

PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Peterson 14X-234**

Surface Location: Peterson 14WX-HZ Pad Sec.14-T5N-R64W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

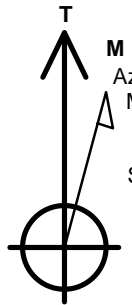
Ground Elevation: 4571.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1388564.77	3275959.50	40.395780	-104.509200	

RKB - 15' WELL @ 4586.0ft (RKB - 15')

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 1367'FSL & 310'FEL	1.0	0.0	0.0	Point
BHL 664'FSL, 500'FWL	6536.0	-686.5	-4320.3	Point



Azimuths to True North
Magnetic North: 8.36°

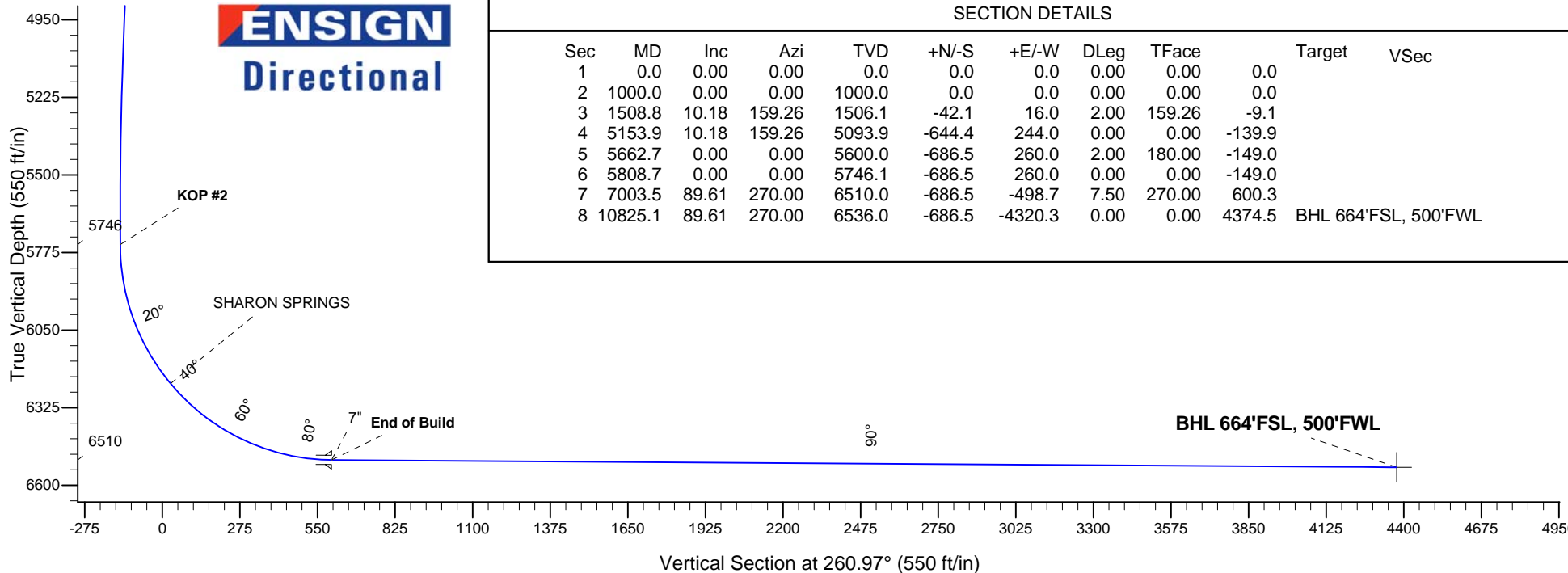
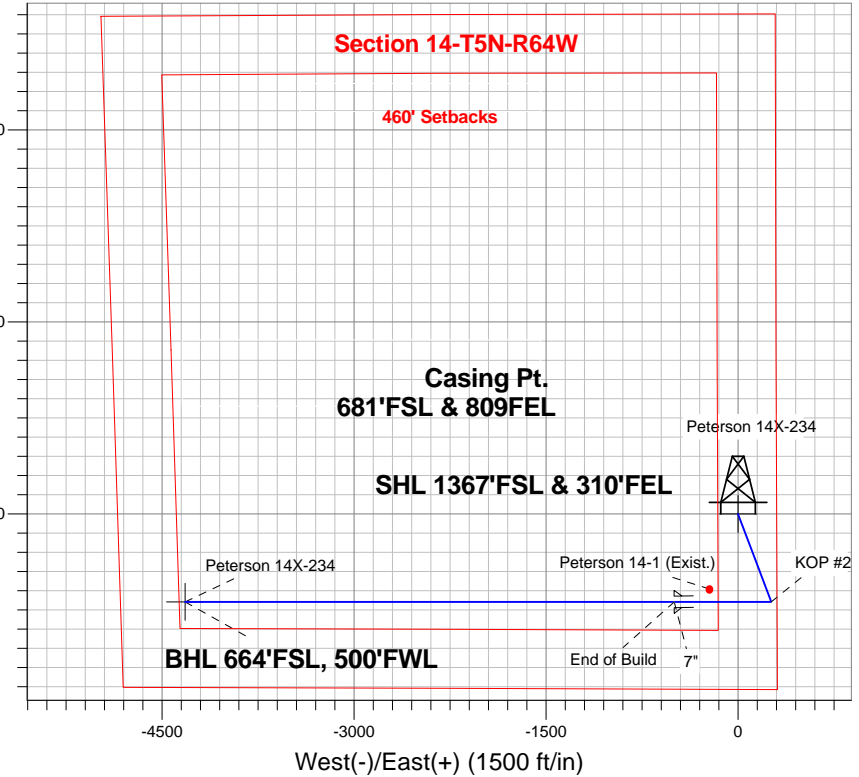
Magnetic Field
Strength: 52870.6snT
Dip Angle: 66.99°
Date: 3/7/2014
Model: IGRF2010

ANNOTATIONS

TVD	MD	Annotation
1000.0	1000.0	KOP #1
5746.0	5808.7	KOP #2
6510.0	7003.5	End of Build

Peterson 14WX-HZ Pad Sec.14-T5N-R64W
Peterson 14X-234
Plan #1 (3-07-14)
12:15, March 10 2014

South(-)/North(+) (1500 ft/in)



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	1000.0	0.00	0.00	1000.0	0.0	0.0	0.00	0.00	0.0	
3	1508.8	10.18	159.26	1506.1	-42.1	16.0	2.00	159.26	-9.1	
4	5153.9	10.18	159.26	5093.9	-644.4	244.0	0.00	0.00	-139.9	
5	5662.7	0.00	0.00	5600.0	-686.5	260.0	2.00	180.00	-149.0	
6	5808.7	0.00	0.00	5746.1	-686.5	260.0	0.00	0.00	-149.0	
7	7003.5	89.61	270.00	6510.0	-686.5	-498.7	7.50	270.00	600.3	
8	10825.1	89.61	270.00	6536.0	-686.5	-4320.3	0.00	0.00	4374.5	BHL 664'FSL, 500'FWL



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.14-T5N-R64W

Peterson 14WX-HZ Pad Sec.14-T5N-R64W

Peterson 14X-234

Wellbore #1

Plan: Plan #1 (3-07-14)

Standard Planning Report

10 March, 2014

Database:	Landmark	Local Co-ordinate Reference:	Well Peterson 14X-234
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4586.0ft (RKB - 15')
Project:	SEC.14-T5N-R64W	MD Reference:	WELL @ 4586.0ft (RKB - 15')
Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	North Reference:	True
Well:	Peterson 14X-234	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (3-07-14)		

Project	SEC.14-T5N-R64W, Weld County, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site						Peterson 14WX-HZ Pad Sec.14-T5N-R64W											
Site Position:						Northing:			1,388,684.96 ft			Latitude:			40.396110		
From:			Lat/Long			Easting:			3,275,955.37 ft			Longitude:			-104.509210		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			0.64 °		

Well	Peterson 14X-234					
Well Position	+N/-S	-120.2 ft	Northing:	1,388,564.77 ft	Latitude:	40.395780
	+E/-W	2.8 ft	Easting:	3,275,959.50 ft	Longitude:	-104.509200
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,571.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/7/2014	8.36	66.99	52,871

Design	Plan #1 (3-07-14)			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	260.97

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,508.8	10.18	159.26	1,506.1	-42.1	16.0	2.00	2.00	0.00	159.26	
5,153.9	10.18	159.26	5,093.9	-644.4	244.0	0.00	0.00	0.00	0.00	
5,662.7	0.00	0.00	5,600.0	-686.5	260.0	2.00	-2.00	0.00	180.00	
5,808.7	0.00	0.00	5,746.1	-686.5	260.0	0.00	0.00	0.00	0.00	
7,003.5	89.61	270.00	6,510.0	-686.5	-498.7	7.50	7.50	0.00	270.00	
10,825.1	89.61	270.00	6,536.0	-686.5	-4,320.3	0.00	0.00	0.00	0.00	BHL 664'FSL, 500'

Database:	Landmark	Local Co-ordinate Reference:	Well Peterson 14X-234
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4586.0ft (RKB - 15')
Project:	SEC.14-T5N-R64W	MD Reference:	WELL @ 4586.0ft (RKB - 15')
Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	North Reference:	True
Well:	Peterson 14X-234	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (3-07-14)		

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 1517'FSL, 310'FEL - SHL 1367'FSL & 310'FEL									
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
KOP #1									
1,100.0	2.00	159.26	1,100.0	-1.6	0.6	-0.4	2.00	2.00	0.00
1,200.0	4.00	159.26	1,199.8	-6.5	2.5	-1.4	2.00	2.00	0.00
1,300.0	6.00	159.26	1,299.5	-14.7	5.6	-3.2	2.00	2.00	0.00
1,400.0	8.00	159.26	1,398.7	-26.1	9.9	-5.7	2.00	2.00	0.00
1,500.0	10.00	159.26	1,497.5	-40.7	15.4	-8.8	2.00	2.00	0.00
1,508.8	10.18	159.26	1,506.1	-42.1	16.0	-9.1	2.00	2.00	0.00
1,600.0	10.18	159.26	1,595.9	-57.2	21.7	-12.4	0.00	0.00	0.00
1,700.0	10.18	159.26	1,694.3	-73.7	27.9	-16.0	0.00	0.00	0.00
1,800.0	10.18	159.26	1,792.7	-90.3	34.2	-19.6	0.00	0.00	0.00
1,900.0	10.18	159.26	1,891.2	-106.8	40.4	-23.2	0.00	0.00	0.00
2,000.0	10.18	159.26	1,989.6	-123.3	46.7	-26.8	0.00	0.00	0.00
2,100.0	10.18	159.26	2,088.0	-139.8	53.0	-30.4	0.00	0.00	0.00
2,200.0	10.18	159.26	2,186.5	-156.3	59.2	-33.9	0.00	0.00	0.00
2,300.0	10.18	159.26	2,284.9	-172.9	65.5	-37.5	0.00	0.00	0.00
2,400.0	10.18	159.26	2,383.3	-189.4	71.7	-41.1	0.00	0.00	0.00
2,500.0	10.18	159.26	2,481.7	-205.9	78.0	-44.7	0.00	0.00	0.00
2,600.0	10.18	159.26	2,580.2	-222.4	84.2	-48.3	0.00	0.00	0.00
2,700.0	10.18	159.26	2,678.6	-238.9	90.5	-51.9	0.00	0.00	0.00
2,800.0	10.18	159.26	2,777.0	-255.5	96.8	-55.5	0.00	0.00	0.00
2,900.0	10.18	159.26	2,875.4	-272.0	103.0	-59.1	0.00	0.00	0.00
3,000.0	10.18	159.26	2,973.9	-288.5	109.3	-62.6	0.00	0.00	0.00
3,100.0	10.18	159.26	3,072.3	-305.0	115.5	-66.2	0.00	0.00	0.00
3,200.0	10.18	159.26	3,170.7	-321.6	121.8	-69.8	0.00	0.00	0.00
3,300.0	10.18	159.26	3,269.2	-338.1	128.0	-73.4	0.00	0.00	0.00
3,400.0	10.18	159.26	3,367.6	-354.6	134.3	-77.0	0.00	0.00	0.00
3,441.1	10.18	159.26	3,408.0	-361.4	136.9	-78.5	0.00	0.00	0.00
PARKMAN									
3,500.0	10.18	159.26	3,466.0	-371.1	140.6	-80.6	0.00	0.00	0.00
3,600.0	10.18	159.26	3,564.4	-387.6	146.8	-84.2	0.00	0.00	0.00
3,700.0	10.18	159.26	3,662.9	-404.2	153.1	-87.7	0.00	0.00	0.00
3,800.0	10.18	159.26	3,761.3	-420.7	159.3	-91.3	0.00	0.00	0.00
3,900.0	10.18	159.26	3,859.7	-437.2	165.6	-94.9	0.00	0.00	0.00
4,000.0	10.18	159.26	3,958.1	-453.7	171.8	-98.5	0.00	0.00	0.00
4,100.0	10.18	159.26	4,056.6	-470.2	178.1	-102.1	0.00	0.00	0.00
4,194.9	10.18	159.26	4,150.0	-485.9	184.0	-105.5	0.00	0.00	0.00
SUSSEX									
4,200.0	10.18	159.26	4,155.0	-486.8	184.4	-105.7	0.00	0.00	0.00
4,300.0	10.18	159.26	4,253.4	-503.3	190.6	-109.3	0.00	0.00	0.00
4,400.0	10.18	159.26	4,351.9	-519.8	196.9	-112.9	0.00	0.00	0.00

