

PETROLEUM DEVELOPMENT CORP Weld County CO

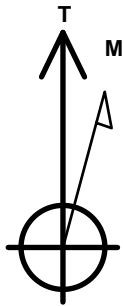
Well Name: **Hunt Federal 28X-234**

Surface Location: Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 4762.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1344202.83	3202569.00	40.275960	-104.773990	
RKB - 15' WELL @ 4777.0ft (RKB - 15')						

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 226'FSL, 282'FEL, SEC.28	1.0	0.0	0.0	Point
BHL 981'FSL, 2550'FWL, SEC.29	7037.0	762.6	-7759.7	Point



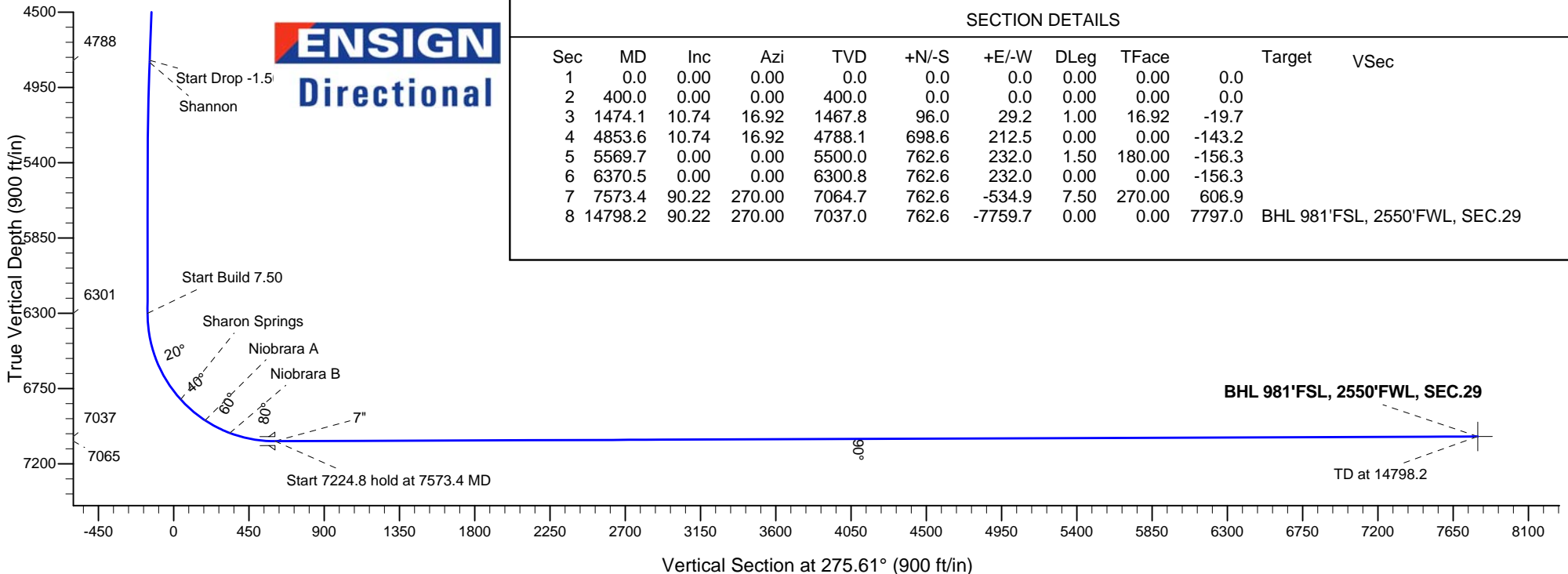
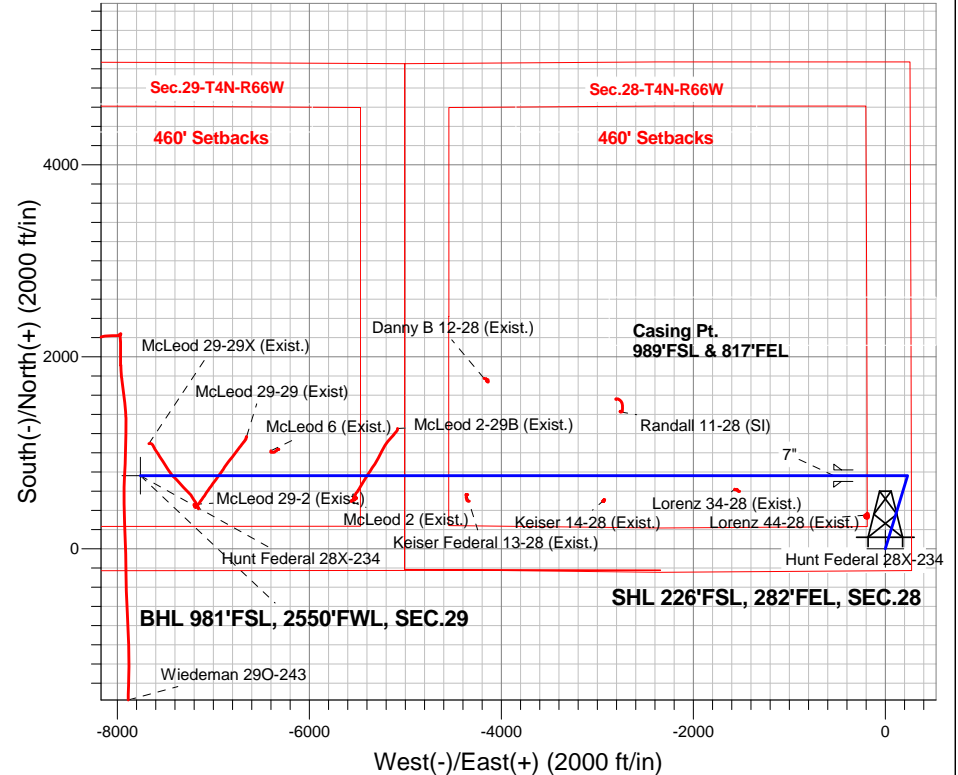
Azimuths to True North
Magnetic North: 8.37°

Magnetic Field
Strength: 52682.6snT
Dip Angle: 66.82°
Date: 2/3/2015
Model: IGRF2010

Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W
Hunt Federal 28X-234
Plan #1 (1-27-15)
13:23, February 03 2015

ANNOTATIONS

TVD	MD	Annotation
400.0	400.0	KOP - Start Build 1.00
4788.1	4853.6	Start Drop -1.50
6300.8	6370.5	Start Build 7.50
7064.7	7573.4	Start 7224.8 hold at 7573.4 MD
7037.0	TD at 14798.2	



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	400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.0	
3	1474.1	10.74	16.92	1467.8	96.0	29.2	1.00	16.92	-19.7	
4	4853.6	10.74	16.92	4788.1	698.6	212.5	0.00	0.00	-143.2	
5	5569.7	0.00	0.00	5500.0	762.6	232.0	1.50	180.00	-156.3	
6	6370.5	0.00	0.00	6300.8	762.6	232.0	0.00	0.00	-156.3	
7	7573.4	90.22	270.00	7064.7	762.6	-534.9	7.50	270.00	606.9	
8	14798.2	90.22	270.00	7037.0	762.6	-7759.7	0.00	0.00	7797.0	BHL 981'FSL, 2550'FWL, SEC.29



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.28-T4N-R66W

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

Hunt Federal 28X-234

Wellbore #1

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

Standard Planning Report

03 February, 2015

Database:	Landmark	Local Co-ordinate Reference:	Well Hunt Federal 28X-234
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4777.0ft (RKB - 15')
Project:	SEC.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (RKB - 15')
Site:	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	North Reference:	True
Well:	Hunt Federal 28X-234	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (1-27-15)		

Project	SEC.28-T4N-R66W, Weld County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site		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-234					
Well Position	+N-S	0.0 ft	Northing:	1,344,202.83 ft	Latitude:	40.275960
	+E-W	0.0 ft	Easting:	3,202,569.00 ft	Longitude:	-104.773990
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,762.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2/3/2015	8.37	66.82	52,683

Design	Plan #1 (1-27-15)			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	275.61

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,474.1	10.74	16.92	1,467.8	96.0	29.2	1.00	1.00	0.00	16.92	
4,853.6	10.74	16.92	4,788.1	698.6	212.5	0.00	0.00	0.00	0.00	
5,569.7	0.00	0.00	5,500.0	762.6	232.0	1.50	-1.50	0.00	180.00	
6,370.5	0.00	0.00	6,300.8	762.6	232.0	0.00	0.00	0.00	0.00	
7,573.4	90.22	270.00	7,064.7	762.6	-534.9	7.50	7.50	0.00	270.00	
14,798.2	90.22	270.00	7,037.0	762.6	-7,759.7	0.00	0.00	0.00	0.00	BHL 981'FSL, 2550

Database:	Landmark	Local Co-ordinate Reference:	Well Hunt Federal 28X-234
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4777.0ft (RKB - 15')
Project:	SEC.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (RKB - 15')
Site:	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	North Reference:	True
Well:	Hunt Federal 28X-234	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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
SHL 226'FSL, 282'FEL, SEC.28									
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP - Start Build 1.00									
500.0	1.00	16.92	500.0	0.8	0.3	-0.2	1.00	1.00	0.00
600.0	2.00	16.92	600.0	3.3	1.0	-0.7	1.00	1.00	0.00
700.0	3.00	16.92	699.9	7.5	2.3	-1.5	1.00	1.00	0.00
800.0	4.00	16.92	799.7	13.4	4.1	-2.7	1.00	1.00	0.00
900.0	5.00	16.92	899.4	20.9	6.3	-4.3	1.00	1.00	0.00
1,000.0	6.00	16.92	998.9	30.0	9.1	-6.2	1.00	1.00	0.00
1,100.0	7.00	16.92	1,098.3	40.9	12.4	-8.4	1.00	1.00	0.00
1,200.0	8.00	16.92	1,197.4	53.3	16.2	-10.9	1.00	1.00	0.00
1,300.0	9.00	16.92	1,296.3	67.5	20.5	-13.8	1.00	1.00	0.00
1,400.0	10.00	16.92	1,394.9	83.3	25.3	-17.1	1.00	1.00	0.00
1,474.1	10.74	16.92	1,467.8	96.0	29.2	-19.7	1.00	1.00	0.00
1,500.0	10.74	16.92	1,493.3	100.7	30.6	-20.6	0.00	0.00	0.00
1,600.0	10.74	16.92	1,591.5	118.5	36.0	-24.3	0.00	0.00	0.00
1,700.0	10.74	16.92	1,689.8	136.3	41.5	-27.9	0.00	0.00	0.00
1,800.0	10.74	16.92	1,788.0	154.1	46.9	-31.6	0.00	0.00	0.00
1,900.0	10.74	16.92	1,886.3	172.0	52.3	-35.2	0.00	0.00	0.00
2,000.0	10.74	16.92	1,984.5	189.8	57.7	-38.9	0.00	0.00	0.00
2,100.0	10.74	16.92	2,082.8	207.6	63.2	-42.6	0.00	0.00	0.00
2,200.0	10.74	16.92	2,181.0	225.5	68.6	-46.2	0.00	0.00	0.00
2,300.0	10.74	16.92	2,279.3	243.3	74.0	-49.9	0.00	0.00	0.00
2,400.0	10.74	16.92	2,377.5	261.1	79.4	-53.5	0.00	0.00	0.00
2,500.0	10.74	16.92	2,475.7	279.0	84.9	-57.2	0.00	0.00	0.00
2,600.0	10.74	16.92	2,574.0	296.8	90.3	-60.8	0.00	0.00	0.00
2,700.0	10.74	16.92	2,672.2	314.6	95.7	-64.5	0.00	0.00	0.00
2,800.0	10.74	16.92	2,770.5	332.4	101.1	-68.1	0.00	0.00	0.00
2,900.0	10.74	16.92	2,868.7	350.3	106.6	-71.8	0.00	0.00	0.00
3,000.0	10.74	16.92	2,967.0	368.1	112.0	-75.4	0.00	0.00	0.00
3,100.0	10.74	16.92	3,065.2	385.9	117.4	-79.1	0.00	0.00	0.00
3,200.0	10.74	16.92	3,163.5	403.8	122.8	-82.7	0.00	0.00	0.00
3,300.0	10.74	16.92	3,261.7	421.6	128.3	-86.4	0.00	0.00	0.00
3,400.0	10.74	16.92	3,360.0	439.4	133.7	-90.1	0.00	0.00	0.00
3,500.0	10.74	16.92	3,458.2	457.2	139.1	-93.7	0.00	0.00	0.00
3,600.0	10.74	16.92	3,556.5	475.1	144.5	-97.4	0.00	0.00	0.00
3,700.0	10.74	16.92	3,654.7	492.9	150.0	-101.0	0.00	0.00	0.00
3,737.9	10.74	16.92	3,692.0	499.7	152.0	-102.4	0.00	0.00	0.00
Parkman									
3,800.0	10.74	16.92	3,753.0	510.7	155.4	-104.7	0.00	0.00	0.00
3,900.0	10.74	16.92	3,851.2	528.6	160.8	-108.3	0.00	0.00	0.00
4,000.0	10.74	16.92	3,949.5	546.4	166.2	-112.0	0.00	0.00	0.00
4,100.0	10.74	16.92	4,047.7	564.2	171.6	-115.6	0.00	0.00	0.00
4,200.0	10.74	16.92	4,146.0	582.1	177.1	-119.3	0.00	0.00	0.00
4,300.0	10.74	16.92	4,244.2	599.9	182.5	-122.9	0.00	0.00	0.00
4,400.0	10.74	16.92	4,342.5	617.7	187.9	-126.6	0.00	0.00	0.00
4,401.6	10.74	16.92	4,344.0	618.0	188.0	-126.7	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Hunt Federal 28X-234
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4777.0ft (RKB - 15')
Project:	SEC.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (RKB - 15')
Site:	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	North Reference:	True
Well:	Hunt Federal 28X-234	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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)
Sussex									
4,500.0	10.74	16.92	4,440.7	635.5	193.3	-130.3	0.00	0.00	0.00
4,600.0	10.74	16.92	4,539.0	653.4	198.8	-133.9	0.00	0.00	0.00
4,700.0	10.74	16.92	4,637.2	671.2	204.2	-137.6	0.00	0.00	0.00
4,800.0	10.74	16.92	4,735.5	689.0	209.6	-141.2	0.00	0.00	0.00
4,853.6	10.74	16.92	4,788.1	698.6	212.5	-143.2	0.00	0.00	0.00
Start Drop -1.50									
4,866.7	10.54	16.92	4,801.0	700.9	213.2	-143.6	1.50	-1.50	0.00
Shannon									
4,900.0	10.05	16.92	4,833.8	706.6	215.0	-144.8	1.50	-1.50	0.00
5,000.0	8.55	16.92	4,932.4	722.1	219.7	-148.0	1.50	-1.50	0.00
5,100.0	7.05	16.92	5,031.5	735.0	223.6	-150.6	1.50	-1.50	0.00
5,200.0	5.55	16.92	5,130.9	745.5	226.8	-152.8	1.50	-1.50	0.00
5,300.0	4.05	16.92	5,230.6	753.5	229.2	-154.4	1.50	-1.50	0.00
5,400.0	2.55	16.92	5,330.4	759.0	230.9	-155.6	1.50	-1.50	0.00
5,500.0	1.05	16.92	5,430.3	762.0	231.8	-156.2	1.50	-1.50	0.00
5,569.7	0.00	0.00	5,500.0	762.6	232.0	-156.3	1.50	-1.50	0.00
5,600.0	0.00	0.00	5,530.3	762.6	232.0	-156.3	0.00	0.00	0.00
5,700.0	0.00	0.00	5,630.3	762.6	232.0	-156.3	0.00	0.00	0.00
5,800.0	0.00	0.00	5,730.3	762.6	232.0	-156.3	0.00	0.00	0.00
5,900.0	0.00	0.00	5,830.3	762.6	232.0	-156.3	0.00	0.00	0.00
6,000.0	0.00	0.00	5,930.3	762.6	232.0	-156.3	0.00	0.00	0.00
6,100.0	0.00	0.00	6,030.3	762.6	232.0	-156.3	0.00	0.00	0.00
6,200.0	0.00	0.00	6,130.3	762.6	232.0	-156.3	0.00	0.00	0.00
6,300.0	0.00	0.00	6,230.3	762.6	232.0	-156.3	0.00	0.00	0.00
6,370.5	0.00	0.00	6,300.8	762.6	232.0	-156.3	0.00	0.00	0.00
Start Build 7.50									
6,400.0	2.21	270.00	6,330.3	762.6	231.4	-155.7	7.51	7.51	0.00
6,500.0	9.71	270.00	6,429.7	762.6	221.0	-145.4	7.50	7.50	0.00
6,600.0	17.21	270.00	6,526.9	762.6	197.8	-122.2	7.50	7.50	0.00
6,700.0	24.71	270.00	6,620.2	762.6	162.0	-86.7	7.50	7.50	0.00
6,800.0	32.21	270.00	6,708.1	762.6	114.4	-39.3	7.50	7.50	0.00
6,900.0	39.71	270.00	6,788.9	762.6	55.7	19.1	7.50	7.50	0.00
6,934.5	42.31	270.00	6,815.0	762.6	33.0	41.7	7.50	7.50	0.00
Sharon Springs									
7,000.0	47.21	270.00	6,861.5	762.6	-13.0	87.6	7.50	7.50	0.00
7,100.0	54.71	270.00	6,924.4	762.6	-90.6	164.8	7.50	7.50	0.00
7,127.7	56.79	270.00	6,940.0	762.6	-113.6	187.6	7.50	7.50	0.00
Niobrara A									
7,200.0	62.21	270.00	6,976.7	762.6	-175.8	249.6	7.50	7.50	0.00
7,296.1	69.42	270.00	7,016.0	762.6	-263.4	336.8	7.50	7.50	0.00
Niobrara B									
7,300.0	69.71	270.00	7,017.4	762.6	-267.1	340.4	7.50	7.50	0.00
7,400.0	77.21	270.00	7,045.8	762.6	-362.9	435.7	7.50	7.50	0.00
7,500.0	84.71	270.00	7,061.5	762.6	-461.6	533.9	7.50	7.50	0.00
7,573.4	90.22	270.00	7,064.7	762.6	-534.9	606.9	7.50	7.50	0.00
Start 7224.8 hold at 7573.4 MD - 7"									
7,600.0	90.22	270.00	7,064.6	762.6	-561.5	633.4	0.00	0.00	0.00
7,700.0	90.22	270.00	7,064.3	762.6	-661.5	732.9	0.00	0.00	0.00
7,800.0	90.22	270.00	7,063.9	762.6	-761.5	832.4	0.00	0.00	0.00
7,900.0	90.22	270.00	7,063.5	762.6	-861.5	931.9	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Hunt Federal 28X-234
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4777.0ft (RKB - 15')
Project:	SEC.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (RKB - 15')
Site:	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	North Reference:	True
Well:	Hunt Federal 28X-234	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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)
8,000.0	90.22	270.00	7,063.1	762.6	-961.5	1,031.4	0.00	0.00	0.00
8,100.0	90.22	270.00	7,062.7	762.6	-1,061.5	1,131.0	0.00	0.00	0.00
8,200.0	90.22	270.00	7,062.3	762.6	-1,161.5	1,230.5	0.00	0.00	0.00
8,300.0	90.22	270.00	7,062.0	762.6	-1,261.5	1,330.0	0.00	0.00	0.00
8,400.0	90.22	270.00	7,061.6	762.6	-1,361.5	1,429.5	0.00	0.00	0.00
8,500.0	90.22	270.00	7,061.2	762.6	-1,461.5	1,529.0	0.00	0.00	0.00
8,600.0	90.22	270.00	7,060.8	762.6	-1,561.5	1,628.6	0.00	0.00	0.00
8,700.0	90.22	270.00	7,060.4	762.6	-1,661.5	1,728.1	0.00	0.00	0.00
8,800.0	90.22	270.00	7,060.0	762.6	-1,761.5	1,827.6	0.00	0.00	0.00
8,900.0	90.22	270.00	7,059.6	762.6	-1,861.5	1,927.1	0.00	0.00	0.00
9,000.0	90.22	270.00	7,059.3	762.6	-1,961.5	2,026.6	0.00	0.00	0.00
9,100.0	90.22	270.00	7,058.9	762.6	-2,061.5	2,126.2	0.00	0.00	0.00
9,200.0	90.22	270.00	7,058.5	762.6	-2,161.5	2,225.7	0.00	0.00	0.00
9,300.0	90.22	270.00	7,058.1	762.6	-2,261.5	2,325.2	0.00	0.00	0.00
9,400.0	90.22	270.00	7,057.7	762.6	-2,361.5	2,424.7	0.00	0.00	0.00
9,500.0	90.22	270.00	7,057.3	762.6	-2,461.5	2,524.2	0.00	0.00	0.00
9,600.0	90.22	270.00	7,057.0	762.6	-2,561.5	2,623.8	0.00	0.00	0.00
9,700.0	90.22	270.00	7,056.6	762.6	-2,661.5	2,723.3	0.00	0.00	0.00
9,800.0	90.22	270.00	7,056.2	762.6	-2,761.5	2,822.8	0.00	0.00	0.00
9,900.0	90.22	270.00	7,055.8	762.6	-2,861.5	2,922.3	0.00	0.00	0.00
10,000.0	90.22	270.00	7,055.4	762.6	-2,961.4	3,021.8	0.00	0.00	0.00
10,100.0	90.22	270.00	7,055.0	762.6	-3,061.4	3,121.4	0.00	0.00	0.00
10,200.0	90.22	270.00	7,054.7	762.6	-3,161.4	3,220.9	0.00	0.00	0.00
10,300.0	90.22	270.00	7,054.3	762.6	-3,261.4	3,320.4	0.00	0.00	0.00
10,400.0	90.22	270.00	7,053.9	762.6	-3,361.4	3,419.9	0.00	0.00	0.00
10,500.0	90.22	270.00	7,053.5	762.6	-3,461.4	3,519.4	0.00	0.00	0.00
10,600.0	90.22	270.00	7,053.1	762.6	-3,561.4	3,619.0	0.00	0.00	0.00
10,700.0	90.22	270.00	7,052.7	762.6	-3,661.4	3,718.5	0.00	0.00	0.00
10,800.0	90.22	270.00	7,052.4	762.6	-3,761.4	3,818.0	0.00	0.00	0.00
10,900.0	90.22	270.00	7,052.0	762.6	-3,861.4	3,917.5	0.00	0.00	0.00
11,000.0	90.22	270.00	7,051.6	762.6	-3,961.4	4,017.0	0.00	0.00	0.00
11,100.0	90.22	270.00	7,051.2	762.6	-4,061.4	4,116.6	0.00	0.00	0.00
11,200.0	90.22	270.00	7,050.8	762.6	-4,161.4	4,216.1	0.00	0.00	0.00
11,300.0	90.22	270.00	7,050.4	762.6	-4,261.4	4,315.6	0.00	0.00	0.00
11,400.0	90.22	270.00	7,050.0	762.6	-4,361.4	4,415.1	0.00	0.00	0.00
11,500.0	90.22	270.00	7,049.7	762.6	-4,461.4	4,514.6	0.00	0.00	0.00
11,600.0	90.22	270.00	7,049.3	762.6	-4,561.4	4,614.2	0.00	0.00	0.00
11,700.0	90.22	270.00	7,048.9	762.6	-4,661.4	4,713.7	0.00	0.00	0.00
11,800.0	90.22	270.00	7,048.5	762.6	-4,761.4	4,813.2	0.00	0.00	0.00
11,900.0	90.22	270.00	7,048.1	762.6	-4,861.4	4,912.7	0.00	0.00	0.00
12,000.0	90.22	270.00	7,047.7	762.6	-4,961.4	5,012.2	0.00	0.00	0.00
12,100.0	90.22	270.00	7,047.4	762.6	-5,061.4	5,111.8	0.00	0.00	0.00
12,200.0	90.22	270.00	7,047.0	762.6	-5,161.4	5,211.3	0.00	0.00	0.00
12,300.0	90.22	270.00	7,046.6	762.6	-5,261.4	5,310.8	0.00	0.00	0.00
12,400.0	90.22	270.00	7,046.2	762.6	-5,361.4	5,410.3	0.00	0.00	0.00
12,500.0	90.22	270.00	7,045.8	762.6	-5,461.4	5,509.8	0.00	0.00	0.00
12,600.0	90.22	270.00	7,045.4	762.6	-5,561.4	5,609.4	0.00	0.00	0.00
12,700.0	90.22	270.00	7,045.1	762.6	-5,661.4	5,708.9	0.00	0.00	0.00
12,800.0	90.22	270.00	7,044.7	762.6	-5,761.4	5,808.4	0.00	0.00	0.00
12,900.0	90.22	270.00	7,044.3	762.6	-5,861.4	5,907.9	0.00	0.00	0.00
13,000.0	90.22	270.00	7,043.9	762.6	-5,961.4	6,007.4	0.00	0.00	0.00
13,100.0	90.22	270.00	7,043.5	762.6	-6,061.4	6,107.0	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Hunt Federal 28X-234
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4777.0ft (RKB - 15')
Project:	SEC.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (RKB - 15')
Site:	Hunt Federal 4N66W28Y Pad	North Reference:	True
	Sec.28-T4N-R66W		
Well:	Hunt Federal 28X-234	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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)
13,200.0	90.22	270.00	7,043.1	762.6	-6,161.4	6,206.5	0.00	0.00	0.00
13,300.0	90.22	270.00	7,042.8	762.6	-6,261.4	6,306.0	0.00	0.00	0.00
13,400.0	90.22	270.00	7,042.4	762.6	-6,361.4	6,405.5	0.00	0.00	0.00
13,500.0	90.22	270.00	7,042.0	762.6	-6,461.4	6,505.0	0.00	0.00	0.00
13,600.0	90.22	270.00	7,041.6	762.6	-6,561.4	6,604.6	0.00	0.00	0.00
13,700.0	90.22	270.00	7,041.2	762.6	-6,661.4	6,704.1	0.00	0.00	0.00
13,800.0	90.22	270.00	7,040.8	762.6	-6,761.4	6,803.6	0.00	0.00	0.00
13,900.0	90.22	270.00	7,040.4	762.6	-6,861.4	6,903.1	0.00	0.00	0.00
14,000.0	90.22	270.00	7,040.1	762.6	-6,961.4	7,002.6	0.00	0.00	0.00
14,100.0	90.22	270.00	7,039.7	762.6	-7,061.4	7,102.2	0.00	0.00	0.00
14,200.0	90.22	270.00	7,039.3	762.6	-7,161.4	7,201.7	0.00	0.00	0.00
14,300.0	90.22	270.00	7,038.9	762.6	-7,261.4	7,301.2	0.00	0.00	0.00
14,400.0	90.22	270.00	7,038.5	762.6	-7,361.4	7,400.7	0.00	0.00	0.00
14,500.0	90.22	270.00	7,038.1	762.6	-7,461.4	7,500.2	0.00	0.00	0.00
14,600.0	90.22	270.00	7,037.8	762.6	-7,561.4	7,599.8	0.00	0.00	0.00
14,700.0	90.22	270.00	7,037.4	762.6	-7,661.4	7,699.3	0.00	0.00	0.00
14,798.2	90.22	270.00	7,037.0	762.6	-7,759.6	7,797.0	0.00	0.00	0.00
TD at 14798.2 - BHL 981'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
- hit/miss target									
- Shape									
BHL 981'FSL, 2550'F	0.00	0.00	7,037.0	762.6	-7,759.7	1,344,901.86	3,194,803.71	40.278050	-104.801800
- plan hits target center									
- Point									
SHL 226'FSL, 282'FE	0.00	0.00	1.0	0.0	0.0	1,344,202.84	3,202,569.00	40.275960	-104.773990
- plan hits target center									
- Point									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
7,573.4	7,064.7	7"	7	7-1/2	

