

PETROLEUM DEVELOPMENT CORP Weld County CO

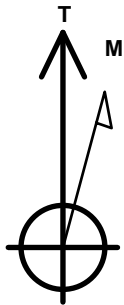
Well Name: **Hunt Federal 28Y-214**

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	1344202.33	3202507.62	40.275960	-104.774210	
RKB - 15' WELL @ 4777.0ft (RKB - 15')						

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 226'FSL, 342'FEL, SEC.28	1.0	0.0	0.0	Point
BHL 260'FSL, 2550'FWL, SEC.29	7037.0	41.3	-7695.7	Point



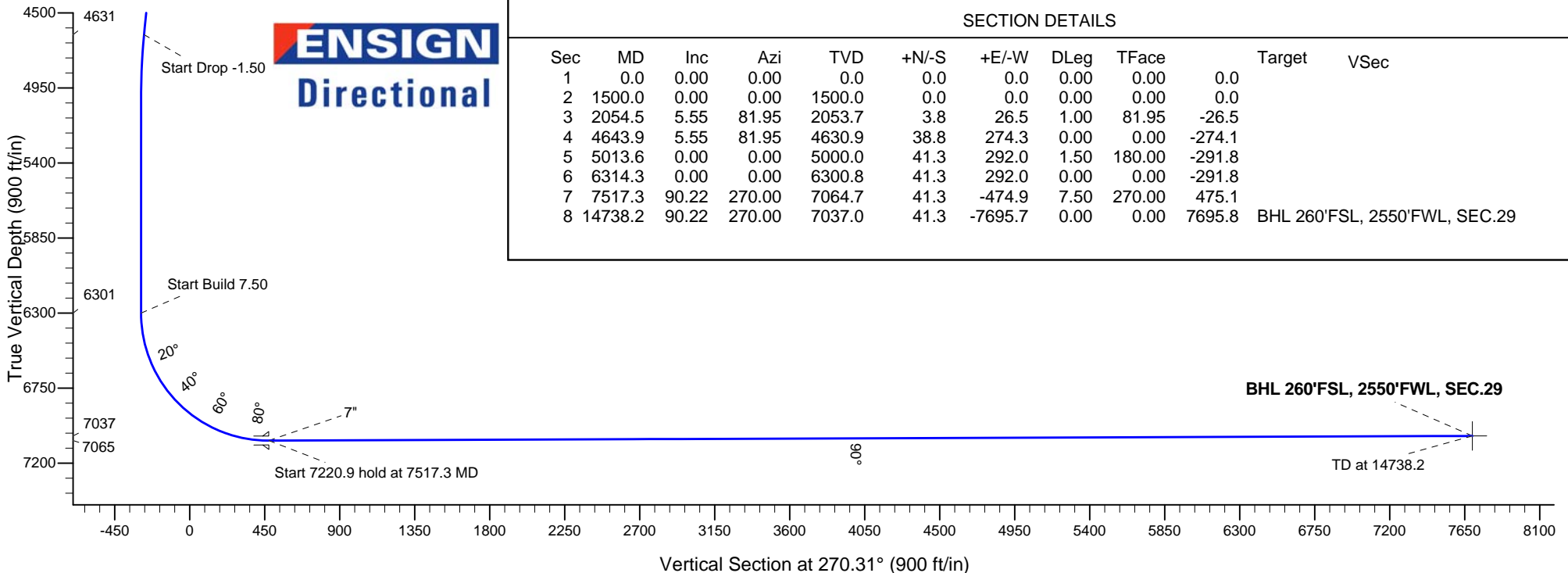
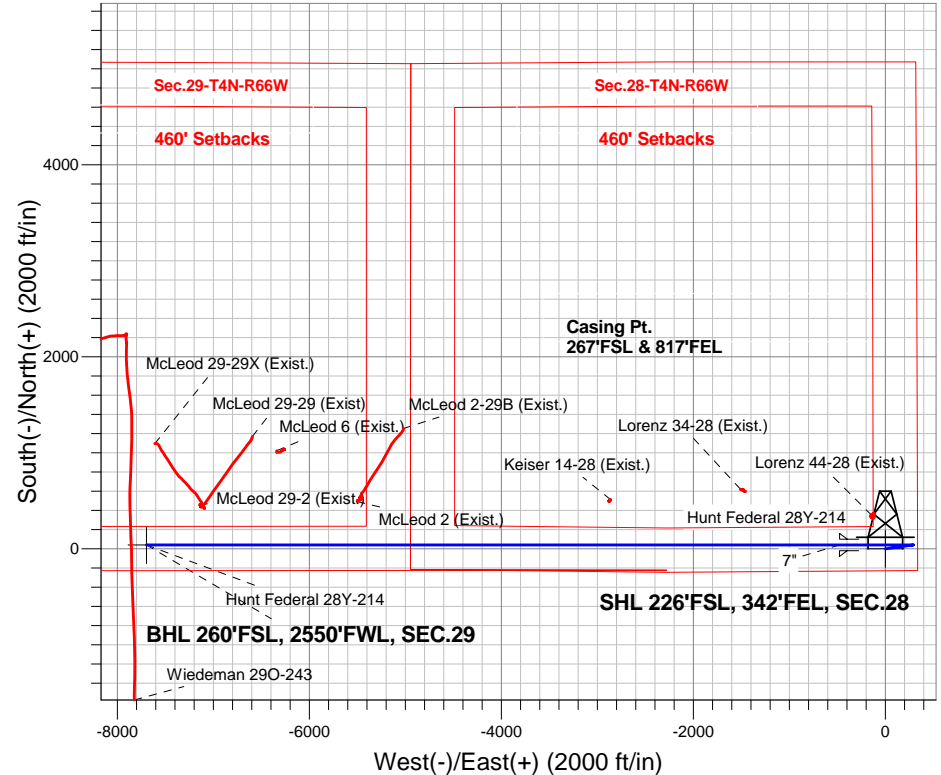
Azimuths to True North
 Magnetic North: 8.37°

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 28Y-214
 Plan #1 (1-27-15)
 8:35, February 03 2015

ANNOTATIONS

TVD	MD	Annotation
1500.0	1500.0	KOP - Start Build 1.00
4630.9	4643.9	Start Drop -1.50
6300.8	6314.3	Start Build 7.50
7064.7	7517.3	Start 7220.9 hold at 7517.3 MD
7037.0	14738.2	TD at 14738.2



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	1500.0	0.00	0.00	1500.0	0.0	0.0	0.00	0.00	0.0	
3	2054.5	5.55	81.95	2053.7	3.8	26.5	1.00	81.95	-26.5	
4	4643.9	5.55	81.95	4630.9	38.8	274.3	0.00	0.00	-274.1	
5	5013.6	0.00	0.00	5000.0	41.3	292.0	1.50	180.00	-291.8	
6	6314.3	0.00	0.00	6300.8	41.3	292.0	0.00	0.00	-291.8	
7	7517.3	90.22	270.00	7064.7	41.3	-474.9	7.50	270.00	475.1	
8	14738.2	90.22	270.00	7037.0	41.3	-7695.7	0.00	0.00	7695.8	BHL 260'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 28Y-214

Wellbore #1

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

Standard Planning Report

03 February, 2015

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,054.5	5.55	81.95	2,053.7	3.8	26.5	1.00	1.00	0.00	81.95	
4,643.9	5.55	81.95	4,630.9	38.8	274.3	0.00	0.00	0.00	0.00	
5,013.6	0.00	0.00	5,000.0	41.3	292.0	1.50	-1.50	0.00	180.00	
6,314.3	0.00	0.00	6,300.8	41.3	292.0	0.00	0.00	0.00	0.00	
7,517.3	90.22	270.00	7,064.7	41.3	-474.9	7.50	7.50	0.00	270.00	
14,738.2	90.22	270.00	7,037.0	41.3	-7,695.7	0.00	0.00	0.00	0.00	BHL 260'FSL, 2550'

Database:	Landmark	Local Co-ordinate Reference:	Well Hunt Federal 28Y-214
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 28Y-214	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, 342'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
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP - Start Build 1.00									
1,600.0	1.00	81.95	1,600.0	0.1	0.9	-0.9	1.00	1.00	0.00
1,700.0	2.00	81.95	1,700.0	0.5	3.5	-3.5	1.00	1.00	0.00
1,800.0	3.00	81.95	1,799.9	1.1	7.8	-7.8	1.00	1.00	0.00
1,900.0	4.00	81.95	1,899.7	2.0	13.8	-13.8	1.00	1.00	0.00
2,000.0	5.00	81.95	1,999.4	3.1	21.6	-21.6	1.00	1.00	0.00
2,054.5	5.55	81.95	2,053.7	3.8	26.5	-26.5	1.00	1.00	0.00
2,100.0	5.55	81.95	2,098.9	4.4	30.9	-30.9	0.00	0.00	0.00
2,200.0	5.55	81.95	2,198.5	5.7	40.5	-40.4	0.00	0.00	0.00
2,300.0	5.55	81.95	2,298.0	7.1	50.0	-50.0	0.00	0.00	0.00
2,400.0	5.55	81.95	2,397.5	8.4	59.6	-59.6	0.00	0.00	0.00
2,500.0	5.55	81.95	2,497.0	9.8	69.2	-69.1	0.00	0.00	0.00
2,600.0	5.55	81.95	2,596.6	11.1	78.7	-78.7	0.00	0.00	0.00
2,700.0	5.55	81.95	2,696.1	12.5	88.3	-88.2	0.00	0.00	0.00
2,800.0	5.55	81.95	2,795.6	13.8	97.9	-97.8	0.00	0.00	0.00
2,900.0	5.55	81.95	2,895.2	15.2	107.4	-107.4	0.00	0.00	0.00
3,000.0	5.55	81.95	2,994.7	16.5	117.0	-116.9	0.00	0.00	0.00
3,100.0	5.55	81.95	3,094.2	17.9	126.6	-126.5	0.00	0.00	0.00
3,200.0	5.55	81.95	3,193.8	19.2	136.1	-136.0	0.00	0.00	0.00
3,300.0	5.55	81.95	3,293.3	20.6	145.7	-145.6	0.00	0.00	0.00
3,400.0	5.55	81.95	3,392.8	22.0	155.3	-155.2	0.00	0.00	0.00
3,500.0	5.55	81.95	3,492.4	23.3	164.9	-164.7	0.00	0.00	0.00
3,600.0	5.55	81.95	3,591.9	24.7	174.4	-174.3	0.00	0.00	0.00
3,700.0	5.55	81.95	3,691.4	26.0	184.0	-183.8	0.00	0.00	0.00
3,800.0	5.55	81.95	3,791.0	27.4	193.6	-193.4	0.00	0.00	0.00
3,900.0	5.55	81.95	3,890.5	28.7	203.1	-203.0	0.00	0.00	0.00
4,000.0	5.55	81.95	3,990.0	30.1	212.7	-212.5	0.00	0.00	0.00
4,100.0	5.55	81.95	4,089.6	31.4	222.3	-222.1	0.00	0.00	0.00
4,200.0	5.55	81.95	4,189.1	32.8	231.8	-231.7	0.00	0.00	0.00
4,300.0	5.55	81.95	4,288.6	34.1	241.4	-241.2	0.00	0.00	0.00
4,400.0	5.55	81.95	4,388.2	35.5	251.0	-250.8	0.00	0.00	0.00
4,500.0	5.55	81.95	4,487.7	36.8	260.5	-260.3	0.00	0.00	0.00
4,600.0	5.55	81.95	4,587.2	38.2	270.1	-269.9	0.00	0.00	0.00
4,643.9	5.55	81.95	4,630.9	38.8	274.3	-274.1	0.00	0.00	0.00

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Site:	Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W	North Reference:	True
Well:	Hunt Federal 28Y-214	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)
Start Drop -1.50									
4,700.0	4.70	81.95	4,686.8	39.5	279.3	-279.0	1.50	-1.50	0.00
4,800.0	3.20	81.95	4,786.6	40.4	286.1	-285.9	1.50	-1.50	0.00
4,900.0	1.70	81.95	4,886.5	41.0	290.3	-290.1	1.50	-1.50	0.00
5,000.0	0.20	81.95	4,986.4	41.3	292.0	-291.8	1.50	-1.50	0.00
5,013.6	0.00	0.00	5,000.0	41.3	292.0	-291.8	1.50	-1.50	0.00
5,100.0	0.00	0.00	5,086.4	41.3	292.0	-291.8	0.00	0.00	0.00
5,200.0	0.00	0.00	5,186.4	41.3	292.0	-291.8	0.00	0.00	0.00
5,300.0	0.00	0.00	5,286.4	41.3	292.0	-291.8	0.00	0.00	0.00
5,400.0	0.00	0.00	5,386.4	41.3	292.0	-291.8	0.00	0.00	0.00
5,500.0	0.00	0.00	5,486.4	41.3	292.0	-291.8	0.00	0.00	0.00
5,600.0	0.00	0.00	5,586.4	41.3	292.0	-291.8	0.00	0.00	0.00
5,700.0	0.00	0.00	5,686.4	41.3	292.0	-291.8	0.00	0.00	0.00
5,800.0	0.00	0.00	5,786.4	41.3	292.0	-291.8	0.00	0.00	0.00
5,900.0	0.00	0.00	5,886.4	41.3	292.0	-291.8	0.00	0.00	0.00
6,000.0	0.00	0.00	5,986.4	41.3	292.0	-291.8	0.00	0.00	0.00
6,100.0	0.00	0.00	6,086.4	41.3	292.0	-291.8	0.00	0.00	0.00
6,200.0	0.00	0.00	6,186.4	41.3	292.0	-291.8	0.00	0.00	0.00
6,300.0	0.00	0.00	6,286.4	41.3	292.0	-291.8	0.00	0.00	0.00
6,314.3	0.00	0.00	6,300.7	41.3	292.0	-291.8	0.00	0.00	0.00
Start Build 7.50									
6,400.0	6.42	270.00	6,386.3	41.3	287.2	-287.0	7.50	7.50	0.00
6,500.0	13.92	270.00	6,484.6	41.3	269.6	-269.3	7.50	7.50	0.00
6,600.0	21.42	270.00	6,579.8	41.3	239.2	-239.0	7.50	7.50	0.00
6,700.0	28.92	270.00	6,670.3	41.3	196.7	-196.5	7.50	7.50	0.00
6,800.0	36.42	270.00	6,754.4	41.3	142.8	-142.5	7.50	7.50	0.00
6,900.0	43.92	270.00	6,830.7	41.3	78.3	-78.1	7.50	7.50	0.00
7,000.0	51.42	270.00	6,898.0	41.3	4.4	-4.2	7.50	7.50	0.00
7,100.0	58.92	270.00	6,955.1	41.3	-77.6	77.8	7.50	7.50	0.00
7,200.0	66.42	270.00	7,001.0	41.3	-166.4	166.6	7.50	7.50	0.00
7,300.0	73.92	270.00	7,034.9	41.3	-260.4	260.6	7.50	7.50	0.00
7,400.0	81.42	270.00	7,056.2	41.3	-358.0	358.2	7.50	7.50	0.00
7,500.0	88.92	270.00	7,064.6	41.3	-457.6	457.8	7.50	7.50	0.00
7,517.3	90.22	270.00	7,064.7	41.3	-474.9	475.1	7.49	7.49	0.00
Start 7220.9 hold at 7517.3 MD - 7"									
7,600.0	90.22	270.00	7,064.4	41.3	-557.6	557.8	0.00	0.00	0.00
7,700.0	90.22	270.00	7,064.0	41.3	-657.6	657.8	0.00	0.00	0.00
7,800.0	90.22	270.00	7,063.6	41.3	-757.6	757.8	0.00	0.00	0.00
7,900.0	90.22	270.00	7,063.3	41.3	-857.6	857.8	0.00	0.00	0.00
8,000.0	90.22	270.00	7,062.9	41.3	-957.6	957.8	0.00	0.00	0.00
8,100.0	90.22	270.00	7,062.5	41.3	-1,057.6	1,057.8	0.00	0.00	0.00
8,200.0	90.22	270.00	7,062.1	41.3	-1,157.6	1,157.8	0.00	0.00	0.00
8,300.0	90.22	270.00	7,061.7	41.3	-1,257.6	1,257.8	0.00	0.00	0.00
8,400.0	90.22	270.00	7,061.3	41.3	-1,357.6	1,357.8	0.00	0.00	0.00
8,500.0	90.22	270.00	7,061.0	41.3	-1,457.6	1,457.8	0.00	0.00	0.00
8,600.0	90.22	270.00	7,060.6	41.3	-1,557.6	1,557.8	0.00	0.00	0.00
8,700.0	90.22	270.00	7,060.2	41.3	-1,657.6	1,657.8	0.00	0.00	0.00
8,800.0	90.22	270.00	7,059.8	41.3	-1,757.6	1,757.8	0.00	0.00	0.00
8,900.0	90.22	270.00	7,059.4	41.3	-1,857.6	1,857.8	0.00	0.00	0.00
9,000.0	90.22	270.00	7,059.0	41.3	-1,957.6	1,957.8	0.00	0.00	0.00
9,100.0	90.22	270.00	7,058.6	41.3	-2,057.6	2,057.8	0.00	0.00	0.00
9,200.0	90.22	270.00	7,058.3	41.3	-2,157.6	2,157.8	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Hunt Federal 28Y-214
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 28Y-214	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)
9,300.0	90.22	270.00	7,057.9	41.3	-2,257.6	2,257.8	0.00	0.00	0.00
9,400.0	90.22	270.00	7,057.5	41.3	-2,357.6	2,357.8	0.00	0.00	0.00
9,500.0	90.22	270.00	7,057.1	41.3	-2,457.6	2,457.8	0.00	0.00	0.00
9,600.0	90.22	270.00	7,056.7	41.3	-2,557.6	2,557.8	0.00	0.00	0.00
9,700.0	90.22	270.00	7,056.3	41.3	-2,657.6	2,657.8	0.00	0.00	0.00
9,800.0	90.22	270.00	7,056.0	41.3	-2,757.6	2,757.8	0.00	0.00	0.00
9,900.0	90.22	270.00	7,055.6	41.3	-2,857.6	2,857.8	0.00	0.00	0.00
10,000.0	90.22	270.00	7,055.2	41.3	-2,957.6	2,957.8	0.00	0.00	0.00
10,100.0	90.22	270.00	7,054.8	41.3	-3,057.6	3,057.8	0.00	0.00	0.00
10,200.0	90.22	270.00	7,054.4	41.3	-3,157.6	3,157.8	0.00	0.00	0.00
10,300.0	90.22	270.00	7,054.0	41.3	-3,257.6	3,257.8	0.00	0.00	0.00
10,400.0	90.22	270.00	7,053.7	41.3	-3,357.6	3,357.7	0.00	0.00	0.00
10,500.0	90.22	270.00	7,053.3	41.3	-3,457.6	3,457.7	0.00	0.00	0.00
10,600.0	90.22	270.00	7,052.9	41.3	-3,557.6	3,557.7	0.00	0.00	0.00
10,700.0	90.22	270.00	7,052.5	41.3	-3,657.6	3,657.7	0.00	0.00	0.00
10,800.0	90.22	270.00	7,052.1	41.3	-3,757.6	3,757.7	0.00	0.00	0.00
10,900.0	90.22	270.00	7,051.7	41.3	-3,857.6	3,857.7	0.00	0.00	0.00
11,000.0	90.22	270.00	7,051.4	41.3	-3,957.6	3,957.7	0.00	0.00	0.00
11,100.0	90.22	270.00	7,051.0	41.3	-4,057.6	4,057.7	0.00	0.00	0.00
11,200.0	90.22	270.00	7,050.6	41.3	-4,157.6	4,157.7	0.00	0.00	0.00
11,300.0	90.22	270.00	7,050.2	41.3	-4,257.6	4,257.7	0.00	0.00	0.00
11,400.0	90.22	270.00	7,049.8	41.3	-4,357.6	4,357.7	0.00	0.00	0.00
11,500.0	90.22	270.00	7,049.4	41.3	-4,457.6	4,457.7	0.00	0.00	0.00
11,600.0	90.22	270.00	7,049.0	41.3	-4,557.6	4,557.7	0.00	0.00	0.00
11,700.0	90.22	270.00	7,048.7	41.3	-4,657.6	4,657.7	0.00	0.00	0.00
11,800.0	90.22	270.00	7,048.3	41.3	-4,757.6	4,757.7	0.00	0.00	0.00
11,900.0	90.22	270.00	7,047.9	41.3	-4,857.6	4,857.7	0.00	0.00	0.00
12,000.0	90.22	270.00	7,047.5	41.3	-4,957.6	4,957.7	0.00	0.00	0.00
12,100.0	90.22	270.00	7,047.1	41.3	-5,057.6	5,057.7	0.00	0.00	0.00
12,200.0	90.22	270.00	7,046.7	41.3	-5,157.6	5,157.7	0.00	0.00	0.00
12,300.0	90.22	270.00	7,046.4	41.3	-5,257.6	5,257.7	0.00	0.00	0.00
12,400.0	90.22	270.00	7,046.0	41.3	-5,357.6	5,357.7	0.00	0.00	0.00
12,500.0	90.22	270.00	7,045.6	41.3	-5,457.6	5,457.7	0.00	0.00	0.00
12,600.0	90.22	270.00	7,045.2	41.3	-5,557.6	5,557.7	0.00	0.00	0.00
12,700.0	90.22	270.00	7,044.8	41.3	-5,657.6	5,657.7	0.00	0.00	0.00
12,800.0	90.22	270.00	7,044.4	41.3	-5,757.6	5,757.7	0.00	0.00	0.00
12,900.0	90.22	270.00	7,044.1	41.3	-5,857.6	5,857.7	0.00	0.00	0.00
13,000.0	90.22	270.00	7,043.7	41.3	-5,957.6	5,957.7	0.00	0.00	0.00
13,100.0	90.22	270.00	7,043.3	41.3	-6,057.6	6,057.7	0.00	0.00	0.00
13,200.0	90.22	270.00	7,042.9	41.3	-6,157.6	6,157.7	0.00	0.00	0.00
13,300.0	90.22	270.00	7,042.5	41.3	-6,257.6	6,257.7	0.00	0.00	0.00
13,400.0	90.22	270.00	7,042.1	41.3	-6,357.6	6,357.7	0.00	0.00	0.00
13,500.0	90.22	270.00	7,041.8	41.3	-6,457.6	6,457.7	0.00	0.00	0.00
13,600.0	90.22	270.00	7,041.4	41.3	-6,557.6	6,557.7	0.00	0.00	0.00
13,700.0	90.22	270.00	7,041.0	41.3	-6,657.6	6,657.7	0.00	0.00	0.00
13,800.0	90.22	270.00	7,040.6	41.3	-6,757.6	6,757.7	0.00	0.00	0.00
13,900.0	90.22	270.00	7,040.2	41.3	-6,857.5	6,857.7	0.00	0.00	0.00
14,000.0	90.22	270.00	7,039.8	41.3	-6,957.5	6,957.7	0.00	0.00	0.00
14,100.0	90.22	270.00	7,039.5	41.3	-7,057.5	7,057.7	0.00	0.00	0.00
14,200.0	90.22	270.00	7,039.1	41.3	-7,157.5	7,157.7	0.00	0.00	0.00
14,300.0	90.22	270.00	7,038.7	41.3	-7,257.5	7,257.7	0.00	0.00	0.00
14,400.0	90.22	270.00	7,038.3	41.3	-7,357.5	7,357.7	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Hunt Federal 28Y-214
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 28Y-214	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)
14,500.0	90.22	270.00	7,037.9	41.3	-7,457.5	7,457.7	0.00	0.00	0.00
14,600.0	90.22	270.00	7,037.5	41.3	-7,557.5	7,557.7	0.00	0.00	0.00
14,700.0	90.22	270.00	7,037.1	41.3	-7,657.5	7,657.7	0.00	0.00	0.00
14,738.2	90.22	270.00	7,037.0	41.3	-7,695.7	7,695.8	0.00	0.00	0.00
BHL 260'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									
SHL 226'FSL, 342'FE	0.00	0.00	1.0	0.0	0.0	1,344,202.33	3,202,507.62	40.275960	-104.774210
- plan hits target center									
- Point									
BHL 260'FSL, 2550'FWL	0.00	0.00	7,037.0	41.3	-7,695.7	1,344,180.62	3,194,812.18	40.276070	-104.801790
- plan hits target center									
- Point									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name		Casing Diameter (")	Hole Diameter (")
7,517.3	7,064.7	7"		7	7-1/2