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Project:	SEC.14-T5N-R64W	MD Reference:	WELL @ 4586.0ft (RKB - 15')
Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	North Reference:	True
Well:	Peterson 14X-234	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (3-07-14)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,500.0	10.18	159.26	4,450.3	-536.3	203.1	-116.4	0.00	0.00	0.00
4,600.0	10.18	159.26	4,548.7	-552.8	209.4	-120.0	0.00	0.00	0.00
4,621.6	10.18	159.26	4,570.0	-556.4	210.7	-120.8	0.00	0.00	0.00
SHANNON									
4,700.0	10.18	159.26	4,647.1	-569.4	215.6	-123.6	0.00	0.00	0.00
4,800.0	10.18	159.26	4,745.6	-585.9	221.9	-127.2	0.00	0.00	0.00
4,900.0	10.18	159.26	4,844.0	-602.4	228.2	-130.8	0.00	0.00	0.00
5,000.0	10.18	159.26	4,942.4	-618.9	234.4	-134.4	0.00	0.00	0.00
5,100.0	10.18	159.26	5,040.8	-635.5	240.7	-138.0	0.00	0.00	0.00
5,153.9	10.18	159.26	5,093.9	-644.4	244.0	-139.9	0.00	0.00	0.00
5,200.0	9.25	159.26	5,139.3	-651.6	246.8	-141.5	2.00	-2.00	0.00
5,300.0	7.25	159.26	5,238.3	-665.1	251.9	-144.4	2.00	-2.00	0.00
5,400.0	5.25	159.26	5,337.7	-675.2	255.7	-146.6	2.00	-2.00	0.00
5,500.0	3.25	159.26	5,437.4	-682.2	258.4	-148.1	2.00	-2.00	0.00
5,600.0	1.25	159.26	5,537.3	-685.9	259.8	-148.9	2.00	-2.00	0.00
5,662.7	0.00	0.00	5,600.0	-686.5	260.0	-149.0	2.00	-2.00	0.00
5,700.0	0.00	0.00	5,637.3	-686.5	260.0	-149.0	0.00	0.00	0.00
5,800.0	0.00	0.00	5,737.3	-686.5	260.0	-149.0	0.00	0.00	0.00
5,808.7	0.00	0.00	5,746.0	-686.5	260.0	-149.0	0.00	0.00	0.00
KOP #2									
5,900.0	6.84	270.00	5,837.1	-686.5	254.6	-143.7	7.50	7.50	0.00
6,000.0	14.34	270.00	5,935.3	-686.5	236.2	-125.5	7.50	7.50	0.00
6,100.0	21.84	270.00	6,030.3	-686.5	205.1	-94.9	7.50	7.50	0.00
6,200.0	29.34	270.00	6,120.4	-686.5	162.0	-52.2	7.50	7.50	0.00
6,300.0	36.84	270.00	6,204.2	-686.5	107.4	1.7	7.50	7.50	0.00
6,344.5	40.18	270.00	6,239.0	-686.5	79.7	29.0	7.50	7.50	0.00
SHARON SPRINGS									
6,400.0	44.34	270.00	6,280.0	-686.5	42.4	65.9	7.50	7.50	0.00
6,500.0	51.84	270.00	6,346.8	-686.5	-32.0	139.3	7.50	7.50	0.00
6,600.0	59.34	270.00	6,403.2	-686.5	-114.4	220.7	7.50	7.50	0.00
6,700.0	66.84	270.00	6,448.5	-686.5	-203.5	308.8	7.50	7.50	0.00
6,800.0	74.34	270.00	6,481.7	-686.5	-297.8	401.8	7.50	7.50	0.00
6,900.0	81.84	270.00	6,502.3	-686.5	-395.6	498.4	7.50	7.50	0.00
7,000.0	89.34	270.00	6,510.0	-686.5	-495.2	596.8	7.50	7.50	0.00
7,003.5	89.61	270.00	6,510.0	-686.5	-498.7	600.3	7.50	7.50	0.00
End of Build - 7"									
7,100.0	89.61	270.00	6,510.6	-686.5	-595.2	695.6	0.00	0.00	0.00
7,200.0	89.61	270.00	6,511.3	-686.5	-695.2	794.3	0.00	0.00	0.00
7,300.0	89.61	270.00	6,512.0	-686.5	-795.2	893.1	0.00	0.00	0.00
7,400.0	89.61	270.00	6,512.7	-686.5	-895.2	991.8	0.00	0.00	0.00
7,500.0	89.61	270.00	6,513.4	-686.5	-995.2	1,090.6	0.00	0.00	0.00
7,600.0	89.61	270.00	6,514.0	-686.5	-1,095.2	1,189.4	0.00	0.00	0.00
7,700.0	89.61	270.00	6,514.7	-686.5	-1,195.2	1,288.1	0.00	0.00	0.00
7,800.0	89.61	270.00	6,515.4	-686.5	-1,295.2	1,386.9	0.00	0.00	0.00
7,900.0	89.61	270.00	6,516.1	-686.5	-1,395.2	1,485.6	0.00	0.00	0.00
8,000.0	89.61	270.00	6,516.8	-686.5	-1,495.2	1,584.4	0.00	0.00	0.00
8,100.0	89.61	270.00	6,517.5	-686.5	-1,595.2	1,683.2	0.00	0.00	0.00
8,200.0	89.61	270.00	6,518.1	-686.5	-1,695.2	1,781.9	0.00	0.00	0.00
8,300.0	89.61	270.00	6,518.8	-686.5	-1,795.2	1,880.7	0.00	0.00	0.00
8,400.0	89.61	270.00	6,519.5	-686.5	-1,895.2	1,979.4	0.00	0.00	0.00
8,500.0	89.61	270.00	6,520.2	-686.5	-1,995.2	2,078.2	0.00	0.00	0.00
8,600.0	89.61	270.00	6,520.9	-686.5	-2,095.2	2,176.9	0.00	0.00	0.00

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Project:	SEC.14-T5N-R64W	MD Reference:	WELL @ 4586.0ft (RKB - 15')
Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	North Reference:	True
Well:	Peterson 14X-234	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (3-07-14)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,700.0	89.61	270.00	6,521.5	-686.5	-2,195.2	2,275.7	0.00	0.00	0.00
8,800.0	89.61	270.00	6,522.2	-686.5	-2,295.2	2,374.5	0.00	0.00	0.00
8,900.0	89.61	270.00	6,522.9	-686.5	-2,395.2	2,473.2	0.00	0.00	0.00
9,000.0	89.61	270.00	6,523.6	-686.5	-2,495.2	2,572.0	0.00	0.00	0.00
9,100.0	89.61	270.00	6,524.3	-686.5	-2,595.2	2,670.7	0.00	0.00	0.00
9,200.0	89.61	270.00	6,524.9	-686.5	-2,695.2	2,769.5	0.00	0.00	0.00
9,300.0	89.61	270.00	6,525.6	-686.5	-2,795.2	2,868.3	0.00	0.00	0.00
9,400.0	89.61	270.00	6,526.3	-686.5	-2,895.2	2,967.0	0.00	0.00	0.00
9,500.0	89.61	270.00	6,527.0	-686.5	-2,995.2	3,065.8	0.00	0.00	0.00
9,600.0	89.61	270.00	6,527.7	-686.5	-3,095.1	3,164.5	0.00	0.00	0.00
9,700.0	89.61	270.00	6,528.3	-686.5	-3,195.1	3,263.3	0.00	0.00	0.00
9,800.0	89.61	270.00	6,529.0	-686.5	-3,295.1	3,362.0	0.00	0.00	0.00
9,900.0	89.61	270.00	6,529.7	-686.5	-3,395.1	3,460.8	0.00	0.00	0.00
10,000.0	89.61	270.00	6,530.4	-686.5	-3,495.1	3,559.6	0.00	0.00	0.00
10,100.0	89.61	270.00	6,531.1	-686.5	-3,595.1	3,658.3	0.00	0.00	0.00
10,200.0	89.61	270.00	6,531.7	-686.5	-3,695.1	3,757.1	0.00	0.00	0.00
10,300.0	89.61	270.00	6,532.4	-686.5	-3,795.1	3,855.8	0.00	0.00	0.00
10,400.0	89.61	270.00	6,533.1	-686.5	-3,895.1	3,954.6	0.00	0.00	0.00
10,500.0	89.61	270.00	6,533.8	-686.5	-3,995.1	4,053.4	0.00	0.00	0.00
10,600.0	89.61	270.00	6,534.5	-686.5	-4,095.1	4,152.1	0.00	0.00	0.00
10,700.0	89.61	270.00	6,535.1	-686.5	-4,195.1	4,250.9	0.00	0.00	0.00
10,800.0	89.61	270.00	6,535.8	-686.5	-4,295.1	4,349.6	0.00	0.00	0.00
10,825.1	89.61	270.00	6,536.0	-686.5	-4,320.3	4,374.5	0.00	0.00	0.00
BHL 664'FSL, 500'FWL									

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,003.5	6,510.0	7"	7	7-1/2

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,441.1	3,408.0	PARKMAN			
4,194.9	4,150.0	SUSSEX			
4,621.6	4,570.0	SHANNON			
6,344.5	6,239.0	SHARON SPRINGS			

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment
1,000.0	1,000.0	0.0	0.0	KOP #1
5,808.7	5,746.0	-686.5	260.0	KOP #2
7,003.5	6,510.0	-686.5	-498.7	End of Build



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.14-T5N-R64W

Peterson 14WX-HZ Pad Sec.14-T5N-R64W

Peterson 14X-234

Wellbore #1

Plan #1 (3-07-14)

Anticollision Report

10 March, 2014



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peterson 14X-234
Project:	SEC.14-T5N-R64W	TVD Reference:	WELL @ 4586.0ft (RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	MD Reference:	WELL @ 4586.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peterson 14X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (3-07-14)	Offset TVD Reference:	Offset Datum

Reference	Plan #1 (3-07-14)
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria
Interpolation Method:	MD Interval 100.0ft
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	3/7/2014		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	10,825.1	Plan #1 (3-07-14) (Wellbore #1)	MWD	MWD - Standard	

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Peterson 14WX-HZ Pad (Exist) Sec.14-T5N-R64W						
Peterson 14-1 (Exist.) - Wellbore #1 - Wellbore #1	6,720.9	6,438.4	100.0	-46.0	0.685	Level 1, CC, ES, SF
Peterson 14WX-HZ Pad Sec.14-T5N-R64W						
Peterson 14W-234 - Wellbore #1 - Plan #1 (3-07-14)	1,000.0	1,000.0	120.3	116.0	28.159	CC, ES
Peterson 14W-234 - Wellbore #1 - Plan #1 (3-07-14)	1,200.0	1,191.9	132.9	127.8	26.166	SF
Peterson 14X-304 - Wellbore #1 - Plan #1 (3-07-14)	1,000.0	1,000.0	58.4	54.1	13.666	CC, ES
Peterson 14X-304 - Wellbore #1 - Plan #1 (3-07-14)	10,825.1	10,859.3	732.3	485.0	2.961	SF
Peterson 14X-434 - Wellbore #1 - Plan #1 (3-07-14)	1,000.0	1,000.0	29.3	25.0	6.856	CC, ES
Peterson 14X-434 - Wellbore #1 - Plan #1 (3-07-14)	10,825.1	10,924.2	343.5	117.4	1.519	SF
Peterson 14Y-304 - Wellbore #1 - Plan #1 (3-07-14)	200.0	200.0	61.9	61.3	91.848	CC, ES
Peterson 14Y-304 - Wellbore #1 - Plan #1 (3-07-14)	10,825.1	10,967.2	594.4	347.5	2.408	SF
Peterson 14Y-414 - Wellbore #1 - Plan #1 (3-07-14)	800.0	800.0	29.1	25.8	8.645	CC, ES
Peterson 14Y-414 - Wellbore #1 - Plan #1 (3-07-14)	10,825.1	10,984.3	300.7	84.3	1.390	Level 3, SF

Offset Design		Peterson 14WX-HZ Pad (Exist) Sec.14-T5N-R64W - Peterson 14-1 (Exist.) - Wellbore #1 - Wellbore #1										Offset Site Error:		0.0 ft	
Survey Program:		6900-UNKNOWN										Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis			Distance								
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)				
0.0	0.0	0.0	0.0	0.0	0.0	-159.20	-586.5	-222.8	627.7						
100.0	100.0	82.0	82.0	0.1	1.6	-159.20	-586.5	-222.8	627.4	625.7	1.75	358.014			
200.0	200.0	182.0	182.0	0.3	3.6	-159.20	-586.5	-222.8	627.4	623.5	3.98	157.756			
300.0	300.0	282.0	282.0	0.6	5.6	-159.20	-586.5	-222.8	627.4	621.2	6.20	101.167			
400.0	400.0	382.0	382.0	0.8	7.6	-159.20	-586.5	-222.8	627.4	619.0	8.43	74.458			
500.0	500.0	482.0	482.0	1.0	9.6	-159.20	-586.5	-222.8	627.4	616.8	10.65	58.906			
600.0	600.0	582.0	582.0	1.2	11.6	-159.20	-586.5	-222.8	627.4	614.6	12.88	48.729			
700.0	700.0	682.0	682.0	1.5	13.6	-159.20	-586.5	-222.8	627.4	612.3	15.10	41.550			
800.0	800.0	782.0	782.0	1.7	15.6	-159.20	-586.5	-222.8	627.4	610.1	17.33	36.214			
900.0	900.0	882.0	882.0	1.9	17.6	-159.20	-586.5	-222.8	627.4	607.9	19.55	32.093			
1,000.0	1,000.0	982.0	982.0	2.1	19.6	-159.20	-586.5	-222.8	627.4	605.7	21.78	28.814			
1,100.0	1,100.0	1,082.0	1,082.0	2.3	21.6	41.67	-586.5	-222.8	626.1	602.2	23.96	26.128			
1,200.0	1,199.8	1,181.8	1,181.8	2.5	23.6	42.04	-586.5	-222.8	622.2	596.1	26.11	23.828			
1,300.0	1,299.5	1,281.5	1,281.5	2.7	25.6	42.67	-586.5	-222.8	615.8	587.5	28.25	21.798			

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 Peterson 14X-234
Project:	SEC.14-T5N-R64W	TVD Reference:	WELL @ 4586.0ft (RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	MD Reference:	WELL @ 4586.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peterson 14X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (3-07-14)	Offset TVD Reference:	Offset Datum