Database:	Landmark	Local Co-ordinate Reference:	Well Hunt Federal 28X-234
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4777.0ft (RKB - 15')
Project:	SEC.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (RKB - 15')
Site:	Hunt Federal 4N66W28Y Pad	North Reference:	True
	Sec.28-T4N-R66W		
Well:	Hunt Federal 28X-234	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (1-27-15)		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,737.9	3,692.0	Parkman				
4,401.6	4,344.0	Sussex				
4,866.7	4,801.0	Shannon				
6,934.5	6,815.0	Sharon Springs				
7,127.7	6,940.0	Niobrara A				
7,296.1	7,016.0	Niobrara B				
	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)	
400.0	400.0	0.0	0.0	KOP - Start Build 1.00
4,853.6	4,788.1	96.0	29.2	Start Drop -1.50
6,370.5	6,300.8	698.6	212.5	Start Build 7.50
7,573.4	7,064.7	762.6	232.0	Start 7224.8 hold at 7573.4 MD
14,798.2	7,037.0	762.6	232.0	TD at 14798.2



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.28-T4N-R66W

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

Hunt Federal 28X-234

Wellbore #1

Plan #1 (1-27-15)

Anticollision Report

03 February, 2015



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Hunt Federal 28X-234
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (RKB - 15')
Reference Site:	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Hunt Federal 28X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (1-27-15)	Offset TVD Reference:	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	14,798.2	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						Out of range
Keiser 14-28 (Exist.) - Wellbore #1 - Wellbore #1	9,969.2	7,033.5	249.5	151.5	2.545	CC, ES
Keiser 14-28 (Exist.) - Wellbore #1 - Wellbore #1	10,000.0	7,033.3	251.4	152.5	2.542	SF
Keiser Federal 13-28 (Exist.) - Wellbore #1 - Wellbore #1	11,403.6	7,033.1	197.3	58.8	1.425	Level 3, CC, ES, SF
Lorenz 34-28 (Exist.) - Wellbore #1 - Wellbore #1	8,607.5	7,041.4	143.0	79.6	2.256	CC, ES, SF
Lorenz 44-28 (Exist.) - Wellbore #1 - Wellbore #1	2,566.1	2,528.7	282.2	269.7	22.537	CC
Lorenz 44-28 (Exist.) - Wellbore #1 - Wellbore #1	2,600.0	2,562.0	282.3	269.6	22.215	ES
Lorenz 44-28 (Exist.) - Wellbore #1 - Wellbore #1	7,350.0	7,023.1	428.9	396.3	13.178	SF
McLeod 2 (Exist.) - Wellbore #1 - Wellbore #1	12,601.2	7,027.4	263.6	91.1	1.528	CC, ES, SF
McLeod 2-29B (Exist.) - Wellbore #1 - Wellbore #1	12,119.6	7,104.9	484.2	321.6	2.978	CC, ES
McLeod 2-29B (Exist.) - Wellbore #1 - Wellbore #1	12,200.0	7,104.5	490.8	326.0	2.978	SF
McLeod 29-2 (Exist.) - Wellbore #1 - Wellbore #1	14,240.0	7,037.9	302.2	84.7	1.389	Level 3, CC, ES, SF
McLeod 29-29 (Exist.) - Wellbore #1 - Wellbore #1	13,693.6	7,139.9	404.1	199.2	1.972	CC
McLeod 29-29 (Exist.) - Wellbore #1 - Wellbore #1	13,700.0	7,139.8	404.1	199.1	1.971	ES, SF
McLeod 29-29X (Exist.) - Wellbore #1 - Wellbore #1	14,698.7	7,114.3	337.4	104.7	1.450	Level 3, CC
McLeod 29-29X (Exist.) - Wellbore #1 - Wellbore #1	14,700.0	7,114.4	337.4	104.7	1.450	Level 3, ES, SF
McLeod 6 (Exist.) - Wellbore #1 - Wellbore #1	13,439.5	7,032.0	250.4	53.8	1.274	Level 3, CC, ES, SF
Existing Wells Sec.27-T4N-R66W						
UPRC 27-13F (Exist.) - Wellbore #1 - Wellbore #1	6,387.7	6,315.6	705.0	671.5	21.041	CC, ES
UPRC 27-13F (Exist.) - Wellbore #1 - Wellbore #1	6,400.0	6,327.9	705.1	671.5	21.022	SF
Existing Wells Sec.28-T4N-R66W						
Randall 11-28 (SI) - Wellbore #1 - Wellbore #1	9,800.7	7,039.0	666.3	572.6	7.113	CC, ES
Randall 11-28 (SI) - Wellbore #1 - Wellbore #1	9,900.0	7,039.2	673.7	577.3	6.988	SF
Heitman K27-62-1HN Sec.27-T4N-R66W						
Heitman K27-62-1HN - Wellbore #1 - Plan A - Rev 0	3,985.7	3,963.5	683.4	659.8	29.002	CC
Heitman K27-62-1HN - Wellbore #1 - Plan A - Rev 0	4,000.0	3,977.2	683.4	659.7	28.880	ES
Heitman K27-62-1HN - Wellbore #1 - Plan A - Rev 0	6,450.0	6,407.9	802.7	768.5	23.492	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Hunt Federal 28X-234
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (RKB - 15')
Reference Site:	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Hunt Federal 28X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (1-27-15)	Offset TVD Reference:	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
Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W						
Hunt Federal 28X-314 - Wellbore #1 - Plan #1 (1-27-15)	200.0	199.0	30.7	30.0	45.672	CC
Hunt Federal 28X-314 - Wellbore #1 - Plan #1 (1-27-15)	300.0	298.9	30.8	29.7	27.504	ES
Hunt Federal 28X-314 - Wellbore #1 - Plan #1 (1-27-15)	14,798.2	14,989.8	568.2	134.1	1.309	Level 3, SF
Hunt Federal 28Y-214 - Wellbore #1 - Plan #1 (1-27-15)	400.0	400.0	61.4	59.8	39.017	CC
Hunt Federal 28Y-214 - Wellbore #1 - Plan #1 (1-27-15)	500.0	500.0	61.6	59.6	30.489	ES
Hunt Federal 28Y-214 - Wellbore #1 - Plan #1 (1-27-15)	14,798.2	14,738.2	721.3	282.2	1.643	SF
Hunt Federal 28Y-314 - Wellbore #1 - Plan #1 (1-27-15)	400.0	400.0	30.7	29.1	19.508	CC
Hunt Federal 28Y-314 - Wellbore #1 - Plan #1 (1-27-15)	500.0	500.0	31.0	28.9	15.312	ES
Hunt Federal 28Y-314 - Wellbore #1 - Plan #1 (1-27-15)	14,798.2	14,745.7	503.4	71.5	1.165	Level 2, SF
Hunt Federal 28Y-404 - Wellbore #1 - Plan #1 (1-27-15)	400.0	400.0	89.3	87.7	56.751	CC
Hunt Federal 28Y-404 - Wellbore #1 - Plan #1 (1-27-15)	500.0	500.0	89.5	87.5	44.289	ES
Hunt Federal 28Y-404 - Wellbore #1 - Plan #1 (1-27-15)	14,798.2	14,955.3	915.3	490.6	2.155	SF
Peppler K26-79-1HN Pad Sec.35-T4N-R66W						
Nelson K27-63HN (Exist.) - Wellbore #1 - Wellbore #1	6,370.5	6,324.0	497.5	466.0	15.775	ES, SF
Nelson K27-63HN (Exist.) - Wellbore #1 - Wellbore #1	6,372.9	6,325.9	497.5	468.0	16.827	CC
Wiedeman 29K-HZ Pad Sec.29-T4N-R66W						
Wiedeman 29O-243 - Wellbore #1 - Wellbore #1	14,798.2	8,435.6	170.3	91.2	2.154	CC, ES, SF

