.29	-15.5	-78.1	668.1	652.7	15.37	43.473		
3,400.0	3,316.9	3,309.5	3,306.8	14.3	7.2	-174.61	-19.8	-66.4	696.9	681.1	15.84	43.984		
3,500.0	3,413.0	3,403.1	3,399.4	14.9	7.4	-175.93	-24.6	-53.6	726.2	709.9	16.34	44.453		
3,600.0	3,509.1	3,497.3	3,492.5	15.4	7.7	-177.18	-29.4	-40.5	755.9	739.1	16.84	44.875		
3,700.0	3,605.2	3,591.5	3,585.7	16.0	7.9	-178.33	-34.3	-27.3	785.9	768.5	17.37	45.254		
3,800.0	3,701.3	3,685.7	3,678.9	16.5	8.2	-179.40	-39.1	-14.2	816.2	798.3	17.90	45.599		
3,900.0	3,797.4	3,779.9	3,772.0	17.1	8.4	179.61	-43.9	-1.1	846.7	828.2	18.44	45.910		
4,000.0	3,893.5	3,874.1	3,865.2	17.7	8.7	178.68	-48.8	12.0	877.4	858.4	19.00	46.192		
4,100.0	3,989.6	3,968.3	3,958.4	18.2	9.0	177.81	-53.6	25.1	908.4	888.8	19.56	46.449		
4,200.0	4,085.7	4,062.5	4,051.5	18.8	9.3	177.01	-58.5	38.2	939.5	919.3	20.12	46.682		
4,300.0	4,181.8	4,156.8	4,144.7	19.3	9.6	176.25	-63.3	51.4	970.7	950.0	20.70	46.895		



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Hunt Federal 28X-314
<b>Project:</b>	SEC.28-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Reference Site:</b>	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	<b>MD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Hunt Federal 28X-314	<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 #1 (1-27-15)	<b>Offset TVD Reference:</b>	Offset Datum