Offset Design Peterson 14WX-HZ Pad (Exist) Sec.14-T5N-R64W - Peterson 14-1 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 6900-UNKNOWN													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
1,400.0	1,398.7	1,380.7	1,380.7	2.9	27.6	43.57		-586.5	-222.8	606.9	576.5	30.37	19.981	
1,500.0	1,497.5	1,479.5	1,479.5	3.2	29.6	44.76		-586.5	-222.8	595.6	563.1	32.49	18.332	
1,600.0	1,595.9	1,577.9	1,577.9	3.5	31.6	45.99		-586.5	-222.8	583.1	548.4	34.70	16.805	
1,700.0	1,694.3	1,676.3	1,676.3	3.8	33.5	47.25		-586.5	-222.8	570.8	533.9	36.94	15.455	
1,800.0	1,792.7	1,774.7	1,774.7	4.1	35.5	48.57		-586.5	-222.8	558.9	519.7	39.19	14.260	
1,900.0	1,891.2	1,873.2	1,873.2	4.4	37.5	49.95		-586.5	-222.8	547.3	505.8	41.47	13.197	
2,000.0	1,989.6	1,971.6	1,971.6	4.8	39.4	51.38		-586.5	-222.8	536.0	492.2	43.76	12.248	
2,100.0	2,088.0	2,070.0	2,070.0	5.2	41.4	52.87		-586.5	-222.8	525.0	478.9	46.06	11.397	
2,200.0	2,186.5	2,168.5	2,168.5	5.5	43.4	54.42		-586.5	-222.8	514.4	466.0	48.39	10.632	
2,300.0	2,284.9	2,266.9	2,266.9	5.9	45.3	56.04		-586.5	-222.8	504.2	453.5	50.72	9.942	
2,400.0	2,383.3	2,365.3	2,365.3	6.3	47.3	57.72		-586.5	-222.8	494.5	441.4	53.07	9.318	
2,500.0	2,481.7	2,463.7	2,463.7	6.7	49.3	59.46		-586.5	-222.8	485.2	429.7	55.43	8.753	
2,600.0	2,580.2	2,562.2	2,562.2	7.1	51.2	61.27		-586.5	-222.8	476.3	418.5	57.80	8.241	
2,700.0	2,678.6	2,660.6	2,660.6	7.4	53.2	63.14		-586.5	-222.8	468.0	407.8	60.18	7.776	
2,800.0	2,777.0	2,759.0	2,759.0	7.8	55.2	65.08		-586.5	-222.8	460.2	397.6	62.57	7.354	
2,900.0	2,875.4	2,857.4	2,857.4	8.2	57.1	67.08		-586.5	-222.8	452.9	387.9	64.97	6.971	
3,000.0	2,973.9	2,955.9	2,955.9	8.6	59.1	69.14		-586.5	-222.8	446.2	378.8	67.38	6.622	
3,100.0	3,072.3	3,054.3	3,054.3	9.0	61.1	71.26		-586.5	-222.8	440.2	370.4	69.79	6.306	
3,200.0	3,170.7	3,152.7	3,152.7	9.4	63.1	73.43		-586.5	-222.8	434.7	362.5	72.21	6.020	
3,300.0	3,269.2	3,251.2	3,251.2	9.8	65.0	75.66		-586.5	-222.8	429.9	355.3	74.63	5.761	
3,400.0	3,367.6	3,349.6	3,349.6	10.2	67.0	77.93		-586.5	-222.8	425.8	348.8	77.05	5.527	
3,500.0	3,466.0	3,448.0	3,448.0	10.6	69.0	80.24		-586.5	-222.8	422.4	343.0	79.46	5.316	
3,600.0	3,564.4	3,546.4	3,546.4	11.0	70.9	82.58		-586.5	-222.8	419.8	337.9	81.87	5.127	
3,700.0	3,662.9	3,644.9	3,644.9	11.4	72.9	84.94		-586.5	-222.8	417.8	333.5	84.28	4.958	
3,800.0	3,761.3	3,743.3	3,743.3	11.8	74.9	87.32		-586.5	-222.8	416.6	329.9	86.67	4.807	
3,900.0	3,859.7	3,841.7	3,841.7	12.2	76.8	89.72		-586.5	-222.8	416.1	327.1	89.05	4.673	
3,911.8	3,871.4	3,853.4	3,853.4	12.3	77.1	90.00		-586.5	-222.8	416.1	326.8	89.33	4.658	
4,000.0	3,958.1	3,940.1	3,940.1	12.6	78.8	92.11		-586.5	-222.8	416.4	325.0	91.42	4.555	
4,100.0	4,056.6	4,038.6	4,038.6	13.0	80.8	94.50		-586.5	-222.8	417.5	323.7	93.77	4.452	
4,200.0	4,155.0	4,137.0	4,137.0	13.4	82.7	96.87		-586.5	-222.8	419.2	323.1	96.11	4.362	
4,300.0	4,253.4	4,235.4	4,235.4	13.8	84.7	99.21		-586.5	-222.8	421.7	323.3	98.43	4.285	
4,400.0	4,351.9	4,333.9	4,333.9	14.2	86.7	101.53		-586.5	-222.8	425.0	324.2	100.73	4.219	
4,500.0	4,450.3	4,432.3	4,432.3	14.6	88.6	103.81		-586.5	-222.8	428.9	325.9	103.02	4.164	
4,600.0	4,548.7	4,530.7	4,530.7	15.0	90.6	106.04		-586.5	-222.8	433.5	328.2	105.28	4.118	
4,700.0	4,647.1	4,629.1	4,629.1	15.5	92.6	108.23		-586.5	-222.8	438.8	331.3	107.53	4.081	
4,800.0	4,745.6	4,727.6	4,727.6	15.9	94.6	110.36		-586.5	-222.8	444.7	335.0	109.76	4.052	
4,900.0	4,844.0	4,826.0	4,826.0	16.3	96.5	112.44		-586.5	-222.8	451.3	339.3	111.98	4.030	
5,000.0	4,942.4	4,924.4	4,924.4	16.7	98.5	114.45		-586.5	-222.8	458.4	344.2	114.18	4.015	
5,100.0	5,040.8	5,022.8	5,022.8	17.1	100.5	116.40		-586.5	-222.8	466.1	349.7	116.37	4.005	
5,200.0	5,139.3	5,121.3	5,121.3	17.5	102.4	118.32		-586.5	-222.8	474.1	355.5	118.57	3.999	
5,300.0	5,238.3	5,220.3	5,220.3	17.7	104.4	119.94		-586.5	-222.8	481.2	360.4	120.78	3.984	
5,400.0	5,337.7	5,319.7	5,319.7	17.9	106.4	121.14		-586.5	-222.8	486.7	363.7	122.98	3.958	
5,500.0	5,437.4	5,419.4	5,419.4	18.1	108.4	121.94		-586.5	-222.8	490.6	365.4	125.17	3.920	
5,600.0	5,537.3	5,519.3	5,519.3	18.3	110.4	122.37		-586.5	-222.8	492.7	365.4	127.32	3.870	
5,700.0	5,637.3	5,619.3	5,619.3	18.4	112.4	-78.30		-586.5	-222.8	493.1	366.0	127.11	3.879	
5,800.0	5,737.3	5,719.3	5,719.3	18.6	114.4	-78.30		-586.5	-222.8	493.1	363.8	129.26	3.815	
5,900.0	5,837.1	5,819.1	5,819.1	18.7	116.4	11.91		-586.5	-222.8	487.7	355.0	132.74	3.675	
6,000.0	5,935.3	5,917.3	5,917.3	18.7	118.3	12.67		-586.5	-222.8	469.8	338.2	131.62	3.569	
6,100.0	6,030.3	6,012.3	6,012.3	18.8	120.2	14.12		-586.5	-222.8	439.5	311.2	128.28	3.426	
6,200.0	6,120.4	6,102.4	6,102.4	18.8	122.0	16.59		-586.5	-222.8	397.6	274.6	122.99	3.233	
6,300.0	6,204.2	6,186.2	6,186.2	18.7	123.7	20.72		-586.5	-222.8	345.0	228.5	116.57	2.960	

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 Peterson 14X-234
Project:	SEC.14-T5N-R64W	TVD Reference:	WELL @ 4586.0ft (RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	MD Reference:	WELL @ 4586.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peterson 14X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (3-07-14)	Offset TVD Reference:	Offset Datum

Offset Design										Peterson 14WX-HZ Pad (Exist) Sec.14-T5N-R64W - Peterson 14-1 (Exist.) - Wellbore #1 - Wellbore #1				Offset Site Error:		0.0 ft
Survey Program: 6900-UNKNOWN												Offset Well Error:		0.0 ft		
Reference		Offset		Semi Major Axis		Distance								Warning		
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor				
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)					
6,400.0	6,280.0	6,262.0	6,262.0	18.7	125.2	27.79	-586.5	-222.8	283.4	172.0	111.46	2.543				
6,500.0	6,346.8	6,328.8	6,328.8	18.7	126.6	40.29	-586.5	-222.8	215.4	101.6	113.88	1.892				
6,600.0	6,403.2	6,385.2	6,385.2	18.8	127.7	61.06	-586.5	-222.8	147.5	17.2	130.23	1.132	Level 2			
6,700.0	6,448.5	6,430.5	6,430.5	18.9	128.6	85.66	-586.5	-222.8	101.8	-43.2	145.01	0.702	Level 1			
6,720.9	6,456.4	6,438.4	6,438.4	19.0	128.8	90.00	-586.5	-222.8	100.0	-46.0	145.91	0.685	Level 1, CC, ES, SF			
6,800.0	6,481.7	6,463.7	6,463.7	19.5	129.3	101.44	-586.5	-222.8	124.9	-20.2	145.15	0.861	Level 1			
6,900.0	6,502.3	6,484.3	6,484.3	20.8	129.7	103.77	-586.5	-222.8	199.6	53.7	145.92	1.368	Level 3			
7,000.0	6,510.0	6,492.0	6,492.0	22.6	129.8	91.78	-586.5	-222.8	290.1	138.4	151.78	1.912				
7,100.0	6,510.6	6,492.6	6,492.6	24.7	129.9	91.45	-586.5	-222.8	385.6	231.6	153.91	2.505				
7,200.0	6,511.3	6,493.3	6,493.3	26.9	129.9	91.84	-586.5	-222.8	482.8	326.7	156.14	3.092				
7,300.0	6,512.0	6,494.0	6,494.0	29.2	129.9	92.23	-586.5	-222.8	581.0	422.6	158.46	3.667				
7,400.0	6,512.7	6,494.7	6,494.7	31.6	129.9	92.62	-586.5	-222.8	679.8	518.9	160.85	4.226				
7,500.0	6,513.4	6,495.4	6,495.4	34.0	129.9	93.01	-586.5	-222.8	778.8	615.5	163.30	4.769				
7,600.0	6,514.0	6,496.0	6,496.0	36.5	129.9	93.40	-586.5	-222.8	878.1	712.3	165.78	5.297				
7,700.0	6,514.7	6,496.7	6,496.7	39.1	129.9	93.79	-586.5	-222.8	977.5	809.2	168.29	5.808				

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peterson 14X-234
Project:	SEC.14-T5N-R64W	TVD Reference:	WELL @ 4586.0ft (RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	MD Reference:	WELL @ 4586.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peterson 14X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (3-07-14)	Offset TVD Reference:	Offset Datum

Offset Design Peterson 14WX-HZ Pad Sec.14-T5N-R64W - Peterson 14W-234 - Wellbore #1 - Plan #1 (3-07-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-1.33	-1.33	120.2	-2.8	120.3				
100.0	100.0	100.0	100.0	0.1	0.1	-1.33	-1.33	120.2	-2.8	120.3	120.0	0.22	535.024	
200.0	200.0	200.0	200.0	0.3	0.3	-1.33	-1.33	120.2	-2.8	120.3	119.6	0.67	178.341	
300.0	300.0	300.0	300.0	0.6	0.6	-1.33	-1.33	120.2	-2.8	120.3	119.1	1.12	107.005	
400.0	400.0	400.0	400.0	0.8	0.8	-1.33	-1.33	120.2	-2.8	120.3	118.7	1.57	76.432	
500.0	500.0	500.0	500.0	1.0	1.0	-1.33	-1.33	120.2	-2.8	120.3	118.2	2.02	59.447	
600.0	600.0	600.0	600.0	1.2	1.2	-1.33	-1.33	120.2	-2.8	120.3	117.8	2.47	48.639	
700.0	700.0	700.0	700.0	1.5	1.5	-1.33	-1.33	120.2	-2.8	120.3	117.3	2.92	41.156	
800.0	800.0	800.0	800.0	1.7	1.7	-1.33	-1.33	120.2	-2.8	120.3	116.9	3.37	35.668	
900.0	900.0	900.0	900.0	1.9	1.9	-1.33	-1.33	120.2	-2.8	120.3	116.4	3.82	31.472	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-1.33	-1.33	120.2	-2.8	120.3	116.0	4.27	28.159 CC, ES	
1,100.0	1,100.0	1,096.2	1,096.2	2.3	2.4	-160.50	-160.50	121.7	-2.1	123.4	118.7	4.68	26.348	
1,200.0	1,199.8	1,191.9	1,191.8	2.5	2.6	-160.28	-160.28	126.1	-0.2	132.9	127.8	5.08	26.166 SF	
1,300.0	1,299.5	1,286.5	1,286.0	2.7	2.8	-159.96	-159.96	133.3	3.0	148.6	143.1	5.48	27.116	
1,400.0	1,398.7	1,379.3	1,378.2	2.9	3.0	-159.59	-159.59	143.2	7.3	170.5	164.6	5.89	28.954	
1,500.0	1,497.5	1,472.0	1,469.9	3.2	3.2	-159.23	-159.23	155.5	12.8	198.2	191.9	6.31	31.428	
1,600.0	1,595.9	1,567.3	1,564.1	3.5	3.5	-159.20	-159.20	168.9	18.7	228.3	221.6	6.74	33.872	
1,700.0	1,694.3	1,662.7	1,658.3	3.8	3.8	-159.20	-159.20	182.2	24.6	258.5	251.3	7.19	35.956	
1,800.0	1,792.7	1,758.0	1,752.5	4.1	4.1	-159.19	-159.19	195.6	30.5	288.6	281.0	7.65	37.748	
1,900.0	1,891.2	1,853.3	1,846.8	4.4	4.4	-159.19	-159.19	208.9	36.4	318.8	310.7	8.12	39.276	
2,000.0	1,889.6	1,848.7	1,841.0	4.8	4.7	-159.18	-159.18	222.2	42.3	349.0	340.4	8.59	40.627	
2,100.0	2,088.0	2,044.0	2,035.2	5.2	5.0	-159.18	-159.18	235.6	48.2	379.1	370.0	9.07	41.800	
2,200.0	2,186.5	2,139.4	2,129.4	5.5	5.3	-159.18	-159.18	248.9	54.0	409.3	399.7	9.55	42.832	
2,300.0	2,284.9	2,234.7	2,223.6	5.9	5.6	-159.18	-159.18	262.2	59.9	439.4	429.4	10.04	43.745	
2,400.0	2,383.3	2,330.1	2,317.9	6.3	5.9	-159.18	-159.18	275.6	65.8	469.6	459.0	10.54	44.557	
2,500.0	2,481.7	2,425.4	2,412.1	6.7	6.3	-159.18	-159.18	288.9	71.7	499.7	488.7	11.04	45.283	
2,600.0	2,580.2	2,520.8	2,506.3	7.1	6.6	-159.17	-159.17	302.2	77.6	529.9	518.3	11.54	45.935	
2,700.0	2,678.6	2,616.1	2,600.5	7.4	6.9	-159.17	-159.17	315.6	83.5	560.0	548.0	12.04	46.523	
2,800.0	2,777.0	2,711.4	2,694.8	7.8	7.2	-159.17	-159.17	328.9	89.4	590.2	577.6	12.54	47.056	
2,900.0	2,875.4	2,806.8	2,789.0	8.2	7.6	-159.17	-159.17	342.2	95.3	620.3	607.3	13.05	47.540	
3,000.0	2,973.9	2,902.1	2,883.2	8.6	7.9	-159.17	-159.17	355.6	101.2	650.5	636.9	13.56	47.982	
3,100.0	3,072.3	2,997.5	2,977.4	9.0	8.2	-159.17	-159.17	368.9	107.1	680.6	666.6	14.07	48.386	
3,200.0	3,170.7	3,092.8	3,071.7	9.4	8.5	-159.17	-159.17	382.3	112.9	710.8	696.2	14.58	48.758	
3,300.0	3,269.2	3,188.2	3,165.9	9.8	8.9	-159.17	-159.17	395.6	118.8	741.0	725.9	15.09	49.100	
3,400.0	3,367.6	3,283.5	3,260.1	10.2	9.2	-159.17	-159.17	408.9	124.7	771.1	755.5	15.60	49.416	
3,500.0	3,466.0	3,378.9	3,354.3	10.6	9.5	-159.17	-159.17	422.3	130.6	801.3	785.1	16.12	49.709	
3,600.0	3,564.4	3,474.2	3,448.6	11.0	9.9	-159.17	-159.17	435.6	136.5	831.4	814.8	16.63	49.980	
3,700.0	3,662.9	3,569.6	3,542.8	11.4	10.2	-159.17	-159.17	448.9	142.4	861.6	844.4	17.15	50.233	
3,800.0	3,761.3	3,664.9	3,637.0	11.8	10.6	-159.17	-159.17	462.3	148.3	891.7	874.1	17.67	50.469	
3,900.0	3,859.7	3,760.2	3,731.2	12.2	10.9	-159.17	-159.17	475.6	154.2	921.9	903.7	18.19	50.689	
4,000.0	3,958.1	3,855.6	3,825.5	12.6	11.2	-159.16	-159.16	488.9	160.1	952.0	933.3	18.71	50.896	
4,100.0	4,056.6	3,950.9	3,919.7	13.0	11.6	-159.16	-159.16	502.3	166.0	982.2	963.0	19.22	51.089	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peterson 14X-234
Project:	SEC.14-T5N-R64W	TVD Reference:	WELL @ 4586.0ft (RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	MD Reference:	WELL @ 4586.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peterson 14X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (3-07-14)	Offset TVD Reference:	Offset Datum