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
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	
9,100.0	7,058.9	7,040.7	7,040.1	62.0	12.8	-91.97	513.1	-2,930.6	904.3	829.9	74.36	12.160		
9,200.0	7,058.5	7,039.8	7,039.3	64.7	12.8	-91.77	513.1	-2,930.6	808.6	731.6	77.07	10.493		
9,300.0	7,058.1	7,039.0	7,038.4	67.4	12.8	-91.58	513.1	-2,930.6	714.2	634.4	79.78	8.953		
9,400.0	7,057.7	7,038.2	7,037.6	70.1	12.8	-91.39	513.1	-2,930.6	621.5	539.0	82.49	7.534		
9,500.0	7,057.3	7,037.3	7,036.8	72.8	12.8	-91.20	513.1	-2,930.6	531.4	446.2	85.22	6.236		
9,600.0	7,057.0	7,036.5	7,035.9	75.5	12.8	-91.01	513.1	-2,930.6	445.6	357.7	87.94	5.067		
9,700.0	7,056.6	7,035.7	7,035.1	78.3	12.8	-90.82	513.1	-2,930.7	367.1	276.4	90.68	4.048		
9,800.0	7,056.2	7,034.9	7,034.3	81.0	12.8	-90.63	513.1	-2,930.7	301.5	208.1	93.42	3.227		
9,900.0	7,055.8	7,034.1	7,033.5	83.7	12.8	-90.45	513.1	-2,930.7	258.9	162.8	96.16	2.693		
9,969.2	7,055.5	7,033.5	7,032.9	85.6	12.8	-90.32	513.1	-2,930.7	249.5	151.5	98.06	2.545	CC, ES	
10,000.0	7,055.4	7,033.3	7,032.7	86.5	12.8	-90.26	513.1	-2,930.7	251.4	152.5	98.90	2.542	SF	
10,100.0	7,055.0	7,032.5	7,031.9	89.2	12.8	-90.08	513.1	-2,930.7	281.7	180.1	101.65	2.771		
10,200.0	7,054.7	7,031.7	7,031.1	92.0	12.7	-89.90	513.1	-2,930.7	339.9	235.5	104.40	3.256		
10,300.0	7,054.3	7,030.9	7,030.3	94.7	12.7	-89.72	513.1	-2,930.7	414.3	307.2	107.15	3.867		
10,400.0	7,053.9	7,030.1	7,029.5	97.5	12.7	-89.54	513.1	-2,930.7	497.8	387.9	109.91	4.530		
10,500.0	7,053.5	7,029.3	7,028.8	100.2	12.7	-89.36	513.1	-2,930.7	586.5	473.8	112.66	5.206		
10,600.0	7,053.1	7,028.6	7,028.0	103.0	12.7	-89.18	513.1	-2,930.7	678.3	562.9	115.42	5.877		
10,700.0	7,052.7	7,027.8	7,027.2	105.8	12.7	-89.01	513.1	-2,930.7	772.2	654.0	118.17	6.534		
10,800.0	7,052.4	7,027.0	7,026.5	108.5	12.7	-88.83	513.1	-2,930.7	867.4	746.5	120.93	7.173		
10,900.0	7,052.0	7,026.3	7,025.7	111.3	12.7	-88.66	513.1	-2,930.7	963.6	839.9	123.69	7.791		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Hunt Federal 28X-234
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (RKB - 15')
Reference Site:	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Hunt Federal 28X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (1-27-15)	Offset TVD Reference:	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		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
							+N/-S (ft)	+E/-W (ft)						
10,500.0	7,053.5	7,042.6	7,040.6	100.2	13.5	-91.91	565.2	-4,365.0	924.8	811.4	113.45	8.152		
10,600.0	7,053.1	7,041.6	7,039.6	103.0	13.5	-91.60	565.2	-4,365.0	827.4	711.2	116.23	7.119		
10,700.0	7,052.7	7,040.5	7,038.5	105.8	13.5	-91.29	565.3	-4,365.0	730.7	611.7	119.00	6.140		
10,800.0	7,052.4	7,039.4	7,037.4	108.5	13.5	-90.99	565.3	-4,365.0	635.0	513.2	121.77	5.215		
10,900.0	7,052.0	7,038.4	7,036.4	111.3	13.5	-90.68	565.3	-4,365.0	540.8	416.3	124.54	4.343		
11,000.0	7,051.6	7,037.3	7,035.3	114.1	13.5	-90.38	565.3	-4,365.0	449.2	321.9	127.31	3.528		
11,100.0	7,051.2	7,036.3	7,034.3	116.8	13.5	-90.07	565.3	-4,365.0	362.0	232.0	130.08	2.783		
11,200.0	7,050.8	7,035.3	7,033.3	119.6	13.5	-89.77	565.3	-4,365.0	283.5	150.6	132.84	2.134		
11,300.0	7,050.4	7,034.2	7,032.2	122.4	13.5	-89.47	565.3	-4,365.0	222.8	87.2	135.61	1.643		
11,400.0	7,050.0	7,033.2	7,031.2	125.2	13.5	-89.17	565.4	-4,365.0	197.3	58.9	138.37	1.426 Level 3		
11,403.6	7,050.0	7,033.1	7,031.1	125.3	13.5	-89.16	565.4	-4,365.0	197.3	58.8	138.47	1.425 Level 3, CC, ES, SF		
11,500.0	7,049.7	7,032.2	7,030.2	127.9	13.5	-88.87	565.4	-4,365.0	219.6	78.4	141.13	1.556		
11,600.0	7,049.3	7,031.1	7,029.1	130.7	13.5	-88.58	565.4	-4,365.0	278.4	134.5	143.88	1.935		
11,700.0	7,048.9	7,030.1	7,028.1	133.5	13.5	-88.28	565.4	-4,365.0	356.0	209.4	146.64	2.428		
11,800.0	7,048.5	7,029.1	7,027.1	136.3	13.5	-87.99	565.4	-4,365.0	442.8	293.4	149.39	2.964		
11,900.0	7,048.1	7,028.1	7,026.1	139.1	13.5	-87.69	565.4	-4,365.1	534.1	382.0	152.13	3.511		
12,000.0	7,047.7	7,027.1	7,025.1	141.8	13.5	-87.40	565.4	-4,365.1	628.2	473.3	154.87	4.056		
12,100.0	7,047.4	7,026.1	7,024.1	144.6	13.5	-87.11	565.5	-4,365.1	723.8	566.2	157.61	4.592		
12,200.0	7,047.0	7,025.1	7,023.1	147.4	13.5	-86.82	565.5	-4,365.1	820.4	660.1	160.35	5.117		
12,300.0	7,046.6	7,024.1	7,022.1	150.2	13.5	-86.53	565.5	-4,365.1	917.8	754.7	163.08	5.628		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Hunt Federal 28X-234
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (RKB - 15')
Reference Site:	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Hunt Federal 28X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (1-27-15)	Offset TVD Reference:	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 (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
7,700.0	7,064.3	7,042.2	7,041.7	27.1	15.0	-90.77	619.6	-1,569.0	918.7	877.6	41.09	22.359	
7,800.0	7,063.9	7,042.1	7,041.6	29.2	15.0	-90.73	619.6	-1,569.0	820.1	776.8	43.28	18.946	
7,900.0	7,063.5	7,042.0	7,041.5	31.5	15.0	-90.69	619.6	-1,569.0	721.8	676.2	45.58	15.836	
8,000.0	7,063.1	7,041.9	7,041.4	33.8	15.0	-90.65	619.6	-1,569.0	624.1	576.2	47.96	13.014	
8,100.0	7,062.7	7,041.8	7,041.3	36.2	15.0	-90.62	619.6	-1,569.0	527.3	476.9	50.39	10.463	
8,200.0	7,062.3	7,041.7	7,041.2	38.6	15.0	-90.58	619.6	-1,569.0	431.9	379.0	52.88	8.167	
8,300.0	7,062.0	7,041.7	7,041.1	41.1	15.0	-90.54	619.6	-1,569.0	339.1	283.7	55.41	6.120	
8,400.0	7,061.6	7,041.6	7,041.0	43.6	15.0	-90.51	619.6	-1,569.0	252.0	194.0	57.98	4.346	
8,500.0	7,061.2	7,041.5	7,040.9	46.2	15.0	-90.47	619.6	-1,569.0	178.9	118.3	60.57	2.953	
8,600.0	7,060.8	7,041.4	7,040.8	48.8	15.0	-90.43	619.6	-1,569.0	143.2	80.0	63.19	2.266	
8,607.5	7,060.8	7,041.4	7,040.8	49.0	15.0	-90.43	619.6	-1,569.0	143.0	79.6	63.39	2.256	CC, ES, SF
8,700.0	7,060.4	7,041.3	7,040.8	51.4	15.0	-90.39	619.6	-1,569.0	170.3	104.5	65.83	2.587	
8,800.0	7,060.0	7,041.2	7,040.7	54.0	15.0	-90.36	619.6	-1,569.0	239.8	171.3	68.48	3.501	
8,900.0	7,059.6	7,041.1	7,040.6	56.7	15.0	-90.32	619.6	-1,569.0	325.6	254.4	71.15	4.576	
9,000.0	7,059.3	7,041.0	7,040.5	59.4	15.0	-90.28	619.6	-1,569.0	417.7	343.9	73.83	5.658	
9,100.0	7,058.9	7,040.9	7,040.4	62.0	15.0	-90.25	619.6	-1,569.0	512.8	436.3	76.53	6.701	
9,200.0	7,058.5	7,040.8	7,040.3	64.7	15.0	-90.21	619.6	-1,569.0	609.5	530.3	79.23	7.693	
9,300.0	7,058.1	7,040.7	7,040.2	67.4	15.0	-90.17	619.6	-1,569.0	707.1	625.1	81.94	8.629	
9,400.0	7,057.7	7,040.6	7,040.1	70.1	15.0	-90.13	619.6	-1,569.0	805.3	720.6	84.66	9.512	
9,500.0	7,057.3	7,040.5	7,040.0	72.8	15.0	-90.10	619.6	-1,569.0	903.9	816.5	87.39	10.343	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Hunt Federal 28X-234
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (RKB - 15')
Reference Site:	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Hunt Federal 28X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (1-27-15)	Offset TVD Reference:	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	-26.82	364.3	-184.2	408.5					
100.0	100.0	85.7	85.7	0.1	0.1	-26.84	364.1	-184.2	408.0	407.8	0.23	1,803.823		
200.0	200.0	186.6	186.6	0.3	0.3	-26.88	363.4	-184.2	407.5	406.8	0.69	594.506		
300.0	300.0	284.7	284.7	0.6	0.6	-26.87	363.1	-184.0	407.0	405.9	1.11	365.492		
400.0	400.0	384.9	384.9	0.8	0.8	-26.84	363.0	-183.7	406.9	405.3	1.55	262.031		
500.0	500.0	485.8	485.8	1.0	1.0	-43.82	362.9	-183.3	405.9	403.9	2.03	200.136		
600.0	600.0	586.3	586.3	1.2	1.3	-44.06	362.5	-182.9	403.5	401.0	2.51	160.458		
700.0	699.9	684.0	684.0	1.5	1.5	-44.49	362.3	-182.6	400.0	397.1	2.93	136.758		
800.0	799.7	783.4	783.4	1.7	1.5	-45.13	362.3	-182.6	395.8	392.5	3.24	122.168		
900.0	899.4	883.2	883.2	1.9	1.7	-45.98	362.4	-182.6	390.3	386.8	3.58	109.091		
1,000.0	998.9	981.4	981.4	2.2	1.8	-47.05	362.5	-182.7	383.9	380.0	3.94	97.331		
1,100.0	1,098.3	1,080.6	1,080.6	2.5	1.9	-48.42	362.7	-183.3	376.7	372.4	4.30	87.577		
1,200.0	1,197.4	1,179.4	1,179.4	2.7	2.0	-50.05	362.9	-184.0	368.7	364.0	4.69	78.587		
1,300.0	1,296.3	1,278.1	1,278.0	3.1	2.2	-52.00	363.1	-184.8	359.9	354.8	5.12	70.240		
1,400.0	1,394.9	1,377.0	1,377.0	3.4	2.3	-54.34	363.0	-185.8	350.5	344.9	5.60	62.583		
1,474.1	1,467.8	1,450.1	1,450.0	3.7	2.5	-56.30	362.9	-186.6	343.2	337.3	5.98	57.368		
1,500.0	1,493.3	1,475.6	1,475.6	3.7	2.5	-57.00	362.9	-186.8	340.7	334.6	6.12	55.647		
1,600.0	1,591.5	1,574.2	1,574.1	4.1	2.7	-59.84	362.7	-187.8	331.3	324.6	6.68	49.594		
1,700.0	1,689.8	1,673.3	1,673.2	4.5	2.9	-62.89	362.1	-188.9	322.5	315.3	7.26	44.401		
1,800.0	1,788.0	1,773.5	1,773.4	4.9	3.1	-66.11	361.3	-189.4	314.3	306.4	7.86	39.996		
1,900.0	1,886.3	1,873.5	1,873.4	5.3	3.3	-69.42	360.3	-189.3	306.3	297.9	8.45	36.239		
2,000.0	1,984.5	1,970.8	1,970.7	5.6	3.5	-72.85	359.0	-189.0	299.2	290.2	9.06	33.030		
2,100.0	2,082.8	2,068.6	2,068.6	6.0	3.7	-76.41	358.0	-189.0	293.6	283.9	9.68	30.318		
2,200.0	2,181.0	2,166.6	2,166.5	6.4	3.9	-80.16	356.7	-189.0	289.1	278.8	10.32	28.018		
2,300.0	2,279.3	2,264.6	2,264.5	6.8	4.1	-84.01	355.4	-189.1	286.0	275.1	10.96	26.100		
2,400.0	2,377.5	2,365.0	2,364.9	7.2	4.4	-88.01	354.0	-189.0	284.0	272.4	11.59	24.513		
2,500.0	2,475.7	2,463.9	2,463.8	7.6	4.5	-91.85	353.0	-187.7	282.5	270.3	12.16	23.230		
2,566.1	2,540.7	2,528.7	2,528.6	7.9	4.6	-94.24	353.0	-186.8	282.2	269.7	12.52	22.537 CC		
2,600.0	2,574.0	2,562.0	2,561.9	8.0	4.7	-95.51	352.9	-186.3	282.3	269.6	12.71	22.215 ES		
2,700.0	2,672.2	2,659.4	2,659.3	8.4	4.9	-99.37	351.6	-185.3	283.4	270.2	13.27	21.365		
2,800.0	2,770.5	2,758.0	2,757.8	8.8	5.1	-103.32	349.9	-184.5	286.1	272.3	13.83	20.691		
2,900.0	2,868.7	2,855.4	2,855.2	9.2	5.3	-107.18	347.9	-183.4	289.9	275.6	14.37	20.174		
3,000.0	2,967.0	2,950.9	2,950.7	9.6	5.6	-110.88	345.9	-182.9	295.7	280.8	14.90	19.853		
3,100.0	3,065.2	3,049.6	3,049.4	10.0	5.8	-114.62	343.3	-183.0	303.4	288.0	15.40	19.697		
3,200.0	3,163.5	3,149.1	3,148.8	10.4	6.0	-118.14	341.2	-182.1	311.3	295.4	15.89	19.589		
3,300.0	3,261.7	3,245.7	3,245.5	10.8	6.3	-121.27	339.7	-181.6	320.5	304.1	16.37	19.582		
3,400.0	3,360.0	3,343.3	3,343.0	11.2	6.5	-124.22	338.3	-181.4	331.0	314.1	16.84	19.658		
3,500.0	3,458.2	3,441.9	3,441.6	11.6	6.8	-127.04	336.7	-181.2	342.2	324.9	17.29	19.787		
3,600.0	3,556.5	3,540.1	3,539.7	12.1	7.0	-129.71	335.0	-180.6	354.0	336.3	17.74	19.953		
3,700.0	3,654.7	3,636.0	3,635.6	12.5	7.2	-132.15	333.3	-180.3	366.8	348.6	18.18	20.176		
3,800.0	3,753.0	3,731.5	3,731.1	12.9	7.5	-134.39	331.3	-180.7	381.0	362.4	18.62	20.465		
3,900.0	3,851.2	3,828.1	3,827.7	13.3	7.7	-136.46	329.5	-181.5	396.1	377.0	19.05	20.794		
4,000.0	3,949.5	3,924.7	3,924.3	13.7	7.9	-138.36	327.5	-182.7	412.0	392.5	19.47	21.158		
4,100.0	4,047.7	4,024.2	4,023.8	14.1	8.2	-140.17	325.5	-183.9	428.3	408.4	19.90	21.528		
4,200.0	4,146.0	4,125.6	4,125.2	14.5	8.4	-141.75	324.7	-185.2	444.4	424.1	20.29	21.900		
4,300.0	4,244.2	4,226.3	4,225.8	14.9	8.5	-143.10	325.1	-186.2	459.9	439.2	20.64	22.281		
4,400.0	4,342.5	4,322.3	4,321.8	15.3	8.6	-144.32	325.2	-187.3	475.8	454.8	21.00	22.659		
4,500.0	4,440.7	4,420.6	4,420.1	15.7	8.8	-145.54	324.9	-188.2	492.0	470.6	21.40	22.990		
4,600.0	4,539.0	4,515.4	4,515.0	16.1	9.0	-146.64	324.5	-189.4	508.8	487.0	21.82	23.325		
4,700.0	4,637.2	4,612.7	4,612.3	16.5	9.2	-147.75	323.4	-190.6	526.2	504.0	22.24	23.660		
4,800.0	4,735.5	4,713.7	4,713.2	16.9	9.5	-148.78	322.7	-192.0	543.6	520.9	22.66	23.985		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Hunt Federal 28X-234
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (RKB - 15')
Reference Site:	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Hunt Federal 28X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (1-27-15)	Offset TVD Reference:	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						
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)		
4,853.6	4,788.1	4,767.8	4,767.3	17.2	9.5	-149.27	322.8	-192.8	552.7	529.9	22.87	24.165	
4,900.0	4,833.8	4,814.1	4,813.6	17.3	9.6	-149.72	322.9	-193.4	560.3	537.3	23.05	24.305	
5,000.0	4,932.4	4,912.7	4,912.2	17.6	9.8	-150.56	322.9	-194.5	575.2	551.8	23.41	24.571	
5,100.0	5,031.5	5,019.6	5,019.1	17.9	9.9	-151.21	323.9	-195.5	587.1	563.4	23.73	24.741	
5,200.0	5,130.9	5,123.1	5,122.5	18.1	10.0	-151.61	326.0	-196.1	595.7	571.8	23.99	24.831	
5,300.0	5,230.6	5,221.5	5,221.0	18.3	10.1	-151.91	327.8	-196.0	601.8	577.5	24.24	24.829	
5,400.0	5,330.4	5,313.6	5,313.1	18.5	10.2	-152.11	328.5	-196.3	606.5	582.0	24.50	24.760	
5,500.0	5,430.3	5,415.1	5,414.6	18.7	10.3	-152.18	329.2	-197.1	609.4	584.6	24.78	24.590	
5,569.7	5,500.0	5,483.8	5,483.2	18.8	10.4	-135.23	329.5	-197.5	610.0	581.8	28.15	21.666	
5,600.0	5,530.3	5,514.6	5,514.1	18.8	10.5	-135.22	329.6	-197.7	610.0	581.8	28.23	21.605	
5,700.0	5,630.3	5,618.1	5,617.5	18.9	10.6	-135.17	330.3	-197.8	609.6	581.1	28.51	21.385	
5,758.1	5,688.4	5,673.0	5,672.4	19.0	10.7	-135.14	330.6	-197.9	609.5	580.8	28.66	21.266	
5,800.0	5,730.3	5,713.0	5,712.4	19.1	10.7	-135.10	330.8	-198.2	609.5	580.8	28.78	21.182	
5,900.0	5,830.3	5,810.3	5,809.7	19.2	10.9	-135.01	331.2	-199.3	610.1	581.0	29.10	20.966	
6,000.0	5,930.3	5,907.1	5,906.5	19.4	11.1	-134.99	330.6	-200.2	611.1	581.7	29.46	20.747	
6,100.0	6,030.3	6,010.3	6,009.7	19.5	11.3	-134.93	330.3	-201.3	612.2	582.3	29.83	20.523	
6,200.0	6,130.3	6,113.3	6,112.7	19.7	11.5	-134.77	331.1	-202.9	612.7	582.5	30.15	20.318	
6,300.0	6,230.3	6,215.9	6,215.3	19.8	11.7	-134.57	332.7	-204.5	612.6	582.2	30.46	20.114	
6,322.8	6,253.1	6,237.7	6,237.1	19.8	11.7	-134.52	333.1	-204.8	612.6	582.1	30.53	20.068	
6,370.5	6,300.8	6,283.5	6,282.9	19.9	11.8	-134.42	333.8	-205.6	612.7	582.0	30.67	19.977	
6,400.0	6,330.3	6,312.3	6,311.6	19.9	11.8	-44.42	334.1	-206.1	612.4	584.5	27.91	21.945	
6,450.0	6,380.2	6,361.8	6,361.2	20.0	11.9	-44.68	334.7	-207.0	610.1	582.1	27.94	21.832	
6,500.0	6,429.7	6,411.3	6,410.6	20.0	12.0	-45.29	335.1	-207.7	605.5	577.6	27.91	21.696	
6,550.0	6,478.7	6,460.8	6,460.1	20.1	12.1	-46.27	335.6	-208.5	598.7	570.8	27.81	21.527	
6,600.0	6,526.9	6,509.9	6,509.2	20.1	12.2	-47.61	336.1	-209.4	589.6	562.0	27.66	21.315	
6,650.0	6,574.1	6,559.7	6,559.0	20.1	12.3	-49.37	336.8	-210.2	578.5	551.0	27.49	21.047	
6,700.0	6,620.2	6,607.9	6,607.2	20.1	12.4	-51.54	337.7	-210.9	565.4	538.0	27.31	20.700	
6,750.0	6,664.9	6,653.3	6,652.6	20.2	12.4	-54.11	338.5	-211.5	550.6	523.4	27.17	20.262	
6,800.0	6,708.1	6,697.1	6,696.3	20.2	12.5	-57.10	339.4	-212.0	534.5	507.4	27.11	19.715	
6,850.0	6,749.5	6,740.3	6,739.5	20.2	12.6	-60.57	340.2	-212.4	517.4	490.3	27.17	19.047	
6,900.0	6,788.9	6,781.6	6,780.8	20.2	12.6	-64.45	341.2	-212.8	499.8	472.4	27.36	18.265	
6,950.0	6,826.3	6,820.4	6,819.6	20.2	12.7	-68.62	342.1	-213.1	482.1	454.4	27.71	17.401	
7,000.0	6,861.5	6,856.4	6,855.6	20.2	12.7	-72.98	343.0	-213.1	465.0	436.8	28.17	16.506	
7,050.0	6,894.2	6,889.5	6,888.7	20.3	12.8	-77.35	343.8	-213.0	449.3	420.6	28.73	15.638	
7,100.0	6,924.4	6,919.4	6,918.6	20.3	12.8	-81.54	344.4	-212.8	435.8	406.4	29.33	14.857	
7,150.0	6,951.9	6,946.2	6,945.4	20.4	12.8	-85.37	345.0	-212.5	425.4	395.4	29.94	14.205	
7,200.0	6,976.7	6,970.1	6,969.2	20.5	12.9	-88.72	345.5	-212.1	418.8	388.3	30.56	13.706	
7,244.0	6,996.0	6,988.5	6,987.7	20.7	12.9	-91.15	345.8	-211.8	416.9	385.8	31.11	13.401	
7,250.0	6,998.5	6,990.8	6,990.0	20.7	12.9	-91.45	345.8	-211.8	416.9	385.8	31.18	13.372	
7,300.0	7,017.4	7,008.5	7,007.7	21.0	12.9	-93.46	346.2	-211.5	420.2	388.4	31.83	13.199	
7,350.0	7,033.2	7,023.1	7,022.3	21.4	12.9	-94.71	346.4	-211.2	428.9	396.3	32.54	13.178 SF	
7,400.0	7,045.8	7,034.6	7,033.8	22.0	12.9	-95.15	346.6	-211.0	442.9	409.6	33.33	13.287	
7,450.0	7,055.3	7,043.0	7,042.1	22.6	12.9	-94.73	346.7	-210.9	462.0	427.8	34.20	13.509	
7,500.0	7,061.5	7,048.2	7,047.3	23.4	12.9	-93.43	346.8	-210.8	485.6	450.5	35.12	13.828	
7,550.0	7,064.5	7,050.2	7,049.3	24.3	12.9	-91.23	346.8	-210.7	513.1	477.1	36.04	14.238	
7,573.4	7,064.7	7,050.0	7,049.2	24.7	12.9	-89.89	346.8	-210.7	527.2	490.7	36.45	14.463	
7,600.0	7,064.6	7,049.4	7,048.6	25.2	12.9	-89.81	346.8	-210.7	543.9	507.0	36.97	14.712	
7,700.0	7,064.3	7,047.3	7,046.4	27.1	12.9	-89.51	346.8	-210.8	613.2	574.2	39.03	15.712	
7,800.0	7,063.9	7,045.1	7,044.2	29.2	12.9	-89.21	346.8	-210.8	690.0	648.8	41.21	16.744	
7,900.0	7,063.5	7,042.9	7,042.1	31.5	12.9	-88.91	346.7	-210.9	772.2	728.7	43.49	17.755	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Hunt Federal 28X-234
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (RKB - 15')
Reference Site:	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Hunt Federal 28X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (1-27-15)	Offset TVD Reference:	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		
8,000.0	7,063.1	7,040.8	7,039.9	33.8	12.9	-88.61	346.7	-210.9	858.1	812.3	45.85	18.716		
8,100.0	7,062.7	7,038.6	7,037.8	36.2	12.9	-88.32	346.7	-210.9	946.8	898.6	48.27	19.615		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Hunt Federal 28X-234
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (RKB - 15')
Reference Site:	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Hunt Federal 28X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (1-27-15)	Offset TVD Reference:	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
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
11,700.0	7,048.9	7,034.4	7,033.6	133.5	14.2	-90.04		498.9	-5,562.6	938.9	791.4	147.50	6.366	
11,800.0	7,048.5	7,033.6	7,032.9	136.3	14.2	-89.88		499.0	-5,562.6	843.4	693.2	150.28	5.612	
11,900.0	7,048.1	7,032.8	7,032.1	139.1	14.2	-89.71		499.0	-5,562.6	749.1	596.0	153.06	4.894	
12,000.0	7,047.7	7,032.1	7,031.3	141.8	14.2	-89.54		499.0	-5,562.6	656.4	500.6	155.83	4.212	
12,100.0	7,047.4	7,031.3	7,030.6	144.6	14.2	-89.38		499.0	-5,562.6	566.3	407.7	158.61	3.570	
12,200.0	7,047.0	7,030.5	7,029.8	147.4	14.2	-89.21		499.0	-5,562.6	480.0	318.7	161.39	2.974	
12,300.0	7,046.6	7,029.7	7,029.0	150.2	14.2	-89.04		499.1	-5,562.6	400.3	236.1	164.16	2.438	
12,400.0	7,046.2	7,029.0	7,028.2	153.0	14.2	-88.87		499.1	-5,562.6	331.6	164.7	166.94	1.986	
12,500.0	7,045.8	7,028.2	7,027.4	155.8	14.2	-88.69		499.1	-5,562.6	282.3	112.6	169.71	1.664	
12,600.0	7,045.4	7,027.4	7,026.6	158.6	14.2	-88.52		499.1	-5,562.6	263.6	91.1	172.48	1.528	
12,601.2	7,045.4	7,027.4	7,026.6	158.6	14.2	-88.52		499.1	-5,562.6	263.6	91.1	172.52	1.528	CC, ES, SF
12,700.0	7,045.1	7,026.6	7,025.8	161.4	14.2	-88.35		499.1	-5,562.6	281.5	106.2	175.25	1.606	
12,800.0	7,044.7	7,025.7	7,025.0	164.1	14.2	-88.17		499.2	-5,562.6	330.1	152.1	178.02	1.854	
12,900.0	7,044.3	7,024.9	7,024.2	166.9	14.2	-87.99		499.2	-5,562.6	398.4	217.6	180.79	2.204	
13,000.0	7,043.9	7,024.1	7,023.4	169.7	14.2	-87.81		499.2	-5,562.6	478.0	294.5	183.55	2.604	
13,100.0	7,043.5	7,023.3	7,022.5	172.5	14.2	-87.63		499.2	-5,562.6	564.1	377.8	186.31	3.028	
13,200.0	7,043.1	7,022.4	7,021.7	175.3	14.2	-87.45		499.3	-5,562.6	654.2	465.1	189.08	3.460	
13,300.0	7,042.8	7,021.6	7,020.9	178.1	14.2	-87.27		499.3	-5,562.6	746.8	555.0	191.83	3.893	
13,400.0	7,042.4	7,020.8	7,020.0	180.9	14.2	-87.08		499.3	-5,562.7	841.1	646.5	194.59	4.323	
13,500.0	7,042.0	7,019.9	7,019.2	183.7	14.2	-86.90		499.3	-5,562.7	936.6	739.3	197.34	4.746	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Hunt Federal 28X-234
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (RKB - 15')
Reference Site:	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Hunt Federal 28X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (1-27-15)	Offset TVD Reference:	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
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	
11,300.0	7,050.4	7,108.8	7,031.2	122.4	18.5	89.52	1,246.8	-5,081.0	951.9	812.2	139.74	6.812	
11,400.0	7,050.0	7,108.3	7,030.7	125.2	18.5	89.46	1,246.8	-5,081.0	867.3	724.8	142.52	6.086	
11,500.0	7,049.7	7,107.8	7,030.3	127.9	18.5	89.40	1,246.8	-5,081.0	786.3	641.0	145.30	5.412	
11,600.0	7,049.3	7,107.4	7,029.8	130.7	18.5	89.35	1,246.7	-5,081.0	710.2	562.1	148.09	4.796	
11,700.0	7,048.9	7,106.9	7,029.3	133.5	18.5	89.29	1,246.7	-5,081.0	640.7	489.8	150.87	4.247	
11,800.0	7,048.5	7,106.4	7,028.8	136.3	18.5	89.23	1,246.7	-5,081.0	580.1	426.5	153.66	3.775	
11,900.0	7,048.1	7,105.9	7,028.3	139.1	18.5	89.18	1,246.7	-5,081.0	531.6	375.2	156.45	3.398	
12,000.0	7,047.7	7,105.4	7,027.8	141.8	18.5	89.12	1,246.7	-5,081.0	498.7	339.5	159.23	3.132	
12,100.0	7,047.4	7,105.0	7,027.4	144.6	18.5	89.06	1,246.7	-5,081.0	484.6	322.5	162.02	2.991	
12,119.6	7,047.3	7,104.9	7,027.3	145.2	18.5	89.05	1,246.7	-5,081.0	484.2	321.6	162.57	2.978 CC, ES	
12,200.0	7,047.0	7,104.5	7,026.9	147.4	18.5	89.01	1,246.7	-5,081.0	490.8	326.0	164.81	2.978 SF	
12,300.0	7,046.6	7,104.0	7,026.4	150.2	18.5	88.95	1,246.7	-5,081.0	516.7	349.1	167.60	3.083	
12,400.0	7,046.2	7,103.5	7,025.9	153.0	18.5	88.89	1,246.7	-5,081.0	559.5	389.1	170.39	3.284	
12,500.0	7,045.8	7,103.0	7,025.4	155.8	18.5	88.83	1,246.7	-5,081.0	615.7	442.5	173.18	3.555	
12,600.0	7,045.4	7,102.6	7,025.0	158.6	18.5	88.78	1,246.7	-5,081.0	682.0	506.1	175.97	3.876	
12,700.0	7,045.1	7,102.1	7,024.5	161.4	18.5	88.72	1,246.7	-5,081.0	755.8	577.0	178.76	4.228	
12,800.0	7,044.7	7,101.6	7,024.0	164.1	18.5	88.66	1,246.7	-5,081.0	835.1	653.5	181.55	4.600	
12,900.0	7,044.3	7,101.1	7,023.5	166.9	18.5	88.61	1,246.6	-5,081.0	918.4	734.0	184.34	4.982	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Hunt Federal 28X-234
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (RKB - 15')
Reference Site:	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Hunt Federal 28X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (1-27-15)	Offset TVD Reference:	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							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		
13,300.0	7,042.8	7,030.7	7,030.2	178.1	13.3	-89.06	460.4	-7,201.3	987.4	796.2	191.19	5.164		
13,400.0	7,042.4	7,031.5	7,031.0	180.9	13.3	-89.22	460.4	-7,201.3	892.7	698.7	194.00	4.601		
13,500.0	7,042.0	7,032.3	7,031.8	183.7	13.3	-89.37	460.4	-7,201.4	799.3	602.5	196.81	4.061		
13,600.0	7,041.6	7,033.1	7,032.6	186.5	13.3	-89.52	460.4	-7,201.4	707.7	508.1	199.62	3.545		
13,700.0	7,041.2	7,033.9	7,033.4	189.3	13.3	-89.67	460.4	-7,201.4	618.8	416.4	202.43	3.057		
13,800.0	7,040.8	7,034.6	7,034.1	192.1	13.3	-89.81	460.4	-7,201.4	533.8	328.5	205.23	2.601		
13,900.0	7,040.4	7,035.4	7,034.9	194.9	13.3	-89.95	460.4	-7,201.4	454.9	246.8	208.04	2.187		
14,000.0	7,040.1	7,036.1	7,035.6	197.7	13.3	-90.10	460.4	-7,201.4	385.9	175.1	210.84	1.830		
14,100.0	7,039.7	7,036.9	7,036.4	200.4	13.3	-90.23	460.4	-7,201.4	333.1	119.4	213.64	1.559		
14,200.0	7,039.3	7,037.6	7,037.1	203.2	13.3	-90.37	460.4	-7,201.4	304.9	88.4	216.45	1.408	Level 3	
14,240.0	7,039.1	7,037.9	7,037.4	204.4	13.3	-90.43	460.4	-7,201.4	302.2	84.7	217.57	1.389	Level 3, CC, ES, SF	
14,300.0	7,038.9	7,038.3	7,037.8	206.0	13.3	-90.51	460.4	-7,201.4	308.1	88.9	219.25	1.405	Level 3	
14,400.0	7,038.5	7,039.0	7,038.5	208.8	13.3	-90.64	460.4	-7,201.4	342.0	119.9	222.05	1.540		
14,500.0	7,038.1	7,039.7	7,039.2	211.6	13.3	-90.77	460.4	-7,201.4	398.7	173.8	224.85	1.773		
14,600.0	7,037.8	7,040.4	7,039.9	214.4	13.3	-90.90	460.4	-7,201.4	470.0	242.4	227.64	2.065		
14,700.0	7,037.4	7,041.1	7,040.6	217.2	13.4	-91.03	460.4	-7,201.4	550.4	320.0	230.44	2.388		
14,798.2	7,037.0	7,041.7	7,041.3	220.0	13.4	-91.16	460.4	-7,201.5	634.8	401.6	233.19	2.722		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Hunt Federal 28X-234
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (RKB - 15')
Reference Site:	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Hunt Federal 28X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (1-27-15)	Offset TVD Reference:	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							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
12,800.0	7,044.7	7,149.3	7,016.5	164.1	17.1	90.32	1,166.8	-6,654.9	980.6	800.8	179.85	5.453		
12,900.0	7,044.3	7,148.2	7,015.4	166.9	17.1	90.17	1,166.8	-6,654.9	890.5	707.8	182.65	4.875		
13,000.0	7,043.9	7,147.2	7,014.4	169.7	17.1	90.02	1,166.7	-6,654.9	802.7	617.2	185.45	4.328		
13,100.0	7,043.5	7,146.1	7,013.3	172.5	17.1	89.87	1,166.7	-6,654.9	718.0	529.8	188.26	3.814		
13,200.0	7,043.1	7,145.1	7,012.3	175.3	17.1	89.72	1,166.7	-6,654.9	637.8	446.8	191.06	3.339		
13,300.0	7,042.8	7,144.0	7,011.2	178.1	17.1	89.57	1,166.7	-6,654.9	564.0	370.2	193.86	2.910		
13,400.0	7,042.4	7,143.0	7,010.2	180.9	17.1	89.42	1,166.7	-6,655.0	499.4	302.8	196.65	2.540		
13,500.0	7,042.0	7,141.9	7,009.1	183.7	17.1	89.27	1,166.6	-6,655.0	448.0	248.6	199.45	2.246		
13,600.0	7,041.6	7,140.9	7,008.0	186.5	17.1	89.12	1,166.6	-6,655.0	414.7	212.5	202.25	2.051		
13,693.6	7,041.2	7,139.9	7,007.0	189.1	17.1	88.98	1,166.6	-6,655.0	404.1	199.2	204.86	1.972 CC		
13,700.0	7,041.2	7,139.8	7,007.0	189.3	17.1	88.97	1,166.6	-6,655.0	404.1	199.1	205.04	1.971 ES, SF		
13,800.0	7,040.8	7,138.7	7,005.9	192.1	17.1	88.82	1,166.6	-6,655.0	417.8	210.0	207.84	2.010		
13,900.0	7,040.4	7,137.6	7,004.8	194.9	17.1	88.67	1,166.6	-6,655.0	453.7	243.1	210.63	2.154		
14,000.0	7,040.1	7,136.6	7,003.8	197.7	17.1	88.51	1,166.5	-6,655.0	507.1	293.7	213.42	2.376		
14,100.0	7,039.7	7,135.5	7,002.7	200.4	17.1	88.36	1,166.5	-6,655.0	573.1	356.9	216.21	2.651		
14,200.0	7,039.3	7,134.4	7,001.6	203.2	17.1	88.21	1,166.5	-6,655.0	647.8	428.8	219.00	2.958		
14,300.0	7,038.9	7,133.3	7,000.5	206.0	17.1	88.05	1,166.5	-6,655.0	728.7	506.9	221.79	3.285		
14,400.0	7,038.5	7,132.2	6,999.4	208.8	17.1	87.90	1,166.5	-6,655.0	813.8	589.2	224.57	3.624		
14,500.0	7,038.1	7,131.2	6,998.4	211.6	17.1	87.75	1,166.4	-6,655.0	901.9	674.6	227.36	3.967		
14,600.0	7,037.8	7,130.1	6,997.3	214.4	17.1	87.60	1,166.4	-6,655.0	992.4	762.2	230.14	4.312		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Hunt Federal 28X-234
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (RKB - 15')
Reference Site:	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Hunt Federal 28X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (1-27-15)	Offset TVD Reference:	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 (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
13,800.0	7,040.8	7,090.3	7,005.3	192.1	16.6	85.91	1,100.0	-7,659.4	959.7	752.4	207.28	4.630			
13,900.0	7,040.4	7,093.1	7,008.0	194.9	16.6	86.38	1,100.0	-7,659.5	866.8	656.7	210.15	4.125			
14,000.0	7,040.1	7,095.8	7,010.8	197.7	16.6	86.84	1,100.0	-7,659.6	775.7	562.7	213.01	3.642			
14,100.0	7,039.7	7,098.6	7,013.5	200.4	16.6	87.30	1,100.0	-7,659.7	687.1	471.2	215.86	3.183			
14,200.0	7,039.3	7,101.2	7,016.2	203.2	16.6	87.76	1,100.0	-7,659.7	602.0	383.3	218.70	2.753			
14,300.0	7,038.9	7,103.9	7,018.8	206.0	16.6	88.21	1,100.0	-7,659.8	522.2	300.7	221.53	2.357			
14,400.0	7,038.5	7,106.6	7,021.5	208.8	16.6	88.66	1,100.0	-7,659.9	450.6	226.2	224.35	2.008			
14,500.0	7,038.1	7,109.2	7,024.1	211.6	16.6	89.10	1,100.0	-7,660.0	391.6	164.4	227.16	1.724			
14,600.0	7,037.8	7,111.8	7,026.7	214.4	16.6	89.54	1,100.0	-7,660.1	351.6	121.6	229.95	1.529			
14,698.7	7,037.4	7,114.3	7,029.2	217.2	16.6	89.98	1,100.0	-7,660.1	337.4	104.7	232.70	1.450	Level 3, CC		
14,700.0	7,037.4	7,114.4	7,029.3	217.2	16.6	89.98	1,100.0	-7,660.1	337.4	104.7	232.73	1.450	Level 3, ES, SF		
14,798.2	7,037.0	7,116.9	7,031.8	220.0	16.6	90.41	1,100.0	-7,660.2	351.8	116.3	235.46	1.494	Level 3		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Hunt Federal 28X-234
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (RKB - 15')
Reference Site:	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Hunt Federal 28X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (1-27-15)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Pad Sec.29-T4-R66W - McLeod 6 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error: 0.0ft
Survey Program: 100-NS-GYRO-MS													Offset Well Error: 0.0ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
12,500.0	7,045.8	7,036.3	7,035.1	155.8	14.7	90.20	1,013.0	-6,400.9	972.3	802.0	170.30	5.710	
12,600.0	7,045.4	7,035.8	7,034.6	158.6	14.7	90.09	1,013.0	-6,400.9	876.1	703.0	173.09	5.061	
12,700.0	7,045.1	7,035.3	7,034.2	161.4	14.7	89.99	1,013.0	-6,400.9	780.8	604.9	175.89	4.439	
12,800.0	7,044.7	7,034.9	7,033.7	164.1	14.7	89.88	1,013.0	-6,400.9	686.8	508.1	178.68	3.844	
12,900.0	7,044.3	7,034.4	7,033.2	166.9	14.7	89.78	1,013.0	-6,400.9	594.8	413.3	181.48	3.278	
13,000.0	7,043.9	7,033.9	7,032.8	169.7	14.7	89.67	1,013.0	-6,401.0	505.8	321.6	184.27	2.745	
13,100.0	7,043.5	7,033.5	7,032.3	172.5	14.7	89.57	1,013.0	-6,401.0	421.9	234.8	187.07	2.255	
13,200.0	7,043.1	7,033.0	7,031.9	175.3	14.7	89.46	1,013.0	-6,401.0	346.5	156.6	189.86	1.825	
13,300.0	7,042.8	7,032.6	7,031.4	178.1	14.7	89.36	1,013.0	-6,401.0	286.6	94.0	192.66	1.488	Level 3
13,400.0	7,042.4	7,032.1	7,031.0	180.9	14.7	89.26	1,013.0	-6,401.0	253.5	58.0	195.45	1.297	Level 3
13,439.5	7,042.2	7,032.0	7,030.8	182.0	14.7	89.22	1,013.0	-6,401.0	250.4	53.8	196.55	1.274	Level 3, CC, ES, SF
13,500.0	7,042.0	7,031.7	7,030.5	183.7	14.7	89.15	1,013.0	-6,401.0	257.6	59.3	198.24	1.299	Level 3
13,600.0	7,041.6	7,031.2	7,030.1	186.5	14.7	89.05	1,012.9	-6,401.0	297.4	96.3	201.04	1.479	Level 3
13,700.0	7,041.2	7,030.8	7,029.6	189.3	14.7	88.95	1,012.9	-6,401.0	361.3	157.4	203.83	1.772	
13,800.0	7,040.8	7,030.3	7,029.2	192.1	14.7	88.85	1,012.9	-6,401.0	438.9	232.3	206.62	2.124	
13,900.0	7,040.4	7,029.9	7,028.7	194.9	14.7	88.75	1,012.9	-6,401.0	524.1	314.7	209.41	2.503	
14,000.0	7,040.1	7,029.5	7,028.3	197.7	14.7	88.65	1,012.9	-6,401.0	613.8	401.6	212.21	2.893	
14,100.0	7,039.7	7,029.0	7,027.9	200.4	14.7	88.55	1,012.9	-6,401.0	706.3	491.3	215.00	3.285	
14,200.0	7,039.3	7,028.6	7,027.4	203.2	14.7	88.45	1,012.9	-6,401.0	800.6	582.8	217.79	3.676	
14,300.0	7,038.9	7,028.2	7,027.0	206.0	14.7	88.35	1,012.9	-6,401.0	896.1	675.6	220.58	4.063	
14,400.0	7,038.5	7,027.7	7,026.6	208.8	14.7	88.25	1,012.9	-6,401.0	992.5	769.2	223.37	4.444	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Hunt Federal 28X-234
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (RKB - 15')
Reference Site:	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Hunt Federal 28X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (1-27-15)	Offset TVD Reference:	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		
1,800.0	1,788.0	1,781.4	1,781.4	4.9	3.6	48.08	583.0	942.1	992.7	984.7	8.05	123.325			
1,900.0	1,886.3	1,883.1	1,883.1	5.3	3.7	48.91	582.4	940.9	978.9	970.3	8.58	114.079			
2,000.0	1,984.5	1,979.1	1,979.0	5.6	3.9	49.74	581.6	939.7	965.2	956.1	9.09	106.185			
2,100.0	2,082.8	2,075.5	2,075.4	6.0	4.1	50.61	580.5	939.0	951.9	942.3	9.59	99.238			
2,200.0	2,181.0	2,172.1	2,172.0	6.4	4.2	51.50	579.5	938.3	939.0	928.9	10.12	92.809			
2,300.0	2,279.3	2,269.5	2,269.4	6.8	4.4	52.40	579.0	937.5	926.5	915.8	10.68	86.779			
2,400.0	2,377.5	2,368.3	2,368.3	7.2	4.6	53.34	578.4	936.8	914.2	903.0	11.25	81.284			
2,500.0	2,475.7	2,464.2	2,464.1	7.6	4.8	54.30	577.4	936.2	902.2	890.4	11.79	76.493			
2,600.0	2,574.0	2,561.9	2,561.8	8.0	4.9	55.32	576.3	936.0	890.7	878.4	12.34	72.173			
2,700.0	2,672.2	2,658.0	2,657.9	8.4	5.1	56.34	575.4	935.7	879.5	866.6	12.89	68.213			
2,800.0	2,770.5	2,755.0	2,754.9	8.8	5.3	57.37	574.8	935.6	868.9	855.5	13.47	64.502			
2,900.0	2,868.7	2,851.9	2,851.8	9.2	5.5	58.38	574.8	935.3	858.6	844.6	14.06	61.078			
3,000.0	2,967.0	2,951.8	2,951.7	9.6	5.6	59.45	574.9	935.2	848.8	834.2	14.65	57.943			
3,100.0	3,065.2	3,052.3	3,052.3	10.0	5.9	60.55	574.9	934.6	838.8	823.5	15.28	54.899			
3,200.0	3,163.5	3,150.1	3,150.0	10.4	6.1	61.64	574.9	934.1	829.1	813.2	15.93	52.032			
3,300.0	3,261.7	3,249.4	3,249.3	10.8	6.3	62.77	575.0	933.4	819.7	803.1	16.60	49.377			
3,400.0	3,360.0	3,347.2	3,347.0	11.2	6.6	63.91	575.1	932.7	810.5	793.2	17.26	46.950			
3,500.0	3,458.2	3,442.8	3,442.7	11.6	6.8	65.06	574.9	932.3	801.9	784.0	17.91	44.784			
3,600.0	3,556.5	3,541.2	3,541.0	12.1	7.0	66.29	574.6	932.1	793.9	775.3	18.54	42.815			
3,700.0	3,654.7	3,640.5	3,640.4	12.5	7.2	67.56	574.0	931.7	786.0	766.8	19.18	40.970			
3,800.0	3,753.0	3,737.7	3,737.6	12.9	7.4	68.83	573.5	931.4	778.6	758.7	19.83	39.261			
3,900.0	3,851.2	3,837.8	3,837.7	13.3	7.7	70.14	573.3	931.0	771.5	751.0	20.51	37.623			
4,000.0	3,949.5	3,938.4	3,938.3	13.7	7.9	71.48	573.0	930.2	764.5	743.3	21.20	36.063			
4,100.0	4,047.7	4,036.6	4,036.4	14.1	8.1	72.86	572.1	929.4	757.8	735.9	21.87	34.645			
4,200.0	4,146.0	4,134.1	4,134.0	14.5	8.3	74.29	570.7	928.5	751.6	729.0	22.54	33.350			
4,300.0	4,244.2	4,231.8	4,231.6	14.9	8.6	75.74	569.4	927.8	745.9	722.7	23.20	32.153			
4,400.0	4,342.5	4,328.9	4,328.7	15.3	8.8	77.17	568.5	927.0	740.7	716.8	23.86	31.044			
4,500.0	4,440.7	4,423.0	4,422.9	15.7	9.0	78.55	567.9	926.8	736.5	712.1	24.49	30.071			
4,600.0	4,539.0	4,524.4	4,524.3	16.1	9.2	80.05	567.3	926.4	732.7	707.6	25.15	29.134			
4,700.0	4,637.2	4,622.8	4,622.6	16.5	9.4	81.53	566.5	925.9	729.2	703.4	25.82	28.242			
4,800.0	4,735.5	4,722.0	4,721.8	16.9	9.6	83.05	565.6	925.2	726.1	699.6	26.49	27.408			
4,853.6	4,788.1	4,774.5	4,774.3	17.2	9.8	83.87	565.1	924.8	724.7	697.8	26.85	26.987			
4,900.0	4,833.8	4,820.3	4,820.2	17.3	9.9	84.55	564.6	924.4	723.5	696.4	27.14	26.659			
5,000.0	4,932.4	4,920.2	4,920.0	17.6	10.1	85.88	563.5	923.4	721.4	693.7	27.70	26.047			
5,100.0	5,031.5	5,018.8	5,018.6	17.9	10.4	87.03	562.4	922.5	719.9	691.7	28.22	25.509			
5,200.0	5,130.9	5,120.6	5,120.4	18.1	10.6	88.01	561.3	921.2	718.5	689.8	28.72	25.015			
5,300.0	5,230.6	5,219.5	5,219.3	18.3	10.9	88.74	560.4	920.0	717.2	688.1	29.19	24.572			
5,400.0	5,330.4	5,318.4	5,318.2	18.5	11.1	89.26	559.7	918.8	716.3	686.6	29.63	24.177			
5,500.0	5,430.3	5,418.8	5,418.6	18.7	11.4	89.58	558.9	917.8	715.5	685.4	30.04	23.820			
5,569.7	5,500.0	5,492.1	5,491.9	18.8	11.6	106.60	558.5	916.8	714.7	690.0	24.68	28.952			
5,600.0	5,530.3	5,521.7	5,521.4	18.8	11.6	106.61	558.4	916.4	714.2	689.4	24.81	28.784			
5,700.0	5,630.3	5,618.3	5,618.1	18.9	11.9	106.65	558.2	915.4	713.3	688.1	25.26	28.240			
5,800.0	5,730.3	5,722.3	5,722.1	19.1	12.1	106.68	558.2	914.1	712.1	686.4	25.72	27.687			
5,900.0	5,830.3	5,819.2	5,819.0	19.2	12.4	106.71	558.2	912.9	711.0	684.8	26.16	27.177			
6,000.0	5,930.3	5,918.7	5,918.4	19.4	12.6	106.72	558.3	912.1	710.2	683.6	26.60	26.700			
6,100.0	6,030.3	6,022.6	6,022.3	19.5	12.9	106.73	558.5	910.9	708.9	681.9	27.05	26.210			
6,200.0	6,130.3	6,120.9	6,120.6	19.7	13.1	106.77	558.5	909.5	707.7	680.2	27.50	25.735			
6,300.0	6,230.3	6,222.8	6,222.5	19.8	13.4	106.80	558.5	908.2	706.4	678.5	27.96	25.268			
6,370.5	6,300.8	6,298.3	6,298.0	19.9	13.5	106.82	558.6	906.8	705.2	676.9	28.29	24.927			
6,387.7	6,318.1	6,315.6	6,315.3	19.9	13.6	-163.18	558.6	906.5	705.0	671.5	33.50	21.041 CC, ES			
6,400.0	6,330.3	6,327.9	6,327.5	19.9	13.6	-163.18	558.7	906.2	705.1	671.5	33.54	21.022 SF			