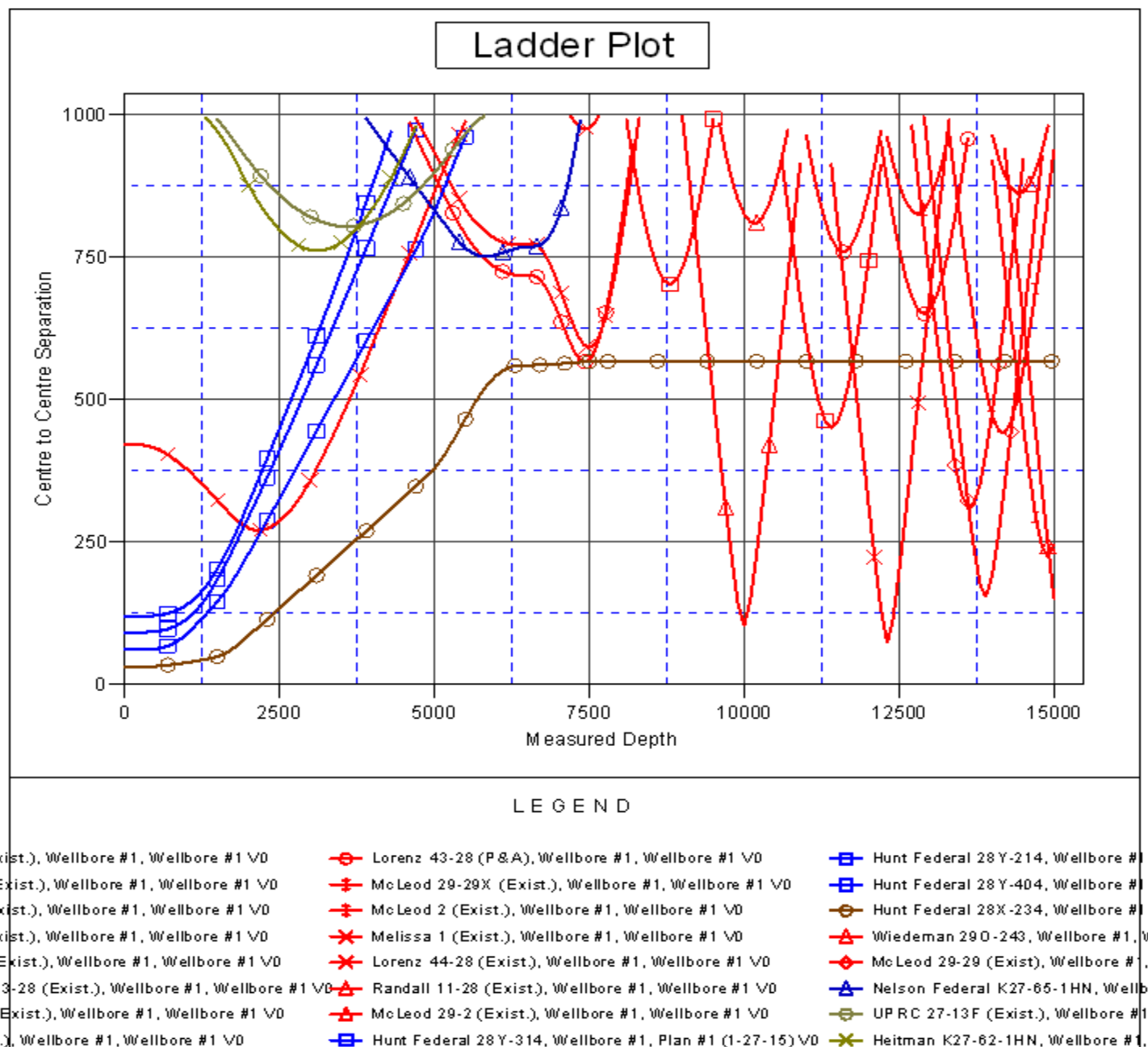
Offset Design Survey Program: 0-Reference										Nelson Federal K27-65-1HN Pad Sec.27-T4N-R66W - Nelson Federal K27-65-1HN - Wellbore #1 - Plan				Offset Site Error: 0.0 ft	
		Offset		Semi Major Axis			Distance					Offset Well Error: 0.0 ft			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (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		
3,900.0	3,797.4	3,686.3	3,663.7	17.1	9.7	10.46	1,725.1	443.8	993.9	974.6	19.39	51.257			
4,000.0	3,893.5	3,785.0	3,761.2	17.7	10.0	10.14	1,740.2	438.1	979.1	959.2	19.96	49.051			
4,100.0	3,989.6	3,883.8	3,858.6	18.2	10.4	9.81	1,755.4	432.3	964.3	943.8	20.53	46.972			
4,200.0	4,085.7	3,982.5	3,956.0	18.8	10.7	9.48	1,770.5	426.6	949.6	928.5	21.10	45.011			
4,300.0	4,181.8	4,081.3	4,053.4	19.3	11.1	9.13	1,785.6	420.9	934.9	913.2	21.66	43.157			
4,400.0	4,277.9	4,180.0	4,150.8	19.9	11.5	8.77	1,800.7	415.1	920.2	898.0	22.23	41.403			
4,500.0	4,374.0	4,278.8	4,248.2	20.4	11.8	8.39	1,815.9	409.4	905.6	882.8	22.79	39.742			
4,600.0	4,470.1	4,377.5	4,345.6	21.0	12.2	8.01	1,831.0	403.6	890.9	867.6	23.34	38.165			
4,700.0	4,566.2	4,476.3	4,443.0	21.6	12.5	7.61	1,846.1	397.9	876.4	852.5	23.90	36.667			
4,800.0	4,662.3	4,575.0	4,540.5	22.1	12.9	7.20	1,861.3	392.2	861.9	837.4	24.45	35.243			
4,900.0	4,758.4	4,673.8	4,637.9	22.7	13.2	6.78	1,876.4	386.4	847.4	822.4	25.01	33.887			
5,000.0	4,854.5	4,772.5	4,735.3	23.2	13.6	6.34	1,891.5	380.7	833.0	807.4	25.56	32.594			
5,100.0	4,950.6	4,871.2	4,832.7	23.8	14.0	5.88	1,906.6	374.9	818.6	792.5	26.10	31.360			
5,200.0	5,046.7	4,970.0	4,930.1	24.3	14.3	5.41	1,921.8	369.2	804.2	777.6	26.65	30.181			
5,301.0	5,143.8	5,069.7	5,028.5	24.9	14.7	4.92	1,937.0	363.4	789.8	762.6	27.20	29.043			
5,400.0	5,239.3	5,167.7	5,125.1	25.4	15.0	4.39	1,952.0	357.7	777.0	749.3	27.77	27.986			
5,500.0	5,336.4	5,266.8	5,223.0	25.8	15.4	3.84	1,967.2	352.0	766.7	738.5	28.29	27.101			
5,600.0	5,434.1	5,366.3	5,321.0	26.1	15.8	3.26	1,982.5	346.2	759.1	730.3	28.79	26.364			
5,700.0	5,532.3	5,465.8	5,419.3	26.5	16.1	2.67	1,997.7	340.4	754.2	724.9	29.27	25.768			
5,800.0	5,631.0	5,565.5	5,517.6	26.8	16.5	2.06	2,013.0	334.6	752.0	722.3	29.72	25.304			
5,832.6	5,663.2	5,598.0	5,549.6	26.8	16.6	1.86	2,018.0	332.7	751.8	722.0	29.86	25.181 CC, ES			