Offset Design Peterson 14WX-HZ Pad Sec.14-T5N-R64W - Peterson 14X-304 - Wellbore #1 - Plan #1 (3-07-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													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	-2.74	58.3	-2.8	58.4					
100.0	100.0	100.0	100.0	0.1	0.1	-2.74	58.3	-2.8	58.4	58.1	0.22	259.650		
200.0	200.0	200.0	200.0	0.3	0.3	-2.74	58.3	-2.8	58.4	57.7	0.67	86.550		
300.0	300.0	300.0	300.0	0.6	0.6	-2.74	58.3	-2.8	58.4	57.2	1.12	51.930		
400.0	400.0	400.0	400.0	0.8	0.8	-2.74	58.3	-2.8	58.4	56.8	1.57	37.093		
500.0	500.0	500.0	500.0	1.0	1.0	-2.74	58.3	-2.8	58.4	56.3	2.02	28.850		
600.0	600.0	600.0	600.0	1.2	1.2	-2.74	58.3	-2.8	58.4	55.9	2.47	23.605		
700.0	700.0	700.0	700.0	1.5	1.5	-2.74	58.3	-2.8	58.4	55.4	2.92	19.973		
800.0	800.0	800.0	800.0	1.7	1.7	-2.74	58.3	-2.8	58.4	55.0	3.37	17.310		
900.0	900.0	900.0	900.0	1.9	1.9	-2.74	58.3	-2.8	58.4	54.5	3.82	15.274		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-2.74	58.3	-2.8	58.4	54.1	4.27	13.666 CC, ES		
1,100.0	1,100.0	1,100.0	1,100.0	2.3	2.4	-162.50	58.3	-2.8	60.0	55.3	4.69	12.792		
1,200.0	1,199.8	1,199.8	1,199.8	2.5	2.6	-163.86	58.3	-2.8	65.0	59.9	5.09	12.775		
1,300.0	1,299.5	1,299.5	1,299.5	2.7	2.8	-165.70	58.3	-2.8	73.4	68.0	5.49	13.374		
1,400.0	1,398.7	1,398.7	1,398.7	2.9	3.0	-167.67	58.3	-2.8	85.3	79.4	5.89	14.473		
1,500.0	1,497.5	1,497.5	1,497.5	3.2	3.3	-169.52	58.3	-2.8	100.7	94.4	6.30	15.984		
1,600.0	1,595.9	1,595.9	1,595.9	3.5	3.5	-171.07	58.3	-2.8	118.1	111.3	6.72	17.566		
1,700.0	1,694.3	1,694.3	1,694.3	3.8	3.7	-172.23	58.3	-2.8	135.6	128.4	7.15	18.947		
1,800.0	1,792.7	1,792.7	1,792.7	4.1	3.9	-173.12	58.3	-2.8	153.1	145.5	7.59	20.162		
1,900.0	1,891.2	1,891.2	1,891.2	4.4	4.1	-173.83	58.3	-2.8	170.6	162.6	8.03	21.237		
2,000.0	1,989.6	1,989.6	1,989.6	4.8	4.4	-174.41	58.3	-2.8	188.2	179.7	8.48	22.192		
2,100.0	2,088.0	2,090.1	2,090.1	5.2	4.6	-174.52	58.2	-1.4	205.4	196.4	8.92	23.015		
2,200.0	2,186.5	2,191.1	2,190.9	5.5	4.8	-173.74	57.9	3.6	221.4	212.1	9.36	23.656		
2,300.0	2,284.9	2,290.6	2,290.2	5.9	5.0	-172.42	57.5	11.2	236.7	226.9	9.81	24.138		
2,400.0	2,383.3	2,389.3	2,388.6	6.3	5.2	-171.22	57.1	19.0	252.1	241.8	10.27	24.559		
2,500.0	2,481.7	2,488.0	2,486.9	6.7	5.4	-170.16	56.7	26.9	267.6	256.8	10.73	24.934		
2,600.0	2,580.2	2,586.7	2,585.3	7.1	5.6	-169.21	56.2	34.7	283.1	271.9	11.20	25.267		
2,700.0	2,678.6	2,685.4	2,683.7	7.4	5.9	-168.36	55.8	42.5	298.7	287.0	11.68	25.565		
2,800.0	2,777.0	2,784.1	2,782.1	7.8	6.1	-167.60	55.4	50.3	314.4	302.2	12.17	25.831		
2,900.0	2,875.4	2,882.7	2,880.4	8.2	6.3	-166.91	55.0	58.1	330.1	317.4	12.66	26.069		
3,000.0	2,973.9	2,981.4	2,978.8	8.6	6.5	-166.28	54.5	65.9	345.8	332.7	13.16	26.283		
3,100.0	3,072.3	3,080.1	3,077.2	9.0	6.8	-165.71	54.1	73.8	361.6	347.9	13.66	26.476		
3,200.0	3,170.7	3,178.8	3,175.6	9.4	7.0	-165.18	53.7	81.6	377.4	363.3	14.16	26.650		
3,300.0	3,269.2	3,277.5	3,273.9	9.8	7.3	-164.70	53.3	89.4	393.3	378.6	14.67	26.807		
3,400.0	3,367.6	3,376.2	3,372.3	10.2	7.5	-164.25	52.8	97.2	409.1	394.0	15.18	26.949		
3,500.0	3,466.0	3,474.8	3,470.7	10.6	7.7	-163.84	52.4	105.0	425.0	409.3	15.70	27.079		
3,600.0	3,564.4	3,573.5	3,569.0	11.0	8.0	-163.46	52.0	112.8	441.0	424.7	16.21	27.197		
3,700.0	3,662.9	3,672.2	3,667.4	11.4	8.2	-163.10	51.6	120.7	456.9	440.2	16.73	27.305		
3,800.0	3,761.3	3,770.9	3,765.8	11.8	8.5	-162.77	51.1	128.5	472.8	455.6	17.25	27.403		
3,900.0	3,859.7	3,869.6	3,864.2	12.2	8.7	-162.46	50.7	136.3	488.8	471.0	17.78	27.494		
4,000.0	3,958.1	3,968.3	3,962.5	12.6	9.0	-162.17	50.3	144.1	504.8	486.5	18.30	27.577		
4,100.0	4,056.6	4,066.9	4,060.9	13.0	9.2	-161.90	49.8	151.9	520.8	501.9	18.83	27.654		
4,200.0	4,155.0	4,165.6	4,159.3	13.4	9.5	-161.64	49.4	159.7	536.8	517.4	19.36	27.724		
4,300.0	4,253.4	4,264.3	4,257.7	13.8	9.7	-161.40	49.0	167.5	552.8	532.9	19.89	27.790		
4,400.0	4,351.9	4,363.0	4,356.0	14.2	10.0	-161.17	48.6	175.4	568.8	548.4	20.42	27.850		
4,500.0	4,450.3	4,461.7	4,454.4	14.6	10.2	-160.96	48.1	183.2	584.8	563.9	20.96	27.907		
4,600.0	4,548.7	4,560.4	4,552.8	15.0	10.5	-160.75	47.7	191.0	600.9	579.4	21.49	27.959		
4,700.0	4,647.1	4,659.0	4,651.1	15.5	10.8	-160.56	47.3	198.8	616.9	594.9	22.03	28.007		
4,800.0	4,745.6	4,757.7	4,749.5	15.9	11.0	-160.37	46.9	206.6	632.9	610.4	22.56	28.053		
4,900.0	4,844.0	4,856.4	4,847.9	16.3	11.3	-160.20	46.4	214.4	649.0	625.9	23.10	28.095		
5,000.0	4,942.4	4,955.1	4,946.3	16.7	11.5	-160.03	46.0	222.3	665.1	641.4	23.64	28.134		

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 Peterson 14X-234
Project:	SEC.14-T5N-R64W	TVD Reference:	WELL @ 4586.0ft (RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	MD Reference:	WELL @ 4586.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peterson 14X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (3-07-14)	Offset TVD Reference:	Offset Datum

Offset Design Peterson 14WX-HZ Pad Sec.14-T5N-R64W - Peterson 14X-304 - Wellbore #1 - Plan #1 (3-07-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
5,100.0	5,040.8	5,053.8	5,044.6	17.1	11.8	-159.88	45.6	230.1	681.1	656.9	24.18	28.171		
5,200.0	5,139.3	5,152.5	5,143.1	17.5	12.0	-159.76	45.1	237.9	696.9	672.1	24.73	28.177		
5,300.0	5,238.3	5,251.6	5,241.9	17.7	12.3	-159.61	44.7	245.7	709.8	684.6	25.26	28.096		
5,400.0	5,337.7	5,350.1	5,340.1	17.9	12.5	-159.42	44.3	252.8	719.6	693.9	25.73	27.968		
5,500.0	5,437.4	5,448.4	5,438.3	18.1	12.7	-159.37	44.1	256.6	726.3	700.2	26.12	27.811		
5,600.0	5,537.3	5,547.4	5,537.3	18.3	12.9	-159.45	44.1	257.2	730.0	703.5	26.45	27.595		
5,700.0	5,637.3	5,647.4	5,637.3	18.4	13.1	-0.22	44.1	257.2	730.6	700.5	30.08	24.287		
5,800.0	5,737.3	5,747.4	5,737.3	18.6	13.3	-0.22	44.1	257.2	730.6	700.2	30.42	24.020		
5,868.3	5,805.6	5,815.7	5,805.6	18.6	13.4	90.00	44.1	257.2	730.6	703.2	27.41	26.649		
5,900.0	5,837.1	5,847.2	5,837.1	18.7	13.5	90.21	44.1	257.2	730.6	703.1	27.54	26.531		
6,000.0	5,935.3	5,947.7	5,937.2	18.7	13.6	91.12	44.1	250.4	730.7	702.9	27.82	26.266		
6,100.0	6,030.3	6,049.7	6,037.2	18.8	13.7	92.02	44.1	230.1	731.1	703.1	28.00	26.110		
6,200.0	6,120.4	6,153.3	6,135.0	18.8	13.8	92.88	44.1	196.0	731.5	703.4	28.13	26.007		
6,300.0	6,204.2	6,258.6	6,228.7	18.7	13.9	93.71	44.1	148.2	732.1	703.8	28.31	25.858		
6,400.0	6,280.0	6,365.5	6,316.2	18.7	14.0	94.47	44.1	87.0	732.8	704.1	28.71	25.526		
6,500.0	6,346.8	6,473.9	6,395.3	18.7	14.4	95.16	44.1	13.1	733.6	704.1	29.51	24.857		
6,600.0	6,403.2	6,583.7	6,464.0	18.8	15.1	95.75	44.1	-72.5	734.3	703.4	30.91	23.754		
6,700.0	6,448.5	6,694.7	6,520.2	18.9	16.2	96.24	44.1	-168.1	735.0	701.9	33.05	22.238		
6,800.0	6,481.7	6,806.7	6,562.3	19.5	17.7	96.61	44.1	-271.7	735.5	699.5	35.97	20.449		
6,900.0	6,502.3	6,919.4	6,589.0	20.8	19.6	96.86	44.1	-381.1	735.9	696.3	39.58	18.590		
7,000.0	6,510.0	7,032.5	6,599.3	22.6	21.8	96.97	44.1	-493.7	736.0	692.3	43.72	16.834		
7,100.0	6,510.6	7,134.3	6,599.1	24.7	24.0	96.90	44.1	-595.5	735.9	688.0	47.95	15.347		
7,200.0	6,511.3	7,234.3	6,598.7	26.9	26.2	96.82	44.1	-695.5	735.8	683.4	52.39	14.044		
7,300.0	6,512.0	7,334.3	6,598.4	29.2	28.6	96.74	44.1	-795.5	735.7	678.6	57.04	12.899		
7,400.0	6,512.7	7,434.3	6,598.0	31.6	31.0	96.66	44.1	-895.5	735.6	673.7	61.84	11.895		
7,500.0	6,513.4	7,534.3	6,597.7	34.0	33.5	96.58	44.1	-995.5	735.4	668.7	66.76	11.016		
7,600.0	6,514.0	7,634.3	6,597.3	36.5	36.0	96.50	44.1	-1,095.5	735.3	663.5	71.79	10.243		
7,700.0	6,514.7	7,734.3	6,597.0	39.1	38.5	96.42	44.1	-1,195.5	735.2	658.3	76.89	9.562		
7,800.0	6,515.4	7,834.3	6,596.6	41.6	41.1	96.34	44.1	-1,295.5	735.1	653.0	82.06	8.958		
7,900.0	6,516.1	7,934.3	6,596.3	44.2	43.8	96.26	44.1	-1,395.5	735.0	647.7	87.28	8.421		
8,000.0	6,516.8	8,034.3	6,595.9	46.9	46.4	96.18	44.1	-1,495.5	734.9	642.3	92.55	7.940		
8,100.0	6,517.5	8,134.3	6,595.6	49.5	49.1	96.10	44.1	-1,595.5	734.8	636.9	97.86	7.509		
8,200.0	6,518.1	8,234.3	6,595.2	52.2	51.8	96.02	44.1	-1,695.4	734.7	631.5	103.19	7.119		
8,300.0	6,518.8	8,334.3	6,594.9	54.8	54.4	95.94	44.1	-1,795.4	734.6	626.0	108.56	6.766		
8,400.0	6,519.5	8,434.3	6,594.5	57.5	57.2	95.86	44.1	-1,895.4	734.4	620.5	113.95	6.445		
8,500.0	6,520.2	8,534.3	6,594.2	60.2	59.9	95.78	44.1	-1,995.4	734.3	615.0	119.36	6.152		
8,600.0	6,520.9	8,634.2	6,593.8	62.9	62.6	95.70	44.1	-2,095.4	734.2	609.4	124.79	5.884		
8,700.0	6,521.5	8,734.2	6,593.5	65.7	65.3	95.62	44.1	-2,195.4	734.1	603.9	130.23	5.637		
8,800.0	6,522.2	8,834.2	6,593.1	68.4	68.1	95.54	44.1	-2,295.4	734.0	598.3	135.69	5.410		
8,900.0	6,522.9	8,934.2	6,592.8	71.1	70.8	95.46	44.1	-2,395.4	733.9	592.8	141.17	5.199		
9,000.0	6,523.6	9,034.2	6,592.4	73.9	73.5	95.38	44.1	-2,495.4	733.8	587.2	146.65	5.004		
9,100.0	6,524.3	9,134.2	6,592.1	76.6	76.3	95.30	44.1	-2,595.4	733.7	581.6	152.14	4.823		
9,200.0	6,524.9	9,234.2	6,591.7	79.3	79.0	95.22	44.1	-2,695.4	733.7	576.0	157.65	4.654		
9,300.0	6,525.6	9,334.2	6,591.4	82.1	81.8	95.14	44.1	-2,795.4	733.6	570.4	163.16	4.496		
9,400.0	6,526.3	9,434.2	6,591.1	84.9	84.6	95.06	44.1	-2,895.4	733.5	564.8	168.68	4.348		
9,500.0	6,527.0	9,534.2	6,590.7	87.6	87.3	94.98	44.1	-2,995.4	733.4	559.2	174.20	4.210		
9,600.0	6,527.7	9,634.2	6,590.4	90.4	90.1	94.90	44.1	-3,095.4	733.3	553.6	179.74	4.080		
9,700.0	6,528.3	9,734.2	6,590.0	93.1	92.9	94.82	44.1	-3,195.4	733.2	547.9	185.27	3.957		
9,800.0	6,529.0	9,834.2	6,589.7	95.9	95.6	94.74	44.1	-3,295.4	733.1	542.3	190.82	3.842		
9,900.0	6,529.7	9,934.2	6,589.3	98.7	98.4	94.66	44.1	-3,395.3	733.0	536.7	196.37	3.733		
10,000.0	6,530.4	10,034.2	6,589.0	101.4	101.2	94.58	44.1	-3,495.3	732.9	531.0	201.92	3.630		