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Hunt Federal 28X-234
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (RKB - 15')
Reference Site:	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Hunt Federal 28X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (1-27-15)	Offset TVD Reference:	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)	Semi Major Axis Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning		
6,450.0	6,380.2	6,377.7	6,377.3	20.0	13.7	-163.20	558.7	905.1	707.4	673.8	33.60	21.057			
6,500.0	6,429.7	6,427.8	6,427.5	20.0	13.9	-163.22	558.8	904.0	712.9	679.4	33.52	21.268			
6,550.0	6,478.7	6,478.0	6,477.6	20.1	14.0	-163.27	559.1	902.9	721.4	688.1	33.31	21.656			
6,600.0	6,526.9	6,527.3	6,526.9	20.1	14.1	-163.33	559.6	901.8	732.9	700.0	32.97	22.230			
6,650.0	6,574.1	6,575.7	6,575.3	20.1	14.2	-163.38	560.2	900.7	747.5	715.0	32.50	22.998			
6,700.0	6,620.2	6,621.9	6,621.5	20.1	14.3	-163.41	560.6	899.6	765.0	733.1	31.91	23.974			
6,750.0	6,664.9	6,665.8	6,665.4	20.2	14.4	-163.40	561.1	898.6	785.5	754.3	31.20	25.176			
6,800.0	6,708.1	6,708.1	6,707.7	20.2	14.5	-163.35	561.6	897.7	808.9	778.5	30.38	26.625			
6,850.0	6,749.5	6,748.5	6,748.0	20.2	14.6	-163.24	562.1	897.0	835.2	805.8	29.47	28.345			
6,900.0	6,788.9	6,786.9	6,786.5	20.2	14.7	-163.06	562.6	896.4	864.3	835.8	28.47	30.356			
6,950.0	6,826.3	6,824.8	6,824.3	20.2	14.8	-162.81	563.1	895.8	895.9	868.5	27.42	32.678			
7,000.0	6,861.5	6,861.3	6,860.8	20.2	14.8	-162.45	563.5	895.2	930.0	903.6	26.33	35.324			
7,050.0	6,894.2	6,895.5	6,895.0	20.3	14.9	-161.95	563.8	894.6	966.3	941.1	25.23	38.298			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Hunt Federal 28X-234
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (RKB - 15')
Reference Site:	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Hunt Federal 28X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (1-27-15)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.28-T4N-R66W - Randall 11-28 (SI) - Wellbore #1 - Wellbore #1													Offset Site Error: 0.0 ft
Survey Program: 100-NS-GYRO-MS													Offset Well Error: 0.0 ft
Reference	Offset	Semi Major Axis		Distance		Warning							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
9,100.0	7,058.9	7,037.8	7,032.4	62.0	13.1	89.93	1,428.9	-2,762.2	967.0	892.4	74.58	12.965	
9,200.0	7,058.5	7,038.0	7,032.6	64.7	13.1	89.95	1,428.9	-2,762.2	897.1	819.9	77.29	11.608	
9,300.0	7,058.1	7,038.1	7,032.8	67.4	13.1	89.96	1,428.9	-2,762.2	833.5	753.5	80.00	10.419	
9,400.0	7,057.7	7,038.3	7,032.9	70.1	13.1	89.98	1,428.9	-2,762.2	777.5	694.8	82.72	9.400	
9,500.0	7,057.3	7,038.5	7,033.1	72.8	13.1	89.99	1,428.9	-2,762.2	731.0	645.6	85.45	8.555	
9,600.0	7,057.0	7,038.7	7,033.3	75.5	13.1	90.01	1,428.9	-2,762.2	695.9	607.7	88.18	7.892	
9,700.0	7,056.6	7,038.8	7,033.5	78.3	13.1	90.02	1,428.9	-2,762.2	673.9	583.0	90.92	7.412	
9,800.0	7,056.2	7,039.0	7,033.6	81.0	13.1	90.04	1,428.9	-2,762.2	666.3	572.7	93.66	7.114	
9,800.7	7,056.2	7,039.0	7,033.6	81.0	13.1	90.04	1,428.9	-2,762.2	666.3	572.6	93.68	7.113 CC, ES	
9,900.0	7,055.8	7,039.2	7,033.8	83.7	13.1	90.05	1,428.9	-2,762.2	673.7	577.3	96.41	6.988 SF	
10,000.0	7,055.4	7,039.4	7,034.0	86.5	13.1	90.07	1,428.9	-2,762.2	695.5	596.3	99.16	7.014	
10,100.0	7,055.0	7,039.5	7,034.2	89.2	13.1	90.08	1,428.9	-2,762.2	730.5	628.5	101.91	7.167	
10,200.0	7,054.7	7,039.7	7,034.3	92.0	13.1	90.10	1,428.9	-2,762.2	776.8	672.1	104.67	7.421	
10,300.0	7,054.3	7,039.9	7,034.5	94.7	13.1	90.11	1,428.9	-2,762.2	832.6	725.2	107.43	7.750	
10,400.0	7,053.9	7,040.1	7,034.7	97.5	13.1	90.13	1,428.9	-2,762.2	896.2	786.0	110.20	8.133	
10,500.0	7,053.5	7,040.2	7,034.9	100.2	13.1	90.14	1,428.9	-2,762.2	965.9	852.9	112.96	8.551	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Hunt Federal 28X-234
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (RKB - 15')
Reference Site:	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Hunt Federal 28X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (1-27-15)	Offset TVD Reference:	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)	Semi Major Axis Offset (ft)	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		
1,600.0	1,591.5	1,641.1	1,641.0	4.1	3.5	49.82	525.4	942.0	994.5	987.1	7.36	135.130			
1,700.0	1,689.8	1,763.3	1,762.8	4.5	3.7	51.19	517.1	937.0	976.0	968.1	7.93	123.075			
1,800.0	1,788.0	1,882.4	1,881.1	4.9	4.0	52.72	505.8	930.3	955.6	947.0	8.52	112.154			
1,900.0	1,886.3	1,977.6	1,975.6	5.3	4.2	54.06	495.6	924.2	934.5	925.4	9.08	102.933			
2,000.0	1,984.5	2,072.9	2,070.1	5.6	4.4	55.45	485.4	918.1	913.9	904.2	9.65	94.675			
2,100.0	2,082.8	2,168.1	2,164.6	6.0	4.7	56.90	475.1	912.0	893.9	883.6	10.25	87.244			
2,200.0	2,181.0	2,263.3	2,259.0	6.4	4.9	58.42	464.9	905.9	874.5	863.6	10.86	80.542			
2,300.0	2,279.3	2,358.5	2,353.5	6.8	5.2	60.00	454.7	899.7	855.8	844.3	11.49	74.505			
2,400.0	2,377.5	2,453.7	2,448.0	7.2	5.4	61.64	444.5	893.6	837.7	825.6	12.13	69.055			
2,500.0	2,475.7	2,548.9	2,542.4	7.6	5.7	63.35	434.3	887.5	820.4	807.6	12.79	64.133			
2,600.0	2,574.0	2,644.2	2,636.9	8.0	6.0	65.12	424.1	881.4	803.9	790.5	13.47	59.684			
2,700.0	2,672.2	2,739.4	2,731.4	8.4	6.2	66.97	413.9	875.3	788.3	774.1	14.16	55.664			
2,800.0	2,770.5	2,834.6	2,825.9	8.8	6.5	68.88	403.6	869.2	773.5	758.6	14.87	52.030			
2,900.0	2,868.7	2,929.8	2,920.3	9.2	6.8	70.85	393.4	863.1	759.7	744.1	15.58	48.749			
3,000.0	2,967.0	3,025.0	3,014.8	9.6	7.1	72.90	383.2	857.0	746.8	730.5	16.31	45.787			
3,100.0	3,065.2	3,120.2	3,109.3	10.0	7.4	75.00	373.0	850.9	735.0	718.0	17.05	43.117			
3,200.0	3,163.5	3,215.5	3,203.7	10.4	7.7	77.17	362.8	844.8	724.3	706.5	17.79	40.715			
3,300.0	3,261.7	3,310.7	3,298.2	10.8	8.0	79.39	352.6	838.7	714.8	696.3	18.54	38.558			
3,400.0	3,360.0	3,405.9	3,392.7	11.2	8.2	81.66	342.4	832.6	706.4	687.2	19.29	36.627			
3,500.0	3,458.2	3,501.1	3,487.1	11.6	8.5	83.98	332.1	826.4	699.3	679.3	20.04	34.904			
3,600.0	3,556.5	3,596.3	3,581.6	12.1	8.8	86.34	321.9	820.3	693.5	672.7	20.78	33.372			
3,700.0	3,654.7	3,691.6	3,676.1	12.5	9.1	88.73	311.7	814.2	688.9	667.4	21.52	32.017			
3,800.0	3,753.0	3,786.8	3,770.6	12.9	9.4	91.14	301.5	808.1	685.7	663.5	22.25	30.825			
3,900.0	3,851.2	3,882.0	3,865.0	13.3	9.7	93.57	291.3	802.0	683.9	660.9	22.96	29.783			
3,985.7	3,935.4	3,963.5	3,945.9	13.6	10.0	95.66	282.5	796.8	683.4	659.8	23.56	29.002 CC			
4,000.0	3,949.5	3,977.2	3,959.5	13.7	10.0	96.01	281.1	795.9	683.4	659.7	23.66	28.880 ES			
4,100.0	4,047.7	4,072.4	4,054.0	14.1	10.3	98.45	270.9	789.8	684.3	659.9	24.35	28.106			
4,200.0	4,146.0	4,167.6	4,148.4	14.5	10.6	100.88	260.6	783.7	686.5	661.5	25.01	27.449			
4,300.0	4,244.2	4,262.9	4,242.9	14.9	11.0	103.29	250.4	777.6	690.1	664.5	25.65	26.900			
4,400.0	4,342.5	4,358.1	4,337.4	15.3	11.3	105.67	240.2	771.5	695.0	668.7	26.28	26.450			
4,500.0	4,440.7	4,453.3	4,431.8	15.7	11.6	108.01	230.0	765.4	701.2	674.4	26.88	26.091			
4,600.0	4,539.0	4,548.5	4,526.3	16.1	11.9	110.32	219.8	759.3	708.7	681.3	27.45	25.815			
4,700.0	4,637.2	4,643.7	4,620.8	16.5	12.2	112.58	209.6	753.2	717.4	689.4	28.01	25.615			
4,800.0	4,735.5	4,738.9	4,715.3	16.9	12.5	114.78	199.3	747.0	727.3	698.8	28.54	25.483			
4,853.6	4,788.1	4,790.0	4,765.9	17.2	12.6	115.94	193.9	743.8	733.1	704.2	28.82	25.438			
4,900.0	4,833.8	4,834.2	4,809.8	17.3	12.8	116.99	189.1	740.9	738.2	709.1	29.03	25.426			
5,000.0	4,932.4	4,930.2	4,905.0	17.6	13.1	119.07	178.8	734.8	749.1	719.6	29.44	25.447			
5,100.0	5,031.5	5,026.8	5,000.9	17.9	13.4	120.95	168.5	728.6	759.5	729.7	29.82	25.469			
5,200.0	5,130.9	5,124.1	5,097.4	18.1	13.7	122.62	158.0	722.3	769.2	739.0	30.19	25.483			
5,300.0	5,230.6	5,222.0	5,194.5	18.3	14.0	124.09	147.5	716.1	778.1	747.5	30.54	25.479			
5,400.0	5,330.4	5,320.3	5,292.1	18.5	14.4	125.37	137.0	709.7	785.8	755.0	30.88	25.450			
5,500.0	5,430.3	5,425.0	5,396.0	18.7	14.7	126.47	126.4	703.4	792.1	761.0	31.18	25.403			
5,569.7	5,500.0	5,500.4	5,471.1	18.8	14.8	143.95	120.1	699.7	795.1	767.2	27.93	28.469			
5,600.0	5,530.3	5,533.3	5,503.9	18.8	14.9	144.13	117.8	698.3	796.1	768.0	28.07	28.366			
5,700.0	5,630.3	5,642.2	5,612.6	18.9	15.1	144.58	111.9	694.8	798.6	770.1	28.51	28.015			
5,800.0	5,730.3	5,751.4	5,721.7	19.1	15.3	144.83	107.7	692.8	800.0	771.1	28.91	27.669			
5,900.0	5,830.3	5,858.1	5,828.3	19.2	15.5	144.88	108.0	692.4	800.3	771.0	29.29	27.324			
6,000.0	5,930.3	5,958.1	5,928.3	19.4	15.6	144.88	108.0	692.4	800.3	770.7	29.65	26.995			
6,100.0	6,030.3	6,058.1	6,028.3	19.5	15.8	144.88	108.0	692.4	800.3	770.3	30.00	26.676			
6,200.0	6,130.3	6,158.1	6,128.3	19.7	15.9	144.88	108.0	692.4	800.3	770.0	30.36	26.362			
6,300.0	6,230.3	6,258.1	6,228.3	19.8	16.1	144.88	108.0	692.4	800.3	769.6	30.72	26.053			

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Hunt Federal 28X-234
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (RKB - 15')
Reference Site:	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Hunt Federal 28X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (1-27-15)	Offset TVD Reference:	Offset Datum

Offset Design		Heitman K27-62-1HN Sec.27-T4N-R66W - Heitman K27-62-1HN - Wellbore #1 - Plan A - Rev 0											Offset Site Error:		0.0 ft	
Survey Program: 0-Reference		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)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning			
6,370.5	6,300.8	6,328.5	6,298.8	19.9	16.2	144.88	108.0	692.4	800.3	769.4	30.97	25.839				
6,400.0	6,330.3	6,358.1	6,328.3	19.9	16.3	-125.13	108.0	692.4	800.7	766.6	34.06	23.504				
6,450.0	6,380.2	6,407.9	6,378.2	20.0	16.4	-125.21	108.0	692.4	802.7	768.5	34.17	23.492 SF				
6,500.0	6,429.7	6,450.0	6,420.3	20.0	16.4	-125.31	108.0	692.8	806.9	772.7	34.18	23.605				
6,550.0	6,478.7	6,475.0	6,445.2	20.1	16.5	-125.23	108.0	694.0	814.1	780.1	34.07	23.895				
6,600.0	6,526.9	6,500.0	6,470.1	20.1	16.5	-125.08	108.0	696.1	824.5	790.6	33.88	24.333				
6,650.0	6,574.1	6,529.3	6,499.3	20.1	16.5	-124.97	108.1	699.7	838.0	804.4	33.63	24.915				
6,700.0	6,620.2	6,550.0	6,519.7	20.1	16.5	-124.52	108.1	702.9	854.7	821.4	33.30	25.665				
6,750.0	6,664.9	6,576.1	6,545.3	20.2	16.6	-124.12	108.2	707.8	874.6	841.6	32.94	26.551				
6,800.0	6,708.1	6,600.0	6,568.6	20.2	16.6	-123.51	108.3	713.1	897.5	865.0	32.55	27.575				
6,850.0	6,749.5	6,613.9	6,582.1	20.2	16.6	-122.26	108.3	716.6	923.3	891.2	32.13	28.735				
6,900.0	6,788.9	6,629.4	6,597.0	20.2	16.6	-120.82	108.4	720.7	952.0	920.2	31.76	29.971				
6,950.0	6,826.3	6,650.0	6,616.7	20.2	16.6	-119.38	108.5	726.7	983.3	951.8	31.47	31.245				

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Hunt Federal 28X-234
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (RKB - 15')
Reference Site:	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Hunt Federal 28X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (1-27-15)	Offset TVD Reference:	Offset Datum

Offset Design		Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W - Hunt Federal 28X-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	0.0	0.0	0.0	0.0	90.02	0.0	30.7	30.7					
100.0	100.0	99.0	99.0	0.1	0.1	90.02	0.0	30.7	30.7	30.5	0.22	137.243		
200.0	200.0	199.0	199.0	0.3	0.3	90.02	0.0	30.7	30.7	30.0	0.67	45.672 CC		
300.0	300.0	298.9	298.9	0.6	0.6	88.45	0.8	30.8	30.8	29.7	1.12	27.504 ES		
400.0	400.0	398.8	398.7	0.8	0.8	83.78	3.4	31.2	31.4	29.8	1.57	19.981		
500.0	500.0	498.5	498.4	1.0	1.0	60.85	7.7	31.9	32.4	30.3	2.02	15.990		
600.0	600.0	598.2	597.9	1.2	1.2	55.03	13.7	32.8	33.4	30.9	2.48	13.470		
700.0	699.9	697.9	697.3	1.5	1.5	49.39	21.4	34.0	34.6	31.7	2.95	11.742		
800.0	799.7	797.5	796.4	1.7	1.8	43.91	30.8	35.4	35.9	32.5	3.42	10.497		
900.0	899.4	897.0	895.3	1.9	2.0	38.60	41.8	37.1	37.3	33.4	3.90	9.571		
1,000.0	998.9	996.4	993.9	2.2	2.3	33.44	54.6	39.0	38.9	34.5	4.39	8.872		
1,100.0	1,098.3	1,095.8	1,092.2	2.5	2.6	28.43	69.1	41.2	40.6	35.8	4.87	8.342		
1,200.0	1,197.4	1,195.1	1,190.1	2.7	3.0	23.57	85.2	43.7	42.5	37.2	5.36	7.942		
1,300.0	1,296.3	1,294.4	1,287.8	3.1	3.4	18.88	103.0	46.4	44.6	38.8	5.83	7.643		
1,400.0	1,394.9	1,393.6	1,385.0	3.4	3.7	14.35	122.5	49.4	46.8	40.5	6.31	7.425		
1,474.1	1,467.8	1,467.0	1,456.7	3.7	4.0	11.11	137.9	51.7	48.6	42.0	6.66	7.302		
1,500.0	1,493.3	1,492.7	1,481.8	3.7	4.2	9.98	143.5	52.6	49.3	42.5	6.78	7.274		
1,600.0	1,591.5	1,591.7	1,578.1	4.1	4.6	5.66	166.3	56.1	53.3	46.0	7.26	7.336		
1,700.0	1,689.8	1,690.5	1,673.8	4.5	5.1	1.67	190.6	59.8	59.2	51.4	7.75	7.635		
1,800.0	1,788.0	1,789.1	1,768.8	4.9	5.6	-1.74	216.4	63.7	67.1	58.8	8.26	8.117		
1,900.0	1,886.3	1,888.4	1,864.2	5.3	6.1	-4.51	243.6	67.9	76.2	67.4	8.79	8.675		
2,000.0	1,984.5	1,987.9	1,959.9	5.6	6.6	-6.68	270.8	72.0	85.5	76.2	9.32	9.174		
2,100.0	2,082.8	2,087.4	2,055.5	6.0	7.1	-8.43	298.0	76.2	95.0	85.1	9.87	9.619		
2,200.0	2,181.0	2,186.9	2,151.1	6.4	7.7	-9.86	325.2	80.3	104.5	94.0	10.43	10.015		
2,300.0	2,279.3	2,286.4	2,246.8	6.8	8.2	-11.05	352.4	84.5	114.0	103.0	11.00	10.370		
2,400.0	2,377.5	2,386.0	2,342.4	7.2	8.8	-12.05	379.6	88.6	123.6	112.0	11.57	10.688		
2,500.0	2,475.7	2,485.5	2,438.0	7.6	9.3	-12.91	406.8	92.8	133.2	121.1	12.14	10.975		
2,600.0	2,574.0	2,585.0	2,533.7	8.0	9.8	-13.66	434.0	96.9	142.9	130.2	12.72	11.234		
2,700.0	2,672.2	2,684.5	2,629.3	8.4	10.4	-14.31	461.2	101.1	152.6	139.3	13.30	11.469		
2,800.0	2,770.5	2,784.0	2,725.0	8.8	10.9	-14.88	488.4	105.2	162.2	148.4	13.89	11.683		
2,900.0	2,868.7	2,883.6	2,820.6	9.2	11.5	-15.39	515.6	109.4	171.9	157.5	14.47	11.879		
3,000.0	2,967.0	2,983.1	2,916.2	9.6	12.0	-15.85	542.8	113.5	181.7	166.6	15.06	12.059		
3,100.0	3,065.2	3,082.6	3,011.9	10.0	12.6	-16.25	570.0	117.7	191.4	175.7	15.66	12.224		
3,200.0	3,163.5	3,182.1	3,107.5	10.4	13.1	-16.62	597.2	121.8	201.1	184.9	16.25	12.376		
3,300.0	3,261.7	3,281.6	3,203.1	10.8	13.7	-16.96	624.4	126.0	210.9	194.0	16.85	12.517		
3,400.0	3,360.0	3,381.1	3,298.8	11.2	14.2	-17.26	651.6	130.1	220.6	203.2	17.44	12.648		
3,500.0	3,458.2	3,480.7	3,394.4	11.6	14.8	-17.54	678.8	134.3	230.4	212.3	18.04	12.770		
3,600.0	3,556.5	3,580.2	3,490.0	12.1	15.3	-17.80	706.0	138.4	240.1	221.5	18.64	12.883		
3,700.0	3,654.7	3,679.7	3,585.7	12.5	15.9	-18.03	733.2	142.6	249.9	230.6	19.24	12.989		
3,800.0	3,753.0	3,779.2	3,681.3	12.9	16.4	-18.25	760.4	146.7	259.6	239.8	19.84	13.088		
3,900.0	3,851.2	3,878.7	3,777.0	13.3	17.0	-18.46	787.6	150.9	269.4	249.0	20.44	13.180		
4,000.0	3,949.5	3,978.2	3,872.6	13.7	17.5	-18.64	814.8	155.0	279.2	258.1	21.04	13.268		
4,100.0	4,047.7	4,077.8	3,968.2	14.1	18.1	-18.82	842.0	159.2	289.0	267.3	21.65	13.350		
4,200.0	4,146.0	4,177.3	4,063.9	14.5	18.6	-18.98	869.2	163.3	298.7	276.5	22.25	13.427		
4,300.0	4,244.2	4,276.8	4,159.5	14.9	19.2	-19.14	896.5	167.5	308.5	285.7	22.85	13.500		
4,400.0	4,342.5	4,376.3	4,255.1	15.3	19.8	-19.28	923.7	171.7	318.3	294.8	23.46	13.569		
4,500.0	4,440.7	4,475.8	4,350.8	15.7	20.3	-19.42	950.9	175.8	328.1	304.0	24.06	13.635		
4,600.0	4,539.0	4,575.3	4,446.4	16.1	20.9	-19.55	978.1	180.0	337.9	313.2	24.67	13.697		
4,700.0	4,637.2	4,674.9	4,542.1	16.5	21.4	-19.67	1,005.3	184.1	347.7	322.4	25.27	13.756		
4,800.0	4,735.5	4,774.4	4,637.7	16.9	22.0	-19.78	1,032.5	188.3	357.4	331.6	25.88	13.812		
4,853.6	4,788.1	4,827.7	4,689.0	17.2	22.3	-19.84	1,047.1	190.5	362.7	336.5	26.21	13.841		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Hunt Federal 28X-234
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (RKB - 15')
Reference Site:	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Hunt Federal 28X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (1-27-15)	Offset TVD Reference:	Offset Datum