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,500.0	1,500.0	0.0	0.0	KOP - Start Build 1.00
4,643.9	4,630.9	3.8	26.5	Start Drop -1.50
6,314.3	6,300.8	38.8	274.3	Start Build 7.50
7,517.3	7,064.7	41.3	292.0	Start 7220.9 hold at 7517.3 MD
14,738.2	7,037.0	41.3	292.0	TD at 14738.2



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.28-T4N-R66W

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

Hunt Federal 28Y-214

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 28Y-214
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 28Y-214	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
Depth Range:	Unlimited
Results Limited by:	Maximum center-center distance of 1,000.0ft
Warning Levels Evaluated at:	2.00 Sigma
Error Model:	ISCWSA
Scan Method:	Closest Approach 3D
Error Surface:	Elliptical Conic

Survey Tool Program		Date	2/3/2015		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	14,738.2	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
Existing Wells Pad Sec.29-T4-R66W						
Keiser 13-28 (Exist.) - Wellbore #1 - Wellbore #1	11,346.0	7,043.3	524.0	386.0	3.798	CC, ES
Keiser 13-28 (Exist.) - Wellbore #1 - Wellbore #1	11,400.0	7,042.8	526.8	387.3	3.777	SF
Keiser 14-28 (Exist.) - Wellbore #1 - Wellbore #1	9,911.7	7,029.5	471.8	374.3	4.840	CC, ES
Keiser 14-28 (Exist.) - Wellbore #1 - Wellbore #1	10,000.0	7,028.9	480.0	380.1	4.804	SF
Lorenz 34-28 (Exist.) - Wellbore #1 - Wellbore #1	8,550.0	7,036.0	578.3	515.6	9.221	CC, ES
Lorenz 34-28 (Exist.) - Wellbore #1 - Wellbore #1	8,700.0	7,035.8	597.5	530.8	8.958	SF
Lorenz 44-28 (Exist.) - Wellbore #1 - Wellbore #1	7,179.8	6,971.7	304.3	274.1	10.077	CC, ES
Lorenz 44-28 (Exist.) - Wellbore #1 - Wellbore #1	7,200.0	6,979.8	304.8	274.4	10.017	SF
McLeod 2 (Exist.) - Wellbore #1 - Wellbore #1	12,543.6	7,045.7	457.5	285.4	2.659	CC, ES
McLeod 2 (Exist.) - Wellbore #1 - Wellbore #1	12,600.0	7,045.3	461.0	287.3	2.655	SF
McLeod 2-29B (Exist.) - Wellbore #1 - Wellbore #1						Out of range
McLeod 29-2 (Exist.) - Wellbore #1 - Wellbore #1	14,182.4	7,032.5	419.1	202.0	1.931	CC
McLeod 29-2 (Exist.) - Wellbore #1 - Wellbore #1	14,200.0	7,032.6	419.5	201.9	1.928	ES, SF
McLeod 29-29 (Exist.) - Wellbore #1 - Wellbore #1						Out of range
McLeod 29-29X (Exist.) - Wellbore #1 - Wellbore #1						Out of range
McLeod 6 (Exist.) - Wellbore #1 - Wellbore #1	13,382.1	7,022.4	971.6	775.6	4.957	CC
McLeod 6 (Exist.) - Wellbore #1 - Wellbore #1	13,400.0	7,022.3	971.8	775.3	4.945	ES
McLeod 6 (Exist.) - Wellbore #1 - Wellbore #1	13,500.0	7,021.9	978.8	779.4	4.911	SF
Wiedeman 29-3 (Exist.) - Wellbore #1 - Wellbore #1	14,738.2	7,007.1	959.2	725.3	4.101	CC, ES, SF
Hunt Federal 4N66W28Y Pad Sec.28-T4N-R66W						
Hunt Federal 28X-234 - Wellbore #1 - Plan #1 (1-27-15)	400.0	400.0	61.4	59.8	39.017	CC
Hunt Federal 28X-234 - Wellbore #1 - Plan #1 (1-27-15)	500.0	499.7	61.6	59.6	30.488	ES
Hunt Federal 28X-234 - Wellbore #1 - Plan #1 (1-27-15)	14,738.2	14,795.7	721.3	282.3	1.643	SF
Hunt Federal 28X-314 - Wellbore #1 - Plan #1 (1-27-15)	200.0	199.0	92.1	91.4	137.015	CC
Hunt Federal 28X-314 - Wellbore #1 - Plan #1 (1-27-15)	400.0	398.4	92.7	91.1	58.897	ES
Hunt Federal 28X-314 - Wellbore #1 - Plan #1 (1-27-15)	1,300.0	1,283.2	149.1	143.2	25.257	SF
Hunt Federal 28Y-314 - Wellbore #1 - Plan #1 (1-27-15)	1,000.0	1,000.0	30.7	26.4	7.187	CC
Hunt Federal 28Y-314 - Wellbore #1 - Plan #1 (1-27-15)	14,738.2	14,743.3	242.8	-165.6	0.595	Level 1, ES, SF
Hunt Federal 28Y-404 - Wellbore #1 - Plan #1 (1-27-15)	1,500.0	1,500.0	27.9	21.4	4.281	CC, ES
Hunt Federal 28Y-404 - Wellbore #1 - Plan #1 (1-27-15)	14,738.2	14,954.9	293.6	34.6	1.133	Level 2, SF
Wiedeman 29K-HZ Pad Sec.29-T4N-R66W						
Wiedeman 29O-243 - Wellbore #1 - Wellbore #1	14,738.2	9,169.4	164.2	80.4	1.961	CC, ES, 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 28Y-214
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 28Y-214	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 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	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)		
10,500.0	7,053.3	7,051.9	7,049.9	101.0	13.5	91.73	565.1	-4,303.5	995.1	880.6	114.43	8.696	3.798 CC, ES 3.777 SF
10,600.0	7,052.9	7,050.9	7,048.9	103.8	13.5	91.62	565.1	-4,303.5	911.6	794.4	117.20	7.778	
10,700.0	7,052.5	7,049.8	7,047.8	106.5	13.5	91.51	565.1	-4,303.5	831.7	711.8	119.98	6.932	
10,800.0	7,052.1	7,048.8	7,046.8	109.3	13.5	91.40	565.1	-4,303.5	756.7	633.9	122.76	6.164	
10,900.0	7,051.7	7,047.8	7,045.8	112.1	13.5	91.29	565.1	-4,303.5	688.1	562.5	125.55	5.481	
11,000.0	7,051.4	7,046.8	7,044.8	114.9	13.5	91.18	565.2	-4,303.5	627.9	499.6	128.33	4.893	
11,100.0	7,051.0	7,045.8	7,043.8	117.6	13.5	91.07	565.2	-4,303.6	578.8	447.7	131.11	4.415	
11,200.0	7,050.6	7,044.8	7,042.8	120.4	13.5	90.96	565.2	-4,303.6	543.9	410.0	133.90	4.062	
11,300.0	7,050.2	7,043.8	7,041.8	123.2	13.5	90.85	565.2	-4,303.6	526.0	389.3	136.69	3.848	
11,346.0	7,050.0	7,043.3	7,041.3	124.5	13.5	90.80	565.2	-4,303.6	524.0	386.0	137.97		
11,400.0	7,049.8	7,042.8	7,040.8	126.0	13.5	90.74	565.2	-4,303.6	526.8	387.3	139.47		
11,500.0	7,049.4	7,041.8	7,039.8	128.8	13.5	90.63	565.2	-4,303.6	546.1	403.9	142.26	3.839	
11,600.0	7,049.0	7,040.8	7,038.8	131.6	13.5	90.52	565.2	-4,303.6	582.3	437.3	145.05	4.015	
11,700.0	7,048.7	7,039.8	7,037.8	134.4	13.5	90.41	565.3	-4,303.6	632.4	484.5	147.84	4.277	
11,800.0	7,048.3	7,038.8	7,036.8	137.1	13.5	90.31	565.3	-4,303.6	693.3	542.7	150.63	4.603	
11,900.0	7,047.9	7,037.8	7,035.8	139.9	13.5	90.20	565.3	-4,303.6	762.5	609.1	153.42	4.970	
12,000.0	7,047.5	7,036.9	7,034.9	142.7	13.5	90.09	565.3	-4,303.6	838.0	681.8	156.21	5.365	
12,100.0	7,047.1	7,035.9	7,033.9	145.5	13.5	89.99	565.3	-4,303.6	918.2	759.2	159.00	5.775	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Hunt Federal 28Y-214
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 28Y-214	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 14-28 (Exist.) - Wellbore #1 - Wellbore #1											Offset Site Error:	0.0 ft	
Survey Program:		100-NS-GYRO-MS											Offset Well Error:	0.0 ft	
Reference		Offset		Semi Major Axis		Distance								Warning	
Measured Depth	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)				
9,100.0	7,058.6	7,035.9	7,035.3	62.5	12.8	90.46	513.1	-2,869.3	938.9	863.6	75.27	12.474			
9,200.0	7,058.3	7,035.1	7,034.5	65.2	12.8	90.36	513.1	-2,869.3	853.9	775.9	77.98	10.950			
9,300.0	7,057.9	7,034.3	7,033.7	68.0	12.8	90.27	513.1	-2,869.3	772.5	691.8	80.70	9.572			
9,400.0	7,057.5	7,033.5	7,032.9	70.7	12.8	90.17	513.1	-2,869.3	696.0	612.6	83.43	8.342			
9,500.0	7,057.1	7,032.7	7,032.2	73.4	12.8	90.08	513.1	-2,869.3	626.2	540.0	86.17	7.267			
9,600.0	7,056.7	7,031.9	7,031.4	76.2	12.8	89.98	513.1	-2,869.3	565.5	476.6	88.91	6.360			
9,700.0	7,056.3	7,031.2	7,030.6	78.9	12.7	89.89	513.1	-2,869.3	517.1	425.5	91.65	5.642			
9,800.0	7,056.0	7,030.4	7,029.8	81.7	12.7	89.79	513.1	-2,869.3	484.9	390.5	94.40	5.136			
9,900.0	7,055.6	7,029.6	7,029.1	84.4	12.7	89.70	513.1	-2,869.3	471.9	374.8	97.15	4.858			
9,911.7	7,055.5	7,029.5	7,029.0	84.7	12.7	89.69	513.1	-2,869.3	471.8	374.3	97.47	4.840 CC, ES			
10,000.0	7,055.2	7,028.9	7,028.3	87.2	12.7	89.61	513.1	-2,869.3	480.0	380.1	99.91	4.804 SF			
10,100.0	7,054.8	7,028.1	7,027.6	89.9	12.7	89.52	513.1	-2,869.3	508.0	405.3	102.66	4.948			
10,200.0	7,054.4	7,027.4	7,026.8	92.7	12.7	89.43	513.1	-2,869.3	552.9	447.5	105.42	5.245			
10,300.0	7,054.0	7,026.6	7,026.1	95.5	12.7	89.34	513.1	-2,869.3	611.0	502.8	108.19	5.648			
10,400.0	7,053.7	7,025.9	7,025.3	98.2	12.7	89.25	513.1	-2,869.3	679.0	568.0	110.95	6.120			
10,500.0	7,053.3	7,025.2	7,024.6	101.0	12.7	89.16	513.1	-2,869.3	754.1	640.4	113.72	6.631			
10,600.0	7,052.9	7,024.4	7,023.9	103.8	12.7	89.07	513.0	-2,869.3	834.4	718.0	116.49	7.163			
10,700.0	7,052.5	7,023.7	7,023.1	106.5	12.7	88.98	513.0	-2,869.3	918.7	799.4	119.26	7.703			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Hunt Federal 28Y-214
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 28Y-214	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	
7,800.0	7,063.6	7,036.7	7,036.1	28.9	14.9	89.64	619.6	-1,507.6	947.1	903.3	43.82	21.614	
7,900.0	7,063.3	7,036.6	7,036.0	31.2	14.9	89.63	619.6	-1,507.6	870.0	823.9	46.18	18.841	
8,000.0	7,062.9	7,036.5	7,035.9	33.7	14.9	89.62	619.6	-1,507.6	798.1	749.5	48.61	16.419	
8,100.0	7,062.5	7,036.4	7,035.9	36.1	14.9	89.61	619.6	-1,507.6	732.8	681.7	51.09	14.342	
8,200.0	7,062.1	7,036.3	7,035.8	38.7	14.9	89.60	619.6	-1,507.6	676.0	622.4	53.62	12.607	
8,300.0	7,061.7	7,036.2	7,035.7	41.2	14.9	89.59	619.6	-1,507.6	630.1	573.9	56.19	11.214	
8,400.0	7,061.3	7,036.1	7,035.6	43.8	14.9	89.59	619.6	-1,507.6	597.5	538.7	58.78	10.165	
8,500.0	7,061.0	7,036.0	7,035.5	46.5	14.9	89.58	619.6	-1,507.6	580.5	519.1	61.40	9.455	
8,550.0	7,060.8	7,036.0	7,035.4	47.8	14.9	89.57	619.6	-1,507.6	578.3	515.6	62.72	9.221 CC, ES	
8,600.0	7,060.6	7,035.9	7,035.4	49.1	14.9	89.57	619.6	-1,507.6	580.5	516.5	64.04	9.065	
8,700.0	7,060.2	7,035.8	7,035.3	51.8	14.9	89.56	619.6	-1,507.6	597.5	530.8	66.70	8.958 SF	
8,800.0	7,059.8	7,035.7	7,035.2	54.4	14.9	89.55	619.6	-1,507.6	630.1	560.7	69.37	9.083	
8,900.0	7,059.4	7,035.6	7,035.1	57.1	14.9	89.54	619.6	-1,507.6	676.0	603.9	72.05	9.382	
9,000.0	7,059.0	7,035.5	7,035.0	59.8	14.9	89.53	619.6	-1,507.6	732.8	658.0	74.75	9.803	
9,100.0	7,058.6	7,035.5	7,034.9	62.5	14.9	89.52	619.6	-1,507.6	798.1	720.6	77.46	10.304	
9,200.0	7,058.3	7,035.4	7,034.8	65.2	14.9	89.51	619.6	-1,507.6	870.0	789.9	80.17	10.852	
9,300.0	7,057.9	7,035.3	7,034.7	68.0	14.9	89.50	619.6	-1,507.6	947.1	864.2	82.89	11.425	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Hunt Federal 28Y-214
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 28Y-214	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	-18.62	364.3	-122.8	384.8						
100.0	100.0	85.8	85.8	0.1	0.1	-18.65	364.1	-122.9	384.2	384.0	0.23	1,697.516			
200.0	200.0	186.4	186.4	0.3	0.3	-18.68	363.4	-122.9	383.7	383.0	0.69	560.083			
300.0	300.0	284.6	284.6	0.6	0.6	-18.66	363.1	-122.6	383.2	382.1	1.11	344.195			
400.0	400.0	384.7	384.7	0.8	0.8	-18.62	363.0	-122.3	383.1	381.6	1.55	246.770			
500.0	500.0	485.5	485.5	1.0	1.0	-18.58	362.9	-122.0	382.8	380.8	2.03	188.761			
600.0	600.0	586.1	586.1	1.2	1.3	-18.53	362.5	-121.5	382.3	379.8	2.52	152.011			
700.0	700.0	684.1	684.1	1.5	1.5	-18.50	362.3	-121.2	382.0	379.1	2.93	130.591			
703.2	703.2	687.2	687.2	1.5	1.5	-18.50	362.3	-121.2	382.0	379.1	2.94	130.027			
800.0	800.0	783.8	783.8	1.7	1.5	-18.49	362.3	-121.2	382.1	378.8	3.24	118.094			
900.0	900.0	883.8	883.7	1.9	1.7	-18.49	362.4	-121.2	382.1	378.6	3.56	107.212			
1,000.0	1,000.0	982.7	982.7	2.1	1.8	-18.51	362.5	-121.4	382.3	378.4	3.91	97.674			
1,100.0	1,100.0	1,082.7	1,082.7	2.4	1.9	-18.58	362.7	-122.0	382.7	378.5	4.24	90.181			
1,200.0	1,200.0	1,182.4	1,182.3	2.6	2.0	-18.66	362.9	-122.6	383.1	378.5	4.59	83.419			
1,300.0	1,300.0	1,282.6	1,282.5	2.8	2.2	-18.77	363.1	-123.4	383.5	378.5	4.97	77.204			
1,400.0	1,400.0	1,383.1	1,383.1	3.0	2.3	-18.93	363.0	-124.5	383.8	378.4	5.36	71.546			
1,500.0	1,500.0	1,483.3	1,483.3	3.3	2.5	-19.08	362.9	-125.5	384.0	378.2	5.78	66.462			
1,600.0	1,600.0	1,584.4	1,584.3	3.5	2.7	-101.32	362.6	-126.5	384.2	378.0	6.19	62.033			
1,700.0	1,700.0	1,685.5	1,685.4	3.7	2.9	-101.88	362.0	-127.6	384.5	377.9	6.61	58.170			
1,800.0	1,799.9	1,786.8	1,786.8	3.9	3.1	-102.63	361.2	-128.1	384.9	377.9	7.02	54.813			
1,900.0	1,899.7	1,889.3	1,889.3	4.1	3.3	-103.56	360.1	-127.8	385.2	377.8	7.43	51.829			
2,000.0	1,999.4	1,987.1	1,987.0	4.3	3.5	-104.70	358.9	-127.6	385.8	378.0	7.85	49.158			
2,054.5	2,053.7	2,041.7	2,041.6	4.4	3.6	-105.43	358.3	-127.6	386.6	378.6	8.09	47.803			
2,100.0	2,098.9	2,087.6	2,087.5	4.6	3.7	-106.10	357.8	-127.6	387.3	379.0	8.29	46.714			
2,200.0	2,198.5	2,187.1	2,187.0	4.8	4.0	-107.55	356.4	-127.7	388.9	380.2	8.75	44.465			
2,300.0	2,298.0	2,286.7	2,286.7	5.0	4.2	-109.00	355.0	-127.8	390.8	381.6	9.21	42.421			
2,400.0	2,397.5	2,388.3	2,388.2	5.3	4.4	-110.39	353.7	-127.3	392.7	383.0	9.67	40.605			
2,500.0	2,497.0	2,483.9	2,483.7	5.5	4.6	-111.53	353.0	-126.0	394.8	384.8	10.07	39.198			
2,600.0	2,596.6	2,586.9	2,586.8	5.8	4.7	-112.72	352.6	-124.7	397.5	387.0	10.49	37.887			
2,700.0	2,696.1	2,687.6	2,687.4	6.0	5.0	-113.99	351.2	-123.7	399.6	388.7	10.95	36.483			
2,800.0	2,795.6	2,789.2	2,789.1	6.3	5.2	-115.30	349.3	-122.7	401.6	390.2	11.43	35.134			
2,900.0	2,895.2	2,887.6	2,887.4	6.6	5.4	-116.56	347.3	-121.7	403.6	391.7	11.91	33.899			
3,000.0	2,994.7	2,987.4	2,987.1	6.8	5.7	-117.94	344.9	-121.6	406.0	393.6	12.39	32.764			
3,100.0	3,094.2	3,087.8	3,087.6	7.1	5.9	-119.33	342.4	-121.3	408.5	395.6	12.88	31.718			
3,200.0	3,193.8	3,184.5	3,184.3	7.4	6.1	-120.52	340.6	-120.5	411.3	397.9	13.36	30.794			
3,300.0	3,293.3	3,282.7	3,282.4	7.6	6.4	-121.74	339.2	-120.1	414.9	401.1	13.84	29.975			
3,400.0	3,392.8	3,382.7	3,382.4	7.9	6.6	-122.98	337.7	-120.0	418.9	404.6	14.34	29.218			
3,500.0	3,492.4	3,483.8	3,483.5	8.2	6.9	-124.20	336.0	-119.6	422.8	407.9	14.83	28.504			
3,600.0	3,591.9	3,582.9	3,582.6	8.5	7.1	-125.36	334.2	-119.0	426.6	411.3	15.32	27.844			
3,700.0	3,691.4	3,680.8	3,680.5	8.7	7.4	-126.56	332.4	-119.0	430.9	415.1	15.81	27.260			
3,800.0	3,791.0	3,778.4	3,778.1	9.0	7.6	-127.80	330.4	-119.6	435.8	419.5	16.29	26.760			
3,900.0	3,890.5	3,877.0	3,876.6	9.3	7.8	-129.05	328.5	-120.7	441.3	424.5	16.76	26.328			
4,000.0	3,990.0	3,976.6	3,976.1	9.6	8.1	-130.31	326.4	-122.0	447.0	429.8	17.23	25.937			
4,100.0	4,089.6	4,071.9	4,071.5	9.8	8.3	-131.44	324.9	-123.1	453.2	435.6	17.68	25.638			
4,200.0	4,189.1	4,168.7	4,168.2	10.1	8.4	-132.43	324.8	-124.3	460.6	442.5	18.07	25.491			
4,300.0	4,288.6	4,268.5	4,268.1	10.4	8.6	-133.34	325.2	-125.3	468.2	449.8	18.44	25.393			
4,400.0	4,388.2	4,370.3	4,369.8	10.7	8.7	-134.30	325.1	-126.4	475.7	456.9	18.85	25.235			
4,500.0	4,487.7	4,468.4	4,468.0	11.0	8.9	-135.21	324.7	-127.3	483.0	463.7	19.29	25.047			
4,600.0	4,587.2	4,570.4	4,569.9	11.2	9.2	-136.19	323.9	-128.8	490.7	470.9	19.74	24.857			
4,643.9	4,630.9	4,614.6	4,614.1	11.4	9.3	-136.62	323.3	-129.2	493.8	473.8	19.94	24.766			
4,700.0	4,686.8	4,667.1	4,666.6	11.5	9.4	-137.12	322.9	-129.9	497.7	477.6	20.17	24.671			