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 Peterson 14X-234
Project:	SEC.14-T5N-R64W	TVD Reference:	WELL @ 4586.0ft (RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	MD Reference:	WELL @ 4586.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peterson 14X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (3-07-14)	Offset TVD Reference:	Offset Datum

Offset Design Peterson 14WX-HZ Pad Sec.14-T5N-R64W - Peterson 14X-304 - Wellbore #1 - Plan #1 (3-07-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning	
Reference	Offset	Reference	Offset	Reference	Offset		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
10,100.0	6,531.1	10,134.2	6,588.6	104.2	104.0	94.50	44.1	-3,595.3	732.9	525.4	207.48	3.532		
10,200.0	6,531.7	10,234.2	6,588.3	107.0	106.8	94.42	44.1	-3,695.3	732.8	519.7	213.04	3.440		
10,300.0	6,532.4	10,334.2	6,587.9	109.8	109.5	94.34	44.1	-3,795.3	732.7	514.1	218.61	3.352		
10,400.0	6,533.1	10,434.2	6,587.6	112.5	112.3	94.26	44.1	-3,895.3	732.6	508.5	224.18	3.268		
10,500.0	6,533.8	10,534.1	6,587.2	115.3	115.1	94.18	44.1	-3,995.3	732.6	502.8	229.75	3.188		
10,600.0	6,534.5	10,634.1	6,586.9	118.1	117.9	94.10	44.1	-4,095.3	732.5	497.2	235.33	3.113		
10,700.0	6,535.1	10,734.1	6,586.5	120.9	120.7	94.02	44.1	-4,195.3	732.4	491.5	240.91	3.040		
10,800.0	6,535.8	10,834.1	6,586.2	123.7	123.1	93.94	44.1	-4,295.3	732.3	486.2	246.15	2.975		
10,825.1	6,536.0	10,859.3	6,586.1	124.4	123.6	93.92	44.1	-4,320.4	732.3	485.0	247.31	2.961 SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peterson 14X-234
Project:	SEC.14-T5N-R64W	TVD Reference:	WELL @ 4586.0ft (RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	MD Reference:	WELL @ 4586.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peterson 14X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (3-07-14)	Offset TVD Reference:	Offset Datum

Offset Design		Peterson 14WX-HZ Pad Sec.14-T5N-R64W - Peterson 14X-434 - Wellbore #1 - Plan #1 (3-07-14)											Offset Site Error:		0.0 ft
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
0.0	0.0	0.0	0.0	0.0	0.0	-5.46	29.1	-2.8	29.3						
100.0	100.0	100.0	100.0	0.1	0.1	-5.46	29.1	-2.8	29.3	29.1	0.22	130.259			
200.0	200.0	200.0	200.0	0.3	0.3	-5.46	29.1	-2.8	29.3	28.6	0.67	43.420			
300.0	300.0	300.0	300.0	0.6	0.6	-5.46	29.1	-2.8	29.3	28.2	1.12	26.052			
400.0	400.0	400.0	400.0	0.8	0.8	-5.46	29.1	-2.8	29.3	27.7	1.57	18.608			
500.0	500.0	500.0	500.0	1.0	1.0	-5.46	29.1	-2.8	29.3	27.3	2.02	14.473			
600.0	600.0	600.0	600.0	1.2	1.2	-5.46	29.1	-2.8	29.3	26.8	2.47	11.842			
700.0	700.0	700.0	700.0	1.5	1.5	-5.46	29.1	-2.8	29.3	26.4	2.92	10.020			
800.0	800.0	800.0	800.0	1.7	1.7	-5.46	29.1	-2.8	29.3	25.9	3.37	8.684			
900.0	900.0	900.0	900.0	1.9	1.9	-5.46	29.1	-2.8	29.3	25.5	3.82	7.662			
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-5.46	29.1	-2.8	29.3	25.0	4.27	6.856 CC, ES			
1,100.0	1,100.0	1,100.0	1,100.0	2.3	2.4	-165.56	29.1	-2.8	31.0	26.3	4.69	6.599			
1,200.0	1,199.8	1,199.8	1,199.8	2.5	2.6	-167.61	29.1	-2.8	36.1	31.0	5.09	7.084			
1,300.0	1,299.5	1,299.5	1,299.5	2.7	2.8	-169.98	29.1	-2.8	44.6	39.1	5.49	8.124			
1,400.0	1,398.7	1,398.7	1,398.7	2.9	3.0	-172.09	29.1	-2.8	56.7	50.8	5.89	9.615			
1,500.0	1,497.5	1,497.5	1,497.5	3.2	3.3	-173.77	29.1	-2.8	72.2	65.9	6.29	11.469			
1,600.0	1,595.9	1,598.8	1,598.8	3.5	3.5	-174.69	27.7	-1.9	88.2	81.5	6.69	13.171			
1,700.0	1,694.3	1,701.3	1,701.1	3.8	3.6	-174.75	23.2	1.0	100.8	93.7	7.08	14.231			
1,800.0	1,792.7	1,804.5	1,803.9	4.1	3.8	-174.23	15.5	5.9	110.1	102.6	7.49	14.690			
1,900.0	1,891.2	1,907.1	1,905.7	4.4	4.0	-173.25	4.9	12.7	116.0	108.1	7.91	14.659			
2,000.0	1,989.6	2,006.9	2,004.7	4.8	4.3	-172.24	-6.2	19.8	121.1	112.8	8.35	14.507			
2,100.0	2,088.0	2,106.8	2,103.7	5.2	4.5	-171.31	-17.3	26.9	126.2	117.4	8.79	14.356			
2,200.0	2,186.5	2,206.6	2,202.6	5.5	4.8	-170.46	-28.4	34.0	131.4	122.1	9.25	14.206			
2,300.0	2,284.9	2,306.5	2,301.6	5.9	5.0	-169.66	-39.5	41.1	136.5	126.8	9.71	14.062			
2,400.0	2,383.3	2,406.3	2,400.6	6.3	5.3	-168.93	-50.7	48.2	141.8	131.6	10.18	13.920			
2,500.0	2,481.7	2,506.2	2,499.6	6.7	5.6	-168.25	-61.8	55.4	147.0	136.3	10.66	13.783			
2,600.0	2,580.2	2,606.0	2,598.5	7.1	5.9	-167.62	-72.9	62.5	152.2	141.1	11.15	13.651			
2,700.0	2,678.6	2,705.9	2,697.5	7.4	6.2	-167.03	-84.0	69.6	157.5	145.8	11.64	13.525			
2,800.0	2,777.0	2,805.7	2,796.5	7.8	6.5	-166.47	-95.1	76.7	162.8	150.6	12.14	13.403			
2,900.0	2,875.4	2,905.6	2,895.4	8.2	6.8	-165.95	-106.2	83.8	168.0	155.4	12.65	13.286			
3,000.0	2,973.9	3,005.4	2,994.4	8.6	7.1	-165.47	-117.4	90.9	173.3	160.2	13.16	13.174			
3,100.0	3,072.3	3,105.3	3,093.4	9.0	7.4	-165.01	-128.5	98.0	178.7	165.0	13.67	13.067			
3,200.0	3,170.7	3,205.1	3,192.4	9.4	7.7	-164.58	-139.6	105.1	184.0	169.8	14.19	12.965			
3,300.0	3,269.2	3,304.9	3,291.3	9.8	8.0	-164.17	-150.7	112.2	189.3	174.6	14.71	12.867			
3,400.0	3,367.6	3,404.8	3,390.3	10.2	8.3	-163.79	-161.8	119.3	194.7	179.4	15.24	12.774			
3,500.0	3,466.0	3,504.6	3,489.3	10.6	8.6	-163.42	-173.0	126.4	200.0	184.3	15.77	12.684			
3,600.0	3,564.4	3,604.5	3,588.3	11.0	9.0	-163.08	-184.1	133.6	205.4	189.1	16.30	12.599			
3,700.0	3,662.9	3,704.3	3,687.2	11.4	9.3	-162.75	-195.2	140.7	210.8	193.9	16.84	12.517			
3,800.0	3,761.3	3,804.2	3,786.2	11.8	9.6	-162.44	-206.3	147.8	216.1	198.8	17.37	12.439			
3,900.0	3,859.7	3,904.0	3,885.2	12.2	9.9	-162.14	-217.4	154.9	221.5	203.6	17.92	12.364			
4,000.0	3,958.1	4,003.9	3,984.1	12.6	10.3	-161.86	-228.5	162.0	226.9	208.4	18.46	12.292			
4,100.0	4,056.6	4,103.7	4,083.1	13.0	10.6	-161.59	-239.7	169.1	232.3	213.3	19.00	12.224			
4,200.0	4,155.0	4,203.6	4,182.1	13.4	10.9	-161.33	-250.8	176.2	237.7	218.1	19.55	12.158			
4,300.0	4,253.4	4,303.4	4,281.1	13.8	11.2	-161.09	-261.9	183.3	243.1	223.0	20.10	12.094			
4,400.0	4,351.9	4,403.3	4,380.0	14.2	11.6	-160.85	-273.0	190.4	248.5	227.8	20.65	12.034			
4,500.0	4,450.3	4,503.1	4,479.0	14.6	11.9	-160.63	-284.1	197.5	253.9	232.7	21.20	11.976			
4,600.0	4,548.7	4,603.0	4,578.0	15.0	12.2	-160.41	-295.2	204.6	259.3	237.6	21.75	11.920			
4,700.0	4,647.1	4,702.8	4,677.0	15.5	12.6	-160.20	-306.4	211.8	264.7	242.4	22.31	11.866			
4,800.0	4,745.6	4,802.7	4,775.9	15.9	12.9	-160.01	-317.5	218.9	270.1	247.3	22.87	11.814			
4,900.0	4,844.0	4,902.5	4,874.9	16.3	13.2	-159.82	-328.6	226.0	275.6	252.1	23.42	11.764			
5,000.0	4,942.4	5,002.4	4,973.9	16.7	13.6	-159.63	-339.7	233.1	281.0	257.0	23.98	11.716			

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 Peterson 14X-234
Project:	SEC.14-T5N-R64W	TVD Reference:	WELL @ 4586.0ft (RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	MD Reference:	WELL @ 4586.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peterson 14X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (3-07-14)	Offset TVD Reference:	Offset Datum