Offset Design		Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W - Hunt Federal 28X-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		
4,900.0	4,833.8	4,873.9	4,733.3	17.3	22.5	-19.90	1,059.7	192.4	367.5	341.0	26.47	13.885		
5,000.0	4,932.4	4,973.1	4,828.7	17.6	23.1	-19.93	1,086.8	196.5	379.6	352.7	26.97	14.076		
5,100.0	5,031.5	5,072.1	4,923.8	17.9	23.6	-19.85	1,113.8	200.7	394.2	366.8	27.43	14.372		
5,200.0	5,130.9	5,170.6	5,018.4	18.1	24.2	-19.67	1,140.8	204.8	411.3	383.4	27.85	14.768		
5,300.0	5,230.6	5,268.6	5,112.7	18.3	24.7	-19.40	1,167.6	208.9	430.7	402.5	28.22	15.261		
5,400.0	5,330.4	5,374.7	5,214.8	18.5	25.3	-19.04	1,195.9	213.2	452.0	423.4	28.56	15.826		
5,500.0	5,430.3	5,485.6	5,322.3	18.7	25.7	-18.65	1,222.6	217.3	473.1	444.3	28.84	16.404		
5,569.7	5,500.0	5,563.3	5,398.2	18.8	26.0	-1.46	1,239.5	219.9	487.6	443.6	43.98	11.086		
5,600.0	5,530.3	5,597.3	5,431.4	18.8	26.1	-1.31	1,246.4	220.9	493.7	449.6	44.16	11.181		
5,700.0	5,630.3	5,710.2	5,542.3	18.9	26.5	-0.90	1,267.3	224.1	512.2	467.4	44.71	11.455		
5,800.0	5,730.3	5,824.3	5,655.0	19.1	26.8	-0.57	1,285.0	226.8	527.7	482.5	45.22	11.670		
5,900.0	5,830.3	5,939.4	5,769.1	19.2	27.1	-0.32	1,299.6	229.0	540.3	494.6	45.68	11.829		
6,000.0	5,930.3	6,055.2	5,884.4	19.4	27.4	-0.13	1,310.7	230.7	550.0	503.9	46.09	11.932		
6,100.0	6,030.3	6,171.7	6,000.6	19.5	27.6	-0.01	1,318.5	231.9	556.6	510.2	46.46	11.982		
6,200.0	6,130.3	6,288.5	6,117.3	19.7	27.7	0.06	1,322.8	232.6	560.3	513.5	46.78	11.978		
6,300.0	6,230.3	6,400.5	6,229.3	19.8	27.9	0.07	1,323.7	232.7	561.0	514.0	47.05	11.925		
6,370.5	6,300.8	6,471.0	6,299.8	19.9	27.9	0.07	1,323.7	232.7	561.0	513.8	47.23	11.880		
6,400.0	6,330.3	6,500.5	6,329.3	19.9	28.0	90.13	1,323.7	232.7	561.0	528.9	32.10	17.479		
6,450.0	6,380.2	6,550.4	6,379.2	20.0	28.0	90.49	1,323.7	232.7	561.1	528.9	32.21	17.420		
6,500.0	6,429.7	6,600.4	6,429.3	20.0	28.1	91.08	1,323.7	231.7	561.1	528.9	32.27	17.389		
6,550.0	6,478.7	6,651.0	6,479.6	20.1	28.1	91.67	1,323.7	227.4	561.3	529.0	32.31	17.372		
6,600.0	6,526.9	6,702.0	6,530.0	20.1	28.1	92.26	1,323.7	219.7	561.5	529.1	32.34	17.361		
6,650.0	6,574.1	6,753.3	6,580.1	20.1	28.2	92.85	1,323.7	208.6	561.7	529.4	32.37	17.352		
6,700.0	6,620.2	6,805.1	6,629.8	20.1	28.2	93.42	1,323.7	194.0	562.1	529.6	32.41	17.342		
6,750.0	6,664.9	6,857.3	6,678.7	20.2	28.2	93.97	1,323.7	176.0	562.4	529.9	32.47	17.323		
6,800.0	6,708.1	6,909.9	6,726.7	20.2	28.2	94.52	1,323.7	154.4	562.8	530.3	32.55	17.291		
6,850.0	6,749.5	6,962.9	6,773.4	20.2	28.2	95.04	1,323.7	129.4	563.2	530.6	32.67	17.238		
6,900.0	6,788.9	7,016.3	6,818.6	20.2	28.3	95.54	1,323.7	101.0	563.7	530.8	32.85	17.157		
6,950.0	6,826.3	7,070.1	6,862.1	20.2	28.3	96.02	1,323.7	69.2	564.2	531.1	33.11	17.041		
7,000.0	6,861.5	7,124.3	6,903.4	20.2	28.3	96.47	1,323.7	34.3	564.7	531.2	33.45	16.881		
7,050.0	6,894.2	7,178.8	6,942.5	20.3	28.3	96.90	1,323.7	-3.8	565.2	531.3	33.88	16.681		
7,100.0	6,924.4	7,233.7	6,978.9	20.3	28.4	97.29	1,323.7	-44.8	565.6	531.2	34.45	16.418		
7,150.0	6,951.9	7,288.9	7,012.5	20.4	28.4	97.65	1,323.7	-88.6	566.1	530.9	35.15	16.106		
7,200.0	6,976.7	7,344.4	7,043.0	20.5	28.5	97.97	1,323.7	-135.0	566.5	530.5	35.99	15.742		
7,250.0	6,998.5	7,400.2	7,070.1	20.7	28.6	98.26	1,323.7	-183.7	566.9	530.0	36.98	15.331		
7,300.0	7,017.4	7,456.2	7,093.7	21.0	28.8	98.51	1,323.7	-234.5	567.3	529.2	38.13	14.877		
7,350.0	7,033.2	7,512.4	7,113.7	21.4	29.0	98.71	1,323.7	-287.0	567.6	528.2	39.44	14.393		
7,400.0	7,045.8	7,568.8	7,129.7	22.0	29.2	98.88	1,323.7	-341.1	567.8	527.0	40.88	13.890		
7,450.0	7,055.3	7,625.3	7,141.7	22.6	29.5	99.00	1,323.7	-396.3	568.0	525.6	42.46	13.377		
7,500.0	7,061.5	7,681.9	7,149.7	23.4	29.9	99.08	1,323.7	-452.3	568.2	524.0	44.16	12.865		
7,550.0	7,064.5	7,738.6	7,153.4	24.3	30.4	99.11	1,323.7	-508.8	568.2	522.2	45.96	12.362		
7,573.4	7,064.7	7,765.0	7,153.7	24.7	30.7	99.11	1,323.7	-535.2	568.2	521.4	46.83	12.133		
7,600.0	7,064.6	7,791.5	7,153.6	25.2	31.0	99.11	1,323.7	-561.8	568.2	520.4	47.85	11.874		
7,700.0	7,064.3	7,891.5	7,153.3	27.1	32.2	99.11	1,323.7	-661.8	568.2	516.3	51.88	10.951		
7,800.0	7,063.9	7,991.5	7,152.9	29.2	33.7	99.11	1,323.7	-761.8	568.2	512.0	56.17	10.116		
7,900.0	7,063.5	8,091.5	7,152.5	31.5	35.5	99.11	1,323.7	-861.8	568.2	507.6	60.66	9.367		
8,000.0	7,063.1	8,191.5	7,152.1	33.8	37.4	99.11	1,323.7	-961.8	568.2	502.9	65.32	8.699		
8,100.0	7,062.7	8,291.5	7,151.7	36.2	39.5	99.11	1,323.7	-1,061.8	568.2	498.1	70.10	8.106		
8,200.0	7,062.3	8,391.5	7,151.3	38.6	41.7	99.11	1,323.7	-1,161.8	568.2	493.2	74.99	7.577		
8,300.0	7,062.0	8,491.5	7,151.0	41.1	43.9	99.11	1,323.7	-1,261.8	568.2	488.2	79.97	7.106		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Hunt Federal 28X-234
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (RKB - 15')
Reference Site:	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Hunt Federal 28X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (1-27-15)	Offset TVD Reference:	Offset Datum

Offset Design		Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W - Hunt Federal 28X-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		
8,400.0	7,061.6	8,591.5	7,150.6	43.6	46.3	99.11	1,323.7	-1,361.8	568.2	483.2	85.01	6.684		
8,500.0	7,061.2	8,691.5	7,150.2	46.2	48.7	99.11	1,323.7	-1,461.8	568.2	478.1	90.12	6.305		
8,600.0	7,060.8	8,791.5	7,149.8	48.8	51.1	99.11	1,323.7	-1,561.8	568.2	472.9	95.27	5.964		
8,700.0	7,060.4	8,891.5	7,149.4	51.4	53.6	99.11	1,323.7	-1,661.8	568.2	467.7	100.47	5.656		
8,800.0	7,060.0	8,991.5	7,149.0	54.0	56.2	99.11	1,323.7	-1,761.8	568.2	462.5	105.70	5.376		
8,900.0	7,059.6	9,091.5	7,148.7	56.7	58.7	99.11	1,323.7	-1,861.8	568.2	457.2	110.97	5.121		
9,000.0	7,059.3	9,191.5	7,148.3	59.4	61.3	99.11	1,323.7	-1,961.8	568.2	452.0	116.25	4.888		
9,100.0	7,058.9	9,291.5	7,147.9	62.0	63.9	99.11	1,323.7	-2,061.8	568.2	446.6	121.57	4.674		
9,200.0	7,058.5	9,391.5	7,147.5	64.7	66.5	99.11	1,323.7	-2,161.8	568.2	441.3	126.90	4.478		
9,300.0	7,058.1	9,491.5	7,147.1	67.4	69.1	99.11	1,323.7	-2,261.8	568.2	436.0	132.25	4.297		
9,400.0	7,057.7	9,591.5	7,146.7	70.1	71.8	99.11	1,323.7	-2,361.8	568.2	430.6	137.62	4.129		
9,500.0	7,057.3	9,691.5	7,146.4	72.8	74.5	99.11	1,323.7	-2,461.8	568.2	425.2	143.00	3.974		
9,600.0	7,057.0	9,791.5	7,146.0	75.5	77.1	99.11	1,323.7	-2,561.8	568.2	419.8	148.39	3.829		
9,700.0	7,056.6	9,891.5	7,145.6	78.3	79.8	99.11	1,323.7	-2,661.8	568.2	414.4	153.79	3.695		
9,800.0	7,056.2	9,991.5	7,145.2	81.0	82.5	99.11	1,323.7	-2,761.8	568.2	409.0	159.20	3.569		
9,900.0	7,055.8	10,091.5	7,144.8	83.7	85.2	99.11	1,323.7	-2,861.8	568.2	403.6	164.63	3.452		
10,000.0	7,055.4	10,191.5	7,144.4	86.5	87.9	99.11	1,323.7	-2,961.8	568.2	398.2	170.06	3.341		
10,100.0	7,055.0	10,291.5	7,144.0	89.2	90.6	99.11	1,323.7	-3,061.8	568.2	392.7	175.49	3.238		
10,200.0	7,054.7	10,391.5	7,143.7	92.0	93.3	99.11	1,323.7	-3,161.8	568.2	387.3	180.94	3.140		
10,300.0	7,054.3	10,491.5	7,143.3	94.7	96.0	99.11	1,323.7	-3,261.8	568.2	381.8	186.39	3.049		
10,400.0	7,053.9	10,591.5	7,142.9	97.5	98.8	99.11	1,323.7	-3,361.8	568.2	376.4	191.84	2.962		
10,500.0	7,053.5	10,691.5	7,142.5	100.2	101.5	99.11	1,323.7	-3,461.8	568.2	370.9	197.30	2.880		
10,600.0	7,053.1	10,791.5	7,142.1	103.0	104.2	99.11	1,323.7	-3,561.8	568.2	365.4	202.77	2.802		
10,700.0	7,052.7	10,891.5	7,141.7	105.8	107.0	99.11	1,323.7	-3,661.8	568.2	360.0	208.24	2.729		
10,800.0	7,052.4	10,991.5	7,141.4	108.5	109.7	99.11	1,323.7	-3,761.8	568.2	354.5	213.71	2.659		
10,900.0	7,052.0	11,091.5	7,141.0	111.3	112.5	99.11	1,323.7	-3,861.8	568.2	349.0	219.19	2.592		
11,000.0	7,051.6	11,191.5	7,140.6	114.1	115.2	99.11	1,323.7	-3,961.8	568.2	343.5	224.67	2.529		
11,100.0	7,051.2	11,291.5	7,140.2	116.8	118.0	99.11	1,323.7	-4,061.8	568.2	338.1	230.16	2.469		
11,200.0	7,050.8	11,391.5	7,139.8	119.6	120.7	99.11	1,323.7	-4,161.8	568.2	332.6	235.64	2.411		
11,300.0	7,050.4	11,491.5	7,139.4	122.4	123.5	99.11	1,323.7	-4,261.8	568.2	327.1	241.13	2.356		
11,400.0	7,050.0	11,591.5	7,139.1	125.2	126.2	99.11	1,323.7	-4,361.8	568.2	321.6	246.63	2.304		
11,500.0	7,049.7	11,691.5	7,138.7	127.9	129.0	99.11	1,323.7	-4,461.8	568.2	316.1	252.12	2.254		
11,600.0	7,049.3	11,791.5	7,138.3	130.7	131.7	99.11	1,323.7	-4,561.8	568.2	310.6	257.62	2.206		
11,700.0	7,048.9	11,891.5	7,137.9	133.5	134.5	99.11	1,323.7	-4,661.8	568.2	305.1	263.12	2.160		
11,800.0	7,048.5	11,991.5	7,137.5	136.3	137.3	99.11	1,323.7	-4,761.8	568.2	299.6	268.62	2.115		
11,900.0	7,048.1	12,091.5	7,137.1	139.1	140.0	99.11	1,323.7	-4,861.8	568.2	294.1	274.12	2.073		
12,000.0	7,047.7	12,191.5	7,136.8	141.8	142.8	99.11	1,323.7	-4,961.8	568.2	288.6	279.63	2.032		
12,100.0	7,047.4	12,291.5	7,136.4	144.6	145.6	99.11	1,323.7	-5,061.8	568.2	283.1	285.14	1.993		
12,200.0	7,047.0	12,391.5	7,136.0	147.4	148.4	99.11	1,323.7	-5,161.8	568.2	277.6	290.64	1.955		
12,300.0	7,046.6	12,491.5	7,135.6	150.2	151.1	99.11	1,323.7	-5,261.8	568.2	272.1	296.15	1.919		
12,400.0	7,046.2	12,591.5	7,135.2	153.0	153.9	99.11	1,323.7	-5,361.8	568.2	266.5	301.66	1.884		
12,500.0	7,045.8	12,691.5	7,134.8	155.8	156.7	99.11	1,323.7	-5,461.8	568.2	261.0	307.18	1.850		
12,600.0	7,045.4	12,791.5	7,134.4	158.6	159.5	99.11	1,323.7	-5,561.8	568.2	255.5	312.69	1.817		
12,700.0	7,045.1	12,891.5	7,134.1	161.4	162.2	99.11	1,323.7	-5,661.8	568.2	250.0	318.21	1.786		
12,800.0	7,044.7	12,991.5	7,133.7	164.1	165.0	99.11	1,323.7	-5,761.8	568.2	244.5	323.72	1.755		
12,900.0	7,044.3	13,091.5	7,133.3	166.9	167.8	99.11	1,323.7	-5,861.8	568.2	239.0	329.24	1.726		
13,000.0	7,043.9	13,191.5	7,132.9	169.7	170.6	99.11	1,323.7	-5,961.8	568.2	233.5	334.76	1.697		
13,100.0	7,043.5	13,291.5	7,132.5	172.5	173.4	99.11	1,323.7	-6,061.8	568.2	227.9	340.28	1.670		
13,200.0	7,043.1	13,391.5	7,132.1	175.3	176.1	99.11	1,323.7	-6,161.8	568.2	222.4	345.80	1.643		
13,300.0	7,042.8	13,491.5	7,131.8	178.1	178.9	99.11	1,323.7	-6,261.8	568.2	216.9	351.32	1.617		
13,400.0	7,042.4	13,591.5	7,131.4	180.9	181.7	99.11	1,323.7	-6,361.8	568.2	211.4	356.84	1.592		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Hunt Federal 28X-234
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (RKB - 15')
Reference Site:	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Hunt Federal 28X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (1-27-15)	Offset TVD Reference:	Offset Datum

Offset Design														Offset Site Error:	0.0 ft
Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W - Hunt Federal 28X-314 - Wellbore #1 - Plan #1 (1-27)														Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning		
13,500.0	7,042.0	13,691.5	7,131.0	183.7	184.5	99.11	1,323.7	-6,461.8	568.2	205.9	362.36	1.568			
13,600.0	7,041.6	13,791.5	7,130.6	186.5	187.3	99.11	1,323.7	-6,561.8	568.2	200.3	367.88	1.545			
13,700.0	7,041.2	13,891.5	7,130.2	189.3	190.1	99.11	1,323.7	-6,661.8	568.2	194.8	373.41	1.522			
13,800.0	7,040.8	13,991.5	7,129.8	192.1	192.9	99.11	1,323.7	-6,761.8	568.2	189.3	378.93	1.500 Level 3			
13,900.0	7,040.4	14,091.5	7,129.5	194.9	195.6	99.11	1,323.7	-6,861.8	568.2	183.8	384.46	1.478 Level 3			
14,000.0	7,040.1	14,191.5	7,129.1	197.7	198.4	99.11	1,323.7	-6,961.8	568.2	178.2	389.98	1.457 Level 3			
14,100.0	7,039.7	14,291.5	7,128.7	200.4	201.2	99.11	1,323.7	-7,061.8	568.2	172.7	395.51	1.437 Level 3			
14,200.0	7,039.3	14,391.5	7,128.3	203.2	204.0	99.11	1,323.7	-7,161.8	568.2	167.2	401.04	1.417 Level 3			
14,300.0	7,038.9	14,491.5	7,127.9	206.0	206.8	99.11	1,323.7	-7,261.8	568.2	161.6	406.56	1.398 Level 3			
14,400.0	7,038.5	14,591.5	7,127.5	208.8	209.6	99.11	1,323.7	-7,361.8	568.2	156.1	412.09	1.379 Level 3			
14,500.0	7,038.1	14,691.5	7,127.2	211.6	212.4	99.11	1,323.7	-7,461.8	568.2	150.6	417.62	1.361 Level 3			
14,600.0	7,037.8	14,791.5	7,126.8	214.4	215.2	99.11	1,323.7	-7,561.8	568.2	145.1	423.15	1.343 Level 3			
14,700.0	7,037.4	14,891.5	7,126.4	217.2	218.0	99.11	1,323.7	-7,661.8	568.2	139.5	428.68	1.325 Level 3			
14,798.2	7,037.0	14,989.8	7,126.0	220.0	220.7	99.11	1,323.7	-7,760.0	568.2	134.1	434.11	1.309 Level 3, SF			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Hunt Federal 28X-234
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (RKB - 15')
Reference Site:	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Hunt Federal 28X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (1-27-15)	Offset TVD Reference:	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	0.0	0.0	0.0	0.0	-90.00	0.0	-61.4	61.4							
100.0	100.0	100.0	100.0	0.1	0.1	-90.00	0.0	-61.4	61.4	61.2	0.22	273.116				
200.0	200.0	200.0	200.0	0.3	0.3	-90.00	0.0	-61.4	61.4	60.7	0.67	91.039				
300.0	300.0	300.0	300.0	0.6	0.6	-90.00	0.0	-61.4	61.4	60.3	1.12	54.623				
400.0	400.0	400.0	400.0	0.8	0.8	-90.00	0.0	-61.4	61.4	59.8	1.57	39.017 CC				
500.0	500.0	500.0	500.0	1.0	1.0	-107.70	0.0	-61.4	61.6	59.6	2.02	30.489 ES				
600.0	600.0	600.0	600.0	1.2	1.2	-109.98	0.0	-61.4	62.5	60.0	2.47	25.296				
700.0	699.9	699.9	699.9	1.5	1.5	-113.62	0.0	-61.4	64.1	61.2	2.92	21.946				
800.0	799.7	799.7	799.7	1.7	1.7	-118.40	0.0	-61.4	66.8	63.4	3.38	19.782				
900.0	899.4	899.4	899.4	1.9	1.9	-123.94	0.0	-61.4	70.9	67.0	3.84	18.472				
1,000.0	998.9	998.9	998.9	2.2	2.1	-129.83	0.0	-61.4	76.7	72.4	4.30	17.823				
1,100.0	1,098.3	1,098.3	1,098.3	2.5	2.4	-135.67	0.0	-61.4	84.4	79.6	4.77	17.703				
1,200.0	1,197.4	1,197.4	1,197.4	2.7	2.6	-141.15	0.0	-61.4	94.2	89.0	5.23	18.005				
1,300.0	1,296.3	1,296.3	1,296.3	3.1	2.8	-146.08	0.0	-61.4	106.1	100.4	5.69	18.641				
1,400.0	1,394.9	1,394.9	1,394.9	3.4	3.0	-150.39	0.0	-61.4	120.2	114.1	6.15	19.536				
1,474.1	1,467.8	1,467.8	1,467.8	3.7	3.2	-153.18	0.0	-61.4	132.0	125.5	6.49	20.331				
1,500.0	1,493.3	1,493.3	1,493.3	3.7	3.2	-154.10	0.0	-61.4	136.4	129.8	6.61	20.617				
1,600.0	1,591.5	1,593.3	1,593.3	4.1	3.5	-157.38	0.1	-60.6	152.9	145.8	7.07	21.621				
1,700.0	1,689.8	1,693.8	1,693.7	4.5	3.7	-160.44	0.5	-58.1	168.5	161.0	7.51	22.432				
1,800.0	1,788.0	1,794.4	1,794.2	4.9	3.9	-163.39	1.1	-53.9	183.4	175.4	7.96	23.051				
1,900.0	1,886.3	1,895.1	1,894.8	5.3	4.1	-166.29	1.9	-47.9	197.6	189.2	8.40	23.511				
2,000.0	1,984.5	1,995.8	1,995.2	5.6	4.3	-169.18	3.0	-40.2	211.2	202.3	8.86	23.838				
2,100.0	2,082.8	2,095.6	2,094.6	6.0	4.5	-172.03	4.3	-30.9	224.3	215.0	9.32	24.069				
2,200.0	2,181.0	2,194.2	2,192.6	6.4	4.8	-174.60	5.6	-21.5	237.8	228.1	9.79	24.286				
2,300.0	2,279.3	2,292.7	2,290.7	6.8	5.0	-176.88	7.0	-12.0	251.8	241.5	10.28	24.500				
2,400.0	2,377.5	2,391.3	2,388.8	7.2	5.3	-178.93	8.3	-2.6	266.0	255.3	10.77	24.706				
2,500.0	2,475.7	2,489.8	2,486.9	7.6	5.5	179.23	9.6	6.8	280.6	269.3	11.27	24.900				
2,600.0	2,574.0	2,588.4	2,585.0	8.0	5.8	177.58	11.0	16.2	295.5	283.7	11.78	25.083				
2,700.0	2,672.2	2,686.9	2,683.1	8.4	6.0	176.08	12.3	25.7	310.5	298.2	12.30	25.254				
2,800.0	2,770.5	2,785.5	2,781.2	8.8	6.3	174.72	13.6	35.1	325.7	312.9	12.82	25.413				
2,900.0	2,868.7	2,884.0	2,879.3	9.2	6.5	173.48	15.0	44.5	341.2	327.8	13.35	25.560				
3,000.0	2,967.0	2,982.6	2,977.3	9.6	6.8	172.35	16.3	54.0	356.7	342.8	13.88	25.697				
3,100.0	3,065.2	3,081.1	3,075.4	10.0	7.1	171.32	17.6	63.4	372.4	358.0	14.42	25.825				
3,200.0	3,163.5	3,179.7	3,173.5	10.4	7.3	170.37	19.0	72.8	388.2	373.2	14.96	25.943				
3,300.0	3,261.7	3,278.2	3,271.6	10.8	7.6	169.49	20.3	82.2	404.0	388.5	15.51	26.053				
3,400.0	3,360.0	3,376.7	3,369.7	11.2	7.9	168.68	21.6	91.7	420.0	403.9	16.06	26.156				
3,500.0	3,458.2	3,475.3	3,467.8	11.6	8.1	167.92	23.0	101.1	436.0	419.4	16.61	26.252				
3,600.0	3,556.5	3,573.8	3,565.9	12.1	8.4	167.22	24.3	110.5	452.2	435.0	17.17	26.341				
3,700.0	3,654.7	3,672.4	3,664.0	12.5	8.7	166.57	25.6	120.0	468.3	450.6	17.72	26.425				
3,800.0	3,753.0	3,770.9	3,762.0	12.9	8.9	165.97	27.0	129.4	484.6	466.3	18.28	26.503				
3,900.0	3,851.2	3,869.5	3,860.1	13.3	9.2	165.40	28.3	138.8	500.8	482.0	18.84	26.577				
4,000.0	3,949.5	3,968.0	3,958.2	13.7	9.5	164.87	29.6	148.2	517.2	497.7	19.41	26.646				
4,100.0	4,047.7	4,066.6	4,056.3	14.1	9.8	164.37	31.0	157.7	533.5	513.5	19.97	26.712				
4,200.0	4,146.0	4,165.1	4,154.4	14.5	10.0	163.90	32.3	167.1	549.9	529.4	20.54	26.773				
4,300.0	4,244.2	4,263.7	4,252.5	14.9	10.3	163.45	33.6	176.5	566.3	545.2	21.11	26.831				
4,400.0	4,342.5	4,362.2	4,350.6	15.3	10.6	163.03	35.0	186.0	582.8	561.1	21.68	26.887				
4,500.0	4,440.7	4,460.8	4,448.7	15.7	10.9	162.64	36.3	195.4	599.3	577.1	22.25	26.939				
4,600.0	4,539.0	4,559.3	4,546.7	16.1	11.1	162.27	37.6	204.8	615.8	593.0	22.82	26.988				
4,700.0	4,637.2	4,657.6	4,644.5	16.5	11.4	161.91	39.0	214.2	632.4	609.0	23.38	27.042				
4,800.0	4,735.5	4,754.2	4,740.8	16.9	11.6	161.72	40.0	221.9	649.1	625.2	23.89	27.176				
4,853.6	4,788.1	4,805.9	4,792.5	17.2	11.7	161.71	40.5	225.0	658.2	634.1	24.14	27.268				