5,900.0	5,730.0	5,665.2	5,615.9	27.0	16.9	1.45	2,028.2	328.8	752.4	722.3	30.14	24.965			
6,000.0	5,829.4	5,773.2	5,722.5	27.3	17.3	0.80	2,044.5	322.6	755.4	724.9	30.54	24.737			
6,100.0	5,929.1	5,893.6	5,841.8	27.5	17.6	0.19	2,059.8	316.8	758.8	727.9	30.88	24.573			
6,200.0	6,028.9	6,014.4	5,961.9	27.6	17.9	-0.28	2,071.5	312.4	762.1	730.9	31.18	24.442			
6,300.0	6,128.8	6,135.5	6,082.7	27.8	18.1	-0.60	2,079.8	309.2	765.3	733.8	31.45	24.336			
6,371.2	6,200.0	6,221.8	6,168.9	27.8	18.3	7.93	2,083.5	307.9	767.5	722.3	45.16	16.994			
6,400.0	6,228.8	6,256.8	6,203.9	27.9	18.3	7.89	2,084.4	307.5	768.2	723.0	45.25	16.978			
6,500.0	6,328.8	6,373.7	6,320.8	28.0	18.5	7.85	2,085.6	307.1	769.1	723.6	45.53	16.891			
6,561.0	6,389.8	6,434.7	6,381.8	28.0	18.6	7.85	2,085.6	307.1	769.1	723.4	45.70	16.831 SF			
6,600.0	6,428.8	6,472.9	6,420.0	28.1	18.7	97.91	2,085.6	307.1	769.2	736.8	32.42	23.727			
6,650.0	6,478.6	6,515.4	6,462.5	28.1	18.7	98.22	2,085.6	308.6	770.1	737.6	32.54	23.668			
6,700.0	6,528.1	6,556.5	6,503.4	28.1	18.8	98.81	2,085.6	312.5	772.0	739.4	32.65	23.648			
6,750.0	6,576.9	6,595.4	6,541.8	28.2	18.8	99.59	2,085.7	318.4	775.2	742.5	32.75	23.674			
6,800.0	6,624.9	6,631.4	6,577.0	28.2	18.8	100.46	2,085.8	325.6	779.9	747.1	32.83	23.757			
6,850.0	6,672.0	6,664.0	6,608.7	28.2	18.9	101.29	2,085.9	333.8	786.5	753.6	32.90	23.907			
6,900.0	6,717.8	6,693.1	6,636.5	28.2	18.9	102.00	2,086.1	342.2	795.3	762.4	32.95	24.136			
6,950.0	6,762.2	6,718.6	6,660.6	28.2	18.9	102.47	2,086.2	350.5	806.5	773.5	32.98	24.451			
7,000.0	6,805.1	6,740.5	6,681.0	28.3	18.9	102.65	2,086.3	358.3	820.3	787.3	33.01	24.850			
7,050.0	6,846.1	6,758.9	6,698.0	28.3	18.9	102.47	2,086.4	365.4	836.9	803.8	33.04	25.327			
7,100.0	6,885.2	6,774.0	6,711.9	28.3	18.9	101.89	2,086.5	371.5	856.2	823.1	33.10	25.865			
7,150.0	6,922.2	6,786.2	6,722.9	28.3	18.9	100.90	2,086.6	376.7	878.2	845.0	33.21	26.441			
7,200.0	6,956.9	6,800.0	6,735.3	28.3	18.9	99.78	2,086.6	382.7	902.8	869.4	33.40	27.033			
7,250.0	6,989.1	6,800.0	6,735.3	28.4	18.9	97.41	2,086.6	382.7	929.7	896.0	33.69	27.592			
7,300.0	7,018.8	6,800.0	6,735.3	28.5	18.9	94.73	2,086.6	382.7	958.8	924.7	34.10	28.118			
7,350.0	7,045.8	6,800.0	6,735.3	28.5	18.9	91.78	2,086.6	382.7	989.8	955.2	34.60	28.608			