Offset Design		Peterson 14WX-HZ Pad Sec.14-T5N-R64W - Peterson 14X-434 - Wellbore #1 - Plan #1 (3-07-14)											Offset Site Error:		0.0 ft
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
5,100.0	5,040.8	5,102.2	5,072.8	17.1	13.9	-159.46	-350.8	240.2	286.4	261.9	24.54	11.670			
5,200.0	5,139.3	5,198.1	5,167.9	17.5	14.2	-159.33	-361.2	246.8	291.9	266.8	25.08	11.636			
5,300.0	5,238.3	5,290.0	5,259.3	17.7	14.4	-159.31	-368.9	251.8	296.9	271.4	25.52	11.633			
5,400.0	5,337.7	5,381.8	5,350.9	17.9	14.6	-159.38	-374.2	255.1	301.4	275.4	25.91	11.633			
5,500.0	5,437.4	5,473.5	5,442.6	18.1	14.8	-159.52	-377.0	256.9	305.3	279.0	26.23	11.636			
5,600.0	5,537.3	5,568.2	5,537.3	18.3	14.9	-159.72	-377.5	257.2	308.4	281.9	26.52	11.628			
5,700.0	5,637.3	5,668.2	5,637.3	18.4	15.1	-0.52	-377.5	257.2	309.1	276.8	32.25	9.582			
5,800.0	5,737.3	5,768.2	5,737.3	18.6	15.2	-0.52	-377.5	257.2	309.1	276.5	32.54	9.498			
5,868.3	5,805.6	5,836.5	5,805.6	18.6	15.3	90.00	-377.5	257.2	309.0	281.6	27.47	11.251			
5,900.0	5,837.1	5,868.0	5,837.1	18.7	15.4	90.49	-377.5	257.2	309.1	281.4	27.63	11.186			
6,000.0	5,935.3	5,967.7	5,936.7	18.7	15.5	93.46	-377.5	255.1	309.6	281.4	28.22	10.973			
6,100.0	6,030.3	6,069.9	6,037.8	18.8	15.6	96.63	-377.5	240.8	311.2	282.5	28.68	10.848			
6,200.0	6,120.4	6,174.6	6,138.5	18.8	15.7	99.68	-377.5	212.3	313.6	284.7	28.98	10.822			
6,300.0	6,204.2	6,281.9	6,236.7	18.7	15.7	102.56	-377.5	169.1	316.8	287.7	29.15	10.869			
6,400.0	6,280.0	6,391.9	6,329.9	18.7	15.7	105.19	-377.5	111.0	320.5	291.2	29.31	10.933			
6,500.0	6,346.8	6,504.5	6,415.8	18.7	15.7	107.54	-377.5	38.3	324.4	294.7	29.68	10.930			
6,600.0	6,403.2	6,619.6	6,491.5	18.8	15.7	109.54	-377.5	-48.2	328.1	297.6	30.50	10.757			
6,700.0	6,448.5	6,736.8	6,554.4	18.9	15.9	111.16	-377.5	-147.0	331.6	299.5	32.04	10.347			
6,800.0	6,481.7	6,855.9	6,602.1	19.5	17.5	112.37	-377.5	-256.0	334.3	299.9	34.44	9.708			
6,900.0	6,502.3	6,976.2	6,632.5	20.8	19.5	113.16	-377.5	-372.3	336.2	298.4	37.71	8.914			
7,000.0	6,510.0	7,085.7	6,645.9	22.6	21.7	113.77	-377.5	-480.9	337.9	296.5	41.46	8.150			
7,100.0	6,510.6	7,196.7	6,653.9	24.7	24.0	114.87	-377.5	-591.6	340.6	295.4	45.25	7.528			
7,200.0	6,511.3	7,299.1	6,654.9	26.9	26.3	114.92	-377.5	-694.0	340.8	291.4	49.34	6.907			
7,300.0	6,512.0	7,399.1	6,655.7	29.2	28.6	114.94	-377.5	-794.0	340.8	287.3	53.57	6.363			
7,400.0	6,512.7	7,499.1	6,656.6	31.6	31.1	114.97	-377.5	-894.0	340.9	283.0	57.94	5.884			
7,500.0	6,513.4	7,599.1	6,657.5	34.0	33.5	115.00	-377.5	-994.0	341.0	278.6	62.42	5.463			
7,600.0	6,514.0	7,699.1	6,658.3	36.5	36.1	115.02	-377.5	-1,094.0	341.1	274.1	67.00	5.091			
7,700.0	6,514.7	7,799.1	6,659.2	39.1	38.6	115.05	-377.5	-1,194.0	341.1	269.5	71.64	4.762			
7,800.0	6,515.4	7,899.1	6,660.0	41.6	41.2	115.08	-377.5	-1,294.0	341.2	264.9	76.34	4.469			
7,900.0	6,516.1	7,999.1	6,660.9	44.2	43.8	115.10	-377.5	-1,393.9	341.3	260.2	81.09	4.209			
8,000.0	6,516.8	8,099.1	6,661.7	46.9	46.5	115.13	-377.5	-1,493.9	341.4	255.5	85.88	3.975			
8,100.0	6,517.5	8,199.1	6,662.6	49.5	49.1	115.16	-377.5	-1,593.9	341.4	250.7	90.70	3.764			
8,200.0	6,518.1	8,299.1	6,663.4	52.2	51.8	115.18	-377.5	-1,693.9	341.5	246.0	95.55	3.574			
8,300.0	6,518.8	8,399.1	6,664.3	54.8	54.5	115.21	-377.5	-1,793.9	341.6	241.2	100.42	3.401			
8,400.0	6,519.5	8,499.1	6,665.2	57.5	57.2	115.24	-377.5	-1,893.9	341.7	236.3	105.31	3.244			
8,500.0	6,520.2	8,599.1	6,666.0	60.2	59.9	115.26	-377.5	-1,993.9	341.7	231.5	110.22	3.100			
8,600.0	6,520.9	8,699.1	6,666.9	62.9	62.6	115.29	-377.5	-2,093.9	341.8	226.7	115.14	2.969			
8,700.0	6,521.5	8,799.1	6,667.7	65.7	65.4	115.32	-377.5	-2,193.9	341.9	221.8	120.08	2.847			
8,800.0	6,522.2	8,899.1	6,668.6	68.4	68.1	115.34	-377.5	-2,293.9	342.0	216.9	125.02	2.735			
8,900.0	6,522.9	8,999.1	6,669.4	71.1	70.8	115.37	-377.5	-2,393.9	342.0	212.1	129.98	2.631			
9,000.0	6,523.6	9,099.1	6,670.3	73.9	73.6	115.40	-377.5	-2,493.9	342.1	207.2	134.94	2.535			
9,100.0	6,524.3	9,199.1	6,671.1	76.6	76.3	115.42	-377.5	-2,593.9	342.2	202.3	139.91	2.446			
9,200.0	6,524.9	9,299.1	6,672.0	79.3	79.1	115.45	-377.5	-2,693.9	342.3	197.4	144.88	2.362			
9,300.0	6,525.6	9,399.1	6,672.9	82.1	81.8	115.47	-377.5	-2,793.9	342.3	192.5	149.86	2.284			
9,400.0	6,526.3	9,499.1	6,673.7	84.9	84.6	115.50	-377.5	-2,893.9	342.4	187.6	154.85	2.211			
9,500.0	6,527.0	9,599.1	6,674.6	87.6	87.4	115.53	-377.5	-2,993.9	342.5	182.6	159.83	2.143			
9,600.0	6,527.7	9,699.1	6,675.4	90.4	90.1	115.55	-377.5	-3,093.9	342.6	177.7	164.83	2.078			
9,700.0	6,528.3	9,799.1	6,676.3	93.1	92.9	115.58	-377.5	-3,193.9	342.6	172.8	169.82	2.018			
9,800.0	6,529.0	9,899.1	6,677.1	95.9	95.7	115.61	-377.5	-3,293.9	342.7	167.9	174.82	1.960			
9,900.0	6,529.7	9,999.1	6,678.0	98.7	98.4	115.63	-377.5	-3,393.9	342.8	163.0	179.81	1.906			
10,000.0	6,530.4	10,099.1	6,678.8	101.4	101.2	115.66	-377.5	-3,493.9	342.9	158.0	184.81	1.855			

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 Peterson 14X-234
Project:	SEC.14-T5N-R64W	TVD Reference:	WELL @ 4586.0ft (RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	MD Reference:	WELL @ 4586.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peterson 14X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (3-07-14)	Offset TVD Reference:	Offset Datum

Offset Design Peterson 14WX-HZ Pad Sec.14-T5N-R64W - Peterson 14X-434 - Wellbore #1 - Plan #1 (3-07-14)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning
Reference	Offset	Reference	Offset	Reference	Offset		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)			
10,100.0	6,531.1	10,199.1	6,679.7	104.2	104.0	115.69	-377.5	-3,593.9	342.9	153.1	189.81	1.807	
10,200.0	6,531.7	10,299.1	6,680.5	107.0	106.8	115.71	-377.5	-3,693.9	343.0	148.2	194.82	1.761	
10,300.0	6,532.4	10,399.1	6,681.4	109.8	109.5	115.74	-377.5	-3,793.9	343.1	143.3	199.82	1.717	
10,400.0	6,533.1	10,499.1	6,682.3	112.5	112.3	115.76	-377.5	-3,893.9	343.2	138.3	204.82	1.675	
10,500.0	6,533.8	10,599.1	6,683.1	115.3	115.1	115.79	-377.5	-3,993.9	343.2	133.4	209.83	1.636	
10,600.0	6,534.5	10,699.1	6,684.0	118.1	117.9	115.82	-377.5	-4,093.8	343.3	128.5	214.83	1.598	
10,700.0	6,535.1	10,799.1	6,684.8	120.9	120.7	115.84	-377.5	-4,193.8	343.4	123.5	219.84	1.562	
10,800.0	6,535.8	10,899.1	6,685.7	123.7	123.5	115.87	-377.5	-4,293.8	343.5	118.6	224.84	1.528	
10,825.1	6,536.0	10,924.2	6,685.9	124.4	124.2	115.88	-377.5	-4,319.0	343.5	117.4	226.10	1.519 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peterson 14X-234
Project:	SEC.14-T5N-R64W	TVD Reference:	WELL @ 4586.0ft (RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	MD Reference:	WELL @ 4586.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peterson 14X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (3-07-14)	Offset TVD Reference:	Offset Datum

Offset Design Peterson 14WX-HZ Pad Sec.14-T5N-R64W - Peterson 14Y-304 - Wellbore #1 - Plan #1 (3-07-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													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	
0.0	0.0	0.0	0.0	0.0	0.0	180.00	-61.9	0.0	61.9					
100.0	100.0	100.0	100.0	0.1	0.1	180.00	-61.9	0.0	61.9	61.7	0.22	275.544		
200.0	200.0	200.0	200.0	0.3	0.3	180.00	-61.9	0.0	61.9	61.3	0.67	91.848 CC, ES		
300.0	300.0	297.9	297.9	0.6	0.5	179.68	-63.6	0.3	63.6	62.5	1.10	57.924		
400.0	400.0	395.6	395.4	0.8	0.7	178.83	-68.5	1.4	68.6	67.1	1.53	44.932		
500.0	500.0	492.8	492.3	1.0	1.0	177.66	-76.5	3.1	77.0	75.0	1.98	38.979		
600.0	600.0	589.3	588.1	1.2	1.2	176.40	-87.8	5.5	88.7	86.3	2.44	36.390		
700.0	700.0	685.0	682.6	1.5	1.6	175.20	-102.0	8.6	103.8	100.9	2.91	35.621		
800.0	800.0	779.5	775.6	1.7	1.9	174.14	-119.1	12.2	122.1	118.7	3.40	35.914		
900.0	900.0	872.9	866.7	1.9	2.3	173.25	-138.9	16.4	143.7	139.8	3.90	36.859		
1,000.0	1,000.0	966.7	957.6	2.1	2.8	172.49	-161.5	21.3	168.3	163.9	4.41	38.133		
1,100.0	1,100.0	1,063.9	1,051.6	2.3	3.3	12.65	-185.5	26.4	191.8	187.1	4.73	40.552		
1,200.0	1,199.8	1,161.8	1,146.4	2.5	3.8	12.40	-209.7	31.6	212.0	206.9	5.16	41.124		
1,300.0	1,299.5	1,260.3	1,241.8	2.7	4.3	12.37	-234.0	36.8	228.9	223.3	5.60	40.887		
1,400.0	1,398.7	1,359.4	1,337.6	2.9	4.8	12.54	-258.5	42.0	242.4	236.4	6.05	40.047		
1,500.0	1,497.5	1,458.9	1,433.9	3.2	5.3	12.87	-283.0	47.3	252.6	246.0	6.52	38.711		
1,600.0	1,595.9	1,558.5	1,530.3	3.5	5.9	13.32	-307.7	52.5	260.7	253.7	7.02	37.139		
1,700.0	1,694.3	1,658.2	1,626.7	3.8	6.4	13.74	-332.3	57.8	268.9	261.4	7.53	35.719		
1,800.0	1,792.7	1,757.8	1,723.1	4.1	6.9	14.14	-356.9	63.0	277.1	269.0	8.04	34.445		
1,900.0	1,891.2	1,857.5	1,819.5	4.4	7.4	14.51	-381.5	68.3	285.3	276.7	8.57	33.297		
2,000.0	1,989.6	1,957.1	1,915.9	4.8	8.0	14.87	-406.1	73.6	293.5	284.4	9.10	32.261		
2,100.0	2,088.0	2,056.8	2,012.3	5.2	8.5	15.20	-430.7	78.8	301.7	292.1	9.63	31.321		
2,200.0	2,186.5	2,156.4	2,108.8	5.5	9.0	15.52	-455.4	84.1	309.9	299.8	10.17	30.467		
2,300.0	2,284.9	2,256.1	2,205.2	5.9	9.6	15.82	-480.0	89.4	318.2	307.5	10.72	29.687		
2,400.0	2,383.3	2,355.7	2,301.6	6.3	10.1	16.10	-504.6	94.6	326.4	315.2	11.27	28.973		
2,500.0	2,481.7	2,455.3	2,398.0	6.7	10.6	16.37	-529.2	99.9	334.7	322.9	11.82	28.318		
2,600.0	2,580.2	2,555.0	2,494.4	7.1	11.2	16.63	-553.8	105.1	342.9	330.6	12.37	27.714		
2,700.0	2,678.6	2,654.6	2,590.8	7.4	11.7	16.88	-578.4	110.4	351.2	338.3	12.93	27.157		
2,800.0	2,777.0	2,754.3	2,687.2	7.8	12.2	17.11	-603.0	115.7	359.5	346.0	13.49	26.640		
2,900.0	2,875.4	2,853.9	2,783.7	8.2	12.8	17.34	-627.7	120.9	367.8	353.7	14.06	26.161		
3,000.0	2,973.9	2,953.6	2,880.1	8.6	13.3	17.55	-652.3	126.2	376.1	361.4	14.62	25.715		
3,100.0	3,072.3	3,053.2	2,976.5	9.0	13.8	17.76	-676.9	131.4	384.3	369.1	15.19	25.299		
3,200.0	3,170.7	3,152.9	3,072.9	9.4	14.4	17.95	-701.5	136.7	392.6	376.9	15.76	24.910		
3,300.0	3,269.2	3,252.5	3,169.3	9.8	14.9	18.14	-726.1	142.0	400.9	384.6	16.33	24.546		
3,400.0	3,367.6	3,352.2	3,265.7	10.2	15.4	18.32	-750.7	147.2	409.2	392.3	16.91	24.204		
3,500.0	3,466.0	3,451.8	3,362.2	10.6	16.0	18.50	-775.4	152.5	417.5	400.1	17.48	23.883		
3,600.0	3,564.4	3,551.5	3,458.6	11.0	16.5	18.66	-800.0	157.8	425.9	407.8	18.06	23.580		
3,700.0	3,662.9	3,651.1	3,555.0	11.4	17.0	18.82	-824.6	163.0	434.2	415.5	18.64	23.295		
3,800.0	3,761.3	3,750.8	3,651.4	11.8	17.6	18.98	-849.2	168.3	442.5	423.3	19.22	23.025		
3,900.0	3,859.7	3,850.4	3,747.8	12.2	18.1	19.13	-873.8	173.5	450.8	431.0	19.80	22.770		
4,000.0	3,958.1	3,950.0	3,844.2	12.6	18.6	19.27	-898.4	178.8	459.1	438.7	20.38	22.528		
4,100.0	4,056.6	4,049.7	3,940.6	13.0	19.2	19.41	-923.1	184.1	467.5	446.5	20.96	22.299		
4,200.0	4,155.0	4,149.3	4,037.1	13.4	19.7	19.54	-947.7	189.3	475.8	454.2	21.55	22.081		
4,300.0	4,253.4	4,249.0	4,133.5	13.8	20.2	19.67	-972.3	194.6	484.1	462.0	22.13	21.874		
4,400.0	4,351.9	4,348.6	4,229.9	14.2	20.8	19.80	-996.9	199.8	492.4	469.7	22.72	21.677		
4,500.0	4,450.3	4,448.3	4,326.3	14.6	21.3	19.92	-1,021.5	205.1	500.8	477.5	23.30	21.488		
4,600.0	4,548.7	4,547.9	4,422.7	15.0	21.9	20.03	-1,046.1	210.4	509.1	485.2	23.89	21.309		
4,700.0	4,647.1	4,647.6	4,519.1	15.5	22.4	20.14	-1,070.7	215.6	517.5	493.0	24.48	21.137		
4,800.0	4,745.6	4,747.2	4,615.5	15.9	22.9	20.25	-1,095.4	220.9	525.8	500.7	25.07	20.973		
4,900.0	4,844.0	4,846.9	4,712.0	16.3	23.5	20.36	-1,120.0	226.2	534.1	508.5	25.66	20.816		
5,000.0	4,942.4	4,946.5	4,808.4	16.7	24.0	20.46	-1,144.6	231.4	542.5	516.2	26.25	20.666		