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Hunt Federal 28X-234
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (RKB - 15')
Reference Site:	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Hunt Federal 28X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (1-27-15)	Offset TVD Reference:	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		
4,900.0	4,833.8	4,850.7	4,837.2	17.3	11.8	161.78	40.8	227.2	665.9	641.6	24.35	27.343		
5,000.0	4,932.4	4,947.5	4,933.9	17.6	12.0	162.02	41.2	230.0	680.9	656.2	24.76	27.500		
5,100.0	5,031.5	5,045.1	5,031.5	17.9	12.1	162.38	41.3	230.6	693.8	668.7	25.13	27.603		
5,200.0	5,130.9	5,144.5	5,130.9	18.1	12.3	162.69	41.3	230.6	704.3	678.7	25.50	27.614		
5,300.0	5,230.6	5,244.1	5,230.6	18.3	12.5	162.93	41.3	230.6	712.2	686.4	25.87	27.537		
5,400.0	5,330.4	5,343.9	5,330.4	18.5	12.7	163.09	41.3	230.6	717.7	691.5	26.21	27.384		
5,500.0	5,430.3	5,443.9	5,430.3	18.7	12.9	163.17	41.3	230.6	720.7	694.2	26.54	27.157		
5,569.7	5,500.0	5,513.6	5,500.0	18.8	13.1	-179.89	41.3	230.6	721.3	691.0	30.31	23.797		
5,600.0	5,530.3	5,543.9	5,530.3	18.8	13.1	-179.89	41.3	230.6	721.3	690.9	30.42	23.716		
5,700.0	5,630.3	5,643.9	5,630.3	18.9	13.3	-179.89	41.3	230.6	721.3	690.6	30.77	23.444		
5,800.0	5,730.3	5,743.9	5,730.3	19.1	13.5	-179.89	41.3	230.6	721.3	690.2	31.12	23.177		
5,900.0	5,830.3	5,843.9	5,830.3	19.2	13.7	-179.89	41.3	230.6	721.3	689.9	31.48	22.914		
6,000.0	5,930.3	5,943.9	5,930.3	19.4	13.9	-179.89	41.3	230.6	721.3	689.5	31.84	22.656		
6,100.0	6,030.3	6,043.9	6,030.3	19.5	14.1	-179.89	41.3	230.6	721.3	689.1	32.20	22.403		
6,200.0	6,130.3	6,143.9	6,130.3	19.7	14.3	-179.89	41.3	230.6	721.3	688.8	32.56	22.153		
6,300.0	6,230.3	6,243.9	6,230.3	19.8	14.5	-179.89	41.3	230.6	721.3	688.4	32.93	21.908		
6,347.0	6,277.3	6,290.9	6,277.3	19.9	14.6	-179.89	41.3	230.6	721.3	688.2	33.10	21.794		
6,370.5	6,300.8	6,314.3	6,300.8	19.9	14.7	-179.89	41.3	230.6	721.3	688.2	33.18	21.738		
6,400.0	6,330.3	6,343.8	6,330.3	19.9	14.7	-89.89	41.3	230.0	721.3	691.3	30.03	24.022		
6,450.0	6,380.2	6,393.7	6,380.0	20.0	14.8	-89.89	41.3	226.5	721.3	691.2	30.17	23.907		
6,500.0	6,429.7	6,443.7	6,429.5	20.0	14.8	-89.89	41.3	219.7	721.3	691.1	30.29	23.814		
6,550.0	6,478.7	6,493.6	6,478.4	20.1	14.9	-89.89	41.3	209.7	721.3	691.0	30.39	23.739		
6,600.0	6,526.9	6,543.5	6,526.5	20.1	14.9	-89.89	41.3	196.5	721.3	690.9	30.46	23.679		
6,650.0	6,574.1	6,593.4	6,573.7	20.1	14.9	-89.90	41.3	180.2	721.3	690.8	30.53	23.626		
6,700.0	6,620.2	6,643.3	6,619.7	20.1	15.0	-89.90	41.3	160.9	721.3	690.7	30.60	23.575		
6,750.0	6,664.9	6,693.2	6,664.3	20.2	15.0	-89.90	41.3	138.6	721.3	690.7	30.68	23.515		
6,800.0	6,708.1	6,743.1	6,707.4	20.2	15.0	-89.91	41.3	113.4	721.3	690.6	30.78	23.437		
6,850.0	6,749.5	6,793.1	6,748.8	20.2	15.1	-89.91	41.3	85.5	721.3	690.4	30.92	23.327		
6,900.0	6,788.9	6,843.0	6,788.2	20.2	15.2	-89.91	41.3	54.9	721.3	690.2	31.13	23.175		
6,950.0	6,826.3	6,892.9	6,825.6	20.2	15.3	-89.92	41.3	21.8	721.3	689.9	31.41	22.966		
7,000.0	6,861.5	6,942.9	6,860.8	20.2	15.5	-89.92	41.3	-13.7	721.3	689.6	31.79	22.690		
7,050.0	6,894.2	6,992.8	6,893.5	20.3	15.8	-89.93	41.3	-51.4	721.3	689.1	32.29	22.339		
7,100.0	6,924.4	7,042.7	6,923.7	20.3	16.1	-89.94	41.3	-91.1	721.3	688.4	32.92	21.909		
7,150.0	6,951.9	7,092.7	6,951.3	20.4	16.5	-89.94	41.3	-132.8	721.3	687.6	33.71	21.401		
7,200.0	6,976.7	7,142.7	6,976.1	20.5	16.9	-89.95	41.3	-176.1	721.3	686.7	34.64	20.822		
7,250.0	6,998.5	7,192.6	6,998.0	20.7	17.5	-89.95	41.3	-221.0	721.3	685.6	35.74	20.181		
7,300.0	7,017.4	7,242.6	7,016.9	21.0	18.1	-89.96	41.3	-267.3	721.3	684.3	37.00	19.495		
7,350.0	7,033.2	7,292.5	7,032.8	21.4	18.8	-89.97	41.3	-314.6	721.3	682.9	38.41	18.778		
7,400.0	7,045.8	7,342.5	7,045.5	22.0	19.6	-89.97	41.3	-363.0	721.3	681.4	39.97	18.048		
7,450.0	7,055.3	7,392.5	7,055.0	22.6	20.4	-89.98	41.3	-412.0	721.3	679.7	41.65	17.319		
7,500.0	7,061.5	7,442.5	7,061.4	23.4	21.3	-89.99	41.3	-461.6	721.3	677.9	43.44	16.604		
7,550.0	7,064.5	7,492.5	7,064.4	24.3	22.3	-90.00	41.3	-511.5	721.3	676.0	45.33	15.913		
7,573.4	7,064.7	7,515.9	7,064.7	24.7	22.7	-90.00	41.3	-534.9	721.3	675.1	46.24	15.601		
7,577.2	7,064.7	7,519.7	7,064.7	24.7	22.8	-90.00	41.3	-538.6	721.3	675.0	46.39	15.551		
7,600.0	7,064.6	7,542.5	7,064.6	25.2	23.3	-90.00	41.3	-561.5	721.3	674.0	47.30	15.250		
7,700.0	7,064.3	7,642.5	7,064.2	27.1	25.4	-90.00	41.3	-661.5	721.3	669.9	51.46	14.018		
7,800.0	7,063.9	7,742.5	7,063.9	29.2	27.6	-90.00	41.3	-761.5	721.3	665.5	55.87	12.912		
7,900.0	7,063.5	7,842.5	7,063.5	31.5	29.9	-90.00	41.3	-861.5	721.3	660.9	60.47	11.928		
8,000.0	7,063.1	7,942.5	7,063.1	33.8	32.3	-90.00	41.3	-961.5	721.3	656.1	65.24	11.057		
8,100.0	7,062.7	8,042.5	7,062.7	36.2	34.7	-90.00	41.3	-1,061.5	721.3	651.2	70.13	10.285		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Hunt Federal 28X-234
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (RKB - 15')
Reference Site:	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Hunt Federal 28X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (1-27-15)	Offset TVD Reference:	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		
8,200.0	7,062.3	8,142.5	7,062.3	38.6	37.2	-90.00	41.3	-1,161.5	721.3	646.2	75.13	9.602		
8,300.0	7,062.0	8,242.5	7,061.9	41.1	39.8	-90.00	41.3	-1,261.5	721.3	641.1	80.20	8.994		
8,400.0	7,061.6	8,342.5	7,061.6	43.6	42.3	-90.00	41.3	-1,361.5	721.3	636.0	85.35	8.452		
8,500.0	7,061.2	8,442.5	7,061.2	46.2	44.9	-90.00	41.3	-1,461.5	721.3	630.8	90.55	7.966		
8,600.0	7,060.8	8,542.5	7,060.8	48.8	47.6	-90.00	41.3	-1,561.5	721.3	625.5	95.79	7.530		
8,700.0	7,060.4	8,642.5	7,060.4	51.4	50.2	-90.00	41.3	-1,661.5	721.3	620.3	101.08	7.136		
8,800.0	7,060.0	8,742.5	7,060.0	54.0	52.9	-90.00	41.3	-1,761.5	721.3	614.9	106.40	6.779		
8,900.0	7,059.6	8,842.5	7,059.6	56.7	55.6	-90.00	41.3	-1,861.5	721.3	609.6	111.75	6.455		
9,000.0	7,059.3	8,942.5	7,059.3	59.4	58.3	-90.00	41.3	-1,961.5	721.3	604.2	117.13	6.159		
9,100.0	7,058.9	9,042.5	7,058.9	62.0	61.0	-90.00	41.3	-2,061.5	721.3	598.8	122.52	5.887		
9,200.0	7,058.5	9,142.5	7,058.5	64.7	63.7	-90.00	41.3	-2,161.5	721.3	593.4	127.94	5.638		
9,300.0	7,058.1	9,242.5	7,058.1	67.4	66.4	-90.00	41.3	-2,261.5	721.3	588.0	133.37	5.409		
9,400.0	7,057.7	9,342.5	7,057.7	70.1	69.1	-90.00	41.3	-2,361.5	721.3	582.5	138.81	5.197		
9,500.0	7,057.3	9,442.5	7,057.3	72.8	71.8	-90.00	41.3	-2,461.5	721.3	577.1	144.27	5.000		
9,600.0	7,057.0	9,542.5	7,056.9	75.5	74.6	-90.00	41.3	-2,561.5	721.3	571.6	149.74	4.817		
9,700.0	7,056.6	9,642.5	7,056.6	78.3	77.3	-90.00	41.3	-2,661.5	721.3	566.1	155.22	4.647		
9,800.0	7,056.2	9,742.5	7,056.2	81.0	80.1	-90.00	41.3	-2,761.5	721.3	560.6	160.71	4.488		
9,900.0	7,055.8	9,842.5	7,055.8	83.7	82.8	-90.00	41.3	-2,861.5	721.3	555.1	166.21	4.340		
10,000.0	7,055.4	9,942.5	7,055.4	86.5	85.6	-90.00	41.3	-2,961.4	721.3	549.6	171.72	4.201		
10,100.0	7,055.0	10,042.5	7,055.0	89.2	88.3	-90.00	41.3	-3,061.4	721.3	544.1	177.23	4.070		
10,200.0	7,054.7	10,142.5	7,054.6	92.0	91.1	-90.00	41.3	-3,161.4	721.3	538.6	182.75	3.947		
10,300.0	7,054.3	10,242.5	7,054.3	94.7	93.9	-90.00	41.3	-3,261.4	721.3	533.1	188.28	3.831		
10,400.0	7,053.9	10,342.5	7,053.9	97.5	96.6	-90.00	41.3	-3,361.4	721.3	527.5	193.81	3.722		
10,500.0	7,053.5	10,442.5	7,053.5	100.2	99.4	-90.00	41.3	-3,461.4	721.3	522.0	199.34	3.619		
10,600.0	7,053.1	10,542.5	7,053.1	103.0	102.2	-90.00	41.3	-3,561.4	721.3	516.5	204.88	3.521		
10,700.0	7,052.7	10,642.5	7,052.7	105.8	104.9	-90.00	41.3	-3,661.4	721.3	510.9	210.42	3.428		
10,800.0	7,052.4	10,742.5	7,052.3	108.5	107.7	-90.00	41.3	-3,761.4	721.3	505.4	215.97	3.340		
10,900.0	7,052.0	10,842.5	7,052.0	111.3	110.5	-90.00	41.3	-3,861.4	721.3	499.8	221.52	3.256		
11,000.0	7,051.6	10,942.5	7,051.6	114.1	113.3	-90.00	41.3	-3,961.4	721.3	494.3	227.07	3.177		
11,100.0	7,051.2	11,042.5	7,051.2	116.8	116.0	-90.00	41.3	-4,061.4	721.3	488.7	232.63	3.101		
11,200.0	7,050.8	11,142.5	7,050.8	119.6	118.8	-90.00	41.3	-4,161.4	721.3	483.2	238.19	3.028		
11,300.0	7,050.4	11,242.5	7,050.4	122.4	121.6	-90.00	41.3	-4,261.4	721.3	477.6	243.75	2.959		
11,400.0	7,050.0	11,342.5	7,050.0	125.2	124.4	-90.00	41.3	-4,361.4	721.3	472.0	249.32	2.893		
11,500.0	7,049.7	11,442.5	7,049.7	127.9	127.2	-90.00	41.3	-4,461.4	721.3	466.5	254.88	2.830		
11,600.0	7,049.3	11,542.5	7,049.3	130.7	130.0	-90.00	41.3	-4,561.4	721.3	460.9	260.45	2.770		
11,700.0	7,048.9	11,642.5	7,048.9	133.5	132.7	-90.00	41.3	-4,661.4	721.3	455.3	266.02	2.712		
11,800.0	7,048.5	11,742.5	7,048.5	136.3	135.5	-90.00	41.3	-4,761.4	721.3	449.7	271.60	2.656		
11,900.0	7,048.1	11,842.5	7,048.1	139.1	138.3	-90.00	41.3	-4,861.4	721.3	444.2	277.17	2.603		
12,000.0	7,047.7	11,942.5	7,047.7	141.8	141.1	-90.00	41.3	-4,961.4	721.3	438.6	282.75	2.551		
12,100.0	7,047.4	12,042.5	7,047.4	144.6	143.9	-90.00	41.3	-5,061.4	721.3	433.0	288.32	2.502		
12,200.0	7,047.0	12,142.5	7,047.0	147.4	146.7	-90.00	41.3	-5,161.4	721.3	427.4	293.90	2.454		
12,300.0	7,046.6	12,242.5	7,046.6	150.2	149.5	-90.00	41.3	-5,261.4	721.3	421.9	299.48	2.409		
12,400.0	7,046.2	12,342.5	7,046.2	153.0	152.3	-90.00	41.3	-5,361.4	721.3	416.3	305.06	2.365		
12,500.0	7,045.8	12,442.5	7,045.8	155.8	155.1	-90.00	41.3	-5,461.4	721.3	410.7	310.65	2.322		
12,600.0	7,045.4	12,542.5	7,045.4	158.6	157.9	-90.00	41.3	-5,561.4	721.3	405.1	316.23	2.281		
12,700.0	7,045.1	12,642.5	7,045.0	161.4	160.7	-90.00	41.3	-5,661.4	721.3	399.5	321.82	2.241		
12,800.0	7,044.7	12,742.5	7,044.7	164.1	163.4	-90.00	41.3	-5,761.4	721.3	393.9	327.40	2.203		
12,900.0	7,044.3	12,842.5	7,044.3	166.9	166.2	-90.00	41.3	-5,861.4	721.3	388.4	332.99	2.166		
13,000.0	7,043.9	12,942.5	7,043.9	169.7	169.0	-90.00	41.3	-5,961.4	721.3	382.8	338.58	2.131		
13,100.0	7,043.5	13,042.5	7,043.5	172.5	171.8	-90.00	41.3	-6,061.4	721.3	377.2	344.16	2.096		
13,200.0	7,043.1	13,142.5	7,043.1	175.3	174.6	-90.00	41.3	-6,161.4	721.3	371.6	349.75	2.062		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Hunt Federal 28X-234
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (RKB - 15')
Reference Site:	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Hunt Federal 28X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (1-27-15)	Offset TVD Reference:	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			
13,300.0	7,042.8	13,242.5	7,042.7	178.1	177.4	-90.00	41.3	-6,261.4	721.3	366.0	355.35	2.030			
13,400.0	7,042.4	13,342.5	7,042.4	180.9	180.2	-90.00	41.3	-6,361.4	721.3	360.4	360.94	1.999			
13,500.0	7,042.0	13,442.5	7,042.0	183.7	183.0	-90.00	41.3	-6,461.4	721.3	354.8	366.53	1.968			
13,600.0	7,041.6	13,542.5	7,041.6	186.5	185.8	-90.00	41.3	-6,561.4	721.3	349.2	372.12	1.938			
13,700.0	7,041.2	13,642.5	7,041.2	189.3	188.6	-90.00	41.3	-6,661.4	721.3	343.6	377.71	1.910			
13,800.0	7,040.8	13,742.5	7,040.8	192.1	191.4	-90.00	41.3	-6,761.4	721.3	338.0	383.31	1.882			
13,900.0	7,040.4	13,842.5	7,040.4	194.9	194.2	-90.00	41.3	-6,861.4	721.3	332.4	388.90	1.855			
14,000.0	7,040.1	13,942.5	7,040.1	197.7	197.0	-90.00	41.3	-6,961.4	721.3	326.8	394.50	1.829			
14,100.0	7,039.7	14,042.5	7,039.7	200.4	199.8	-90.00	41.3	-7,061.4	721.3	321.2	400.09	1.803			
14,200.0	7,039.3	14,142.5	7,039.3	203.2	202.6	-90.00	41.3	-7,161.4	721.3	315.7	405.69	1.778			
14,300.0	7,038.9	14,242.5	7,038.9	206.0	205.4	-90.00	41.3	-7,261.4	721.3	310.1	411.29	1.754			
14,400.0	7,038.5	14,342.5	7,038.5	208.8	208.2	-90.00	41.3	-7,361.4	721.3	304.5	416.88	1.730			
14,500.0	7,038.1	14,442.5	7,038.1	211.6	211.0	-90.00	41.3	-7,461.4	721.3	298.9	422.48	1.707			
14,600.0	7,037.8	14,542.5	7,037.8	214.4	213.8	-90.00	41.3	-7,561.4	721.3	293.3	428.08	1.685			
14,700.0	7,037.4	14,642.5	7,037.4	217.2	216.6	-90.00	41.3	-7,661.4	721.3	287.7	433.68	1.663			
14,759.1	7,037.2	14,701.6	7,037.1	218.9	218.2	-90.00	41.3	-7,720.5	721.3	284.4	436.99	1.651			
14,798.2	7,037.0	14,738.2	7,037.0	220.0	219.3	-90.00	41.3	-7,757.1	721.3	282.2	439.11	1.643 SF			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Hunt Federal 28X-234
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (RKB - 15')
Reference Site:	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Hunt Federal 28X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (1-27-15)	Offset TVD Reference:	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	0.0	0.0	0.0	0.0	-90.02	0.0	-30.7	30.7					
100.0	100.0	100.0	100.0	0.1	0.1	-90.02	0.0	-30.7	30.7	30.5	0.22	136.558		
200.0	200.0	200.0	200.0	0.3	0.3	-90.02	0.0	-30.7	30.7	30.0	0.67	45.519		
300.0	300.0	300.0	300.0	0.6	0.6	-90.02	0.0	-30.7	30.7	29.6	1.12	27.312		
400.0	400.0	400.0	400.0	0.8	0.8	-90.02	0.0	-30.7	30.7	29.1	1.57	19.508 CC		
500.0	500.0	500.0	500.0	1.0	1.0	-108.48	0.0	-30.7	31.0	28.9	2.02	15.312 ES		
600.0	600.0	600.0	600.0	1.2	1.2	-112.93	0.0	-30.7	31.9	29.4	2.47	12.906		
700.0	699.9	699.9	699.9	1.5	1.5	-119.73	0.0	-30.7	33.8	30.9	2.92	11.578		
800.0	799.7	799.7	799.7	1.7	1.7	-127.88	0.0	-30.7	37.2	33.9	3.38	11.030		
900.0	899.4	899.4	899.4	1.9	1.9	-136.21	0.0	-30.7	42.5	38.7	3.83	11.094		
1,000.0	998.9	998.9	998.9	2.2	2.1	-143.79	0.0	-30.7	49.9	45.6	4.29	11.632		
1,100.0	1,098.3	1,099.3	1,099.2	2.5	2.4	-150.06	0.7	-30.2	58.6	53.8	4.74	12.354		
1,200.0	1,197.4	1,199.8	1,199.7	2.7	2.6	-155.08	2.9	-28.8	67.6	62.5	5.19	13.029		
1,300.0	1,296.3	1,300.5	1,300.3	3.1	2.8	-159.27	6.6	-26.4	77.0	71.3	5.64	13.642		
1,400.0	1,394.9	1,401.3	1,401.0	3.4	3.0	-162.86	11.7	-23.0	86.5	80.4	6.09	14.199		
1,474.1	1,467.8	1,476.1	1,475.6	3.7	3.2	-165.25	16.5	-19.8	93.8	87.3	6.43	14.578		
1,500.0	1,493.3	1,502.3	1,501.7	3.7	3.3	-166.03	18.4	-18.6	96.2	89.7	6.55	14.692		
1,600.0	1,591.5	1,601.9	1,600.9	4.1	3.5	-168.69	25.8	-13.7	105.6	98.6	7.02	15.052		
1,700.0	1,689.8	1,701.4	1,699.9	4.5	3.7	-170.92	33.2	-8.8	115.2	107.7	7.49	15.384		
1,800.0	1,788.0	1,800.8	1,799.0	4.9	4.0	-172.79	40.6	-3.9	124.9	116.9	7.96	15.688		
1,900.0	1,886.3	1,900.3	1,898.1	5.3	4.2	-174.40	48.0	0.9	134.7	126.3	8.44	15.967		
2,000.0	1,984.5	1,999.7	1,997.1	5.6	4.5	-175.79	55.4	5.8	144.6	135.7	8.92	16.220		
2,100.0	2,082.8	2,099.2	2,096.2	6.0	4.8	-177.00	62.8	10.7	154.6	145.2	9.40	16.451		
2,200.0	2,181.0	2,198.6	2,195.2	6.4	5.0	-178.06	70.2	15.6	164.7	154.8	9.88	16.661		
2,300.0	2,279.3	2,298.1	2,294.3	6.8	5.3	-179.00	77.6	20.4	174.8	164.4	10.37	16.852		
2,400.0	2,377.5	2,397.5	2,393.3	7.2	5.5	-179.84	85.0	25.3	184.9	174.0	10.86	17.027		
2,500.0	2,475.7	2,497.0	2,492.4	7.6	5.8	179.41	92.4	30.2	195.1	183.7	11.35	17.187		
2,600.0	2,574.0	2,596.4	2,591.4	8.0	6.1	178.74	99.8	35.1	205.3	193.4	11.84	17.333		
2,700.0	2,672.2	2,695.9	2,690.5	8.4	6.3	178.12	107.2	40.0	215.5	203.2	12.34	17.468		
2,800.0	2,770.5	2,795.3	2,789.5	8.8	6.6	177.57	114.6	44.8	225.8	212.9	12.83	17.592		
2,900.0	2,868.7	2,894.8	2,888.6	9.2	6.9	177.06	122.1	49.7	236.0	222.7	13.33	17.706		
3,000.0	2,967.0	2,994.2	2,987.7	9.6	7.1	176.59	129.5	54.6	246.3	232.5	13.83	17.812		
3,100.0	3,065.2	3,093.7	3,086.7	10.0	7.4	176.17	136.9	59.5	256.6	242.3	14.33	17.910		
3,200.0	3,163.5	3,193.1	3,185.8	10.4	7.7	175.77	144.3	64.4	266.9	252.1	14.83	18.001		
3,300.0	3,261.7	3,292.6	3,284.8	10.8	7.9	175.41	151.7	69.2	277.3	261.9	15.33	18.086		
3,400.0	3,360.0	3,392.0	3,383.9	11.2	8.2	175.07	159.1	74.1	287.6	271.8	15.83	18.165		
3,500.0	3,458.2	3,491.5	3,482.9	11.6	8.5	174.75	166.5	79.0	297.9	281.6	16.33	18.239		
3,600.0	3,556.5	3,590.9	3,582.0	12.1	8.7	174.46	173.9	83.9	308.3	291.4	16.84	18.309		
3,700.0	3,654.7	3,690.4	3,681.0	12.5	9.0	174.18	181.3	88.7	318.6	301.3	17.34	18.373		
3,800.0	3,753.0	3,789.8	3,780.1	12.9	9.3	173.92	188.7	93.6	329.0	311.2	17.85	18.435		
3,900.0	3,851.2	3,889.3	3,879.1	13.3	9.5	173.68	196.1	98.5	339.4	321.0	18.35	18.492		
4,000.0	3,949.5	3,988.7	3,978.2	13.7	9.8	173.45	203.5	103.4	349.8	330.9	18.86	18.546		
4,100.0	4,047.7	4,088.2	4,077.3	14.1	10.1	173.24	210.9	108.3	360.2	340.8	19.37	18.597		
4,200.0	4,146.0	4,187.6	4,176.3	14.5	10.4	173.03	218.3	113.1	370.5	350.7	19.87	18.645		
4,300.0	4,244.2	4,287.1	4,275.4	14.9	10.6	172.84	225.7	118.0	380.9	360.6	20.38	18.691		
4,400.0	4,342.5	4,386.5	4,374.4	15.3	10.9	172.66	233.1	122.9	391.3	370.5	20.89	18.734		
4,500.0	4,440.7	4,486.0	4,473.5	15.7	11.2	172.49	240.5	127.8	401.7	380.3	21.40	18.775		
4,600.0	4,539.0	4,585.4	4,572.5	16.1	11.4	172.32	248.0	132.7	412.1	390.2	21.91	18.815		
4,700.0	4,637.2	4,683.8	4,670.5	16.5	11.7	172.17	255.3	137.5	422.6	400.2	22.41	18.858		
4,800.0	4,735.5	4,773.9	4,760.3	16.9	11.9	172.11	260.9	141.2	434.3	411.5	22.84	19.015		
4,853.6	4,788.1	4,822.0	4,808.3	17.2	12.0	172.12	263.1	142.7	441.5	418.4	23.07	19.140		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Hunt Federal 28X-234
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (RKB - 15')
Reference Site:	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Hunt Federal 28X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (1-27-15)	Offset TVD Reference:	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		
4,900.0	4,833.8	4,863.5	4,849.8	17.3	12.1	172.17	264.7	143.7	447.9	424.6	23.26	19.255		
5,000.0	4,932.4	4,952.9	4,939.1	17.6	12.2	172.32	266.7	145.0	461.4	437.8	23.64	19.521		
5,100.0	5,031.5	5,045.2	5,031.5	17.9	12.4	172.52	267.2	145.3	474.4	450.4	24.00	19.766		
5,200.0	5,130.9	5,144.6	5,130.9	18.1	12.6	172.71	267.2	145.3	485.3	460.9	24.38	19.906		
5,300.0	5,230.6	5,244.3	5,230.6	18.3	12.8	172.85	267.2	145.3	493.5	468.8	24.75	19.940		
5,400.0	5,330.4	5,344.1	5,330.4	18.5	13.0	172.94	267.2	145.3	499.3	474.1	25.11	19.885		
5,500.0	5,430.3	5,444.1	5,430.3	18.7	13.2	172.99	267.2	145.3	502.4	476.9	25.44	19.744		
5,569.7	5,500.0	5,513.7	5,500.0	18.8	13.3	-170.08	267.2	145.3	503.0	471.2	31.78	15.825		
5,600.0	5,530.3	5,544.1	5,530.3	18.8	13.4	-170.08	267.2	145.3	503.0	471.1	31.88	15.775		
5,700.0	5,630.3	5,644.1	5,630.3	18.9	13.6	-170.08	267.2	145.3	503.0	470.8	32.22	15.609		
5,800.0	5,730.3	5,744.1	5,730.3	19.1	13.8	-170.08	267.2	145.3	503.0	470.4	32.57	15.445		
5,900.0	5,830.3	5,844.1	5,830.3	19.2	14.0	-170.08	267.2	145.3	503.0	470.1	32.91	15.284		
6,000.0	5,930.3	5,944.1	5,930.3	19.4	14.2	-170.08	267.2	145.3	503.0	469.7	33.26	15.125		
6,100.0	6,030.3	6,044.1	6,030.3	19.5	14.4	-170.08	267.2	145.3	503.0	469.4	33.61	14.968		
6,200.0	6,130.3	6,144.1	6,130.3	19.7	14.6	-170.08	267.2	145.3	503.0	469.0	33.96	14.813		
6,300.0	6,230.3	6,244.1	6,230.3	19.8	14.8	-170.08	267.2	145.3	503.0	468.7	34.31	14.661		
6,370.5	6,300.8	6,314.5	6,300.8	19.9	14.9	-170.08	267.2	145.3	503.0	468.4	34.56	14.555		
6,400.0	6,330.3	6,344.0	6,330.3	19.9	15.0	-80.15	267.2	145.3	502.9	473.8	29.11	17.275		
6,450.0	6,380.2	6,393.9	6,380.2	20.0	15.1	-80.59	267.2	145.3	502.3	473.0	29.30	17.146		
6,500.0	6,429.7	6,439.9	6,426.2	20.0	15.2	-81.27	267.2	144.5	501.4	471.9	29.47	17.011		
6,550.0	6,478.7	6,485.1	6,471.3	20.1	15.2	-81.99	267.2	141.0	500.4	470.8	29.63	16.887		
6,600.0	6,526.9	6,530.7	6,516.4	20.1	15.3	-82.73	267.2	134.9	499.5	469.8	29.79	16.768		
6,650.0	6,574.1	6,576.6	6,561.4	20.1	15.4	-83.52	267.2	126.0	498.7	468.8	29.95	16.652		
6,700.0	6,620.2	6,622.9	6,606.2	20.1	15.4	-84.33	267.2	114.3	498.0	467.8	30.11	16.539		
6,750.0	6,664.9	6,669.5	6,650.5	20.2	15.4	-85.16	267.2	99.8	497.3	467.0	30.28	16.425		
6,800.0	6,708.1	6,716.5	6,694.2	20.2	15.5	-86.03	267.2	82.4	496.7	466.2	30.46	16.306		
6,850.0	6,749.5	6,764.0	6,737.2	20.2	15.5	-86.91	267.2	62.2	496.2	465.5	30.67	16.179		
6,900.0	6,788.9	6,811.9	6,779.2	20.2	15.6	-87.81	267.2	39.2	495.8	464.9	30.92	16.038		
6,950.0	6,826.3	6,860.3	6,820.0	20.2	15.6	-88.72	267.2	13.3	495.6	464.4	31.22	15.876		
7,000.0	6,861.5	6,909.2	6,859.6	20.2	15.6	-89.65	267.2	-15.5	495.5	463.9	31.58	15.687		
7,019.1	6,874.2	6,928.0	6,874.2	20.2	15.6	-90.00	267.2	-27.2	495.5	463.7	31.76	15.602		
7,050.0	6,894.2	6,958.6	6,897.5	20.3	15.7	-90.58	267.2	-47.0	495.5	463.5	32.04	15.465		
7,100.0	6,924.4	7,008.5	6,933.8	20.3	15.8	-91.51	267.2	-81.4	495.6	463.0	32.60	15.205		
7,150.0	6,951.9	7,059.0	6,968.1	20.4	16.0	-92.44	267.2	-118.4	495.9	462.6	33.28	14.902		
7,200.0	6,976.7	7,110.0	7,000.2	20.5	16.4	-93.36	267.2	-158.0	496.3	462.2	34.10	14.556		
7,250.0	6,998.5	7,161.7	7,029.9	20.7	16.8	-94.28	267.2	-200.2	496.9	461.8	35.07	14.169		
7,300.0	7,017.4	7,213.9	7,057.0	21.0	17.3	-95.17	267.2	-244.9	497.5	461.3	36.20	13.745		
7,350.0	7,033.2	7,266.7	7,081.2	21.4	18.0	-96.05	267.2	-291.8	498.3	460.8	37.49	13.290		
7,400.0	7,045.8	7,320.1	7,102.3	22.0	18.7	-96.91	267.2	-340.8	499.2	460.2	38.95	12.815		
7,450.0	7,055.3	7,374.1	7,120.2	22.6	19.5	-97.73	267.2	-391.8	500.1	459.5	40.57	12.327		
7,500.0	7,061.5	7,428.7	7,134.5	23.4	20.3	-98.53	267.2	-444.5	501.1	458.8	42.33	11.837		
7,550.0	7,064.5	7,483.9	7,145.2	24.3	21.3	-99.29	267.2	-498.6	502.2	457.9	44.23	11.353		
7,573.4	7,064.7	7,510.0	7,148.8	24.7	21.8	-99.63	267.2	-524.4	502.7	457.5	45.16	11.131		
7,600.0	7,064.6	7,539.8	7,151.9	25.2	22.3	-99.99	267.2	-554.1	503.1	456.9	46.21	10.889		
7,700.0	7,064.3	7,647.6	7,154.5	27.1	24.5	-100.32	267.2	-661.8	503.6	453.3	50.35	10.002		
7,800.0	7,063.9	7,747.6	7,154.1	29.2	26.7	-100.32	267.2	-761.8	503.6	449.0	54.62	9.220		
7,900.0	7,063.5	7,847.6	7,153.7	31.5	28.9	-100.32	267.2	-861.8	503.6	444.5	59.10	8.522		
8,000.0	7,063.1	7,947.6	7,153.3	33.8	31.2	-100.32	267.2	-961.8	503.6	439.9	63.74	7.901		
8,100.0	7,062.7	8,047.6	7,152.9	36.2	33.7	-100.31	267.2	-1,061.8	503.6	435.1	68.52	7.350		
8,200.0	7,062.3	8,147.6	7,152.5	38.6	36.1	-100.31	267.2	-1,161.8	503.6	430.2	73.40	6.861		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Hunt Federal 28X-234
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (RKB - 15')
Reference Site:	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Hunt Federal 28X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (1-27-15)	Offset TVD Reference:	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		
8,300.0	7,062.0	8,247.6	7,152.1	41.1	38.6	-100.31	267.2	-1,261.8	503.6	425.2	78.37	6.426		
8,400.0	7,061.6	8,347.6	7,151.7	43.6	41.2	-100.31	267.2	-1,361.8	503.6	420.2	83.41	6.037		
8,500.0	7,061.2	8,447.6	7,151.3	46.2	43.8	-100.31	267.2	-1,461.8	503.6	415.1	88.51	5.689		
8,600.0	7,060.8	8,547.6	7,150.9	48.8	46.4	-100.30	267.2	-1,561.8	503.6	409.9	93.66	5.377		
8,700.0	7,060.4	8,647.6	7,150.5	51.4	49.0	-100.30	267.2	-1,661.8	503.6	404.7	98.85	5.094		
8,800.0	7,060.0	8,747.6	7,150.1	54.0	51.7	-100.30	267.2	-1,761.8	503.6	399.5	104.08	4.838		
8,900.0	7,059.6	8,847.6	7,149.7	56.7	54.3	-100.30	267.2	-1,861.8	503.6	394.2	109.34	4.606		
9,000.0	7,059.3	8,947.6	7,149.3	59.4	57.0	-100.30	267.2	-1,961.8	503.6	389.0	114.62	4.393		
9,100.0	7,058.9	9,047.6	7,148.9	62.0	59.7	-100.29	267.2	-2,061.8	503.6	383.6	119.93	4.199		
9,200.0	7,058.5	9,147.6	7,148.5	64.7	62.4	-100.29	267.2	-2,161.8	503.6	378.3	125.25	4.020		
9,300.0	7,058.1	9,247.6	7,148.1	67.4	65.1	-100.29	267.2	-2,261.8	503.6	373.0	130.59	3.856		
9,400.0	7,057.7	9,347.6	7,147.7	70.1	67.8	-100.29	267.2	-2,361.8	503.6	367.6	135.95	3.704		
9,500.0	7,057.3	9,447.6	7,147.3	72.8	70.6	-100.29	267.2	-2,461.8	503.6	362.2	141.32	3.563		
9,600.0	7,057.0	9,547.6	7,146.9	75.5	73.3	-100.29	267.2	-2,561.8	503.6	356.8	146.71	3.432		
9,700.0	7,056.6	9,647.6	7,146.5	78.3	76.0	-100.28	267.2	-2,661.8	503.6	351.4	152.10	3.311		
9,800.0	7,056.2	9,747.6	7,146.1	81.0	78.8	-100.28	267.2	-2,761.8	503.5	346.0	157.51	3.197		
9,900.0	7,055.8	9,847.6	7,145.7	83.7	81.5	-100.28	267.2	-2,861.8	503.5	340.6	162.92	3.091		
10,000.0	7,055.4	9,947.6	7,145.3	86.5	84.3	-100.28	267.2	-2,961.8	503.5	335.2	168.34	2.991		
10,100.0	7,055.0	10,047.6	7,144.9	89.2	87.0	-100.28	267.2	-3,061.8	503.5	329.8	173.77	2.898		
10,200.0	7,054.7	10,147.6	7,144.5	92.0	89.8	-100.27	267.2	-3,161.8	503.5	324.3	179.21	2.810		
10,300.0	7,054.3	10,247.6	7,144.1	94.7	92.5	-100.27	267.2	-3,261.8	503.5	318.9	184.65	2.727		
10,400.0	7,053.9	10,347.6	7,143.7	97.5	95.3	-100.27	267.2	-3,361.8	503.5	313.4	190.09	2.649		
10,500.0	7,053.5	10,447.6	7,143.3	100.2	98.1	-100.27	267.2	-3,461.8	503.5	308.0	195.55	2.575		
10,600.0	7,053.1	10,547.6	7,142.9	103.0	100.8	-100.27	267.2	-3,561.8	503.5	302.5	201.00	2.505		
10,700.0	7,052.7	10,647.6	7,142.5	105.8	103.6	-100.26	267.2	-3,661.8	503.5	297.1	206.46	2.439		
10,800.0	7,052.4	10,747.6	7,142.0	108.5	106.4	-100.26	267.2	-3,761.8	503.5	291.6	211.93	2.376		
10,900.0	7,052.0	10,847.6	7,141.6	111.3	109.2	-100.26	267.2	-3,861.8	503.5	286.1	217.39	2.316		
11,000.0	7,051.6	10,947.6	7,141.2	114.1	111.9	-100.26	267.2	-3,961.8	503.5	280.6	222.86	2.259		
11,100.0	7,051.2	11,047.6	7,140.8	116.8	114.7	-100.26	267.2	-4,061.8	503.5	275.2	228.34	2.205		
11,200.0	7,050.8	11,147.6	7,140.4	119.6	117.5	-100.25	267.2	-4,161.8	503.5	269.7	233.82	2.153		
11,300.0	7,050.4	11,247.6	7,140.0	122.4	120.3	-100.25	267.2	-4,261.8	503.5	264.2	239.30	2.104		
11,400.0	7,050.0	11,347.6	7,139.6	125.2	123.1	-100.25	267.2	-4,361.8	503.5	258.7	244.78	2.057		
11,500.0	7,049.7	11,447.6	7,139.2	127.9	125.8	-100.25	267.2	-4,461.8	503.5	253.2	250.26	2.012		
11,600.0	7,049.3	11,547.6	7,138.8	130.7	128.6	-100.25	267.2	-4,561.8	503.5	247.7	255.75	1.969		
11,700.0	7,048.9	11,647.6	7,138.4	133.5	131.4	-100.24	267.2	-4,661.8	503.5	242.2	261.24	1.927		
11,800.0	7,048.5	11,747.6	7,138.0	136.3	134.2	-100.24	267.2	-4,761.8	503.5	236.8	266.73	1.888		
11,900.0	7,048.1	11,847.6	7,137.6	139.1	137.0	-100.24	267.2	-4,861.8	503.5	231.3	272.22	1.850		
12,000.0	7,047.7	11,947.6	7,137.2	141.8	139.8	-100.24	267.2	-4,961.8	503.5	225.8	277.72	1.813		
12,100.0	7,047.4	12,047.6	7,136.8	144.6	142.6	-100.24	267.2	-5,061.8	503.5	220.3	283.22	1.778		
12,200.0	7,047.0	12,147.6	7,136.4	147.4	145.3	-100.23	267.2	-5,161.8	503.5	214.8	288.71	1.744		
12,300.0	7,046.6	12,247.6	7,136.0	150.2	148.1	-100.23	267.2	-5,261.8	503.5	209.3	294.21	1.711		
12,400.0	7,046.2	12,347.6	7,135.6	153.0	150.9	-100.23	267.2	-5,361.8	503.5	203.8	299.71	1.680		
12,500.0	7,045.8	12,447.6	7,135.2	155.8	153.7	-100.23	267.2	-5,461.8	503.5	198.2	305.22	1.650		
12,600.0	7,045.4	12,547.6	7,134.8	158.6	156.5	-100.23	267.2	-5,561.8	503.5	192.7	310.72	1.620		
12,700.0	7,045.1	12,647.6	7,134.4	161.4	159.3	-100.22	267.2	-5,661.8	503.5	187.2	316.22	1.592		
12,800.0	7,044.7	12,747.6	7,134.0	164.1	162.1	-100.22	267.2	-5,761.8	503.5	181.7	321.73	1.565		
12,900.0	7,044.3	12,847.6	7,133.6	166.9	164.9	-100.22	267.2	-5,861.8	503.5	176.2	327.24	1.538		
13,000.0	7,043.9	12,947.6	7,133.2	169.7	167.7	-100.22	267.2	-5,961.8	503.4	170.7	332.75	1.513		
13,100.0	7,043.5	13,047.6	7,132.8	172.5	170.5	-100.22	267.2	-6,061.8	503.4	165.2	338.25	1.488 Level 3		
13,200.0	7,043.1	13,147.6	7,132.4	175.3	173.3	-100.21	267.2	-6,161.8	503.4	159.7	343.76	1.465 Level 3		
13,300.0	7,042.8	13,247.6	7,132.0	178.1	176.1	-100.21	267.2	-6,261.8	503.4	154.2	349.27	1.441 Level 3		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Hunt Federal 28X-234
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (RKB - 15')
Reference Site:	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Hunt Federal 28X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (1-27-15)	Offset TVD Reference:	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					
13,400.0	7,042.4	13,347.6	7,131.6	180.9	178.9	-100.21	267.2	-6,361.8	503.4	148.7	354.79	1.419	Level 3				
13,500.0	7,042.0	13,447.6	7,131.2	183.7	181.7	-100.21	267.2	-6,461.8	503.4	143.1	360.30	1.397	Level 3				
13,600.0	7,041.6	13,547.6	7,130.8	186.5	184.4	-100.21	267.2	-6,561.8	503.4	137.6	365.81	1.376	Level 3				
13,700.0	7,041.2	13,647.6	7,130.4	189.3	187.2	-100.20	267.2	-6,661.8	503.4	132.1	371.33	1.356	Level 3				
13,800.0	7,040.8	13,747.6	7,130.0	192.1	190.0	-100.20	267.2	-6,761.8	503.4	126.6	376.84	1.336	Level 3				
13,900.0	7,040.4	13,847.6	7,129.6	194.9	192.8	-100.20	267.2	-6,861.8	503.4	121.1	382.36	1.317	Level 3				
14,000.0	7,040.1	13,947.6	7,129.2	197.7	195.6	-100.20	267.2	-6,961.8	503.4	115.5	387.87	1.298	Level 3				
14,100.0	7,039.7	14,047.6	7,128.8	200.4	198.4	-100.20	267.2	-7,061.8	503.4	110.0	393.39	1.280	Level 3				
14,200.0	7,039.3	14,147.6	7,128.4	203.2	201.2	-100.20	267.2	-7,161.8	503.4	104.5	398.91	1.262	Level 3				
14,300.0	7,038.9	14,247.6	7,128.0	206.0	204.0	-100.19	267.2	-7,261.8	503.4	99.0	404.42	1.245	Level 2				
14,400.0	7,038.5	14,347.6	7,127.6	208.8	206.8	-100.19	267.2	-7,361.8	503.4	93.5	409.94	1.228	Level 2				
14,500.0	7,038.1	14,447.6	7,127.2	211.6	209.6	-100.19	267.2	-7,461.8	503.4	87.9	415.46	1.212	Level 2				
14,600.0	7,037.8	14,547.6	7,126.8	214.4	212.4	-100.19	267.2	-7,561.8	503.4	82.4	420.98	1.196	Level 2				
14,700.0	7,037.4	14,647.6	7,126.4	217.2	215.2	-100.19	267.2	-7,661.8	503.4	76.9	426.50	1.180	Level 2				
14,769.0	7,037.1	14,716.7	7,126.1	219.2	217.2	-100.18	267.2	-7,730.8	503.4	73.1	430.31	1.170	Level 2				
14,798.2	7,037.0	14,745.7	7,126.0	220.0	218.0	-100.18	267.2	-7,759.8	503.4	71.5	431.92	1.165	Level 2, SF				