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 28Y-214
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 28Y-214	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 (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
4,800.0	4,786.6	4,765.0	4,764.5	11.7	9.5	-137.81	322.8	-131.3	504.0	483.4	20.55	24.528	
4,900.0	4,886.5	4,866.0	4,865.5	11.9	9.7	-138.24	322.9	-132.6	508.3	487.4	20.91	24.311	
5,000.0	4,986.4	4,964.3	4,963.8	12.1	9.9	-138.43	323.2	-133.7	510.6	489.3	21.23	24.049	
5,013.6	5,000.0	4,977.5	4,977.0	12.1	9.9	-56.48	323.3	-133.8	510.8	489.2	21.53	23.728	
5,100.0	5,086.4	5,062.8	5,062.2	12.2	10.0	-56.39	324.7	-134.4	512.1	490.3	21.77	23.525	
5,200.0	5,186.4	5,165.9	5,165.4	12.4	10.0	-56.21	326.8	-134.8	513.5	491.5	22.04	23.297	
5,300.0	5,286.4	5,267.3	5,266.8	12.6	10.1	-56.08	328.3	-134.7	514.2	491.9	22.34	23.018	
5,400.0	5,386.4	5,365.8	5,365.3	12.8	10.3	-56.07	328.8	-135.3	515.1	492.4	22.67	22.717	
5,500.0	5,486.4	5,467.2	5,466.6	13.0	10.4	-56.05	329.5	-136.1	516.1	493.0	23.02	22.416	
5,600.0	5,586.4	5,569.0	5,568.4	13.2	10.6	-56.03	329.9	-136.4	516.6	493.2	23.36	22.116	
5,700.0	5,686.4	5,667.3	5,666.7	13.4	10.7	-55.97	330.6	-136.5	517.1	493.4	23.68	21.831	
5,800.0	5,786.4	5,765.1	5,764.6	13.6	10.8	-55.99	331.0	-137.4	518.0	494.0	24.05	21.542	
5,900.0	5,886.4	5,869.5	5,869.0	13.8	11.0	-56.06	331.0	-138.5	518.9	494.5	24.47	21.211	
6,000.0	5,986.4	5,966.6	5,966.0	14.0	11.3	-56.18	330.2	-139.4	519.2	494.3	24.88	20.866	
6,100.0	6,086.4	6,061.9	6,061.3	14.2	11.4	-56.23	330.6	-140.7	520.6	495.3	25.28	20.597	
6,200.0	6,186.4	6,160.1	6,159.5	14.4	11.6	-56.22	331.8	-142.3	522.6	496.9	25.65	20.377	
6,300.0	6,286.4	6,259.3	6,258.7	14.6	11.8	-56.16	333.4	-143.8	524.8	498.7	26.01	20.174	
6,314.3	6,300.8	6,273.6	6,273.0	14.7	11.8	-56.16	333.6	-144.0	525.1	499.0	26.06	20.146	
6,350.0	6,336.4	6,309.4	6,308.7	14.7	11.8	33.89	334.1	-144.7	525.2	499.2	25.95	20.239	
6,400.0	6,386.3	6,360.9	6,360.2	14.8	11.9	34.23	334.7	-145.6	522.9	496.9	26.03	20.086	
6,450.0	6,435.7	6,411.5	6,410.8	14.8	12.0	34.90	335.1	-146.3	517.9	491.8	26.06	19.874	
6,500.0	6,484.6	6,459.5	6,458.8	14.9	12.1	35.88	335.5	-147.1	510.2	484.2	26.02	19.607	
6,550.0	6,532.7	6,506.9	6,506.2	14.9	12.2	37.23	336.1	-147.9	500.1	474.2	25.94	19.279	
6,600.0	6,579.8	6,553.8	6,553.1	14.9	12.3	38.99	336.7	-148.7	487.7	461.9	25.83	18.879	
6,650.0	6,625.7	6,600.0	6,599.3	15.0	12.4	41.22	337.5	-149.4	473.2	447.4	25.73	18.389	
6,700.0	6,670.3	6,645.0	6,644.3	15.0	12.4	43.94	338.4	-150.0	456.7	431.0	25.66	17.798	
6,750.0	6,713.2	6,688.8	6,688.0	15.0	12.5	47.22	339.2	-150.5	438.5	412.8	25.66	17.085	
6,800.0	6,754.4	6,730.0	6,729.3	15.1	12.6	51.02	340.0	-150.9	419.0	393.2	25.78	16.254	
6,850.0	6,793.6	6,769.1	6,768.3	15.2	12.6	55.36	340.9	-151.3	398.8	372.8	26.04	15.314	
6,900.0	6,830.7	6,806.4	6,805.6	15.4	12.7	60.23	341.8	-151.6	378.5	352.0	26.47	14.298	
6,950.0	6,865.6	6,842.9	6,842.1	15.5	12.7	65.67	342.7	-151.7	358.6	331.6	27.06	13.253	
7,000.0	6,898.0	6,876.5	6,875.7	15.8	12.8	71.30	343.5	-151.7	340.2	312.4	27.75	12.258	
7,050.0	6,927.9	6,907.0	6,906.2	16.1	12.8	76.84	344.2	-151.5	324.3	295.8	28.47	11.390	
7,100.0	6,955.1	6,934.4	6,933.6	16.5	12.8	81.99	344.7	-151.2	312.3	283.1	29.17	10.708	
7,150.0	6,979.5	6,958.7	6,957.9	17.0	12.9	86.50	345.2	-150.9	305.5	275.6	29.81	10.245	
7,179.8	6,992.6	6,971.7	6,970.8	17.3	12.9	88.79	345.5	-150.7	304.3	274.1	30.19	10.077 CC, ES	
7,200.0	7,001.0	6,979.8	6,979.0	17.6	12.9	90.16	345.6	-150.6	304.8	274.4	30.43	10.017 SF	
7,250.0	7,019.4	6,997.7	6,996.8	18.2	12.9	92.82	346.0	-150.3	311.1	280.1	31.06	10.017	
7,300.0	7,034.9	7,012.4	7,011.6	18.9	12.9	94.42	346.2	-150.0	324.4	292.7	31.74	10.220	
7,350.0	7,047.1	7,023.9	7,023.1	19.7	12.9	94.89	346.4	-149.8	344.2	311.7	32.52	10.585	
7,400.0	7,056.2	7,032.2	7,031.4	20.6	12.9	94.19	346.6	-149.7	369.7	336.3	33.40	11.069	
7,450.0	7,062.0	7,037.2	7,036.4	21.5	12.9	92.27	346.6	-149.6	399.9	365.6	34.37	11.636	
7,500.0	7,064.6	7,038.9	7,038.0	22.4	12.9	89.11	346.7	-149.6	433.9	398.5	35.35	12.274	
7,517.3	7,064.7	7,038.7	7,037.9	22.8	12.9	87.73	346.7	-149.6	446.3	410.7	35.67	12.512	
7,600.0	7,064.4	7,036.8	7,036.0	24.4	12.9	87.38	346.6	-149.6	509.8	472.4	37.34	13.651	
7,700.0	7,064.0	7,034.6	7,033.8	26.6	12.9	86.96	346.6	-149.6	592.8	553.3	39.49	15.012	
7,800.0	7,063.6	7,032.4	7,031.5	28.9	12.9	86.54	346.6	-149.7	680.5	638.7	41.74	16.301	
7,900.0	7,063.3	7,030.1	7,029.3	31.2	12.9	86.13	346.5	-149.7	771.1	727.0	44.08	17.493	
8,000.0	7,062.9	7,027.9	7,027.1	33.7	12.9	85.71	346.5	-149.8	863.8	817.3	46.48	18.583	
8,100.0	7,062.5	7,025.7	7,024.9	36.1	12.9	85.30	346.5	-149.8	958.0	909.0	48.93	19.576	