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 Peterson 14X-234
Project:	SEC.14-T5N-R64W	TVD Reference:	WELL @ 4586.0ft (RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	MD Reference:	WELL @ 4586.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peterson 14X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (3-07-14)	Offset TVD Reference:	Offset Datum

Offset Design Peterson 14WX-HZ Pad Sec.14-T5N-R64W - Peterson 14Y-304 - Wellbore #1 - Plan #1 (3-07-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWDD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
5,100.0	5,040.8	5,046.2	4,904.8	17.1	24.5	20.56	-1,169.2	236.7	550.8	524.0	26.84	20.521		
5,200.0	5,139.3	5,151.8	5,007.1	17.5	25.1	20.68	-1,195.1	242.2	559.4	532.0	27.42	20.398		
5,300.0	5,238.3	5,275.2	5,127.4	17.7	25.5	20.79	-1,221.8	247.9	567.7	539.8	27.93	20.328		
5,400.0	5,337.7	5,399.1	5,249.3	17.9	25.9	20.85	-1,243.4	252.5	575.0	546.7	28.35	20.281		
5,500.0	5,437.4	5,523.4	5,372.4	18.1	26.2	20.87	-1,260.0	256.1	581.4	552.7	28.71	20.251		
5,600.0	5,537.3	5,648.1	5,496.6	18.3	26.4	20.84	-1,271.3	258.5	586.8	557.8	29.00	20.236		
5,700.0	5,637.3	5,773.2	5,621.5	18.4	26.6	-179.98	-1,277.3	259.8	591.0	546.9	44.06	13.412		
5,800.0	5,737.3	5,889.0	5,737.3	18.6	26.7	180.00	-1,278.3	260.0	591.8	547.5	44.31	13.356		
5,822.6	5,760.0	5,911.7	5,760.0	18.6	26.7	-90.03	-1,278.3	260.0	591.8	562.1	29.69	19.935		
5,900.0	5,837.1	5,988.9	5,837.2	18.7	26.8	-90.51	-1,278.3	259.8	591.9	562.0	29.82	19.850		
6,000.0	5,935.3	6,089.8	5,937.6	18.7	26.8	-91.45	-1,278.3	251.1	592.0	562.2	29.84	19.842		
6,100.0	6,030.3	6,192.0	6,037.3	18.8	26.9	-92.38	-1,278.3	228.9	592.3	562.6	29.79	19.884		
6,200.0	6,120.4	6,295.5	6,134.4	18.8	26.9	-93.27	-1,278.3	193.0	592.8	563.1	29.75	19.927		
6,300.0	6,204.2	6,400.4	6,226.8	18.7	26.9	-94.11	-1,278.3	143.6	593.4	563.5	29.82	19.898		
6,400.0	6,280.0	6,506.6	6,312.6	18.7	26.9	-94.87	-1,278.3	81.2	594.0	563.8	30.15	19.701		
6,500.0	6,346.8	6,614.0	6,389.7	18.7	26.9	-95.56	-1,278.3	6.6	594.6	563.7	30.90	19.243		
6,600.0	6,403.2	6,722.4	6,456.2	18.8	26.9	-96.14	-1,278.3	-79.0	595.3	563.0	32.23	18.469		
6,700.0	6,448.5	6,831.8	6,510.4	18.9	27.0	-96.61	-1,278.3	-173.9	595.8	561.6	34.23	17.408		
6,800.0	6,481.7	6,941.9	6,550.6	19.5	27.2	-96.96	-1,278.3	-276.3	596.2	559.3	36.92	16.149		
6,900.0	6,502.3	7,052.5	6,575.8	20.8	27.5	-97.17	-1,278.3	-383.9	596.5	556.3	40.24	14.825		
7,000.0	6,510.0	7,163.4	6,585.3	22.6	28.2	-97.25	-1,278.3	-494.2	596.6	552.6	44.04	13.547		
7,100.0	6,510.6	7,264.3	6,585.4	24.7	29.1	-97.19	-1,278.3	-595.2	596.5	548.4	48.16	12.385		
7,200.0	6,511.3	7,364.3	6,585.4	26.9	30.5	-97.13	-1,278.3	-695.2	596.5	543.9	52.53	11.354		
7,300.0	6,512.0	7,464.3	6,585.4	29.2	32.2	-97.07	-1,278.3	-795.2	596.4	539.3	57.12	10.441		
7,400.0	6,512.7	7,564.3	6,585.4	31.6	34.2	-97.00	-1,278.3	-895.2	596.3	534.4	61.87	9.638		
7,500.0	6,513.4	7,664.3	6,585.4	34.0	36.4	-96.94	-1,278.3	-995.2	596.2	529.5	66.75	8.932		
7,600.0	6,514.0	7,764.3	6,585.4	36.5	38.6	-96.88	-1,278.3	-1,095.2	596.1	524.4	71.74	8.310		
7,700.0	6,514.7	7,864.3	6,585.5	39.1	41.0	-96.81	-1,278.3	-1,195.2	596.1	519.2	76.81	7.760		
7,800.0	6,515.4	7,964.3	6,585.5	41.6	43.4	-96.75	-1,278.3	-1,295.2	596.0	514.0	81.95	7.272		
7,900.0	6,516.1	8,064.3	6,585.5	44.2	45.9	-96.69	-1,278.3	-1,395.2	595.9	508.7	87.15	6.838		
8,000.0	6,516.8	8,164.3	6,585.5	46.9	48.4	-96.62	-1,278.3	-1,495.2	595.8	503.4	92.39	6.449		
8,100.0	6,517.5	8,264.3	6,585.5	49.5	50.9	-96.56	-1,278.3	-1,595.2	595.7	498.1	97.68	6.099		
8,200.0	6,518.1	8,364.3	6,585.5	52.2	53.5	-96.50	-1,278.3	-1,695.2	595.7	492.7	103.00	5.783		
8,300.0	6,518.8	8,464.3	6,585.6	54.8	56.1	-96.43	-1,278.3	-1,795.2	595.6	487.2	108.35	5.497		
8,400.0	6,519.5	8,564.3	6,585.6	57.5	58.8	-96.37	-1,278.3	-1,895.2	595.5	481.8	113.72	5.237		
8,500.0	6,520.2	8,664.3	6,585.6	60.2	61.4	-96.31	-1,278.3	-1,995.2	595.4	476.3	119.12	4.999		
8,600.0	6,520.9	8,764.3	6,585.6	62.9	64.1	-96.24	-1,278.3	-2,095.2	595.4	470.8	124.54	4.781		
8,700.0	6,521.5	8,864.3	6,585.6	65.7	66.7	-96.18	-1,278.3	-2,195.2	595.3	465.3	129.97	4.580		
8,800.0	6,522.2	8,964.3	6,585.7	68.4	69.4	-96.12	-1,278.3	-2,295.2	595.2	459.8	135.42	4.395		
8,900.0	6,522.9	9,064.3	6,585.7	71.1	72.1	-96.05	-1,278.3	-2,395.2	595.2	454.3	140.88	4.225		
9,000.0	6,523.6	9,164.3	6,585.7	73.9	74.8	-95.99	-1,278.3	-2,495.1	595.1	448.7	146.35	4.066		
9,100.0	6,524.3	9,264.3	6,585.7	76.6	77.5	-95.93	-1,278.3	-2,595.1	595.0	443.2	151.84	3.919		
9,200.0	6,524.9	9,364.3	6,585.7	79.3	80.2	-95.86	-1,278.3	-2,695.1	595.0	437.6	157.33	3.781		
9,300.0	6,525.6	9,464.3	6,585.7	82.1	82.9	-95.80	-1,278.3	-2,795.1	594.9	432.1	162.84	3.653		
9,400.0	6,526.3	9,564.3	6,585.8	84.9	85.7	-95.74	-1,278.3	-2,895.1	594.8	426.5	168.35	3.533		
9,500.0	6,527.0	9,664.3	6,585.8	87.6	88.4	-95.67	-1,278.3	-2,995.1	594.8	420.9	173.87	3.421		
9,600.0	6,527.7	9,764.3	6,585.8	90.4	91.1	-95.61	-1,278.3	-3,095.1	594.7	415.3	179.40	3.315		
9,700.0	6,528.3	9,864.3	6,585.8	93.1	93.9	-95.55	-1,278.3	-3,195.1	594.6	409.7	184.93	3.215		
9,800.0	6,529.0	9,964.3	6,585.8	95.9	96.6	-95.48	-1,278.3	-3,295.1	594.6	404.1	190.47	3.122		
9,900.0	6,529.7	10,064.3	6,585.8	98.7	99.4	-95.42	-1,278.3	-3,395.1	594.5	398.5	196.01	3.033		
10,000.0	6,530.4	10,164.3	6,585.9	101.4	102.1	-95.35	-1,278.3	-3,495.1	594.4	392.9	201.56	2.949		

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 Peterson 14X-234
Project:	SEC.14-T5N-R64W	TVD Reference:	WELL @ 4586.0ft (RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	MD Reference:	WELL @ 4586.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peterson 14X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (3-07-14)	Offset TVD Reference:	Offset Datum

Offset Design Peterson 14WX-HZ Pad Sec.14-T5N-R64W - Peterson 14Y-304 - Wellbore #1 - Plan #1 (3-07-14)												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)				
10,100.0	6,531.1	10,264.3	6,585.9	104.2	104.9	-95.29	-1,278.3	-3,595.1	594.4	387.3	207.11	2.870			
10,200.0	6,531.7	10,364.3	6,585.9	107.0	107.6	-95.23	-1,278.3	-3,695.1	594.3	381.7	212.67	2.795			
10,300.0	6,532.4	10,464.3	6,585.9	109.8	110.4	-95.16	-1,278.3	-3,795.1	594.3	376.0	218.23	2.723			
10,400.0	6,533.1	10,564.3	6,585.9	112.5	113.2	-95.10	-1,278.4	-3,895.1	594.2	370.4	223.79	2.655			
10,500.0	6,533.8	10,664.3	6,585.9	115.3	115.9	-95.04	-1,278.4	-3,995.1	594.1	364.8	229.36	2.590			
10,600.0	6,534.5	10,764.3	6,586.0	118.1	118.7	-94.97	-1,278.4	-4,095.1	594.1	359.2	234.93	2.529			
10,700.0	6,535.1	10,864.3	6,586.0	120.9	121.5	-94.91	-1,278.4	-4,195.1	594.0	353.5	240.51	2.470			
10,800.0	6,535.8	10,964.3	6,586.0	123.7	124.2	-94.85	-1,278.4	-4,295.1	594.0	347.9	246.09	2.414			
10,803.3	6,535.9	10,967.2	6,586.0	123.8	124.3	-94.84	-1,278.4	-4,298.1	594.0	347.7	246.26	2.412			
10,825.1	6,536.0	10,967.2	6,586.0	124.4	124.3	-94.84	-1,278.4	-4,298.1	594.4	347.5	246.87	2.408 SF			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peterson 14X-234
Project:	SEC.14-T5N-R64W	TVD Reference:	WELL @ 4586.0ft (RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	MD Reference:	WELL @ 4586.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peterson 14X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (3-07-14)	Offset TVD Reference:	Offset Datum