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Hunt Federal 28X-234
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (RKB - 15')
Reference Site:	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Hunt Federal 28X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (1-27-15)	Offset TVD Reference:	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 (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-90.01	0.0	-89.3	89.3					
100.0	100.0	100.0	100.0	0.1	0.1	-90.01	0.0	-89.3	89.3	89.1	0.22	397.259		
200.0	200.0	200.0	200.0	0.3	0.3	-90.01	0.0	-89.3	89.3	88.6	0.67	132.420		
300.0	300.0	300.0	300.0	0.6	0.6	-90.01	0.0	-89.3	89.3	88.2	1.12	79.452		
400.0	400.0	400.0	400.0	0.8	0.8	-90.01	0.0	-89.3	89.3	87.7	1.57	56.751 CC		
500.0	500.0	500.0	500.0	1.0	1.0	-107.46	0.0	-89.3	89.5	87.5	2.02	44.289 ES		
600.0	600.0	600.0	600.0	1.2	1.2	-109.04	0.0	-89.3	90.4	87.9	2.47	36.580		
700.0	699.9	699.9	699.9	1.5	1.5	-111.59	0.0	-89.3	91.9	89.0	2.92	31.451		
800.0	799.7	799.7	799.7	1.7	1.7	-115.02	0.0	-89.3	94.3	90.9	3.38	27.924		
900.0	899.4	899.4	899.4	1.9	1.9	-119.14	0.0	-89.3	97.9	94.0	3.84	25.501		
1,000.0	998.9	998.9	998.9	2.2	2.1	-123.75	0.0	-89.3	102.9	98.6	4.31	23.899		
1,100.0	1,098.3	1,098.3	1,098.3	2.5	2.4	-128.60	0.0	-89.3	109.6	104.8	4.78	22.945		
1,200.0	1,197.4	1,197.4	1,197.4	2.7	2.6	-133.47	0.0	-89.3	118.2	113.0	5.25	22.516		
1,300.0	1,296.3	1,296.3	1,296.3	3.1	2.8	-138.15	0.0	-89.3	128.9	123.2	5.73	22.516		
1,400.0	1,394.9	1,394.9	1,394.9	3.4	3.0	-142.50	0.0	-89.3	141.7	135.5	6.20	22.864		
1,474.1	1,467.8	1,467.8	1,467.8	3.7	3.2	-145.47	0.0	-89.3	152.5	146.0	6.54	23.308		
1,500.0	1,493.3	1,493.3	1,493.3	3.7	3.2	-146.47	0.0	-89.3	156.6	149.9	6.67	23.482		
1,600.0	1,591.5	1,591.5	1,591.5	4.1	3.5	-149.88	0.0	-89.3	172.5	165.3	7.14	24.159		
1,700.0	1,689.8	1,689.8	1,689.8	4.5	3.7	-152.71	0.0	-89.3	188.9	181.3	7.61	24.823		
1,800.0	1,788.0	1,788.0	1,788.0	4.9	3.9	-155.08	0.0	-89.3	205.7	197.6	8.08	25.461		
1,900.0	1,886.3	1,886.3	1,886.3	5.3	4.1	-157.09	0.0	-89.3	222.8	214.2	8.55	26.065		
2,000.0	1,984.5	1,984.5	1,984.5	5.6	4.3	-158.82	0.0	-89.3	240.1	231.1	9.02	26.633		
2,100.0	2,082.8	2,082.8	2,082.8	6.0	4.6	-160.32	0.0	-89.3	257.6	248.1	9.48	27.164		
2,200.0	2,181.0	2,181.0	2,181.0	6.4	4.8	-161.62	0.0	-89.3	275.3	265.3	9.95	27.659		
2,300.0	2,279.3	2,279.3	2,279.3	6.8	5.0	-162.77	0.0	-89.3	293.0	282.6	10.42	28.121		
2,400.0	2,377.5	2,377.5	2,377.5	7.2	5.2	-163.78	0.0	-89.3	310.9	300.0	10.89	28.551		
2,500.0	2,475.7	2,475.7	2,475.7	7.6	5.5	-164.69	0.0	-89.3	328.9	317.5	11.36	28.952		
2,600.0	2,574.0	2,574.8	2,574.8	8.0	5.7	-165.59	-0.2	-88.8	346.8	335.0	11.82	29.352		
2,700.0	2,672.2	2,674.1	2,674.1	8.4	5.9	-166.66	-0.9	-86.8	364.5	352.3	12.25	29.756		
2,800.0	2,770.5	2,773.3	2,773.2	8.8	6.0	-167.89	-2.3	-83.2	382.1	369.4	12.68	30.132		
2,900.0	2,868.7	2,872.3	2,872.0	9.2	6.2	-169.26	-4.2	-78.0	399.6	386.5	13.11	30.474		
3,000.0	2,967.0	2,971.0	2,970.4	9.6	6.4	-170.74	-6.7	-71.1	417.2	403.6	13.55	30.787		
3,100.0	3,065.2	3,069.3	3,068.4	10.0	6.6	-172.32	-9.8	-62.8	434.8	420.9	13.99	31.074		
3,200.0	3,163.5	3,167.4	3,165.8	10.4	6.9	-173.98	-13.5	-52.9	452.7	438.3	14.45	31.338		
3,300.0	3,261.7	3,264.9	3,262.7	10.8	7.1	-175.72	-17.7	-41.5	470.9	456.0	14.91	31.580		
3,400.0	3,360.0	3,362.0	3,358.8	11.2	7.3	-177.52	-22.5	-28.6	489.5	474.2	15.39	31.804		
3,500.0	3,458.2	3,459.0	3,454.7	11.6	7.6	-179.26	-27.4	-15.1	508.6	492.7	15.89	32.008		
3,600.0	3,556.5	3,556.0	3,550.6	12.1	7.8	179.12	-32.4	-1.6	528.2	511.8	16.40	32.198		
3,700.0	3,654.7	3,653.0	3,646.6	12.5	8.1	177.62	-37.4	11.9	548.1	531.1	16.93	32.377		
3,800.0	3,753.0	3,750.0	3,742.5	12.9	8.4	176.22	-42.4	25.4	568.3	550.8	17.46	32.545		
3,900.0	3,851.2	3,847.0	3,838.4	13.3	8.6	174.92	-47.4	38.9	588.9	570.9	18.01	32.701		
4,000.0	3,949.5	3,944.0	3,934.3	13.7	8.9	173.70	-52.4	52.4	609.7	591.1	18.56	32.849		
4,100.0	4,047.7	4,041.0	4,030.3	14.1	9.2	172.56	-57.4	65.9	630.8	611.7	19.12	32.988		
4,200.0	4,146.0	4,138.0	4,126.2	14.5	9.5	171.50	-62.4	79.4	652.1	632.4	19.69	33.119		
4,300.0	4,244.2	4,235.0	4,222.1	14.9	9.8	170.50	-67.4	92.9	673.6	653.3	20.26	33.243		
4,400.0	4,342.5	4,332.0	4,318.0	15.3	10.1	169.57	-72.4	106.4	695.3	674.5	20.84	33.360		
4,500.0	4,440.7	4,429.0	4,413.9	15.7	10.4	168.69	-77.4	120.0	717.2	695.7	21.43	33.472		
4,600.0	4,539.0	4,526.0	4,509.9	16.1	10.7	167.86	-82.3	133.5	739.2	717.2	22.01	33.579		
4,700.0	4,637.2	4,623.0	4,605.8	16.5	11.0	167.08	-87.3	147.0	761.3	738.7	22.60	33.681		
4,800.0	4,735.5	4,720.0	4,701.7	16.9	11.3	166.34	-92.3	160.5	783.6	760.4	23.20	33.779		
4,853.6	4,788.1	4,772.0	4,753.2	17.2	11.5	165.96	-95.0	167.7	795.6	772.1	23.52	33.830		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Hunt Federal 28X-234
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (RKB - 15')
Reference Site:	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Hunt Federal 28X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (1-27-15)	Offset TVD Reference:	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 (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
4,900.0	4,833.8	4,817.1	4,797.7	17.3	11.6	165.68	-97.3	174.0	805.8	782.0	23.81	33.849			
5,000.0	4,932.4	4,914.5	4,894.1	17.6	11.9	165.05	-102.3	187.5	825.9	801.5	24.39	33.869			
5,100.0	5,031.5	5,016.9	4,995.4	17.9	12.3	164.40	-107.4	201.3	843.5	818.6	24.94	33.824			
5,200.0	5,130.9	5,123.3	5,101.0	18.1	12.5	163.87	-111.8	213.1	857.9	832.5	25.43	33.737			
5,300.0	5,230.6	5,230.7	5,208.0	18.3	12.8	163.47	-115.2	222.2	869.0	843.1	25.88	33.575			
5,400.0	5,330.4	5,338.7	5,315.8	18.5	13.0	163.21	-117.5	228.5	876.6	850.3	26.29	33.343			
5,500.0	5,430.3	5,447.2	5,424.3	18.7	13.2	163.06	-118.8	232.0	880.8	854.1	26.66	33.044			
5,569.7	5,500.0	5,523.0	5,500.0	18.8	13.3	179.95	-119.0	232.7	881.6	851.3	30.37	29.026			
5,600.0	5,530.3	5,553.3	5,530.3	18.8	13.4	179.95	-119.0	232.7	881.6	851.2	30.47	28.931			
5,700.0	5,630.3	5,653.3	5,630.3	18.9	13.6	179.95	-119.0	232.7	881.6	850.8	30.82	28.608			
5,800.0	5,730.3	5,753.3	5,730.3	19.1	13.8	179.95	-119.0	232.7	881.6	850.5	31.17	28.286			
5,900.0	5,830.3	5,853.3	5,830.3	19.2	14.0	179.95	-119.0	232.7	881.6	850.1	31.52	27.970			
6,000.0	5,930.3	5,953.3	5,930.3	19.4	14.2	179.95	-119.0	232.7	881.6	849.8	31.88	27.658			
6,100.0	6,030.3	6,053.3	6,030.3	19.5	14.4	179.95	-119.0	232.7	881.6	849.4	32.23	27.352			
6,200.0	6,130.3	6,153.3	6,130.3	19.7	14.6	179.95	-119.0	232.7	881.6	849.1	32.59	27.051			
6,300.0	6,230.3	6,253.3	6,230.3	19.8	14.7	179.95	-119.0	232.7	881.6	848.7	32.95	26.755			
6,370.5	6,300.8	6,323.8	6,300.8	19.9	14.9	179.95	-119.0	232.7	881.6	848.4	33.21	26.549			
6,400.0	6,330.3	6,353.3	6,330.3	19.9	14.9	-90.08	-119.0	232.7	881.6	851.5	30.12	29.271			
6,450.0	6,380.2	6,403.2	6,380.2	20.0	15.0	-90.31	-119.0	232.7	881.7	851.4	30.30	29.094			
6,500.0	6,429.7	6,452.7	6,429.7	20.0	15.1	-90.75	-119.0	232.7	881.7	851.2	30.48	28.924			
6,550.0	6,478.7	6,501.7	6,478.7	20.1	15.2	-91.37	-119.0	232.7	881.9	851.3	30.66	28.763			
6,600.0	6,526.9	6,550.8	6,527.9	20.1	15.3	-92.17	-119.0	232.4	882.3	851.5	30.83	28.618			
6,650.0	6,574.1	6,601.8	6,578.7	20.1	15.4	-93.01	-119.0	229.3	883.0	852.0	30.97	28.506			
6,700.0	6,620.2	6,653.7	6,630.1	20.1	15.5	-93.84	-119.0	222.6	883.8	852.7	31.09	28.423			
6,750.0	6,664.9	6,706.6	6,682.1	20.2	15.5	-94.67	-119.0	212.3	884.8	853.6	31.20	28.362			
6,800.0	6,708.1	6,760.6	6,734.2	20.2	15.5	-95.48	-119.0	198.0	886.0	854.7	31.29	28.316			
6,850.0	6,749.5	6,815.8	6,786.2	20.2	15.6	-96.28	-119.0	179.7	887.3	855.9	31.38	28.273			
6,900.0	6,788.9	6,872.1	6,837.7	20.2	15.6	-97.06	-119.0	157.1	888.8	857.3	31.50	28.218			
6,950.0	6,826.3	6,929.6	6,888.6	20.2	15.6	-97.82	-119.0	130.3	890.4	858.7	31.65	28.136			
7,000.0	6,861.5	6,988.3	6,938.2	20.2	15.7	-98.54	-119.0	99.0	892.0	860.2	31.85	28.005			
7,050.0	6,894.2	7,048.2	6,986.2	20.3	15.7	-99.23	-119.0	63.2	893.7	861.6	32.14	27.804			
7,100.0	6,924.4	7,109.3	7,032.2	20.3	15.9	-99.89	-119.0	23.0	895.5	862.9	32.56	27.505			
7,150.0	6,951.9	7,171.6	7,075.6	20.4	16.1	-100.49	-119.0	-21.7	897.1	864.0	33.11	27.092			
7,200.0	6,976.7	7,235.0	7,115.9	20.5	16.4	-101.05	-119.0	-70.6	898.8	864.9	33.85	26.555			
7,250.0	6,998.5	7,299.4	7,152.5	20.7	16.8	-101.56	-119.0	-123.6	900.3	865.5	34.77	25.890			
7,300.0	7,017.4	7,364.9	7,185.1	21.0	17.4	-102.00	-119.0	-180.4	901.6	865.7	35.94	25.090			
7,350.0	7,033.2	7,431.2	7,212.9	21.4	18.1	-102.37	-119.0	-240.5	902.8	865.5	37.32	24.189			
7,400.0	7,045.8	7,498.3	7,235.7	22.0	19.0	-102.68	-119.0	-303.6	903.8	864.9	38.93	23.216			
7,450.0	7,055.3	7,565.9	7,253.0	22.6	20.1	-102.90	-119.0	-369.0	904.6	863.8	40.77	22.189			
7,500.0	7,061.5	7,634.0	7,264.4	23.4	21.2	-103.05	-119.0	-436.1	905.1	862.3	42.78	21.154			
7,550.0	7,064.5	7,702.4	7,269.9	24.3	22.5	-103.12	-119.0	-504.2	905.3	860.3	44.96	20.136			
7,573.4	7,064.7	7,732.7	7,270.4	24.7	23.0	-103.13	-119.0	-534.5	905.3	859.3	45.99	19.684			
7,600.0	7,064.6	7,759.3	7,270.4	25.2	23.6	-103.14	-119.0	-561.1	905.3	858.3	47.02	19.256			
7,700.0	7,064.3	7,859.3	7,270.6	27.1	25.6	-103.17	-119.0	-661.1	905.5	854.4	51.04	17.742			
7,800.0	7,063.9	7,959.3	7,270.8	29.2	27.8	-103.21	-119.0	-761.1	905.6	850.3	55.30	16.377			
7,900.0	7,063.5	8,059.3	7,271.0	31.5	30.1	-103.24	-119.0	-861.1	905.7	846.0	59.76	15.157			
8,000.0	7,063.1	8,159.3	7,271.1	33.8	32.5	-103.28	-119.0	-961.1	905.9	841.5	64.37	14.072			
8,100.0	7,062.7	8,259.3	7,271.3	36.2	34.9	-103.31	-119.0	-1,061.1	906.0	836.9	69.11	13.109			
8,200.0	7,062.3	8,359.3	7,271.5	38.6	37.4	-103.35	-119.0	-1,161.1	906.1	832.2	73.95	12.253			
8,300.0	7,062.0	8,459.3	7,271.7	41.1	39.9	-103.38	-119.0	-1,261.1	906.2	827.4	78.87	11.490			