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 28Y-214
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 28Y-214	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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Hunt Federal 28Y-214
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 28Y-214	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 (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		
11,700.0	7,048.7	7,051.6	7,050.9	134.4	14.3	92.19	498.5	-5,501.1	959.6	811.1	148.50	6.462			
11,800.0	7,048.3	7,050.9	7,050.2	137.1	14.3	92.10	498.5	-5,501.2	873.0	721.7	151.29	5.771			
11,900.0	7,047.9	7,050.2	7,049.5	139.9	14.3	92.01	498.5	-5,501.2	789.6	635.5	154.08	5.125			
12,000.0	7,047.5	7,049.6	7,048.8	142.7	14.3	91.93	498.5	-5,501.2	710.5	553.6	156.88	4.529			
12,100.0	7,047.1	7,048.9	7,048.1	145.5	14.3	91.84	498.6	-5,501.2	637.2	477.6	159.67	3.991			
12,200.0	7,046.7	7,048.2	7,047.4	148.3	14.3	91.75	498.6	-5,501.2	572.1	409.7	162.47	3.522			
12,300.0	7,046.4	7,047.5	7,046.7	151.1	14.3	91.67	498.6	-5,501.2	518.3	353.0	165.26	3.136			
12,400.0	7,046.0	7,046.8	7,046.0	153.9	14.3	91.58	498.6	-5,501.2	479.5	311.4	168.06	2.853			
12,500.0	7,045.6	7,046.0	7,045.3	156.7	14.2	91.49	498.6	-5,501.2	459.6	288.7	170.86	2.690			
12,543.6	7,045.4	7,045.7	7,045.0	157.9	14.2	91.45	498.6	-5,501.2	457.5	285.4	172.08	2.659 CC, ES			
12,600.0	7,045.2	7,045.3	7,044.6	159.5	14.2	91.40	498.7	-5,501.2	461.0	287.3	173.65	2.655 SF			
12,700.0	7,044.8	7,044.6	7,043.9	162.3	14.2	91.31	498.7	-5,501.2	483.5	307.1	176.45	2.740			
12,800.0	7,044.4	7,043.9	7,043.1	165.1	14.2	91.21	498.7	-5,501.2	524.5	345.2	179.25	2.926			
12,900.0	7,044.1	7,043.1	7,042.4	167.8	14.2	91.12	498.7	-5,501.2	580.0	397.9	182.05	3.186			
13,000.0	7,043.7	7,042.4	7,041.7	170.6	14.2	91.03	498.7	-5,501.2	646.3	461.4	184.85	3.496			
13,100.0	7,043.3	7,041.6	7,040.9	173.4	14.2	90.94	498.7	-5,501.2	720.4	532.7	187.64	3.839			
13,200.0	7,042.9	7,040.9	7,040.2	176.2	14.2	90.84	498.8	-5,501.2	800.1	609.7	190.44	4.201			
13,300.0	7,042.5	7,040.1	7,039.4	179.0	14.2	90.75	498.8	-5,501.2	884.0	690.8	193.24	4.575			
13,400.0	7,042.1	7,039.4	7,038.6	181.8	14.2	90.65	498.8	-5,501.2	971.0	774.9	196.04	4.953			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Hunt Federal 28Y-214
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 28Y-214	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	7,042.5	7,025.3	7,024.9	179.0	13.3	88.60	460.3	-7,139.9	976.9	784.6	192.30	5.080	
13,400.0	7,042.1	7,026.2	7,025.7	181.8	13.3	88.71	460.3	-7,139.9	887.6	692.5	195.10	4.549	
13,500.0	7,041.8	7,027.0	7,026.6	184.6	13.3	88.83	460.3	-7,139.9	800.8	602.9	197.91	4.046	
13,600.0	7,041.4	7,027.9	7,027.4	187.4	13.3	88.94	460.3	-7,139.9	717.5	516.8	200.71	3.575	
13,700.0	7,041.0	7,028.7	7,028.2	190.2	13.3	89.05	460.3	-7,139.9	639.0	435.5	203.52	3.140	
13,800.0	7,040.6	7,029.5	7,029.0	193.0	13.3	89.16	460.3	-7,139.9	567.3	361.0	206.32	2.750	
13,900.0	7,040.2	7,030.3	7,029.8	195.8	13.3	89.27	460.3	-7,139.9	505.4	296.2	209.13	2.417	
14,000.0	7,039.8	7,031.1	7,030.6	198.6	13.3	89.38	460.3	-7,140.0	457.1	245.1	211.93	2.157	
14,100.0	7,039.5	7,031.8	7,031.4	201.4	13.3	89.48	460.3	-7,140.0	427.1	212.4	214.73	1.989	
14,182.4	7,039.1	7,032.5	7,032.0	203.7	13.3	89.57	460.4	-7,140.0	419.1	202.0	217.04	1.931 CC	
14,200.0	7,039.1	7,032.6	7,032.1	204.2	13.3	89.59	460.4	-7,140.0	419.5	201.9	217.53	1.928 ES, SF	
14,300.0	7,038.7	7,033.3	7,032.9	207.0	13.3	89.69	460.4	-7,140.0	435.3	214.9	220.34	1.975	
14,400.0	7,038.3	7,034.1	7,033.6	209.8	13.3	89.79	460.4	-7,140.0	472.2	249.1	223.14	2.116	
14,500.0	7,037.9	7,034.8	7,034.3	212.6	13.3	89.89	460.4	-7,140.0	525.8	299.9	225.94	2.327	
14,600.0	7,037.5	7,035.5	7,035.1	215.4	13.3	89.99	460.4	-7,140.0	591.6	362.9	228.74	2.586	
14,700.0	7,037.1	7,036.3	7,035.8	218.2	13.3	90.09	460.4	-7,140.0	666.0	434.4	231.54	2.876	
14,738.2	7,037.0	7,036.5	7,036.1	219.3	13.3	90.13	460.4	-7,140.0	696.0	463.4	232.61	2.992	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Hunt Federal 28Y-214
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 28Y-214	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:		0.0 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)			
13,200.0	7,042.9	7,023.2	7,022.0	176.2	14.7	89.28	1,012.8	-6,339.6	988.5	797.6	190.93	5.177		
13,300.0	7,042.5	7,022.7	7,021.6	179.0	14.7	89.26	1,012.8	-6,339.6	975.1	781.4	193.72	5.033		
13,382.1	7,042.2	7,022.4	7,021.2	181.3	14.7	89.23	1,012.8	-6,339.6	971.6	775.6	196.02	4.957 CC		
13,400.0	7,042.1	7,022.3	7,021.2	181.8	14.7	89.23	1,012.8	-6,339.6	971.8	775.3	196.52	4.945 ES		
13,500.0	7,041.8	7,021.9	7,020.7	184.6	14.7	89.21	1,012.8	-6,339.6	978.8	779.4	199.31	4.911 SF		
13,600.0	7,041.4	7,021.5	7,020.3	187.4	14.7	89.18	1,012.8	-6,339.6	995.8	793.7	202.11	4.927		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Hunt Federal 28Y-214
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 28Y-214	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 - Wiedeman 29-3 (Exist.) - Wellbore #1 - Wellbore #1		Offset Site Error:	0.0 ft
Survey Program: 100-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				
14,700.0	7,037.1	7,007.1	7,005.9	218.2	14.7	88.74	753.1	-8,338.4	985.2	752.4	232.82	4.232				
14,738.2	7,037.0	7,007.1	7,005.9	219.3	14.7	88.74	753.1	-8,338.4	959.2	725.3	233.88	4.101	CC, ES, SF			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Hunt Federal 28Y-214
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 28Y-214	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-234 - Wellbore #1 - Plan #1 (1-27)			Offset Site Error:		0.0 ft
Survey Program: 0-MWD											Offset Well Error:		0.0 ft			
Reference		Offset		Semi Major Axis			Distance						Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
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	499.7	499.7	1.0	1.0	89.23	0.8	61.6	61.6	59.6	2.02	30.488 ES				
600.0	600.0	599.3	599.3	1.2	1.2	86.95	3.3	62.4	62.5	60.0	2.47	25.280				
700.0	700.0	698.8	698.7	1.5	1.5	83.32	7.5	63.7	64.1	61.2	2.92	21.933				
800.0	800.0	798.1	797.8	1.7	1.7	78.56	13.2	65.4	66.8	63.4	3.38	19.784				
900.0	900.0	897.2	896.6	1.9	1.9	73.04	20.6	67.7	70.8	67.0	3.83	18.489				
1,000.0	1,000.0	996.0	994.9	2.1	2.2	67.17	29.6	70.4	76.6	72.3	4.29	17.835				
1,100.0	1,100.0	1,094.4	1,092.7	2.4	2.4	61.36	40.2	73.6	84.2	79.4	4.76	17.673				
1,200.0	1,200.0	1,192.4	1,189.9	2.6	2.7	55.90	52.3	77.3	93.9	88.7	5.25	17.882				
1,300.0	1,300.0	1,290.0	1,286.4	2.8	3.0	50.99	66.0	81.5	105.7	100.0	5.76	18.361				
1,400.0	1,400.0	1,387.0	1,382.1	3.0	3.3	46.69	81.1	86.1	119.6	113.3	6.29	19.031				
1,500.0	1,500.0	1,483.7	1,477.2	3.3	3.7	42.99	97.8	91.1	135.6	128.7	6.84	19.830				
1,600.0	1,600.0	1,582.0	1,573.8	3.5	4.0	-42.14	115.3	96.5	151.9	144.8	7.09	21.423				
1,700.0	1,700.0	1,680.4	1,670.5	3.7	4.4	-45.10	132.8	101.8	167.5	159.9	7.53	22.232				
1,800.0	1,799.9	1,778.9	1,767.3	3.9	4.8	-47.94	150.4	107.1	182.3	174.3	7.98	22.850				
1,900.0	1,899.7	1,877.4	1,864.1	4.1	5.2	-50.73	168.0	112.5	196.4	187.9	8.42	23.312				
2,000.0	1,999.4	1,976.0	1,960.9	4.3	5.5	-53.50	185.5	117.8	209.9	201.0	8.87	23.646				
2,054.5	2,053.7	2,029.7	2,013.7	4.4	5.8	-55.02	195.1	120.7	217.0	207.9	9.12	23.780				
2,100.0	2,098.9	2,074.6	2,057.8	4.6	5.9	-56.30	203.1	123.2	222.9	213.6	9.34	23.880				
2,200.0	2,198.5	2,173.1	2,154.6	4.8	6.3	-58.90	220.7	128.5	236.4	226.6	9.81	24.102				
2,300.0	2,298.0	2,271.7	2,251.4	5.0	6.7	-61.21	238.2	133.9	250.3	240.0	10.29	24.323				
2,400.0	2,397.5	2,370.2	2,348.2	5.3	7.1	-63.28	255.8	139.2	264.5	253.7	10.78	24.537				
2,500.0	2,497.0	2,468.8	2,445.1	5.5	7.5	-65.14	273.4	144.6	279.1	267.8	11.28	24.740				
2,600.0	2,596.6	2,567.3	2,541.9	5.8	7.9	-66.82	291.0	149.9	293.9	282.1	11.79	24.931				
2,700.0	2,696.1	2,665.9	2,638.7	6.0	8.3	-68.33	308.5	155.2	308.9	296.6	12.30	25.111				
2,800.0	2,795.6	2,764.4	2,735.5	6.3	8.7	-69.70	326.1	160.6	324.1	311.3	12.82	25.278				
2,900.0	2,895.2	2,862.9	2,832.3	6.6	9.1	-70.95	343.7	165.9	339.5	326.2	13.35	25.433				
3,000.0	2,994.7	2,961.5	2,929.2	6.8	9.5	-72.09	361.2	171.3	355.0	341.2	13.88	25.578				
3,100.0	3,094.2	3,060.0	3,026.0	7.1	9.9	-73.14	378.8	176.6	370.7	356.3	14.42	25.712				
3,200.0	3,193.8	3,158.6	3,122.8	7.4	10.3	-74.10	396.4	182.0	386.5	371.5	14.96	25.837				
3,300.0	3,293.3	3,257.1	3,219.6	7.6	10.7	-74.98	414.0	187.3	402.4	386.8	15.50	25.954				
3,400.0	3,392.8	3,355.7	3,316.4	7.9	11.1	-75.80	431.5	192.7	418.3	402.3	16.05	26.062				
3,500.0	3,492.4	3,454.2	3,413.3	8.2	11.5	-76.56	449.1	198.0	434.3	417.7	16.60	26.163				
3,600.0	3,591.9	3,552.8	3,510.1	8.5	11.9	-77.26	466.7	203.4	450.4	433.3	17.15	26.258				
3,700.0	3,691.4	3,651.3	3,606.9	8.7	12.3	-77.92	484.2	208.7	466.6	448.9	17.71	26.347				
3,800.0	3,791.0	3,749.9	3,703.7	9.0	12.7	-78.53	501.8	214.0	482.8	464.6	18.27	26.430				
3,900.0	3,890.5	3,848.4	3,800.6	9.3	13.1	-79.10	519.4	219.4	499.1	480.3	18.83	26.507				
4,000.0	3,990.0	3,947.0	3,897.4	9.6	13.5	-79.64	536.9	224.7	515.4	496.0	19.39	26.581				
4,100.0	4,089.6	4,045.5	3,994.2	9.8	13.9	-80.14	554.5	230.1	531.8	511.8	19.95	26.650				
4,200.0	4,189.1	4,144.1	4,091.0	10.1	14.3	-80.62	572.1	235.4	548.2	527.7	20.52	26.715				
4,300.0	4,288.6	4,242.6	4,187.8	10.4	14.7	-81.06	589.7	240.8	564.6	543.5	21.09	26.776				
4,400.0	4,388.2	4,341.2	4,284.7	10.7	15.1	-81.48	607.2	246.1	581.1	559.4	21.65	26.834				
4,500.0	4,487.7	4,439.7	4,381.5	11.0	15.5	-81.88	624.8	251.5	597.6	575.3	22.22	26.889				
4,600.0	4,587.2	4,538.3	4,478.3	11.2	15.9	-82.26	642.4	256.8	614.1	591.3	22.79	26.942				
4,643.9	4,630.9	4,581.5	4,520.8	11.4	16.0	-82.42	650.1	259.2	621.3	598.3	23.04	26.964				
4,700.0	4,686.8	4,636.8	4,575.1	11.5	16.3	-82.72	659.9	262.2	630.7	607.3	23.35	27.013				
4,800.0	4,786.6	4,735.4	4,672.0	11.7	16.7	-83.06	677.5	267.5	647.6	623.7	23.84	27.167				

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 28Y-214
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 28Y-214	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-234 - Wellbore #1 - Plan #1 (1-27										Offset Site Error:		0.0 ft	
Survey Program: 0-MWD												Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
4,900.0	4,886.5	4,833.9	4,768.7	11.9	17.1	-83.18	695.1	272.8	664.8	640.5	24.30	27.359			
5,000.0	4,986.4	4,948.3	4,881.4	12.1	17.5	-83.05	714.4	278.7	681.4	656.7	24.73	27.557			
5,013.6	5,000.0	4,964.5	4,897.3	12.1	17.5	-1.06	716.8	279.5	683.4	655.5	27.97	24.437			
5,100.0	5,086.4	5,067.8	4,999.5	12.2	17.8	-0.68	731.1	283.8	695.3	666.9	28.44	24.449			
5,200.0	5,186.4	5,188.2	5,119.2	12.4	18.1	-0.34	744.4	287.8	706.4	677.4	28.96	24.389			
5,300.0	5,286.4	5,309.4	5,239.9	12.6	18.4	-0.10	754.1	290.8	714.4	684.9	29.44	24.265			
5,400.0	5,386.4	5,431.1	5,361.5	12.8	18.6	0.05	760.2	292.7	719.4	689.5	29.87	24.082			
5,500.0	5,486.4	5,553.1	5,483.4	13.0	18.7	0.11	762.6	293.4	721.3	691.1	30.26	23.836			
5,600.0	5,586.4	5,656.1	5,586.4	13.2	18.9	0.11	762.6	293.4	721.3	690.7	30.61	23.563			
5,700.0	5,686.4	5,756.1	5,686.4	13.4	19.0	0.11	762.6	293.4	721.3	690.4	30.97	23.293			
5,800.0	5,786.4	5,856.1	5,786.4	13.6	19.2	0.11	762.6	293.4	721.3	690.0	31.32	23.029			
5,900.0	5,886.4	5,956.1	5,886.4	13.8	19.3	0.11	762.6	293.4	721.3	689.7	31.68	22.769			
6,000.0	5,986.4	6,056.1	5,986.4	14.0	19.4	0.11	762.6	293.4	721.3	689.3	32.04	22.513			
6,100.0	6,086.4	6,156.1	6,086.4	14.2	19.6	0.11	762.6	293.4	721.3	688.9	32.40	22.262			
6,200.0	6,186.4	6,256.1	6,186.4	14.4	19.7	0.11	762.6	293.4	721.3	688.6	32.77	22.015			
6,300.0	6,286.4	6,356.1	6,286.4	14.6	19.9	0.11	762.6	293.4	721.3	688.2	33.13	21.773			
6,314.3	6,300.8	6,370.5	6,300.8	14.7	19.9	0.11	762.6	293.4	721.3	688.2	33.18	21.738			
6,350.0	6,336.4	6,406.2	6,336.5	14.7	19.9	90.11	762.6	292.6	721.3	691.3	30.05	24.005			
6,400.0	6,386.3	6,456.3	6,386.4	14.8	20.0	90.11	762.6	288.6	721.3	691.2	30.19	23.894			
6,450.0	6,435.7	6,506.4	6,436.0	14.8	20.1	90.11	762.6	281.3	721.3	691.0	30.30	23.803			
6,500.0	6,484.6	6,556.4	6,484.9	14.9	20.1	90.11	762.6	270.9	721.3	690.9	30.40	23.731			
6,550.0	6,532.7	6,606.5	6,533.1	14.9	20.1	90.11	762.6	257.2	721.3	690.9	30.47	23.671			
6,600.0	6,579.8	6,656.6	6,580.3	14.9	20.1	90.10	762.6	240.4	721.3	690.8	30.54	23.620			
6,650.0	6,625.7	6,706.7	6,626.3	15.0	20.1	90.10	762.6	220.6	721.3	690.7	30.61	23.567			
6,700.0	6,670.3	6,756.8	6,670.9	15.0	20.2	90.10	762.6	197.8	721.3	690.7	30.69	23.506			
6,750.0	6,713.2	6,806.9	6,713.8	15.0	20.2	90.09	762.6	172.1	721.3	690.5	30.80	23.424			
6,800.0	6,754.4	6,856.9	6,755.1	15.1	20.2	90.09	762.6	143.7	721.3	690.4	30.95	23.309			
6,850.0	6,793.6	6,907.0	6,794.3	15.2	20.2	90.08	762.6	112.6	721.3	690.2	31.16	23.149			
6,900.0	6,830.7	6,957.1	6,831.4	15.4	20.2	90.08	762.6	79.0	721.3	689.9	31.46	22.931			
6,950.0	6,865.6	7,007.1	6,866.3	15.5	20.2	90.08	762.6	43.1	721.3	689.5	31.86	22.644			
7,000.0	6,898.0	7,057.2	6,898.7	15.8	20.3	90.07	762.6	5.0	721.3	689.0	32.37	22.282			
7,050.0	6,927.9	7,107.3	6,928.6	16.1	20.3	90.06	762.6	-35.2	721.3	688.3	33.03	21.840			
7,100.0	6,955.1	7,157.3	6,955.7	16.5	20.4	90.06	762.6	-77.2	721.3	687.5	33.83	21.321			
7,150.0	6,979.5	7,207.4	6,980.1	17.0	20.6	90.05	762.6	-121.0	721.3	686.5	34.80	20.731			
7,200.0	7,001.0	7,257.4	7,001.5	17.6	20.8	90.05	762.6	-166.2	721.3	685.4	35.92	20.083			
7,250.0	7,019.4	7,307.4	7,019.9	18.2	21.1	90.04	762.6	-212.7	721.3	684.1	37.20	19.390			
7,300.0	7,034.9	7,357.5	7,035.2	18.9	21.5	90.03	762.6	-260.3	721.3	682.7	38.64	18.670			
7,350.0	7,047.1	7,407.5	7,047.4	19.7	22.1	90.02	762.6	-308.8	721.3	681.1	40.21	17.939			
7,400.0	7,056.2	7,457.5	7,056.4	20.6	22.8	90.02	762.6	-358.0	721.3	679.4	41.91	17.211			
7,450.0	7,062.0	7,507.5	7,062.2	21.5	23.5	90.01	762.6	-407.7	721.3	677.6	43.72	16.499			
7,500.0	7,064.6	7,557.5	7,064.6	22.4	24.4	90.00	762.6	-457.6	721.3	675.7	45.62	15.813			
7,517.3	7,064.7	7,574.8	7,064.7	22.8	24.7	90.00	762.6	-474.9	721.3	675.1	46.29	15.583			
7,600.0	7,064.4	7,657.5	7,064.4	24.4	26.3	90.00	762.6	-557.6	721.3	671.7	49.66	14.526			
7,700.0	7,064.0	7,757.5	7,064.0	26.6	28.3	90.00	762.6	-657.6	721.3	667.4	53.97	13.367			
7,800.0	7,063.6	7,857.5	7,063.7	28.9	30.5	90.00	762.6	-757.6	721.3	662.8	58.50	12.332			
7,900.0	7,063.3	7,957.5	7,063.3	31.2	32.8	90.00	762.6	-857.6	721.3	658.1	63.20	11.414			
8,000.0	7,062.9	8,057.5	7,062.9	33.7	35.2	90.00	762.6	-957.6	721.3	653.3	68.04	10.601			
8,100.0	7,062.5	8,157.5	7,062.5	36.1	37.6	90.00	762.6	-1,057.6	721.3	648.3	73.00	9.882			
8,200.0	7,062.1	8,257.5	7,062.1	38.7	40.1	90.00	762.6	-1,157.6	721.3	643.3	78.04	9.243			
8,300.0	7,061.7	8,357.5	7,061.7	41.2	42.6	90.00	762.6	-1,257.6	721.3	638.2	83.16	8.675			