Offset Design Peterson 14WX-HZ Pad Sec.14-T5N-R64W - Peterson 14Y-414 - Wellbore #1 - Plan #1 (3-07-14)													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)			
0.0	0.0	0.0	0.0	0.0	0.0	180.00	-29.1	0.0	29.1					
100.0	100.0	100.0	100.0	0.1	0.1	180.00	-29.1	0.0	29.1	28.9	0.22	129.668		
200.0	200.0	200.0	200.0	0.3	0.3	180.00	-29.1	0.0	29.1	28.5	0.67	43.223		
300.0	300.0	300.0	300.0	0.6	0.6	180.00	-29.1	0.0	29.1	28.0	1.12	25.934		
400.0	400.0	400.0	400.0	0.8	0.8	180.00	-29.1	0.0	29.1	27.6	1.57	18.524		
500.0	500.0	500.0	500.0	1.0	1.0	180.00	-29.1	0.0	29.1	27.1	2.02	14.408		
600.0	600.0	600.0	600.0	1.2	1.2	180.00	-29.1	0.0	29.1	26.7	2.47	11.788		
700.0	700.0	700.0	700.0	1.5	1.5	180.00	-29.1	0.0	29.1	26.2	2.92	9.974		
800.0	800.0	800.0	800.0	1.7	1.7	180.00	-29.1	0.0	29.1	25.8	3.37	8.645 CC, ES		
900.0	900.0	899.0	899.0	1.9	1.9	179.13	-30.8	0.5	30.8	27.0	3.79	8.125		
1,000.0	1,000.0	997.7	997.6	2.1	2.1	177.02	-35.7	1.9	35.8	31.6	4.20	8.539		
1,100.0	1,100.0	1,096.2	1,095.7	2.3	2.3	15.89	-43.9	4.2	42.6	38.0	4.58	9.302		
1,200.0	1,199.8	1,194.4	1,193.2	2.5	2.5	14.87	-55.2	7.4	49.4	44.5	4.95	9.987		
1,300.0	1,299.5	1,292.4	1,290.0	2.7	2.7	14.40	-69.8	11.5	56.2	50.9	5.33	10.554		
1,400.0	1,398.7	1,390.2	1,386.0	2.9	3.0	14.30	-87.4	16.5	63.0	57.3	5.72	11.016		
1,500.0	1,497.5	1,489.5	1,483.0	3.2	3.4	14.60	-107.6	22.2	68.8	62.7	6.13	11.224		
1,600.0	1,595.9	1,589.4	1,580.7	3.5	3.8	15.27	-128.1	28.0	72.8	66.2	6.58	11.054		
1,700.0	1,694.3	1,689.3	1,678.3	3.8	4.2	15.88	-148.5	33.8	76.7	69.7	7.05	10.875		
1,800.0	1,792.7	1,789.2	1,776.0	4.1	4.6	16.43	-169.0	39.6	80.7	73.1	7.54	10.704		
1,900.0	1,891.2	1,889.1	1,873.6	4.4	5.0	16.93	-189.4	45.4	84.6	76.6	8.03	10.535		
2,000.0	1,989.6	1,989.1	1,971.2	4.8	5.4	17.38	-209.8	51.2	88.6	80.0	8.54	10.376		
2,100.0	2,088.0	2,089.0	2,068.9	5.2	5.9	17.80	-230.3	57.0	92.6	83.5	9.05	10.226		
2,200.0	2,186.5	2,188.9	2,166.5	5.5	6.3	18.18	-250.7	62.8	96.5	87.0	9.57	10.084		
2,300.0	2,284.9	2,288.8	2,264.1	5.9	6.7	18.53	-271.2	68.6	100.5	90.4	10.10	9.951		
2,400.0	2,383.3	2,388.7	2,361.8	6.3	7.2	18.85	-291.6	74.4	104.5	93.9	10.63	9.826		
2,500.0	2,481.7	2,488.7	2,459.4	6.7	7.6	19.15	-312.0	80.1	108.5	97.3	11.17	9.708		
2,600.0	2,580.2	2,588.6	2,557.0	7.1	8.1	19.43	-332.5	85.9	112.5	100.7	11.72	9.598		
2,700.0	2,678.6	2,688.5	2,654.7	7.4	8.6	19.69	-352.9	91.7	116.5	104.2	12.26	9.495		
2,800.0	2,777.0	2,788.4	2,752.3	7.8	9.0	19.94	-373.3	97.5	120.4	107.6	12.82	9.399		
2,900.0	2,875.4	2,888.3	2,849.9	8.2	9.5	20.16	-393.8	103.3	124.4	111.1	13.37	9.308		
3,000.0	2,973.9	2,988.2	2,947.6	8.6	9.9	20.38	-414.2	109.1	128.4	114.5	13.93	9.222		
3,100.0	3,072.3	3,088.2	3,045.2	9.0	10.4	20.58	-434.7	114.9	132.4	117.9	14.49	9.142		
3,200.0	3,170.7	3,188.1	3,142.8	9.4	10.8	20.76	-455.1	120.7	136.4	121.4	15.05	9.066		
3,300.0	3,269.2	3,288.0	3,240.5	9.8	11.3	20.94	-475.5	126.5	140.4	124.8	15.61	8.994		
3,400.0	3,367.6	3,387.9	3,338.1	10.2	11.8	21.11	-496.0	132.3	144.4	128.3	16.18	8.927		
3,500.0	3,466.0	3,487.8	3,435.7	10.6	12.2	21.27	-516.4	138.1	148.4	131.7	16.75	8.863		
3,600.0	3,564.4	3,587.8	3,533.4	11.0	12.7	21.42	-536.8	143.8	152.4	135.1	17.32	8.802		
3,700.0	3,662.9	3,687.7	3,631.0	11.4	13.2	21.56	-557.3	149.6	156.4	138.6	17.89	8.745		
3,800.0	3,761.3	3,787.6	3,728.6	11.8	13.6	21.70	-577.7	155.4	160.5	142.0	18.46	8.691		
3,900.0	3,859.7	3,887.5	3,826.3	12.2	14.1	21.83	-598.2	161.2	164.5	145.4	19.04	8.639		
4,000.0	3,958.1	3,987.4	3,923.9	12.6	14.5	21.95	-618.6	167.0	168.5	148.9	19.61	8.590		
4,100.0	4,056.6	4,087.4	4,021.6	13.0	15.0	22.07	-639.0	172.8	172.5	152.3	20.19	8.543		
4,200.0	4,155.0	4,187.3	4,119.2	13.4	15.5	22.18	-659.5	178.6	176.5	155.7	20.77	8.498		
4,300.0	4,253.4	4,287.2	4,216.8	13.8	15.9	22.29	-679.9	184.4	180.5	159.1	21.35	8.456		
4,400.0	4,351.9	4,387.1	4,314.5	14.2	16.4	22.39	-700.4	190.2	184.5	162.6	21.92	8.415		
4,500.0	4,450.3	4,487.0	4,412.1	14.6	16.9	22.49	-720.8	196.0	188.5	166.0	22.51	8.376		
4,600.0	4,548.7	4,587.0	4,509.7	15.0	17.3	22.58	-741.2	201.7	192.5	169.4	23.09	8.339		
4,700.0	4,647.1	4,686.9	4,607.4	15.5	17.8	22.67	-761.7	207.5	196.5	172.9	23.67	8.304		
4,800.0	4,745.6	4,786.8	4,705.0	15.9	18.3	22.76	-782.1	213.3	200.5	176.3	24.25	8.270		
4,900.0	4,844.0	4,886.7	4,802.6	16.3	18.7	22.84	-802.5	219.1	204.6	179.7	24.83	8.237		
5,000.0	4,942.4	4,986.6	4,900.3	16.7	19.2	22.92	-823.0	224.9	208.6	183.2	25.42	8.206		

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 Peterson 14X-234
Project:	SEC.14-T5N-R64W	TVD Reference:	WELL @ 4586.0ft (RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	MD Reference:	WELL @ 4586.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peterson 14X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (3-07-14)	Offset TVD Reference:	Offset Datum

Offset Design		Peterson 14WX-HZ Pad Sec.14-T5N-R64W - Peterson 14Y-414 - Wellbore #1 - Plan #1 (3-07-14)											Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
5,100.0	5,040.8	5,086.5	4,997.9	17.1	19.7	23.00	-843.4	230.7	212.6	186.6	26.00	8.176		
5,200.0	5,139.3	5,186.5	5,095.5	17.5	20.1	23.05	-863.9	236.5	216.9	190.4	26.57	8.164		
5,300.0	5,238.3	5,286.4	5,193.1	17.7	20.6	22.84	-884.3	242.3	224.0	197.0	27.03	8.287		
5,400.0	5,337.7	5,394.2	5,298.9	17.9	20.9	22.43	-904.4	248.0	232.5	205.1	27.40	8.486		
5,500.0	5,437.4	5,502.4	5,405.8	18.1	21.2	22.01	-920.6	252.6	240.6	212.9	27.70	8.686		
5,600.0	5,537.3	5,610.9	5,513.5	18.3	21.5	21.55	-933.0	256.1	248.3	220.4	27.95	8.886		
5,700.0	5,637.3	5,719.8	5,622.1	18.4	21.7	-179.66	-941.5	258.5	255.5	216.4	39.05	6.542		
5,800.0	5,737.3	5,829.2	5,731.3	18.6	21.9	-179.95	-946.1	259.8	259.6	220.2	39.38	6.594		
5,900.0	5,837.1	5,935.0	5,837.1	18.7	22.0	-91.19	-946.8	260.0	260.4	231.8	28.63	9.096		
6,000.0	5,935.3	6,034.8	5,936.9	18.7	22.1	-94.71	-946.8	257.9	261.3	232.9	28.36	9.213		
6,100.0	6,030.3	6,137.4	6,038.4	18.8	22.2	-98.44	-946.8	243.5	263.3	235.2	28.09	9.374		
6,200.0	6,120.4	6,242.5	6,139.5	18.8	22.2	-102.01	-946.8	214.8	266.3	238.4	27.90	9.547		
6,300.0	6,204.2	6,350.3	6,238.0	18.7	22.2	-105.33	-946.8	171.3	270.2	242.4	27.83	9.707		
6,400.0	6,280.0	6,460.7	6,331.5	18.7	22.2	-108.34	-946.8	112.8	274.6	246.6	27.95	9.823		
6,500.0	6,346.8	6,573.7	6,417.5	18.7	22.2	-110.97	-946.8	39.6	279.1	250.8	28.34	9.848		
6,600.0	6,403.2	6,689.2	6,493.2	18.8	22.2	-113.19	-946.8	-47.4	283.5	254.3	29.13	9.732		
6,700.0	6,448.5	6,806.7	6,555.9	18.9	22.3	-114.95	-946.8	-146.7	287.3	256.9	30.45	9.437		
6,800.0	6,481.7	6,926.0	6,603.2	19.5	22.5	-116.24	-946.8	-256.1	290.3	257.9	32.42	8.957		
6,900.0	6,502.3	7,046.6	6,633.2	20.8	23.1	-117.03	-946.8	-372.8	292.3	257.3	35.03	8.344		
7,000.0	6,510.0	7,155.6	6,646.3	22.6	24.2	-117.68	-946.8	-480.9	294.3	256.3	37.92	7.760		
7,100.0	6,510.6	7,267.0	6,654.1	24.7	26.0	-118.86	-946.8	-592.0	297.3	255.9	41.36	7.187		
7,200.0	6,511.3	7,369.0	6,655.1	26.9	28.1	-118.91	-946.8	-694.0	297.4	252.1	45.31	6.563		
7,300.0	6,512.0	7,469.0	6,655.9	29.2	30.2	-118.94	-946.8	-794.0	297.5	248.1	49.42	6.020		
7,400.0	6,512.7	7,569.0	6,656.8	31.6	32.5	-118.97	-946.8	-894.0	297.6	243.9	53.66	5.545		
7,500.0	6,513.4	7,669.0	6,657.6	34.0	34.8	-119.00	-946.8	-994.0	297.6	239.6	58.02	5.130		
7,600.0	6,514.0	7,769.0	6,658.5	36.5	37.3	-119.03	-946.8	-1,094.0	297.7	235.3	62.47	4.766		
7,700.0	6,514.7	7,869.0	6,659.4	39.1	39.8	-119.05	-946.8	-1,194.0	297.8	230.8	66.98	4.446		
7,800.0	6,515.4	7,969.0	6,660.2	41.6	42.3	-119.08	-946.8	-1,294.0	297.9	226.4	71.55	4.164		
7,900.0	6,516.1	8,069.0	6,661.1	44.2	44.8	-119.11	-946.8	-1,393.9	298.0	221.8	76.16	3.912		
8,000.0	6,516.8	8,169.0	6,661.9	46.9	47.4	-119.14	-946.8	-1,493.9	298.1	217.3	80.82	3.688		
8,100.0	6,517.5	8,269.0	6,662.8	49.5	50.0	-119.17	-946.8	-1,593.9	298.2	212.7	85.50	3.487		
8,200.0	6,518.1	8,369.0	6,663.6	52.2	52.7	-119.20	-946.8	-1,693.9	298.2	208.0	90.21	3.306		
8,300.0	6,518.8	8,469.0	6,664.5	54.8	55.3	-119.23	-946.8	-1,793.9	298.3	203.4	94.93	3.142		
8,400.0	6,519.5	8,569.0	6,665.3	57.5	58.0	-119.26	-946.8	-1,893.9	298.4	198.7	99.68	2.994		
8,500.0	6,520.2	8,669.0	6,666.2	60.2	60.7	-119.29	-946.8	-1,993.9	298.5	194.1	104.44	2.858		
8,600.0	6,520.9	8,769.0	6,667.1	62.9	63.4	-119.32	-946.8	-2,093.9	298.6	189.4	109.22	2.734		
8,700.0	6,521.5	8,869.0	6,667.9	65.7	66.1	-119.35	-946.8	-2,193.9	298.7	184.7	114.00	2.620		
8,800.0	6,522.2	8,969.0	6,668.8	68.4	68.8	-119.38	-946.8	-2,293.9	298.8	180.0	118.79	2.515		
8,900.0	6,522.9	9,069.0	6,669.6	71.1	71.5	-119.41	-946.8	-2,393.9	298.8	175.2	123.59	2.418		
9,000.0	6,523.6	9,169.0	6,670.5	73.9	74.2	-119.44	-946.8	-2,493.9	298.9	170.5	128.40	2.328		
9,100.0	6,524.3	9,269.0	6,671.3	76.6	76.9	-119.46	-946.8	-2,593.9	299.0	165.8	133.22	2.245		
9,200.0	6,524.9	9,369.0	6,672.2	79.3	79.7	-119.49	-946.8	-2,693.9	299.1	161.1	138.03	2.167		
9,300.0	6,525.6	9,469.0	6,673.0	82.1	82.4	-119.52	-946.8	-2,793.9	299.2	156.3	142.86	2.094		
9,400.0	6,526.3	9,569.0	6,673.9	84.9	85.1	-119.55	-946.8	-2,893.9	299.3	151.6	147.68	2.026		
9,500.0	6,527.0	9,669.0	6,674.8	87.6	87.9	-119.58	-946.8	-2,993.9	299.4	146.8	152.51	1.963		
9,600.0	6,527.7	9,769.0	6,675.6	90.4	90.6	-119.61	-946.8	-3,093.9	299.4	142.1	157.34	1.903		
9,700.0	6,528.3	9,869.0	6,676.5	93.1	93.4	-119.64	-946.8	-3,193.9	299.5	137.4	162.17	1.847		
9,800.0	6,529.0	9,969.0	6,677.3	95.9	96.2	-119.67	-946.8	-3,293.9	299.6	132.6	167.00	1.794		
9,900.0	6,529.7	10,069.0	6,678.2	98.7	98.9	-119.70	-946.8	-3,393.9	299.7	127.9	171.84	1.744		
10,000.0	6,530.4	10,169.0	6,679.0	101.4	101.7	-119.73	-946.8	-3,493.9	299.8	123.1	176.67	1.697		
10,100.0	6,531.1	10,269.0	6,679.9	104.2	104.4	-119.76	-946.8	-3,593.9	299.9	118.4	181.51	1.652		

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 Peterson 14X-234
Project:	SEC.14-T5N-R64W	TVD Reference:	WELL @ 4586.0ft (RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	MD Reference:	WELL @ 4586.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peterson 14X-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (3-07-14)	Offset TVD Reference:	Offset Datum

Offset Design Peterson 14WX-HZ Pad Sec.14-T5N-R64W - Peterson 14Y-414 - Wellbore #1 - Plan #1 (3-07-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning	
Reference	Offset	Reference	Offset	(ft)	(ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
10,200.0	6,531.7	10,369.0	6,680.7	107.0	107.2	-119.78	-946.8	-3,693.9	300.0	113.6	186.35	1.610		
10,300.0	6,532.4	10,469.0	6,681.6	109.8	110.0	-119.81	-946.8	-3,793.9	300.0	108.9	191.18	1.569		
10,400.0	6,533.1	10,569.0	6,682.4	112.5	112.8	-119.84	-946.8	-3,893.9	300.1	104.1	196.02	1.531		
10,500.0	6,533.8	10,669.0	6,683.3	115.3	115.5	-119.87	-946.8	-3,993.8	300.2	99.4	200.85	1.495 Level 3		
10,600.0	6,534.5	10,769.0	6,684.2	118.1	118.3	-119.90	-946.8	-4,093.8	300.3	94.6	205.69	1.460 Level 3		
10,700.0	6,535.1	10,869.0	6,685.0	120.9	121.1	-119.93	-946.8	-4,193.8	300.4	89.9	210.52	1.427 Level 3		
10,800.0	6,535.8	10,969.0	6,685.9	123.7	123.9	-119.96	-946.8	-4,293.8	300.5	85.1	215.36	1.395 Level 3		
10,805.0	6,535.9	10,973.9	6,685.9	123.8	124.0	-119.96	-946.8	-4,298.8	300.5	84.9	215.60	1.394 Level 3		
10,825.1	6,536.0	10,984.3	6,686.0	124.4	124.3	-119.96	-946.8	-4,309.2	300.7	84.3	216.34	1.390 Level 3, SF		

Reference Depths are relative to WELL @ 4586.0ft (RKB - 15')	Coordinates are relative to: Peterson 14X-234
Offset Depths are relative to Offset Datum	Coordinate System is US State Plane 1983, Colorado Northern Zone
Central Meridian is -105.500000 °	Grid Convergence at Surface is: 0.64°



Coordinates are relative to: Peterson 14X-234
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.64°