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Hunt Federal 28X-234
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (RKB - 15')
Reference Site:	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Hunt Federal 28X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (1-27-15)	Offset TVD Reference:	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 (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	7,061.6	8,559.3	7,271.8	43.6	42.5	-103.41	-119.0	-1,361.1	906.4	822.5	83.86	10.809		
8,500.0	7,061.2	8,659.3	7,272.0	46.2	45.1	-103.45	-119.0	-1,461.1	906.5	817.6	88.90	10.197		
8,600.0	7,060.8	8,759.3	7,272.2	48.8	47.7	-103.48	-119.0	-1,561.1	906.6	812.6	93.99	9.646		
8,700.0	7,060.4	8,859.3	7,272.4	51.4	50.4	-103.52	-119.0	-1,661.1	906.8	807.6	99.11	9.149		
8,800.0	7,060.0	8,959.3	7,272.5	54.0	53.0	-103.55	-119.0	-1,761.1	906.9	802.6	104.27	8.697		
8,900.0	7,059.6	9,059.3	7,272.7	56.7	55.7	-103.59	-119.0	-1,861.1	907.0	797.6	109.46	8.286		
9,000.0	7,059.3	9,159.3	7,272.9	59.4	58.4	-103.62	-119.0	-1,961.1	907.2	792.5	114.67	7.911		
9,100.0	7,058.9	9,259.3	7,273.1	62.0	61.1	-103.65	-119.0	-2,061.1	907.3	787.4	119.90	7.567		
9,200.0	7,058.5	9,359.3	7,273.2	64.7	63.8	-103.69	-119.0	-2,161.1	907.4	782.3	125.15	7.251		
9,300.0	7,058.1	9,459.3	7,273.4	67.4	66.5	-103.72	-119.0	-2,261.1	907.6	777.1	130.42	6.959		
9,400.0	7,057.7	9,559.3	7,273.6	70.1	69.2	-103.76	-119.0	-2,361.1	907.7	772.0	135.70	6.689		
9,500.0	7,057.3	9,659.3	7,273.8	72.8	71.9	-103.79	-119.0	-2,461.1	907.8	766.8	140.99	6.439		
9,600.0	7,057.0	9,759.3	7,273.9	75.5	74.7	-103.83	-119.0	-2,561.1	908.0	761.7	146.29	6.207		
9,700.0	7,056.6	9,859.3	7,274.1	78.3	77.4	-103.86	-119.0	-2,661.1	908.1	756.5	151.59	5.990		
9,800.0	7,056.2	9,959.3	7,274.3	81.0	80.1	-103.89	-119.0	-2,761.1	908.2	751.3	156.91	5.788		
9,900.0	7,055.8	10,059.3	7,274.5	83.7	82.9	-103.93	-119.0	-2,861.1	908.4	746.1	162.24	5.599		
10,000.0	7,055.4	10,159.3	7,274.6	86.5	85.6	-103.96	-119.0	-2,961.1	908.5	740.9	167.57	5.422		
10,100.0	7,055.0	10,259.3	7,274.8	89.2	88.4	-104.00	-119.0	-3,061.1	908.6	735.7	172.90	5.255		
10,200.0	7,054.7	10,359.3	7,275.0	92.0	91.2	-104.03	-119.0	-3,161.1	908.8	730.5	178.24	5.098		
10,300.0	7,054.3	10,459.3	7,275.2	94.7	93.9	-104.06	-119.0	-3,261.1	908.9	725.3	183.59	4.951		
10,400.0	7,053.9	10,559.3	7,275.3	97.5	96.7	-104.10	-119.0	-3,361.1	909.0	720.1	188.94	4.811		
10,500.0	7,053.5	10,659.3	7,275.5	100.2	99.5	-104.13	-119.0	-3,461.1	909.2	714.9	194.29	4.679		
10,600.0	7,053.1	10,759.3	7,275.7	103.0	102.2	-104.17	-119.0	-3,561.1	909.3	709.7	199.65	4.555		
10,700.0	7,052.7	10,859.2	7,275.9	105.8	105.0	-104.20	-119.0	-3,661.1	909.4	704.4	205.00	4.436		
10,800.0	7,052.4	10,959.2	7,276.0	108.5	107.8	-104.24	-119.0	-3,761.1	909.6	699.2	210.36	4.324		
10,900.0	7,052.0	11,059.2	7,276.2	111.3	110.5	-104.27	-119.0	-3,861.1	909.7	694.0	215.73	4.217		
11,000.0	7,051.6	11,159.2	7,276.4	114.1	113.3	-104.30	-119.0	-3,961.1	909.9	688.8	221.09	4.115		
11,100.0	7,051.2	11,259.2	7,276.5	116.8	116.1	-104.34	-119.0	-4,061.0	910.0	683.5	226.46	4.018		
11,200.0	7,050.8	11,359.2	7,276.7	119.6	118.9	-104.37	-119.0	-4,161.0	910.1	678.3	231.82	3.926		
11,300.0	7,050.4	11,459.2	7,276.9	122.4	121.7	-104.41	-119.0	-4,261.0	910.3	673.1	237.19	3.838		
11,400.0	7,050.0	11,559.2	7,277.1	125.2	124.4	-104.44	-119.0	-4,361.0	910.4	667.8	242.56	3.753		
11,500.0	7,049.7	11,659.2	7,277.2	127.9	127.2	-104.47	-119.0	-4,461.0	910.5	662.6	247.93	3.673		
11,600.0	7,049.3	11,759.2	7,277.4	130.7	130.0	-104.51	-119.0	-4,561.0	910.7	657.4	253.30	3.595		
11,700.0	7,048.9	11,859.2	7,277.6	133.5	132.8	-104.54	-119.0	-4,661.0	910.8	652.2	258.67	3.521		
11,800.0	7,048.5	11,959.2	7,277.8	136.3	135.6	-104.58	-119.0	-4,761.0	911.0	646.9	264.04	3.450		
11,900.0	7,048.1	12,059.2	7,277.9	139.1	138.4	-104.61	-119.0	-4,861.0	911.1	641.7	269.41	3.382		
12,000.0	7,047.7	12,159.2	7,278.1	141.8	141.1	-104.64	-119.0	-4,961.0	911.2	636.5	274.78	3.316		
12,100.0	7,047.4	12,259.2	7,278.3	144.6	143.9	-104.68	-119.0	-5,061.0	911.4	631.2	280.15	3.253		
12,200.0	7,047.0	12,359.2	7,278.5	147.4	146.7	-104.71	-119.0	-5,161.0	911.5	626.0	285.52	3.193		
12,300.0	7,046.6	12,459.2	7,278.6	150.2	149.5	-104.75	-119.0	-5,261.0	911.7	620.8	290.89	3.134		
12,400.0	7,046.2	12,559.2	7,278.8	153.0	152.3	-104.78	-119.0	-5,361.0	911.8	615.6	296.26	3.078		
12,500.0	7,045.8	12,659.2	7,279.0	155.8	155.1	-104.81	-119.0	-5,461.0	912.0	610.3	301.63	3.023		
12,600.0	7,045.4	12,759.2	7,279.2	158.6	157.9	-104.85	-119.0	-5,561.0	912.1	605.1	307.00	2.971		
12,700.0	7,045.1	12,859.2	7,279.3	161.4	160.7	-104.88	-119.0	-5,661.0	912.2	599.9	312.36	2.920		
12,800.0	7,044.7	12,959.2	7,279.5	164.1	163.5	-104.92	-119.0	-5,761.0	912.4	594.7	317.73	2.872		
12,900.0	7,044.3	13,059.2	7,279.7	166.9	166.3	-104.95	-119.0	-5,861.0	912.5	589.4	323.10	2.824		
13,000.0	7,043.9	13,159.2	7,279.9	169.7	169.1	-104.98	-119.0	-5,961.0	912.7	584.2	328.47	2.779		
13,100.0	7,043.5	13,259.2	7,280.0	172.5	171.9	-105.02	-119.0	-6,061.0	912.8	579.0	333.83	2.734		
13,200.0	7,043.1	13,359.2	7,280.2	175.3	174.6	-105.05	-119.0	-6,161.0	913.0	573.8	339.20	2.692		
13,300.0	7,042.8	13,459.2	7,280.4	178.1	177.4	-105.08	-119.0	-6,261.0	913.1	568.5	344.56	2.650		
13,400.0	7,042.4	13,559.2	7,280.6	180.9	180.2	-105.12	-119.0	-6,361.0	913.3	563.3	349.92	2.610		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Hunt Federal 28X-234
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (RKB - 15')
Reference Site:	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Hunt Federal 28X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (1-27-15)	Offset TVD Reference:	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)				
13,500.0	7,042.0	13,659.2	7,280.7	183.7	183.0	-105.15	-119.0	-6,461.0	913.4	558.1	355.29	2.571			
13,600.0	7,041.6	13,759.2	7,280.9	186.5	185.8	-105.19	-119.0	-6,561.0	913.5	552.9	360.65	2.533			
13,700.0	7,041.2	13,859.2	7,281.1	189.3	188.6	-105.22	-119.0	-6,661.0	913.7	547.7	366.01	2.496			
13,800.0	7,040.8	13,959.2	7,281.3	192.1	191.4	-105.25	-119.0	-6,761.0	913.8	542.5	371.37	2.461			
13,900.0	7,040.4	14,059.2	7,281.4	194.9	194.2	-105.29	-119.0	-6,861.0	914.0	537.3	376.72	2.426			
14,000.0	7,040.1	14,159.2	7,281.6	197.7	197.0	-105.32	-119.0	-6,961.0	914.1	532.1	382.08	2.393			
14,100.0	7,039.7	14,259.2	7,281.8	200.4	199.8	-105.35	-119.0	-7,061.0	914.3	526.8	387.44	2.360			
14,200.0	7,039.3	14,359.2	7,282.0	203.2	202.6	-105.39	-119.0	-7,161.0	914.4	521.6	392.79	2.328			
14,300.0	7,038.9	14,459.2	7,282.1	206.0	205.4	-105.42	-119.0	-7,261.0	914.6	516.4	398.14	2.297			
14,400.0	7,038.5	14,559.2	7,282.3	208.8	208.2	-105.46	-119.0	-7,361.0	914.7	511.2	403.50	2.267			
14,500.0	7,038.1	14,659.2	7,282.5	211.6	211.0	-105.49	-119.0	-7,461.0	914.9	506.0	408.85	2.238			
14,600.0	7,037.8	14,759.2	7,282.7	214.4	213.8	-105.52	-119.0	-7,561.0	915.0	500.8	414.20	2.209			
14,700.0	7,037.4	14,859.2	7,282.8	217.2	216.6	-105.56	-119.0	-7,661.0	915.2	495.6	419.55	2.181			
14,798.2	7,037.0	14,955.3	7,283.0	220.0	219.3	-105.59	-119.0	-7,757.1	915.3	490.6	424.74	2.155 SF			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Hunt Federal 28X-234
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (RKB - 15')
Reference Site:	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Hunt Federal 28X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (1-27-15)	Offset TVD Reference:	Offset Datum

Offset Design														Offset Site Error:	0.0 ft
Survey Program: 791-														Offset Well Error:	0.0 ft
Reference															
		Offset		Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning		
3,300.0	3,261.7	3,376.7	3,370.8	10.8	6.7	12.23	1,280.6	598.4	985.4	971.0	14.41	68.388			
3,400.0	3,360.0	3,491.9	3,484.8	11.2	7.0	13.14	1,264.3	600.7	956.2	941.2	14.98	63.822			
3,500.0	3,458.2	3,591.3	3,582.9	11.6	7.3	14.00	1,247.6	601.5	924.3	908.7	15.53	59.518			
3,600.0	3,556.5	3,710.6	3,700.2	12.1	7.7	15.30	1,226.2	604.9	892.7	876.6	16.17	55.221			
3,700.0	3,654.7	3,818.3	3,805.3	12.5	8.1	16.67	1,203.3	607.0	858.2	841.4	16.81	51.048			
3,800.0	3,753.0	3,909.2	3,894.0	12.9	8.4	17.95	1,183.2	608.9	823.4	806.0	17.41	47.289			
3,900.0	3,851.2	3,983.8	3,966.9	13.3	8.6	19.03	1,167.8	610.4	790.2	772.2	17.96	44.005			
4,000.0	3,949.5	4,058.6	4,040.5	13.7	8.9	20.10	1,154.4	611.9	759.4	740.9	18.50	41.051			
4,100.0	4,047.7	4,140.6	4,121.6	14.1	9.1	21.21	1,142.2	613.3	731.3	712.2	19.07	38.347			
4,200.0	4,146.0	4,231.2	4,211.4	14.5	9.4	22.46	1,129.7	614.9	704.3	684.6	19.68	35.780			
4,300.0	4,244.2	4,322.0	4,301.2	14.9	9.7	23.88	1,117.1	617.4	678.3	657.9	20.33	33.359			
4,400.0	4,342.5	4,411.3	4,389.8	15.3	9.9	25.29	1,105.9	619.5	653.4	632.5	20.98	31.145			
4,500.0	4,440.7	4,498.5	4,476.6	15.7	10.2	26.50	1,097.4	620.1	630.0	608.4	21.60	29.170			
4,600.0	4,539.0	4,578.9	4,556.8	16.1	10.4	27.51	1,092.2	620.5	608.9	586.8	22.17	27.469			
4,700.0	4,637.2	4,678.4	4,656.2	16.5	10.6	28.53	1,088.7	619.5	589.3	566.5	22.77	25.883			
4,800.0	4,735.5	4,781.8	4,759.5	16.9	10.8	29.47	1,085.7	616.5	568.8	545.5	23.36	24.352			
4,853.6	4,788.1	4,829.5	4,807.2	17.2	10.9	29.90	1,084.6	615.0	558.0	534.3	23.66	23.589			
4,900.0	4,833.8	4,870.0	4,847.7	17.3	10.9	30.17	1,084.0	613.7	549.2	525.3	23.90	22.981			
5,000.0	4,932.4	4,956.0	4,933.6	17.6	11.1	30.62	1,084.7	611.9	534.2	509.8	24.36	21.929			
5,100.0	5,031.5	5,043.1	5,020.7	17.9	11.2	31.04	1,086.5	611.7	523.7	498.9	24.80	21.117			
5,200.0	5,130.9	5,144.7	5,122.3	18.1	11.4	31.58	1,088.0	612.8	516.1	490.8	25.27	20.424			
5,300.0	5,230.6	5,250.7	5,228.3	18.3	11.6	31.98	1,089.0	613.0	509.7	484.0	25.70	19.832			
5,400.0	5,330.4	5,350.4	5,328.0	18.5	11.8	32.25	1,089.5	613.0	505.2	479.1	26.09	19.360			
5,500.0	5,430.3	5,453.1	5,430.7	18.7	12.0	32.43	1,089.4	613.1	502.6	476.1	26.46	18.993			
5,569.7	5,500.0	5,526.0	5,503.6	18.8	12.1	49.38	1,089.2	612.7	501.6	473.0	28.65	17.510			
5,600.0	5,530.3	5,556.1	5,533.7	18.8	12.1	49.37	1,089.0	612.5	501.3	472.6	28.75	17.438			
5,700.0	5,630.3	5,655.2	5,632.8	18.9	12.3	49.35	1,088.7	611.8	500.6	471.5	29.10	17.201			
5,800.0	5,730.3	5,754.2	5,731.8	19.1	12.5	49.30	1,088.6	611.1	500.0	470.5	29.46	16.973			
5,900.0	5,830.3	5,853.2	5,830.8	19.2	12.7	49.25	1,088.7	610.5	499.6	469.8	29.81	16.757			
6,000.0	5,930.3	5,953.2	5,930.7	19.4	12.9	49.20	1,088.9	610.0	499.3	469.2	30.17	16.549			
6,100.0	6,030.3	6,054.2	6,031.8	19.5	13.1	49.13	1,089.1	609.3	498.9	468.4	30.54	16.338			
6,200.0	6,130.3	6,154.0	6,131.6	19.7	13.3	49.04	1,089.4	608.4	498.4	467.5	30.90	16.128			
6,300.0	6,230.3	6,254.4	6,231.9	19.8	13.4	48.91	1,089.9	607.4	498.0	466.8	31.28	15.924			
6,370.5	6,300.8	6,324.0	6,301.6	19.9	13.6	48.81	1,090.3	606.4	497.5	466.0	31.54	15.775 ES, SF			
6,372.9	6,303.3	6,325.9	6,303.5	19.9	13.6	138.81	1,090.3	606.4	497.5	468.0	29.57	16.827 CC			
6,400.0	6,330.3	6,349.0	6,326.6	19.9	13.6	138.84	1,090.2	606.6	498.0	468.4	29.62	16.812			
6,450.0	6,380.2	6,381.0	6,358.5	20.0	13.7	138.94	1,090.1	608.1	502.2	472.6	29.67	16.925			
6,500.0	6,429.7	6,406.3	6,383.7	20.0	13.7	138.95	1,090.2	610.4	510.8	481.2	29.64	17.231			
6,550.0	6,478.7	6,438.2	6,415.3	20.1	13.8	139.02	1,090.7	614.3	523.6	494.0	29.58	17.701			
6,600.0	6,526.9	6,469.6	6,446.4	20.1	13.9	139.07	1,091.3	619.2	540.3	510.8	29.46	18.338			
6,650.0	6,574.1	6,497.9	6,474.1	20.1	13.9	139.01	1,091.5	624.7	560.8	531.5	29.28	19.152			
6,700.0	6,620.2	6,523.5	6,499.0	20.1	14.0	138.77	1,091.6	630.6	585.0	556.0	29.04	20.147			
6,750.0	6,664.9	6,546.6	6,521.3	20.2	14.0	138.27	1,091.6	636.6	612.8	584.1	28.74	21.320			
6,800.0	6,708.1	6,571.0	6,544.7	20.2	14.1	137.66	1,091.7	643.7	644.0	615.6	28.44	22.649			
6,850.0	6,749.5	6,587.2	6,560.1	20.2	14.1	136.30	1,091.8	648.7	678.2	650.1	28.10	24.135			
6,900.0	6,788.9	6,603.0	6,575.1	20.2	14.2	134.54	1,091.8	653.7	715.1	687.3	27.81	25.709			
6,950.0	6,826.3	6,620.6	6,591.6	20.2	14.2	132.49	1,091.9	659.7	754.3	726.7	27.62	27.307			
7,000.0	6,861.5	6,634.0	6,604.2	20.2	14.2	129.55	1,092.0	664.3	795.6	768.0	27.59	28.838			
7,050.0	6,894.2	6,643.7	6,613.3	20.3	14.3	125.52	1,092.0	667.8	838.6	810.8	27.80	30.163			
7,100.0	6,924.4	6,651.4	6,620.5	20.3	14.3	120.29	1,092.1	670.6	883.1	854.7	28.34	31.159			
7,150.0	6,951.9	6,657.0	6,625.7	20.4	14.3	113.58	1,092.1	672.6	928.7	899.4	29.23	31.768			

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Hunt Federal 28X-234
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (RKB - 15')
Reference Site:	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Hunt Federal 28X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (1-27-15)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 791-Reference													Offset Well Error:	0.0 ft
Peppler K26-79-1HN Pad Sec.35-T4N-R66W - Nelson K27-63HN (Exist.) - Wellbore #1 - Wellbore #1														
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (")	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
7,200.0	6,976.7	6,666.0	6,634.0	20.5	14.3	106.05	1,092.2	676.0	975.2	944.9	30.33	32.150		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Hunt Federal 28X-234
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (RKB - 15')
Reference Site:	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Hunt Federal 28X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (1-27-15)	Offset TVD Reference:	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		
14,000.0	7,040.1	8,404.3	7,079.9	197.7	33.2	140.93	800.4	-7,922.3	962.5	814.4	148.17	6.496		
14,100.0	7,039.7	8,408.1	7,079.9	200.4	33.2	143.82	796.7	-7,922.4	862.8	720.3	142.41	6.058		
14,200.0	7,039.3	8,411.9	7,079.9	203.2	33.3	146.99	792.9	-7,922.6	763.0	627.4	135.56	5.628		
14,300.0	7,038.9	8,415.7	7,079.9	206.0	33.3	150.44	789.0	-7,922.7	663.3	535.7	127.57	5.199		
14,400.0	7,038.5	8,419.6	7,079.9	208.8	33.4	154.19	785.1	-7,922.9	563.7	445.2	118.46	4.758		
14,500.0	7,038.1	8,423.6	7,079.9	211.6	33.4	158.25	781.2	-7,923.0	464.2	355.8	108.40	4.282		
14,600.0	7,037.8	8,427.6	7,079.8	214.4	33.5	162.60	777.2	-7,923.2	364.9	267.1	97.81	3.731		
14,700.0	7,037.4	8,431.6	7,079.8	217.2	33.5	167.22	773.2	-7,923.4	266.1	178.6	87.50	3.041		
14,798.2	7,037.0	8,435.6	7,079.8	220.0	33.6	171.99	769.1	-7,923.5	170.3	91.2	79.05	2.154 CC, ES, SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Hunt Federal 28X-234
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (RKB - 15')
Reference Site:	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Hunt Federal 28X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (1-27-15)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4777.0ft (RKB - 15')

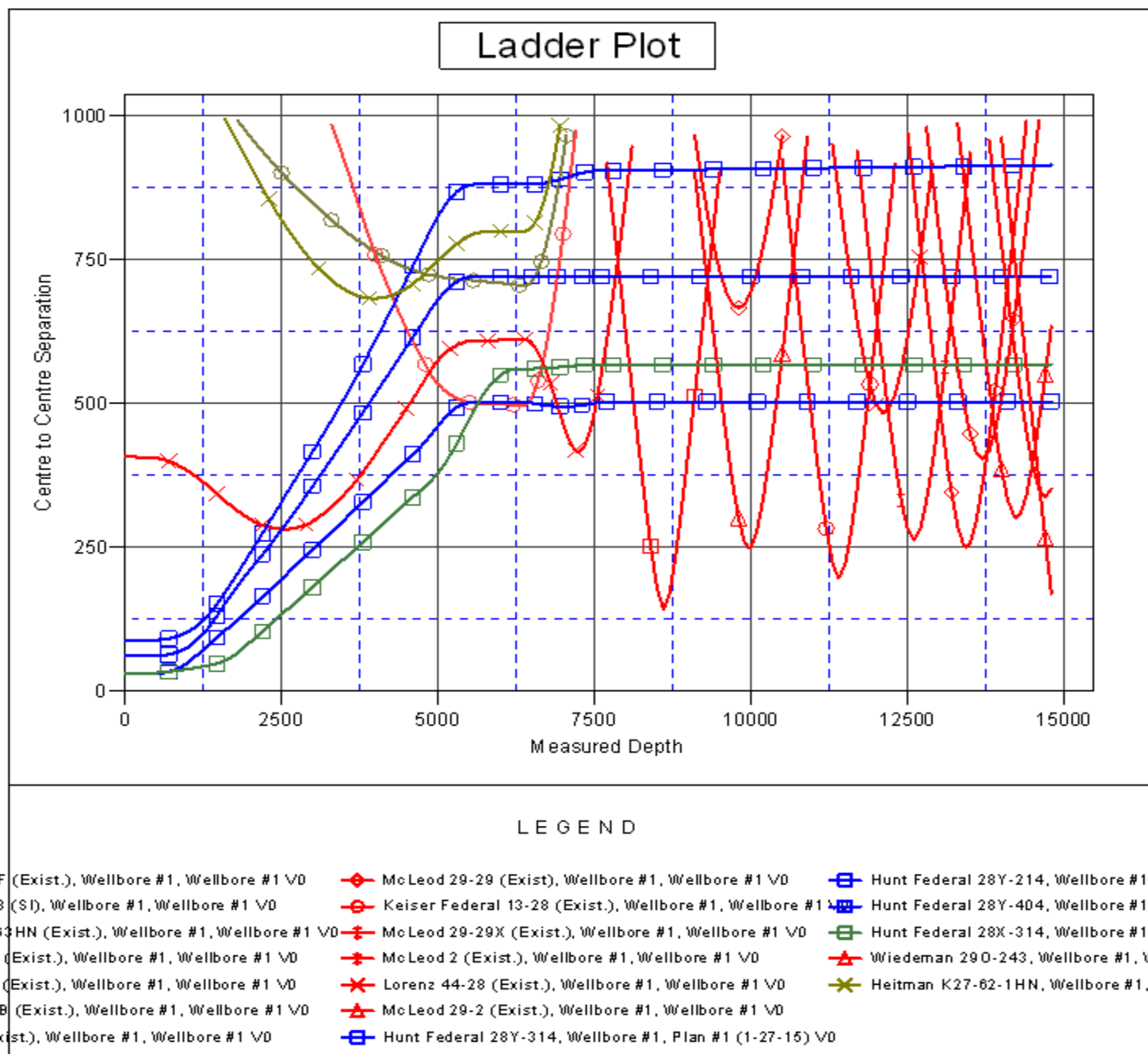
Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Hunt Federal 28X-234

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.47°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Hunt Federal 28X-234
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (RKB - 15')
Reference Site:	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Hunt Federal 28X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (1-27-15)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4777.0ft (RKB - 15')

Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Hunt Federal 28X-234

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.47°