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 28Y-214
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 28Y-214	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-234 - Wellbore #1 - Plan #1 (1-27)										Offset Site Error:		0.0 ft
Survey Program: 0-MWDD												Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
8,400.0	7,061.3	8,457.5	7,061.3	43.8	45.1	90.00	762.6	-1,357.6	721.3	633.0	88.33	8.166		
8,500.0	7,061.0	8,557.5	7,061.0	46.5	47.7	90.00	762.6	-1,457.6	721.3	627.8	93.56	7.710		
8,600.0	7,060.6	8,657.5	7,060.6	49.1	50.3	90.00	762.6	-1,557.6	721.3	622.5	98.83	7.299		
8,700.0	7,060.2	8,757.5	7,060.2	51.8	52.9	90.00	762.6	-1,657.6	721.3	617.2	104.14	6.927		
8,800.0	7,059.8	8,857.5	7,059.8	54.4	55.6	90.00	762.6	-1,757.6	721.3	611.9	109.48	6.589		
8,900.0	7,059.4	8,957.5	7,059.4	57.1	58.2	90.00	762.6	-1,857.6	721.3	606.5	114.84	6.281		
9,000.0	7,059.0	9,057.5	7,059.0	59.8	60.9	90.00	762.6	-1,957.6	721.3	601.1	120.23	6.000		
9,100.0	7,058.6	9,157.5	7,058.7	62.5	63.6	90.00	762.6	-2,057.6	721.3	595.7	125.63	5.742		
9,200.0	7,058.3	9,257.5	7,058.3	65.2	66.3	90.00	762.6	-2,157.6	721.3	590.3	131.06	5.504		
9,300.0	7,057.9	9,357.5	7,057.9	68.0	69.0	90.00	762.6	-2,257.6	721.3	584.8	136.50	5.285		
9,400.0	7,057.5	9,457.5	7,057.5	70.7	71.7	90.00	762.6	-2,357.6	721.3	579.4	141.95	5.082		
9,500.0	7,057.1	9,557.5	7,057.1	73.4	74.4	90.00	762.6	-2,457.6	721.3	573.9	147.42	4.893		
9,600.0	7,056.7	9,657.5	7,056.7	76.2	77.1	90.00	762.6	-2,557.6	721.3	568.4	152.89	4.718		
9,700.0	7,056.3	9,757.5	7,056.4	78.9	79.8	90.00	762.6	-2,657.6	721.3	563.0	158.38	4.555		
9,800.0	7,056.0	9,857.5	7,056.0	81.7	82.6	90.00	762.6	-2,757.6	721.3	557.5	163.87	4.402		
9,900.0	7,055.6	9,957.5	7,055.6	84.4	85.3	90.00	762.6	-2,857.6	721.3	552.0	169.38	4.259		
10,000.0	7,055.2	10,057.5	7,055.2	87.2	88.1	90.00	762.6	-2,957.6	721.3	546.5	174.89	4.125		
10,100.0	7,054.8	10,157.5	7,054.8	89.9	90.8	90.00	762.6	-3,057.6	721.3	540.9	180.40	3.998		
10,200.0	7,054.4	10,257.5	7,054.4	92.7	93.6	90.00	762.6	-3,157.6	721.3	535.4	185.93	3.880		
10,300.0	7,054.0	10,357.5	7,054.1	95.5	96.3	90.00	762.6	-3,257.6	721.3	529.9	191.46	3.768		
10,400.0	7,053.7	10,457.5	7,053.7	98.2	99.1	90.00	762.6	-3,357.6	721.3	524.4	196.99	3.662		
10,500.0	7,053.3	10,557.5	7,053.3	101.0	101.8	90.00	762.6	-3,457.6	721.3	518.8	202.53	3.562		
10,600.0	7,052.9	10,657.5	7,052.9	103.8	104.6	90.00	762.6	-3,557.6	721.3	513.3	208.07	3.467		
10,700.0	7,052.5	10,757.5	7,052.5	106.5	107.4	90.00	762.6	-3,657.6	721.3	507.7	213.61	3.377		
10,800.0	7,052.1	10,857.5	7,052.1	109.3	110.1	90.00	762.6	-3,757.6	721.3	502.2	219.16	3.291		
10,900.0	7,051.7	10,957.5	7,051.7	112.1	112.9	90.00	762.6	-3,857.6	721.3	496.6	224.71	3.210		
11,000.0	7,051.4	11,057.5	7,051.4	114.9	115.7	90.00	762.6	-3,957.6	721.3	491.1	230.27	3.133		
11,100.0	7,051.0	11,157.5	7,051.0	117.6	118.4	90.00	762.6	-4,057.6	721.3	485.5	235.83	3.059		
11,200.0	7,050.6	11,257.5	7,050.6	120.4	121.2	90.00	762.6	-4,157.6	721.3	480.0	241.39	2.988		
11,300.0	7,050.2	11,357.5	7,050.2	123.2	124.0	90.00	762.6	-4,257.6	721.3	474.4	246.95	2.921		
11,400.0	7,049.8	11,457.5	7,049.8	126.0	126.8	90.00	762.6	-4,357.6	721.3	468.8	252.52	2.857		
11,500.0	7,049.4	11,557.5	7,049.4	128.8	129.5	90.00	762.6	-4,457.6	721.3	463.3	258.09	2.795		
11,600.0	7,049.0	11,657.5	7,049.1	131.6	132.3	90.00	762.6	-4,557.6	721.3	457.7	263.66	2.736		
11,700.0	7,048.7	11,757.5	7,048.7	134.4	135.1	90.00	762.6	-4,657.6	721.3	452.1	269.23	2.679		
11,800.0	7,048.3	11,857.5	7,048.3	137.1	137.9	90.00	762.6	-4,757.6	721.3	446.5	274.80	2.625		
11,900.0	7,047.9	11,957.5	7,047.9	139.9	140.7	90.00	762.6	-4,857.6	721.3	441.0	280.38	2.573		
12,000.0	7,047.5	12,057.5	7,047.5	142.7	143.4	90.00	762.6	-4,957.6	721.3	435.4	285.95	2.523		
12,100.0	7,047.1	12,157.5	7,047.1	145.5	146.2	90.00	762.6	-5,057.6	721.3	429.8	291.53	2.474		
12,200.0	7,046.7	12,257.5	7,046.8	148.3	149.0	90.00	762.6	-5,157.6	721.3	424.2	297.11	2.428		
12,300.0	7,046.4	12,357.5	7,046.4	151.1	151.8	90.00	762.6	-5,257.6	721.3	418.7	302.69	2.383		
12,400.0	7,046.0	12,457.5	7,046.0	153.9	154.6	90.00	762.6	-5,357.6	721.3	413.1	308.27	2.340		
12,500.0	7,045.6	12,557.5	7,045.6	156.7	157.4	90.00	762.6	-5,457.6	721.3	407.5	313.86	2.298		
12,600.0	7,045.2	12,657.5	7,045.2	159.5	160.2	90.00	762.6	-5,557.6	721.3	401.9	319.44	2.258		
12,700.0	7,044.8	12,757.5	7,044.8	162.3	163.0	90.00	762.6	-5,657.6	721.3	396.3	325.03	2.219		
12,800.0	7,044.4	12,857.5	7,044.5	165.1	165.7	90.00	762.6	-5,757.6	721.3	390.7	330.61	2.182		
12,900.0	7,044.1	12,957.5	7,044.1	167.8	168.5	90.00	762.6	-5,857.6	721.3	385.1	336.20	2.146		
13,000.0	7,043.7	13,057.5	7,043.7	170.6	171.3	90.00	762.6	-5,957.6	721.3	379.6	341.79	2.110		
13,100.0	7,043.3	13,157.5	7,043.3	173.4	174.1	90.00	762.6	-6,057.6	721.3	374.0	347.38	2.077		
13,200.0	7,042.9	13,257.5	7,042.9	176.2	176.9	90.00	762.6	-6,157.6	721.3	368.4	352.97	2.044		
13,300.0	7,042.5	13,357.5	7,042.5	179.0	179.7	90.00	762.6	-6,257.6	721.3	362.8	358.56	2.012		
13,400.0	7,042.1	13,457.5	7,042.1	181.8	182.5	90.00	762.6	-6,357.6	721.3	357.2	364.15	1.981		

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 28Y-214
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 28Y-214	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-234 - Wellbore #1 - Plan #1 (1-27										Offset Site Error:		0.0 ft			
Survey Program: 0-MWD														Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning			
Measured Depth	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	7,041.8	13,557.5	7,041.8	184.6	185.3	90.00	762.6	-6,457.6	721.3	351.6	369.74	1.951					
13,600.0	7,041.4	13,657.5	7,041.4	187.4	188.1	90.00	762.6	-6,557.6	721.3	346.0	375.34	1.922					
13,700.0	7,041.0	13,757.5	7,041.0	190.2	190.9	90.00	762.6	-6,657.6	721.3	340.4	380.93	1.894					
13,800.0	7,040.6	13,857.5	7,040.6	193.0	193.7	90.00	762.6	-6,757.6	721.3	334.8	386.53	1.866					
13,900.0	7,040.2	13,957.5	7,040.2	195.8	196.5	90.00	762.6	-6,857.5	721.3	329.2	392.12	1.840					
14,000.0	7,039.8	14,057.5	7,039.8	198.6	199.3	90.00	762.6	-6,957.5	721.3	323.6	397.72	1.814					
14,100.0	7,039.5	14,157.5	7,039.5	201.4	202.1	90.00	762.6	-7,057.5	721.3	318.0	403.31	1.789					
14,200.0	7,039.1	14,257.5	7,039.1	204.2	204.9	90.00	762.6	-7,157.5	721.3	312.4	408.91	1.764					
14,300.0	7,038.7	14,357.5	7,038.7	207.0	207.6	90.00	762.6	-7,257.5	721.3	306.8	414.51	1.740					
14,400.0	7,038.3	14,457.5	7,038.3	209.8	210.4	90.00	762.6	-7,357.5	721.3	301.2	420.10	1.717					
14,500.0	7,037.9	14,557.5	7,037.9	212.6	213.2	90.00	762.6	-7,457.5	721.3	295.6	425.70	1.694					
14,600.0	7,037.5	14,657.5	7,037.5	215.4	216.0	90.00	762.6	-7,557.5	721.3	290.0	431.30	1.672					
14,700.0	7,037.1	14,757.5	7,037.2	218.2	218.8	90.00	762.6	-7,657.5	721.3	284.4	436.90	1.651					
14,738.2	7,037.0	14,795.7	7,037.0	219.3	219.9	90.00	762.6	-7,695.7	721.3	282.3	439.04	1.643 SF					

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Hunt Federal 28Y-214
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 28Y-214	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	90.00	0.0	92.1	92.1							
100.0	100.0	99.0	99.0	0.1	0.1	90.00	0.0	92.1	92.1	91.9	0.22	411.729				
200.0	200.0	199.0	199.0	0.3	0.3	90.00	0.0	92.1	92.1	91.4	0.67	137.015 CC				
300.0	300.0	298.8	298.7	0.6	0.6	89.48	0.8	92.2	92.2	91.1	1.12	82.216				
400.0	400.0	398.4	398.4	0.8	0.8	87.90	3.4	92.6	92.7	91.1	1.57	58.897 ES				
500.0	500.0	498.0	497.9	1.0	1.0	85.31	7.7	93.2	93.6	91.5	2.03	46.190				
600.0	600.0	597.4	597.1	1.2	1.2	81.77	13.6	94.2	95.2	92.7	2.48	38.384				
700.0	700.0	696.5	695.9	1.5	1.5	77.43	21.3	95.3	97.7	94.8	2.93	33.301				
800.0	800.0	795.4	794.3	1.7	1.8	72.47	30.6	96.7	101.6	98.2	3.39	29.929				
900.0	900.0	893.9	892.2	1.9	2.0	67.14	41.5	98.4	107.0	103.2	3.86	27.723				
1,000.0	1,000.0	992.0	989.5	2.1	2.3	61.70	54.0	100.3	114.3	110.0	4.34	26.350				
1,100.0	1,100.0	1,089.6	1,086.0	2.4	2.6	56.38	68.1	102.5	123.7	118.9	4.84	25.583				
1,200.0	1,200.0	1,186.7	1,181.8	2.6	3.0	51.38	83.8	104.9	135.3	130.0	5.36	25.259				
1,300.0	1,300.0	1,283.2	1,276.8	2.8	3.3	46.80	100.9	107.5	149.1	143.2	5.90	25.257 SF				
1,400.0	1,400.0	1,379.2	1,370.9	3.0	3.7	42.71	119.5	110.3	165.1	158.6	6.48	25.486				
1,500.0	1,500.0	1,474.4	1,463.9	3.3	4.1	39.10	139.5	113.4	183.2	176.1	7.08	25.881				
1,600.0	1,600.0	1,569.0	1,556.0	3.5	4.5	-46.05	160.9	116.6	202.7	195.5	7.28	27.846				
1,700.0	1,700.0	1,663.0	1,647.1	3.7	4.9	-49.12	183.6	120.1	223.2	215.5	7.73	28.880				
1,800.0	1,799.9	1,756.2	1,737.1	3.9	5.4	-52.06	207.6	123.8	244.8	236.6	8.18	29.930				
1,900.0	1,899.7	1,850.6	1,827.9	4.1	5.9	-54.91	233.2	127.7	267.3	258.7	8.63	30.972				
2,000.0	1,999.4	1,947.1	1,920.6	4.3	6.4	-57.65	259.6	131.7	289.8	280.7	9.09	31.877				
2,054.5	2,053.7	1,999.6	1,971.1	4.4	6.7	-59.07	274.0	133.9	302.0	292.6	9.34	32.317				
2,100.0	2,098.9	2,043.5	2,013.3	4.6	6.9	-60.29	286.0	135.7	312.2	302.6	9.56	32.666				
2,200.0	2,198.5	2,139.9	2,105.9	4.8	7.4	-62.72	312.3	139.7	335.0	325.0	10.03	33.403				
2,300.0	2,298.0	2,236.3	2,198.6	5.0	7.9	-64.84	338.7	143.8	358.4	347.9	10.51	34.089				
2,400.0	2,397.5	2,332.7	2,291.3	5.3	8.5	-66.70	365.0	147.8	382.1	371.1	11.01	34.721				
2,500.0	2,497.0	2,429.2	2,383.9	5.5	9.0	-68.34	391.4	151.8	406.2	394.7	11.51	35.299				
2,600.0	2,596.6	2,525.6	2,476.6	5.8	9.5	-69.80	417.7	155.8	430.6	418.6	12.02	35.827				
2,700.0	2,696.1	2,622.0	2,569.2	6.0	10.0	-71.11	444.1	159.9	455.3	442.7	12.54	36.308				
2,800.0	2,795.6	2,718.4	2,661.9	6.3	10.6	-72.28	470.5	163.9	480.1	467.0	13.07	36.746				
2,900.0	2,895.2	2,814.8	2,754.6	6.6	11.1	-73.34	496.8	167.9	505.1	491.5	13.60	37.144				
3,000.0	2,994.7	2,911.3	2,847.2	6.8	11.6	-74.30	523.2	171.9	530.2	516.1	14.14	37.508				
3,100.0	3,094.2	3,007.7	2,939.9	7.1	12.2	-75.17	549.5	175.9	555.5	540.8	14.68	37.840				
3,200.0	3,193.8	3,104.1	3,032.5	7.4	12.7	-75.97	575.9	180.0	580.9	565.7	15.23	38.143				
3,300.0	3,293.3	3,200.5	3,125.2	7.6	13.2	-76.70	602.2	184.0	606.4	590.6	15.78	38.421				
3,400.0	3,392.8	3,296.9	3,217.9	7.9	13.8	-77.37	628.6	188.0	632.0	615.6	16.34	38.676				
3,500.0	3,492.4	3,393.4	3,310.5	8.2	14.3	-77.99	655.0	192.0	657.6	640.7	16.90	38.911				
3,600.0	3,591.9	3,489.8	3,403.2	8.5	14.8	-78.56	681.3	196.1	683.3	665.8	17.46	39.127				
3,700.0	3,691.4	3,586.2	3,495.8	8.7	15.4	-79.09	707.7	200.1	709.1	691.1	18.03	39.327				
3,800.0	3,791.0	3,682.6	3,588.5	9.0	15.9	-79.59	734.0	204.1	734.9	716.3	18.60	39.512				
3,900.0	3,890.5	3,779.0	3,681.2	9.3	16.4	-80.05	760.4	208.1	760.8	741.6	19.17	39.683				
4,000.0	3,990.0	3,875.5	3,773.8	9.6	17.0	-80.48	786.7	212.1	786.7	766.9	19.74	39.843				
4,100.0	4,089.6	3,971.9	3,866.5	9.8	17.5	-80.88	813.1	216.2	812.6	792.3	20.32	39.991				
4,200.0	4,189.1	4,068.3	3,959.1	10.1	18.0	-81.26	839.5	220.2	838.6	817.7	20.90	40.129				
4,300.0	4,288.6	4,164.7	4,051.8	10.4	18.6	-81.62	865.8	224.2	864.7	843.2	21.48	40.258				
4,400.0	4,388.2	4,261.1	4,144.5	10.7	19.1	-81.95	892.2	228.2	890.7	868.6	22.06	40.379				
4,500.0	4,487.7	4,357.6	4,237.1	11.0	19.6	-82.27	918.5	232.3	916.8	894.1	22.64	40.492				
4,600.0	4,587.2	4,454.0	4,329.8	11.2	20.2	-82.57	944.9	236.3	942.9	919.7	23.22	40.598				
4,643.9	4,630.9	4,496.3	4,370.4	11.4	20.4	-82.69	956.5	238.0	954.3	930.9	23.48	40.642				
4,700.0	4,686.8	4,550.4	4,422.4	11.5	20.7	-83.05	971.2	240.3	969.1	945.3	23.80	40.719				
4,800.0	4,786.6	4,646.8	4,515.1	11.7	21.3	-83.56	997.6	244.3	995.5	971.2	24.32	40.938				