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Hunt Federal 28X-314
<b>Project:</b>	SEC.28-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Reference Site:</b>	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	<b>MD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Hunt Federal 28X-314	<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 #1 (1-27-15)	<b>Offset TVD Reference:</b>	Offset Datum

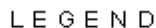
Offset Design Wiedeman 29K-HZ Pad Sec.29-T4N-R66W - Wiedeman 29O-243 - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 134-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured 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		
14,200.0	7,129.0	7,877.3	7,086.9	198.7	27.8	5.42	1,327.1	-7,940.5	940.5	870.8	69.64	13.505		
14,300.0	7,128.7	7,877.7	7,086.9	201.5	27.8	4.92	1,326.8	-7,940.5	840.6	770.8	69.79	12.045		
14,400.0	7,128.3	7,878.0	7,086.9	204.2	27.8	4.40	1,326.5	-7,940.5	740.7	670.7	69.94	10.591		
14,500.0	7,127.9	7,878.4	7,086.9	207.0	27.8	3.85	1,326.1	-7,940.5	640.8	570.7	70.10	9.142		
14,600.0	7,127.5	7,878.7	7,086.9	209.8	27.8	3.27	1,325.8	-7,940.5	541.0	470.7	70.28	7.698		
14,700.0	7,127.1	7,879.1	7,086.9	212.6	27.9	2.67	1,325.4	-7,940.5	441.3	370.8	70.50	6.260		
14,800.0	7,126.7	7,879.5	7,086.9	215.4	27.9	2.03	1,325.0	-7,940.5	341.7	271.0	70.76	4.829		
14,900.0	7,126.4	7,879.9	7,086.9	218.2	27.9	1.36	1,324.5	-7,940.5	242.5	171.4	71.09	3.412		
14,992.1	7,126.0	7,880.4	7,086.9	220.8	27.9	0.71	1,324.1	-7,940.5	152.1	80.7	71.46	2.129 CC, ES, SF		

















<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Hunt Federal 28X-314
<b>Project:</b>	SEC.28-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Reference Site:</b>	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	<b>MD Reference:</b>	WELL @ 4776.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Hunt Federal 28X-314	<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 #1 (1-27-15)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4776.0ft (Original Well Elev) Coordinates are relative to: Hunt Federal 28X-314  
 Offset Depths are relative to Offset Datum  
 Central Meridian is -105.500000 °  
 Coordinate System is US State Plane 1983, Colorado Northern Zone  
 Grid Convergence at Surface is: 0.47°



Reference Depths are relative to WELL @ 4776.0ft (Original Well Elev) Coordinates are relative to: Hunt Federal 28X-314  
Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone  
Central Meridian is -105.500000 ° Grid Convergence at Surface is: 0.47°



Exist.), Wellbore #1, Wellbore #1 VD	 Lorenz 43-28 (P&A), Wellbore #1, Wellbore #1 VD	 Hunt Federal 28Y-214, Wellbore #1, Wellbore #1 VD
Exist.), Wellbore #1, Wellbore #1 VD	 McLeod 29-29X (Exist.), Wellbore #1, Wellbore #1 VD	 Hunt Federal 28Y-404, Wellbore #1, Wellbore #1 VD
Exist.), Wellbore #1, Wellbore #1 VD	 McLeod 2 (Exist.), Wellbore #1, Wellbore #1 VD	 Hunt Federal 28X-234, Wellbore #1, Wellbore #1 VD
Exist.), Wellbore #1, Wellbore #1 VD	 Melissa 1 (Exist.), Wellbore #1, Wellbore #1 VD	 Wiedeman 29O-243, Wellbore #1, Wellbore #1 VD
(Exist.), Wellbore #1, Wellbore #1 VD	 Lorenz 44-28 (Exist.), Wellbore #1, Wellbore #1 VD	 McLeod 29-29 (Exist.), Wellbore #1, Wellbore #1 VD
13-28 (Exist.), Wellbore #1, Wellbore #1 VD	 Randall 11-28 (Exist.), Wellbore #1, Wellbore #1 VD	 Nelson Federal K27-65-1HN, Wellbore #1, Wellbore #1 VD
(Exist.), Wellbore #1, Wellbore #1 VD	 McLeod 29-2 (Exist.), Wellbore #1, Wellbore #1 VD	 UPRC 27-13F (Exist.), Wellbore #1, Wellbore #1 VD
t.), Wellbore #1, Wellbore #1 VD	 Hunt Federal 28Y-314, Wellbore #1, Plan #1 (1-27-15) VD	 Heitman K27-62-1HN, Wellbore #1, Wellbore #1 VD