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 28Y-214
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 28Y-214	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
Survey Program: 0-MWD														
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)			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Hunt Federal 28Y-214
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 28Y-214	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	90.01	0.0	30.7	30.7					
100.0	100.0	100.0	100.0	0.1	0.1	90.01	0.0	30.7	30.7	30.5	0.22	136.558		
200.0	200.0	200.0	200.0	0.3	0.3	90.01	0.0	30.7	30.7	30.0	0.67	45.519		
300.0	300.0	300.0	300.0	0.6	0.6	90.01	0.0	30.7	30.7	29.6	1.12	27.312		
400.0	400.0	400.0	400.0	0.8	0.8	90.01	0.0	30.7	30.7	29.1	1.57	19.508		
500.0	500.0	500.0	500.0	1.0	1.0	90.01	0.0	30.7	30.7	28.7	2.02	15.173		
600.0	600.0	600.0	600.0	1.2	1.2	90.01	0.0	30.7	30.7	28.2	2.47	12.414		
700.0	700.0	700.0	700.0	1.5	1.5	90.01	0.0	30.7	30.7	27.8	2.92	10.504		
800.0	800.0	800.0	800.0	1.7	1.7	90.01	0.0	30.7	30.7	27.3	3.37	9.104		
900.0	900.0	900.0	900.0	1.9	1.9	90.01	0.0	30.7	30.7	26.9	3.82	8.033		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	90.01	0.0	30.7	30.7	26.4	4.27	7.187 CC		
1,100.0	1,100.0	1,099.7	1,099.7	2.4	2.4	88.68	0.7	31.2	31.2	26.5	4.72	6.610		
1,200.0	1,200.0	1,199.3	1,199.3	2.6	2.6	84.93	2.9	32.6	32.7	27.6	5.16	6.340		
1,300.0	1,300.0	1,298.8	1,298.7	2.8	2.8	79.47	6.5	35.0	35.6	30.0	5.61	6.346		
1,400.0	1,400.0	1,398.2	1,397.9	3.0	3.0	73.23	11.5	38.3	40.1	34.0	6.06	6.611		
1,500.0	1,500.0	1,497.3	1,496.7	3.3	3.3	67.07	18.0	42.6	46.3	39.8	6.51	7.113		
1,600.0	1,600.0	1,596.8	1,595.8	3.5	3.5	-20.43	25.4	47.4	53.2	46.2	6.94	7.661		
1,700.0	1,700.0	1,696.6	1,695.1	3.7	3.7	-25.39	32.8	52.3	58.8	51.4	7.36	7.984		
1,800.0	1,799.9	1,796.3	1,794.5	3.9	4.0	-30.24	40.3	57.2	63.3	55.5	7.79	8.121		
1,900.0	1,899.7	1,896.1	1,893.9	4.1	4.2	-35.26	47.7	62.1	66.8	58.5	8.23	8.114		
2,000.0	1,999.4	1,995.8	1,993.2	4.3	4.5	-40.67	55.1	67.0	69.4	60.7	8.67	8.000		
2,054.5	2,053.7	2,050.2	2,047.4	4.4	4.6	-43.85	59.2	69.7	70.5	61.6	8.92	7.907		
2,100.0	2,098.9	2,095.6	2,092.6	4.6	4.7	-46.55	62.5	71.9	71.5	62.3	9.13	7.830		
2,200.0	2,198.5	2,195.3	2,191.9	4.8	5.0	-52.21	70.0	76.8	74.1	64.5	9.60	7.721		
2,300.0	2,298.0	2,295.0	2,291.2	5.0	5.3	-57.43	77.4	81.7	77.4	67.3	10.08	7.681		
2,400.0	2,397.5	2,394.7	2,390.5	5.3	5.5	-62.19	84.8	86.6	81.3	70.7	10.57	7.692		
2,500.0	2,497.0	2,494.4	2,489.8	5.5	5.8	-66.49	92.2	91.5	85.7	74.7	11.07	7.742		
2,600.0	2,596.6	2,594.1	2,589.1	5.8	6.1	-70.35	99.7	96.4	90.6	79.0	11.58	7.820		
2,700.0	2,696.1	2,693.8	2,688.4	6.0	6.3	-73.81	107.1	101.2	95.8	83.7	12.10	7.918		
2,800.0	2,795.6	2,793.5	2,787.7	6.3	6.6	-76.90	114.5	106.1	101.3	88.7	12.62	8.030		
2,900.0	2,895.2	2,893.2	2,887.0	6.6	6.9	-79.66	121.9	111.0	107.1	94.0	13.14	8.150		
3,000.0	2,994.7	2,992.9	2,986.3	6.8	7.1	-82.14	129.4	115.9	113.1	99.5	13.67	8.276		
3,100.0	3,094.2	3,092.6	3,085.6	7.1	7.4	-84.36	136.8	120.8	119.3	105.1	14.20	8.404		
3,200.0	3,193.8	3,192.3	3,184.9	7.4	7.7	-86.36	144.2	125.7	125.7	111.0	14.73	8.533		
3,300.0	3,293.3	3,292.0	3,284.3	7.6	7.9	-88.16	151.6	130.6	132.2	117.0	15.27	8.661		
3,400.0	3,392.8	3,391.7	3,383.6	7.9	8.2	-89.80	159.1	135.5	138.8	123.0	15.80	8.787		
3,500.0	3,492.4	3,491.4	3,482.9	8.2	8.5	-91.29	166.5	140.4	145.6	129.2	16.34	8.910		
3,600.0	3,591.9	3,591.1	3,582.2	8.5	8.7	-92.64	173.9	145.3	152.4	135.5	16.87	9.031		
3,700.0	3,691.4	3,690.8	3,681.5	8.7	9.0	-93.88	181.3	150.2	159.3	141.9	17.41	9.148		
3,800.0	3,791.0	3,790.6	3,780.8	9.0	9.3	-95.01	188.8	155.0	166.2	148.3	17.95	9.261		
3,900.0	3,890.5	3,890.3	3,880.1	9.3	9.6	-96.05	196.2	159.9	173.3	154.8	18.49	9.371		
4,000.0	3,990.0	3,990.0	3,979.4	9.6	9.8	-97.01	203.6	164.8	180.3	161.3	19.03	9.477		
4,100.0	4,089.6	4,089.7	4,078.7	9.8	10.1	-97.90	211.0	169.7	187.5	167.9	19.57	9.580		
4,200.0	4,189.1	4,189.4	4,178.0	10.1	10.4	-98.73	218.5	174.6	194.6	174.5	20.11	9.679		
4,300.0	4,288.6	4,289.1	4,277.3	10.4	10.6	-99.49	225.9	179.5	201.8	181.2	20.65	9.774		
4,400.0	4,388.2	4,388.8	4,376.6	10.7	10.9	-100.20	233.3	184.4	209.1	187.9	21.19	9.866		
4,500.0	4,487.7	4,488.5	4,476.0	11.0	11.2	-100.87	240.7	189.3	216.3	194.6	21.73	9.955		
4,600.0	4,587.2	4,588.2	4,575.3	11.2	11.5	-101.49	248.2	194.2	223.6	201.3	22.27	10.040		
4,643.9	4,630.9	4,631.9	4,618.8	11.4	11.6	-101.75	251.4	196.3	226.8	204.3	22.51	10.077		
4,700.0	4,686.8	4,688.5	4,675.2	11.5	11.7	-102.04	255.6	199.1	230.8	208.0	22.79	10.127		
4,800.0	4,786.6	4,792.1	4,778.5	11.7	11.9	-102.37	261.8	203.2	236.5	213.3	23.20	10.192		

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 28Y-214
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 28Y-214	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:	0.0ft
Survey Program: 0-MWD													Offset Well Error:	0.0ft
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	4,886.5	4,895.8	4,882.1	11.9	12.1	-102.57	265.6	205.7	240.1	216.5	23.59	10.178		
5,000.0	4,986.4	4,999.6	4,985.9	12.1	12.3	-102.64	267.1	206.7	241.4	217.5	23.94	10.086		
5,013.6	5,000.0	5,013.7	5,000.0	12.1	12.3	-20.69	267.2	206.7	241.5	218.9	22.52	10.720		
5,100.0	5,086.4	5,100.2	5,086.4	12.2	12.5	-20.69	267.2	206.7	241.5	218.6	22.86	10.564		
5,200.0	5,186.4	5,200.2	5,186.4	12.4	12.7	-20.69	267.2	206.7	241.5	218.2	23.27	10.374		
5,300.0	5,286.4	5,300.2	5,286.4	12.6	12.9	-20.69	267.2	206.7	241.5	217.8	23.69	10.191		
5,400.0	5,386.4	5,400.2	5,386.4	12.8	13.1	-20.69	267.2	206.7	241.5	217.3	24.11	10.014		
5,500.0	5,486.4	5,500.2	5,486.4	13.0	13.3	-20.69	267.2	206.7	241.5	216.9	24.53	9.842		
5,600.0	5,586.4	5,600.2	5,586.4	13.2	13.5	-20.69	267.2	206.7	241.5	216.5	24.95	9.676		
5,700.0	5,686.4	5,700.2	5,686.4	13.4	13.7	-20.69	267.2	206.7	241.5	216.1	25.38	9.515		
5,800.0	5,786.4	5,800.2	5,786.4	13.6	13.9	-20.69	267.2	206.7	241.5	215.7	25.80	9.358		
5,900.0	5,886.4	5,900.2	5,886.4	13.8	14.1	-20.69	267.2	206.7	241.5	215.2	26.22	9.207		
6,000.0	5,986.4	6,000.2	5,986.4	14.0	14.3	-20.69	267.2	206.7	241.5	214.8	26.65	9.060		
6,100.0	6,086.4	6,100.2	6,086.4	14.2	14.5	-20.69	267.2	206.7	241.5	214.4	27.08	8.917		
6,200.0	6,186.4	6,200.2	6,186.4	14.4	14.7	-20.69	267.2	206.7	241.5	213.9	27.50	8.779		
6,300.0	6,286.4	6,300.2	6,286.4	14.6	14.9	-20.69	267.2	206.7	241.5	213.5	27.93	8.645		
6,314.3	6,300.8	6,314.5	6,300.8	14.7	14.9	-20.69	267.2	206.7	241.5	213.5	27.99	8.626		
6,350.0	6,336.4	6,350.2	6,336.4	14.7	15.0	69.52	267.2	206.7	241.2	211.8	29.37	8.211		
6,400.0	6,386.3	6,400.0	6,386.3	14.8	15.1	70.50	267.2	206.7	239.8	210.3	29.53	8.120		
6,450.0	6,435.7	6,445.5	6,431.7	14.8	15.2	71.88	267.2	205.6	237.8	208.2	29.65	8.022		
6,500.0	6,484.6	6,490.8	6,476.9	14.9	15.2	73.34	267.2	201.8	235.9	206.2	29.73	7.936		
6,550.0	6,532.7	6,536.5	6,522.1	14.9	15.3	74.89	267.2	195.3	234.1	204.3	29.79	7.858		
6,600.0	6,579.8	6,582.5	6,567.2	14.9	15.4	76.53	267.2	186.0	232.4	202.6	29.85	7.786		
6,650.0	6,625.7	6,628.9	6,612.0	15.0	15.4	78.24	267.2	173.9	230.8	200.9	29.90	7.720		
6,700.0	6,670.3	6,675.7	6,656.3	15.0	15.4	80.03	267.2	159.0	229.4	199.5	29.96	7.656		
6,750.0	6,713.2	6,722.9	6,700.0	15.0	15.5	81.88	267.2	141.3	228.2	198.2	30.05	7.594		
6,800.0	6,754.4	6,770.5	6,742.9	15.1	15.5	83.79	267.2	120.7	227.2	197.1	30.18	7.531		
6,850.0	6,793.6	6,818.5	6,784.8	15.2	15.6	85.74	267.2	97.2	226.5	196.2	30.35	7.464		
6,900.0	6,830.7	6,867.1	6,825.6	15.4	15.6	87.73	267.2	70.8	226.1	195.5	30.58	7.392		
6,950.0	6,865.6	6,916.1	6,865.0	15.5	15.6	89.75	267.2	41.7	225.9	195.0	30.89	7.312		
6,956.2	6,869.8	6,922.3	6,869.8	15.6	15.6	90.00	267.2	37.8	225.9	194.9	30.94	7.301		
7,000.0	6,898.0	6,965.6	6,902.8	15.8	15.7	91.77	267.2	9.7	226.0	194.7	31.29	7.223		
7,050.0	6,927.9	7,015.7	6,938.8	16.1	15.8	93.80	267.2	-25.1	226.4	194.6	31.78	7.124		
7,100.0	6,955.1	7,066.3	6,972.8	16.5	16.1	95.81	267.2	-62.5	227.1	194.7	32.38	7.013		
7,150.0	6,979.5	7,117.5	7,004.7	17.0	16.5	97.79	267.2	-102.6	228.0	194.9	33.09	6.891		
7,200.0	7,001.0	7,169.3	7,034.0	17.6	16.9	99.74	267.2	-145.2	229.3	195.3	33.92	6.758		
7,250.0	7,019.4	7,221.6	7,060.7	18.2	17.4	101.63	267.2	-190.2	230.7	195.9	34.87	6.616		
7,300.0	7,034.9	7,274.5	7,084.5	18.9	18.1	103.46	267.2	-237.5	232.4	196.5	35.94	6.467		
7,350.0	7,047.1	7,328.1	7,105.2	19.7	18.8	105.22	267.2	-286.9	234.3	197.2	37.11	6.313		
7,400.0	7,056.2	7,382.2	7,122.6	20.6	19.6	106.89	267.2	-338.2	236.3	197.9	38.39	6.155		
7,450.0	7,062.0	7,437.0	7,136.4	21.5	20.5	108.48	267.2	-391.1	238.4	198.6	39.75	5.996		
7,500.0	7,064.6	7,492.3	7,146.4	22.4	21.5	109.97	267.2	-445.5	240.6	199.4	41.20	5.838		
7,517.3	7,064.7	7,511.5	7,149.0	22.8	21.8	110.46	267.2	-464.6	241.3	199.6	41.72	5.784		
7,600.0	7,064.4	7,604.8	7,154.7	24.4	23.6	111.78	267.2	-557.6	243.2	198.6	44.63	5.450		
7,700.0	7,064.0	7,705.1	7,154.3	26.6	25.7	111.78	267.2	-658.0	243.2	194.6	48.59	5.006		
7,800.0	7,063.6	7,805.1	7,153.9	28.9	27.9	111.77	267.2	-758.0	243.2	190.5	52.77	4.609		
7,900.0	7,063.3	7,905.1	7,153.5	31.2	30.2	111.77	267.2	-858.0	243.2	186.1	57.12	4.258		
8,000.0	7,062.9	8,005.1	7,153.1	33.7	32.6	111.77	267.2	-958.0	243.2	181.6	61.61	3.948		
8,100.0	7,062.5	8,105.1	7,152.7	36.1	35.1	111.76	267.2	-1,058.0	243.2	177.0	66.21	3.673		
8,200.0	7,062.1	8,205.1	7,152.3	38.7	37.6	111.76	267.2	-1,158.0	243.2	172.3	70.91	3.430		

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 28Y-214
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 28Y-214	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	7,061.7	8,305.1	7,151.9	41.2	40.1	111.75	267.2	-1,258.0	243.2	167.5	75.67	3.214				
8,400.0	7,061.3	8,405.1	7,151.5	43.8	42.7	111.75	267.2	-1,358.0	243.2	162.7	80.49	3.021				
8,500.0	7,061.0	8,505.1	7,151.1	46.5	45.3	111.75	267.2	-1,458.0	243.2	157.8	85.37	2.849				
8,600.0	7,060.6	8,605.1	7,150.6	49.1	47.9	111.74	267.2	-1,558.0	243.2	152.9	90.28	2.694				
8,700.0	7,060.2	8,705.1	7,150.2	51.8	50.5	111.74	267.2	-1,657.9	243.2	147.9	95.23	2.554				
8,800.0	7,059.8	8,805.1	7,149.8	54.4	53.2	111.73	267.2	-1,757.9	243.2	143.0	100.21	2.427				
8,900.0	7,059.4	8,905.1	7,149.4	57.1	55.9	111.73	267.2	-1,857.9	243.2	137.9	105.21	2.311				
9,000.0	7,059.0	9,005.1	7,149.0	59.8	58.6	111.73	267.2	-1,957.9	243.2	132.9	110.24	2.206				
9,100.0	7,058.6	9,105.1	7,148.6	62.5	61.3	111.72	267.2	-2,057.9	243.1	127.9	115.29	2.109				
9,200.0	7,058.3	9,205.1	7,148.2	65.2	64.0	111.72	267.2	-2,157.9	243.1	122.8	120.35	2.020				
9,300.0	7,057.9	9,305.1	7,147.8	68.0	66.7	111.72	267.2	-2,257.9	243.1	117.7	125.43	1.938				
9,400.0	7,057.5	9,405.1	7,147.4	70.7	69.4	111.71	267.2	-2,357.9	243.1	112.6	130.53	1.863				
9,500.0	7,057.1	9,505.1	7,147.0	73.4	72.1	111.71	267.2	-2,457.9	243.1	107.5	135.63	1.793				
9,600.0	7,056.7	9,605.1	7,146.6	76.2	74.9	111.70	267.2	-2,557.9	243.1	102.4	140.75	1.727				
9,700.0	7,056.3	9,705.1	7,146.2	78.9	77.6	111.70	267.2	-2,657.9	243.1	97.2	145.87	1.667				
9,800.0	7,056.0	9,805.1	7,145.8	81.7	80.4	111.70	267.2	-2,757.9	243.1	92.1	151.00	1.610				
9,900.0	7,055.6	9,905.1	7,145.4	84.4	83.1	111.69	267.2	-2,857.9	243.1	87.0	156.14	1.557				
10,000.0	7,055.2	10,005.1	7,145.0	87.2	85.9	111.69	267.2	-2,957.9	243.1	81.8	161.29	1.507				
10,100.0	7,054.8	10,105.1	7,144.6	89.9	88.6	111.68	267.2	-3,057.9	243.1	76.6	166.45	1.460	Level 3			
10,200.0	7,054.4	10,205.1	7,144.2	92.7	91.4	111.68	267.2	-3,157.9	243.1	71.5	171.61	1.416	Level 3			
10,300.0	7,054.0	10,305.1	7,143.8	95.5	94.1	111.68	267.2	-3,257.9	243.1	66.3	176.77	1.375	Level 3			
10,400.0	7,053.7	10,405.1	7,143.4	98.2	96.9	111.67	267.2	-3,357.9	243.1	61.1	181.94	1.336	Level 3			
10,500.0	7,053.3	10,505.1	7,143.0	101.0	99.7	111.67	267.2	-3,457.9	243.1	55.9	187.12	1.299	Level 3			
10,600.0	7,052.9	10,605.1	7,142.6	103.8	102.4	111.67	267.2	-3,557.9	243.0	50.8	192.29	1.264	Level 3			
10,700.0	7,052.5	10,705.1	7,142.2	106.5	105.2	111.66	267.2	-3,657.9	243.0	45.6	197.48	1.231	Level 2			
10,800.0	7,052.1	10,805.1	7,141.8	109.3	108.0	111.66	267.2	-3,757.9	243.0	40.4	202.66	1.199	Level 2			
10,900.0	7,051.7	10,905.1	7,141.4	112.1	110.8	111.65	267.2	-3,857.9	243.0	35.2	207.85	1.169	Level 2			
11,000.0	7,051.4	11,005.1	7,141.0	114.9	113.5	111.65	267.2	-3,957.9	243.0	30.0	213.05	1.141	Level 2			
11,100.0	7,051.0	11,105.1	7,140.6	117.6	116.3	111.65	267.2	-4,057.9	243.0	24.8	218.24	1.114	Level 2			
11,200.0	7,050.6	11,205.1	7,140.2	120.4	119.1	111.64	267.2	-4,157.9	243.0	19.6	223.44	1.088	Level 2			
11,300.0	7,050.2	11,305.1	7,139.8	123.2	121.9	111.64	267.2	-4,257.9	243.0	14.4	228.64	1.063	Level 2			
11,400.0	7,049.8	11,405.1	7,139.4	126.0	124.7	111.64	267.2	-4,357.9	243.0	9.2	233.84	1.039	Level 2			
11,500.0	7,049.4	11,505.1	7,139.0	128.8	127.4	111.63	267.2	-4,457.9	243.0	3.9	239.05	1.016	Level 2			
11,600.0	7,049.0	11,605.1	7,138.6	131.6	130.2	111.63	267.2	-4,557.9	243.0	-1.3	244.26	0.995	Level 1			
11,700.0	7,048.7	11,705.1	7,138.2	134.4	133.0	111.62	267.2	-4,657.9	243.0	-6.5	249.47	0.974	Level 1			
11,800.0	7,048.3	11,805.1	7,137.8	137.1	135.8	111.62	267.2	-4,757.9	243.0	-11.7	254.68	0.954	Level 1			
11,900.0	7,047.9	11,905.1	7,137.4	139.9	138.6	111.62	267.2	-4,857.9	243.0	-16.9	259.89	0.935	Level 1			
12,000.0	7,047.5	12,005.1	7,137.0	142.7	141.4	111.61	267.2	-4,957.9	243.0	-22.1	265.11	0.916	Level 1			
12,100.0	7,047.1	12,105.1	7,136.6	145.5	144.2	111.61	267.2	-5,057.9	243.0	-27.4	270.32	0.899	Level 1			
12,200.0	7,046.7	12,205.1	7,136.2	148.3	146.9	111.60	267.2	-5,157.9	242.9	-32.6	275.54	0.882	Level 1			
12,300.0	7,046.4	12,305.1	7,135.8	151.1	149.7	111.60	267.2	-5,257.9	242.9	-37.8	280.76	0.865	Level 1			
12,400.0	7,046.0	12,405.1	7,135.4	153.9	152.5	111.60	267.2	-5,357.9	242.9	-43.0	285.98	0.849	Level 1			
12,500.0	7,045.6	12,505.1	7,135.0	156.7	155.3	111.59	267.2	-5,457.9	242.9	-48.3	291.21	0.834	Level 1			
12,600.0	7,045.2	12,605.1	7,134.6	159.5	158.1	111.59	267.2	-5,557.9	242.9	-53.5	296.43	0.819	Level 1			
12,700.0	7,044.8	12,705.1	7,134.2	162.3	160.9	111.59	267.2	-5,657.9	242.9	-58.7	301.66	0.805	Level 1			
12,800.0	7,044.4	12,805.1	7,133.8	165.1	163.7	111.58	267.2	-5,757.9	242.9	-64.0	306.88	0.792	Level 1			
12,900.0	7,044.1	12,905.1	7,133.4	167.8	166.5	111.58	267.2	-5,857.9	242.9	-69.2	312.11	0.778	Level 1			
13,000.0	7,043.7	13,005.1	7,133.0	170.6	169.3	111.57	267.2	-5,957.9	242.9	-74.4	317.34	0.765	Level 1			
13,100.0	7,043.3	13,105.1	7,132.6	173.4	172.1	111.57	267.2	-6,057.9	242.9	-79.7	322.57	0.753	Level 1			
13,200.0	7,042.9	13,205.1	7,132.2	176.2	174.9	111.57	267.2	-6,157.9	242.9	-84.9	327.80	0.741	Level 1			
13,300.0	7,042.5	13,305.1	7,131.8	179.0	177.7	111.56	267.2	-6,257.9	242.9	-90.2	333.03	0.729	Level 1			

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Hunt Federal 28Y-214
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 28Y-214	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							
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)			
13,400.0	7,042.1	13,405.1	7,131.4	181.8	180.5	111.56	267.2	-6,357.9	242.9	-95.4	338.26	0.718	Level 1	
13,500.0	7,041.8	13,505.1	7,131.0	184.6	183.3	111.55	267.2	-6,457.9	242.9	-100.6	343.50	0.707	Level 1	
13,600.0	7,041.4	13,605.1	7,130.6	187.4	186.1	111.55	267.2	-6,557.9	242.9	-105.9	348.73	0.696	Level 1	
13,700.0	7,041.0	13,705.1	7,130.2	190.2	188.9	111.55	267.2	-6,657.9	242.9	-111.1	353.97	0.686	Level 1	
13,800.0	7,040.6	13,805.1	7,129.8	193.0	191.6	111.54	267.2	-6,757.9	242.8	-116.4	359.20	0.676	Level 1	
13,900.0	7,040.2	13,905.1	7,129.4	195.8	194.4	111.54	267.2	-6,857.9	242.8	-121.6	364.44	0.666	Level 1	
14,000.0	7,039.8	14,005.1	7,129.0	198.6	197.2	111.54	267.2	-6,957.9	242.8	-126.8	369.68	0.657	Level 1	
14,100.0	7,039.5	14,105.1	7,128.6	201.4	200.0	111.53	267.2	-7,057.9	242.8	-132.1	374.92	0.648	Level 1	
14,200.0	7,039.1	14,205.1	7,128.2	204.2	202.8	111.53	267.2	-7,157.9	242.8	-137.3	380.16	0.639	Level 1	
14,300.0	7,038.7	14,305.1	7,127.8	207.0	205.6	111.52	267.2	-7,257.9	242.8	-142.6	385.40	0.630	Level 1	
14,400.0	7,038.3	14,405.1	7,127.4	209.8	208.4	111.52	267.2	-7,357.9	242.8	-147.8	390.64	0.622	Level 1	
14,500.0	7,037.9	14,505.1	7,127.0	212.6	211.2	111.52	267.2	-7,457.9	242.8	-153.1	395.88	0.613	Level 1	
14,600.0	7,037.5	14,605.1	7,126.6	215.4	214.0	111.51	267.2	-7,557.9	242.8	-158.3	401.12	0.605	Level 1	
14,700.0	7,037.1	14,705.1	7,126.2	218.2	216.8	111.51	267.2	-7,657.9	242.8	-163.6	406.36	0.597	Level 1	
14,738.2	7,037.0	14,743.3	7,126.0	219.3	217.9	111.51	267.2	-7,696.1	242.8	-165.6	408.36	0.595 Level 1, ES, SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Hunt Federal 28Y-214
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 28Y-214	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	-90.03	0.0	-27.9	27.9					
100.0	100.0	100.0	100.0	0.1	0.1	-90.03	0.0	-27.9	27.9	27.7	0.22	124.144		
200.0	200.0	200.0	200.0	0.3	0.3	-90.03	0.0	-27.9	27.9	27.2	0.67	41.381		
300.0	300.0	300.0	300.0	0.6	0.6	-90.03	0.0	-27.9	27.9	26.8	1.12	24.829		
400.0	400.0	400.0	400.0	0.8	0.8	-90.03	0.0	-27.9	27.9	26.3	1.57	17.735		
500.0	500.0	500.0	500.0	1.0	1.0	-90.03	0.0	-27.9	27.9	25.9	2.02	13.794		
600.0	600.0	600.0	600.0	1.2	1.2	-90.03	0.0	-27.9	27.9	25.4	2.47	11.286		
700.0	700.0	700.0	700.0	1.5	1.5	-90.03	0.0	-27.9	27.9	25.0	2.92	9.550		
800.0	800.0	800.0	800.0	1.7	1.7	-90.03	0.0	-27.9	27.9	24.5	3.37	8.276		
900.0	900.0	900.0	900.0	1.9	1.9	-90.03	0.0	-27.9	27.9	24.1	3.82	7.303		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-90.03	0.0	-27.9	27.9	23.6	4.27	6.534		
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	-90.03	0.0	-27.9	27.9	23.2	4.72	5.912		
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	-90.03	0.0	-27.9	27.9	22.7	5.17	5.398		
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	-90.03	0.0	-27.9	27.9	22.3	5.62	4.966		
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	-90.03	0.0	-27.9	27.9	21.8	6.07	4.598		
1,500.0	1,500.0	1,500.0	1,500.0	3.3	3.3	-90.03	0.0	-27.9	27.9	21.4	6.52	4.281 CC, ES		
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	-172.22	0.0	-27.9	28.8	21.8	6.95	4.136		
1,700.0	1,700.0	1,700.0	1,700.0	3.7	3.7	-172.86	0.0	-27.9	31.4	24.0	7.38	4.250		
1,800.0	1,799.9	1,799.9	1,799.9	3.9	3.9	-173.73	0.0	-27.9	35.7	27.9	7.80	4.574		
1,900.0	1,899.7	1,899.7	1,899.7	4.1	4.2	-174.64	0.0	-27.9	41.8	33.5	8.23	5.076		
2,000.0	1,999.4	1,999.4	1,999.4	4.3	4.4	-175.48	0.0	-27.9	49.6	40.9	8.65	5.730		
2,054.5	2,053.7	2,053.7	2,053.7	4.4	4.5	-175.89	0.0	-27.9	54.6	45.7	8.88	6.143		
2,100.0	2,098.9	2,098.9	2,098.9	4.6	4.6	-176.20	0.0	-27.9	59.0	49.9	9.08	6.492		
2,200.0	2,198.5	2,198.5	2,198.5	4.8	4.8	-176.73	0.0	-27.9	68.6	59.1	9.52	7.208		
2,300.0	2,298.0	2,298.0	2,298.0	5.0	5.1	-177.14	0.0	-27.9	78.3	68.3	9.96	7.859		
2,400.0	2,397.5	2,397.5	2,397.5	5.3	5.3	-177.45	0.0	-27.9	87.9	77.5	10.40	8.455		
2,500.0	2,497.0	2,497.0	2,497.0	5.5	5.5	-177.70	0.0	-27.9	97.6	86.7	10.84	9.001		
2,600.0	2,596.6	2,598.2	2,598.2	5.8	5.7	-178.11	-0.3	-27.1	106.5	95.2	11.27	9.451		
2,700.0	2,696.1	2,699.7	2,699.6	6.0	5.9	-178.87	-1.2	-24.6	113.8	102.2	11.68	9.747		
2,800.0	2,795.6	2,801.3	2,801.2	6.3	6.1	-179.94	-2.8	-20.5	119.6	107.5	12.09	9.892		
2,900.0	2,895.2	2,903.1	2,902.8	6.6	6.3	178.69	-4.9	-14.6	123.9	111.4	12.52	9.902		
3,000.0	2,994.7	3,004.9	3,004.2	6.8	6.5	176.99	-7.7	-7.0	126.8	113.8	12.94	9.794		
3,100.0	3,094.2	3,106.7	3,105.6	7.1	6.7	174.93	-11.1	2.2	128.2	114.8	13.38	9.583		
3,200.0	3,193.8	3,208.4	3,206.6	7.4	7.0	172.45	-15.2	13.1	128.4	114.6	13.83	9.285		
3,300.0	3,293.3	3,310.0	3,307.3	7.6	7.2	169.49	-19.8	25.7	127.4	113.1	14.29	8.915		
3,400.0	3,392.8	3,410.5	3,406.7	7.9	7.4	166.08	-24.9	39.5	125.6	110.9	14.77	8.505		
3,500.0	3,492.4	3,510.2	3,505.3	8.2	7.7	162.55	-30.1	53.4	124.2	109.0	15.27	8.134		
3,600.0	3,591.9	3,609.9	3,603.9	8.5	8.0	158.95	-35.2	67.3	123.3	107.5	15.79	7.807		
3,700.0	3,691.4	3,709.6	3,702.5	8.7	8.2	155.32	-40.3	81.2	122.8	106.5	16.34	7.521		
3,738.2	3,729.5	3,747.7	3,740.2	8.8	8.4	153.93	-42.3	86.5	122.8	106.3	16.55	7.421		
3,800.0	3,791.0	3,809.2	3,801.0	9.0	8.5	151.67	-45.5	95.1	122.9	106.0	16.90	7.273		
3,900.0	3,890.5	3,908.9	3,899.6	9.3	8.8	148.05	-50.6	108.9	123.5	106.0	17.48	7.063		
4,000.0	3,990.0	4,008.6	3,998.2	9.6	9.1	144.47	-55.7	122.8	124.5	106.4	18.08	6.887		
4,100.0	4,089.6	4,108.3	4,096.8	9.8	9.4	140.96	-60.8	136.7	126.0	107.4	18.70	6.742		
4,200.0	4,189.1	4,208.0	4,195.4	10.1	9.7	137.55	-66.0	150.6	128.0	108.7	19.32	6.627		
4,300.0	4,288.6	4,307.7	4,294.0	10.4	10.0	134.25	-71.1	164.4	130.5	110.5	19.96	6.538		
4,400.0	4,388.2	4,407.4	4,392.6	10.7	10.3	131.08	-76.2	178.3	133.3	112.7	20.60	6.473		
4,500.0	4,487.7	4,507.1	4,491.2	11.0	10.6	128.06	-81.4	192.2	136.6	115.3	21.24	6.430		
4,600.0	4,587.2	4,606.8	4,589.7	11.2	11.0	125.18	-86.5	206.1	140.2	118.3	21.88	6.406		
4,643.9	4,630.9	4,650.5	4,633.0	11.4	11.1	123.96	-88.7	212.2	141.9	119.7	22.16	6.401		
4,700.0	4,686.8	4,706.5	4,688.3	11.5	11.3	122.34	-91.6	220.0	143.9	121.4	22.51	6.393		

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 28Y-214
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 28Y-214	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-MWID														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					
4,800.0	4,786.6	4,806.0	4,786.8	11.7	11.6	118.87	-96.7	233.8	146.8	123.7	23.09	6.359					
4,900.0	4,886.5	4,905.4	4,885.0	11.9	11.9	114.65	-101.9	247.7	149.1	125.5	23.65	6.307					
5,000.0	4,986.4	5,004.8	4,983.4	12.1	12.2	109.79	-106.9	261.2	151.3	127.2	24.16	6.264					
5,013.6	5,000.0	5,018.3	4,996.8	12.1	12.3	-168.92	-107.5	262.9	151.6	129.7	21.87	6.932					
5,100.0	5,086.4	5,104.8	5,082.6	12.2	12.5	-172.76	-111.1	272.6	153.6	131.4	22.22	6.913					
5,200.0	5,186.4	5,205.4	5,182.7	12.4	12.7	-176.22	-114.4	281.7	156.1	133.4	22.66	6.888					
5,300.0	5,286.4	5,306.4	5,283.5	12.6	12.9	-178.67	-116.9	288.3	158.2	135.1	23.11	6.849					
5,400.0	5,386.4	5,407.7	5,384.8	12.8	13.1	179.83	-118.4	292.5	159.7	136.2	23.54	6.785					
5,500.0	5,486.4	5,509.2	5,486.2	13.0	13.3	179.26	-119.0	294.1	160.3	136.4	23.96	6.692					
5,600.0	5,586.4	5,609.4	5,586.4	13.2	13.5	179.25	-119.0	294.1	160.3	135.9	24.37	6.579					
5,700.0	5,686.4	5,709.4	5,686.4	13.4	13.7	179.25	-119.0	294.1	160.3	135.5	24.79	6.468					
5,800.0	5,786.4	5,809.4	5,786.4	13.6	13.9	179.25	-119.0	294.1	160.3	135.1	25.21	6.359					
5,900.0	5,886.4	5,909.4	5,886.4	13.8	14.1	179.25	-119.0	294.1	160.3	134.7	25.63	6.255					
6,000.0	5,986.4	6,009.4	5,986.4	14.0	14.3	179.25	-119.0	294.1	160.3	134.3	26.06	6.153					
6,100.0	6,086.4	6,109.4	6,086.4	14.2	14.5	179.25	-119.0	294.1	160.3	133.8	26.48	6.054					
6,200.0	6,186.4	6,209.4	6,186.4	14.4	14.7	179.25	-119.0	294.1	160.3	133.4	26.91	5.959					
6,300.0	6,286.4	6,309.4	6,286.4	14.6	14.9	179.25	-119.0	294.1	160.3	133.0	27.33	5.866					
6,314.3	6,300.8	6,323.8	6,300.8	14.7	14.9	179.25	-119.0	294.1	160.3	132.9	27.39	5.853					
6,350.0	6,336.4	6,359.4	6,336.4	14.7	15.0	-91.05	-119.0	294.1	160.3	130.8	29.51	5.433					
6,400.0	6,386.3	6,409.2	6,386.3	14.8	15.1	-92.45	-119.0	294.1	160.5	130.8	29.66	5.410					
6,450.0	6,435.7	6,458.7	6,435.7	14.8	15.2	-94.95	-119.0	294.1	160.9	131.2	29.77	5.406					
6,500.0	6,484.6	6,507.6	6,484.6	14.9	15.3	-98.45	-119.0	294.1	162.2	132.3	29.83	5.437					
6,550.0	6,532.7	6,557.1	6,534.1	14.9	15.3	-102.76	-119.0	293.6	164.7	134.9	29.82	5.523					
6,600.0	6,579.8	6,608.2	6,585.1	14.9	15.4	-107.07	-119.0	290.0	168.2	138.5	29.72	5.661					
6,650.0	6,625.7	6,660.3	6,636.7	15.0	15.5	-111.18	-119.0	282.9	172.8	143.2	29.56	5.845					
6,700.0	6,670.3	6,713.5	6,688.8	15.0	15.5	-115.03	-119.0	272.0	178.1	148.8	29.32	6.074					
6,750.0	6,713.2	6,767.8	6,741.0	15.0	15.5	-118.62	-119.0	257.2	184.1	155.0	29.02	6.344					
6,800.0	6,754.4	6,823.2	6,793.0	15.1	15.6	-121.91	-119.0	238.3	190.6	161.9	28.66	6.650					
6,850.0	6,793.6	6,879.8	6,844.7	15.2	15.6	-124.92	-119.0	215.2	197.5	169.2	28.27	6.985					
6,900.0	6,830.7	6,937.6	6,895.4	15.4	15.6	-127.64	-119.0	187.6	204.5	176.7	27.86	7.343					
6,950.0	6,865.6	6,996.5	6,945.0	15.5	15.7	-130.09	-119.0	155.7	211.7	184.3	27.45	7.713					
7,000.0	6,898.0	7,056.7	6,992.8	15.8	15.8	-132.27	-119.0	119.2	218.8	191.7	27.08	8.081					
7,050.0	6,927.9	7,118.1	7,038.5	16.1	15.9	-134.21	-119.0	78.3	225.7	198.9	26.77	8.431					
7,100.0	6,955.1	7,180.6	7,081.6	16.5	16.1	-135.90	-119.0	33.0	232.2	205.7	26.55	8.747					
7,150.0	6,979.5	7,244.3	7,121.4	17.0	16.4	-137.37	-119.0	-16.6	238.3	211.9	26.45	9.010					
7,200.0	7,001.0	7,309.0	7,157.6	17.6	16.9	-138.62	-119.0	-70.3	243.8	217.3	26.51	9.198					
7,250.0	7,019.4	7,374.6	7,189.5	18.2	17.5	-139.67	-119.0	-127.7	248.7	222.0	26.75	9.297					
7,300.0	7,034.9	7,441.1	7,216.6	18.9	18.3	-140.52	-119.0	-188.3	252.8	225.7	27.19	9.300					
7,350.0	7,047.1	7,508.3	7,238.6	19.7	19.2	-141.18	-119.0	-251.8	256.2	228.3	27.84	9.201					
7,400.0	7,056.2	7,576.1	7,255.1	20.6	20.2	-141.66	-119.0	-317.6	258.6	229.9	28.71	9.008					
7,450.0	7,062.0	7,644.3	7,265.6	21.5	21.4	-141.95	-119.0	-384.9	260.2	230.4	29.79	8.732					
7,500.0	7,064.6	7,712.7	7,270.2	22.4	22.7	-142.06	-119.0	-453.1	260.8	229.7	31.08	8.388					
7,517.3	7,064.7	7,734.1	7,270.4	22.8	23.1	-142.07	-119.0	-474.5	260.8	229.2	31.55	8.265					
7,600.0	7,064.4	7,816.8	7,270.5	24.4	24.7	-142.13	-119.0	-557.2	261.1	227.5	33.59	7.773					
7,700.0	7,064.0	7,916.8	7,270.7	26.6	26.9	-142.20	-119.0	-657.2	261.6	225.3	36.23	7.220					
7,800.0	7,063.6	8,016.8	7,270.9	28.9	29.1	-142.28	-119.0	-757.2	262.0	223.0	39.01	6.717					
7,900.0	7,063.3	8,116.8	7,271.1	31.2	31.5	-142.35	-119.0	-857.2	262.5	220.5	41.91	6.263					
8,000.0	7,062.9	8,216.8	7,271.2	33.7	33.9	-142.43	-119.0	-957.2	262.9	218.0	44.90	5.856					
8,100.0	7,062.5	8,316.8	7,271.4	36.1	36.3	-142.50	-119.0	-1,057.2	263.3	215.4	47.96	5.491					
8,200.0	7,062.1	8,416.8	7,271.6	38.7	38.9	-142.58	-119.0	-1,157.2	263.8	212.7	51.08	5.165					

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 28Y-214
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 28Y-214	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		
8,300.0	7,061.7	8,516.8	7,271.8	41.2	41.4	-142.65	-119.0	-1,257.2	264.2	210.0	54.24	4.872		
8,400.0	7,061.3	8,616.8	7,271.9	43.8	44.0	-142.72	-119.0	-1,357.2	264.7	207.2	57.44	4.608		
8,500.0	7,061.0	8,716.8	7,272.1	46.5	46.6	-142.80	-119.0	-1,457.2	265.1	204.4	60.67	4.370		
8,600.0	7,060.6	8,816.8	7,272.3	49.1	49.2	-142.87	-119.0	-1,557.2	265.6	201.6	63.92	4.155		
8,700.0	7,060.2	8,916.8	7,272.5	51.8	51.9	-142.94	-119.0	-1,657.2	266.0	198.8	67.18	3.959		
8,800.0	7,059.8	9,016.8	7,272.6	54.4	54.5	-143.01	-119.0	-1,757.2	266.4	196.0	70.46	3.781		
8,900.0	7,059.4	9,116.8	7,272.8	57.1	57.2	-143.09	-119.0	-1,857.2	266.9	193.1	73.76	3.619		
9,000.0	7,059.0	9,216.8	7,273.0	59.8	59.9	-143.16	-119.0	-1,957.2	267.3	190.3	77.06	3.469		
9,100.0	7,058.6	9,316.8	7,273.2	62.5	62.6	-143.23	-119.0	-2,057.2	267.8	187.4	80.36	3.332		
9,200.0	7,058.3	9,416.8	7,273.3	65.2	65.3	-143.30	-119.0	-2,157.2	268.2	184.6	83.67	3.206		
9,300.0	7,057.9	9,516.8	7,273.5	68.0	68.0	-143.37	-119.0	-2,257.2	268.7	181.7	86.99	3.089		
9,400.0	7,057.5	9,616.8	7,273.7	70.7	70.8	-143.44	-119.0	-2,357.2	269.1	178.8	90.30	2.980		
9,500.0	7,057.1	9,716.8	7,273.9	73.4	73.5	-143.51	-119.0	-2,457.2	269.6	176.0	93.61	2.880		
9,600.0	7,056.7	9,816.8	7,274.0	76.2	76.2	-143.58	-119.0	-2,557.2	270.0	173.1	96.93	2.786		
9,700.0	7,056.3	9,916.8	7,274.2	78.9	79.0	-143.65	-119.0	-2,657.2	270.5	170.2	100.24	2.698		
9,800.0	7,056.0	10,016.8	7,274.4	81.7	81.7	-143.72	-119.0	-2,757.2	270.9	167.4	103.55	2.617		
9,900.0	7,055.6	10,116.8	7,274.6	84.4	84.5	-143.79	-119.0	-2,857.2	271.4	164.5	106.85	2.540		
10,000.0	7,055.2	10,216.8	7,274.7	87.2	87.2	-143.86	-119.0	-2,957.2	271.8	161.7	110.15	2.468		
10,100.0	7,054.8	10,316.8	7,274.9	89.9	90.0	-143.93	-119.0	-3,057.2	272.3	158.8	113.45	2.400		
10,200.0	7,054.4	10,416.8	7,275.1	92.7	92.7	-144.00	-119.0	-3,157.2	272.7	156.0	116.74	2.336		
10,300.0	7,054.0	10,516.8	7,275.3	95.5	95.5	-144.07	-119.0	-3,257.2	273.2	153.2	120.03	2.276		
10,400.0	7,053.7	10,616.8	7,275.4	98.2	98.3	-144.14	-119.0	-3,357.2	273.6	150.3	123.31	2.219		
10,500.0	7,053.3	10,716.8	7,275.6	101.0	101.0	-144.21	-119.0	-3,457.2	274.1	147.5	126.59	2.165		
10,600.0	7,052.9	10,816.8	7,275.8	103.8	103.8	-144.28	-119.0	-3,557.2	274.5	144.7	129.86	2.114		
10,700.0	7,052.5	10,916.8	7,276.0	106.5	106.6	-144.34	-119.0	-3,657.2	275.0	141.9	133.13	2.066		
10,800.0	7,052.1	11,016.8	7,276.1	109.3	109.4	-144.41	-119.0	-3,757.2	275.5	139.1	136.39	2.020		
10,900.0	7,051.7	11,116.8	7,276.3	112.1	112.1	-144.48	-119.0	-3,857.2	275.9	136.3	139.64	1.976		
11,000.0	7,051.4	11,216.8	7,276.5	114.9	114.9	-144.55	-119.0	-3,957.2	276.4	133.5	142.89	1.934		
11,100.0	7,051.0	11,316.8	7,276.6	117.6	117.7	-144.61	-119.0	-4,057.2	276.8	130.7	146.12	1.894		
11,200.0	7,050.6	11,416.8	7,276.8	120.4	120.5	-144.68	-119.0	-4,157.2	277.3	127.9	149.36	1.856		
11,300.0	7,050.2	11,516.8	7,277.0	123.2	123.3	-144.75	-119.0	-4,257.2	277.7	125.1	152.58	1.820		
11,400.0	7,049.8	11,616.8	7,277.2	126.0	126.0	-144.81	-119.0	-4,357.2	278.2	122.4	155.80	1.786		
11,500.0	7,049.4	11,716.8	7,277.3	128.8	128.8	-144.88	-119.0	-4,457.2	278.6	119.6	159.01	1.752		
11,600.0	7,049.0	11,816.7	7,277.5	131.6	131.6	-144.95	-119.0	-4,557.2	279.1	116.9	162.22	1.721		
11,700.0	7,048.7	11,916.7	7,277.7	134.4	134.4	-145.01	-119.0	-4,657.2	279.6	114.1	165.42	1.690		
11,800.0	7,048.3	12,016.7	7,277.9	137.1	137.2	-145.08	-119.0	-4,757.2	280.0	111.4	168.61	1.661		
11,900.0	7,047.9	12,116.7	7,278.0	139.9	140.0	-145.14	-119.0	-4,857.2	280.5	108.7	171.79	1.633		
12,000.0	7,047.5	12,216.7	7,278.2	142.7	142.7	-145.21	-119.0	-4,957.2	280.9	106.0	174.97	1.606		
12,100.0	7,047.1	12,316.7	7,278.4	145.5	145.5	-145.27	-119.0	-5,057.2	281.4	103.3	178.14	1.580		
12,200.0	7,046.7	12,416.7	7,278.6	148.3	148.3	-145.34	-119.0	-5,157.2	281.8	100.6	181.30	1.555		
12,300.0	7,046.4	12,516.7	7,278.7	151.1	151.1	-145.40	-119.0	-5,257.2	282.3	97.9	184.45	1.531		
12,400.0	7,046.0	12,616.7	7,278.9	153.9	153.9	-145.47	-119.0	-5,357.2	282.8	95.2	187.60	1.507		
12,500.0	7,045.6	12,716.7	7,279.1	156.7	156.7	-145.53	-119.0	-5,457.2	283.2	92.5	190.74	1.485 Level 3		
12,600.0	7,045.2	12,816.7	7,279.3	159.5	159.5	-145.59	-119.0	-5,557.2	283.7	89.8	193.87	1.463 Level 3		
12,700.0	7,044.8	12,916.7	7,279.4	162.3	162.3	-145.66	-119.0	-5,657.1	284.2	87.2	197.00	1.442 Level 3		
12,800.0	7,044.4	13,016.7	7,279.6	165.1	165.1	-145.72	-119.0	-5,757.1	284.6	84.5	200.11	1.422 Level 3		
12,900.0	7,044.1	13,116.7	7,279.8	167.8	167.9	-145.78	-119.0	-5,857.1	285.1	81.9	203.22	1.403 Level 3		
13,000.0	7,043.7	13,216.7	7,280.0	170.6	170.7	-145.85	-119.0	-5,957.1	285.5	79.2	206.32	1.384 Level 3		
13,100.0	7,043.3	13,316.7	7,280.1	173.4	173.5	-145.91	-119.0	-6,057.1	286.0	76.6	209.42	1.366 Level 3		
13,200.0	7,042.9	13,416.7	7,280.3	176.2	176.3	-145.97	-119.0	-6,157.1	286.5	74.0	212.51	1.348 Level 3		
13,300.0	7,042.5	13,516.7	7,280.5	179.0	179.0	-146.03	-119.0	-6,257.1	286.9	71.3	215.59	1.331 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 28Y-214
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 28Y-214	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							
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)			
13,400.0	7,042.1	13,616.7	7,280.7	181.8	181.8	-146.10	-119.0	-6,357.1	287.4	68.7	218.66	1.314	Level 3	
13,500.0	7,041.8	13,716.7	7,280.8	184.6	184.6	-146.16	-119.0	-6,457.1	287.9	66.1	221.72	1.298	Level 3	
13,600.0	7,041.4	13,816.7	7,281.0	187.4	187.4	-146.22	-119.0	-6,557.1	288.3	63.5	224.78	1.283	Level 3	
13,700.0	7,041.0	13,916.7	7,281.2	190.2	190.2	-146.28	-119.0	-6,657.1	288.8	60.9	227.83	1.268	Level 3	
13,800.0	7,040.6	14,016.7	7,281.4	193.0	193.0	-146.34	-119.0	-6,757.1	289.2	58.4	230.87	1.253	Level 3	
13,900.0	7,040.2	14,116.7	7,281.5	195.8	195.8	-146.40	-119.0	-6,857.1	289.7	55.8	233.91	1.239	Level 2	
14,000.0	7,039.8	14,216.7	7,281.7	198.6	198.6	-146.47	-119.0	-6,957.1	290.2	53.2	236.94	1.225	Level 2	
14,100.0	7,039.5	14,316.7	7,281.9	201.4	201.4	-146.53	-119.0	-7,057.1	290.6	50.7	239.96	1.211	Level 2	
14,200.0	7,039.1	14,416.7	7,282.1	204.2	204.2	-146.59	-119.0	-7,157.1	291.1	48.1	242.97	1.198	Level 2	
14,300.0	7,038.7	14,516.7	7,282.2	207.0	207.0	-146.65	-119.0	-7,257.1	291.6	45.6	245.98	1.185	Level 2	
14,400.0	7,038.3	14,616.7	7,282.4	209.8	209.8	-146.71	-119.0	-7,357.1	292.0	43.1	248.98	1.173	Level 2	
14,500.0	7,037.9	14,716.7	7,282.6	212.6	212.6	-146.77	-119.0	-7,457.1	292.5	40.5	251.97	1.161	Level 2	
14,600.0	7,037.5	14,816.7	7,282.8	215.4	215.4	-146.83	-119.0	-7,557.1	293.0	38.0	254.95	1.149	Level 2	
14,700.0	7,037.1	14,916.7	7,282.9	218.2	218.2	-146.89	-119.0	-7,657.1	293.4	35.5	257.93	1.138	Level 2	
14,738.2	7,037.0	14,954.9	7,283.0	219.3	219.3	-146.91	-119.0	-7,695.3	293.6	34.6	259.07	1.133	Level 2, SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Hunt Federal 28Y-214
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 28Y-214	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)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
13,900.0	7,040.2	9,199.8	7,075.0	195.8	43.9	-139.24	5.4	-7,853.6	997.4	841.4	156.05	6.392		
14,000.0	7,039.8	9,196.0	7,074.9	198.6	43.9	-142.27	9.1	-7,853.7	897.6	747.1	150.45	5.966		
14,100.0	7,039.5	9,195.0	7,074.9	201.4	43.9	-143.17	10.2	-7,853.8	797.8	647.8	149.96	5.320		
14,200.0	7,039.1	9,189.2	7,074.8	204.2	43.8	-148.60	16.0	-7,854.0	698.0	560.7	137.29	5.084		
14,300.0	7,038.7	9,185.7	7,074.7	207.0	43.7	-152.21	19.5	-7,854.1	598.2	469.3	128.95	4.639		
14,400.0	7,038.3	9,182.1	7,074.7	209.8	43.7	-156.18	23.1	-7,854.3	498.6	379.2	119.35	4.178		
14,500.0	7,037.9	9,178.5	7,074.6	212.6	43.6	-160.52	26.7	-7,854.4	399.1	290.4	108.69	3.672		
14,600.0	7,037.5	9,174.7	7,074.5	215.4	43.6	-165.22	30.4	-7,854.5	299.9	202.3	97.54	3.074		
14,700.0	7,037.1	9,170.9	7,074.5	218.2	43.5	-170.27	34.2	-7,854.7	201.3	114.2	87.11	2.311		
14,738.2	7,037.0	9,169.4	7,074.4	219.3	43.5	-172.27	35.7	-7,854.7	164.2	80.4	83.75	1.961 CC, ES, SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Hunt Federal 28Y-214
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 28Y-214	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')

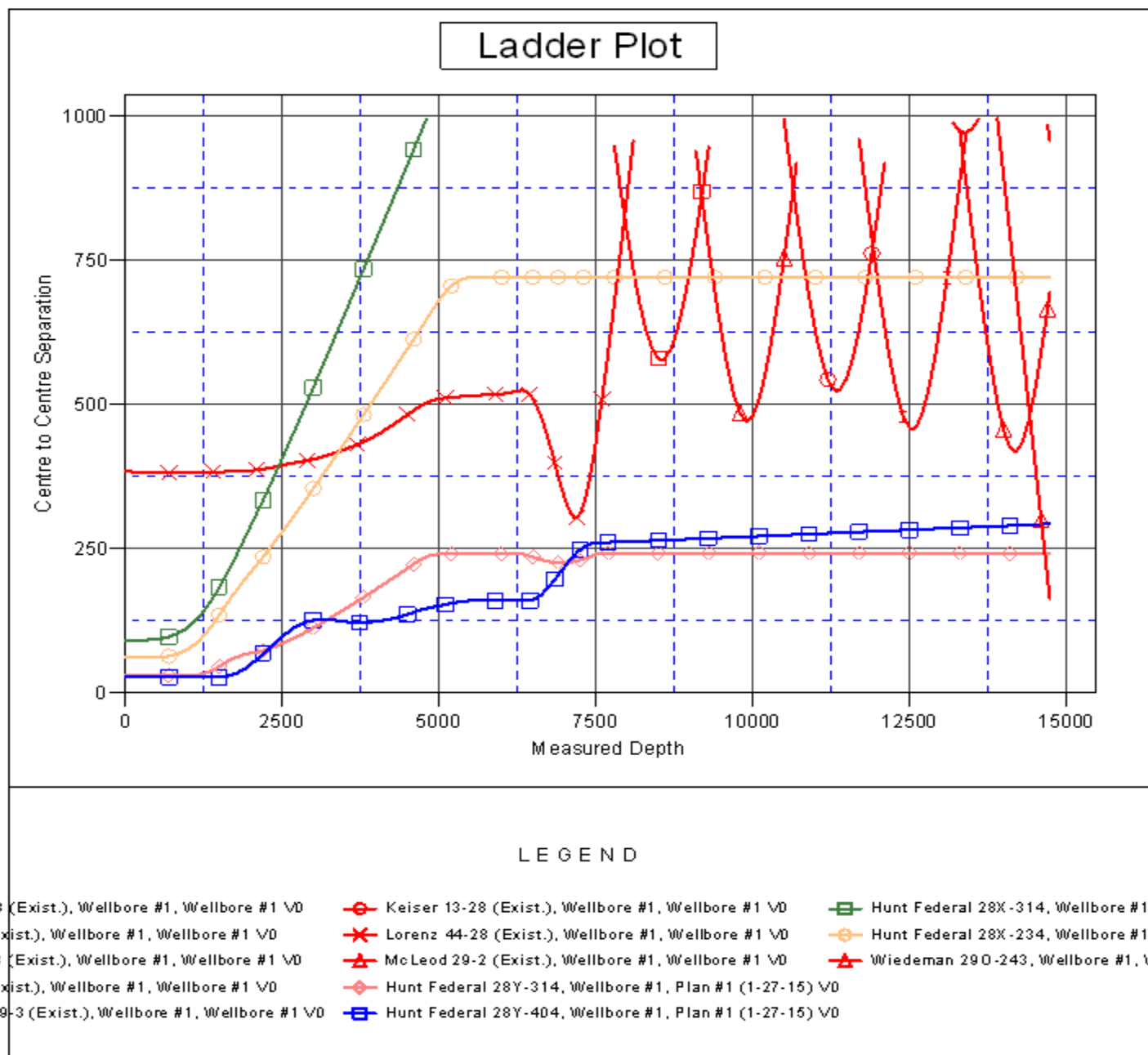
Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Hunt Federal 28Y-214

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 28Y-214
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 28Y-214	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 28Y-214

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.47°

