

PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Peterson 14X-434**

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

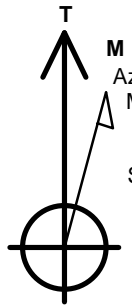
Ground Elevation: 4571.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1388593.88	3275956.39	40.395860	-104.509210	

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

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 1397'FSL & 310'FEL	1.0	0.0	0.0	Point
BHL 975'FSL, 500'FWL	6686.0	-406.6	-4328.6	Point



Azimuths to True North
Magnetic North: 8.36°

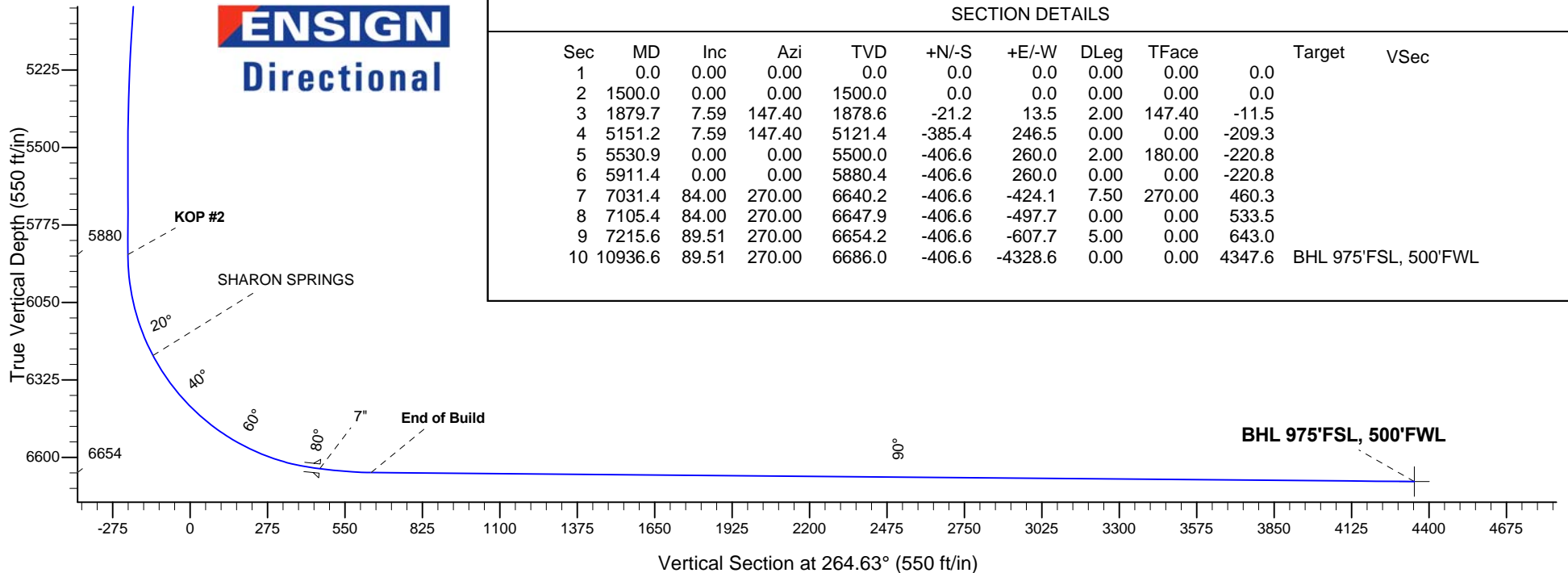
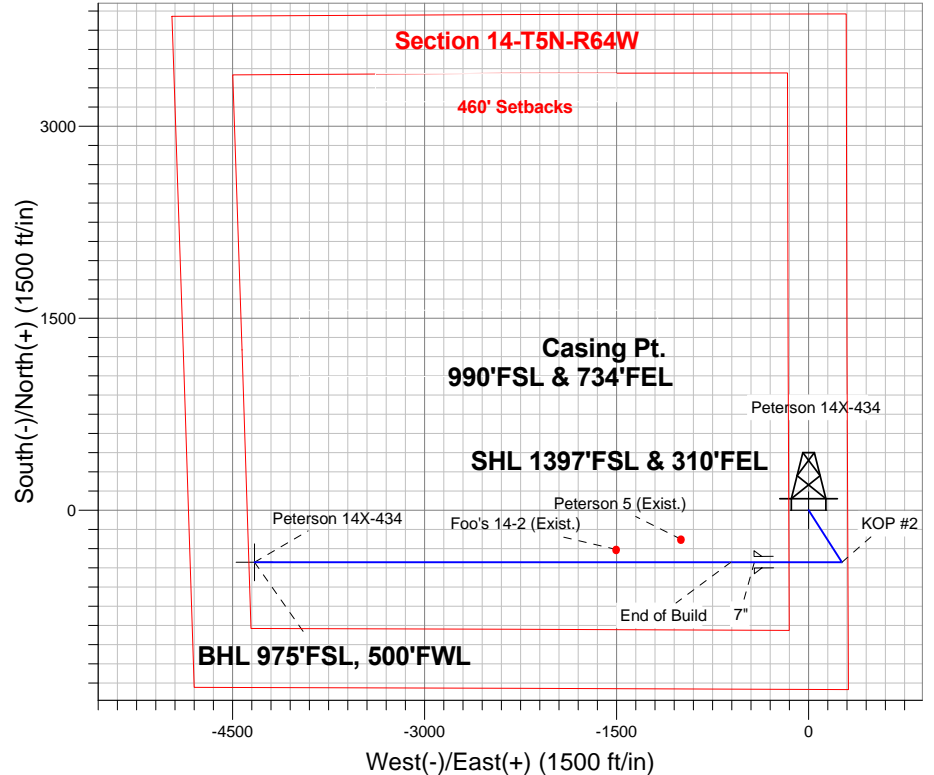
Magnetic Field
Strength: 52870.6snT
Dip Angle: 66.99°
Date: 3/7/2014
Model: IGRF2010

ANNOTATIONS

TVD	MD	Annotation
1500.0	1500.0	KOP #1
5880.5	5911.4	KOP #2
6654.2	7215.6	End of Build

Peterson 14WX-HZ Pad Sec.14-T5N-R64W
Peterson 14X-434
Plan #1 (3-07-14)
11:50, 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	1500.0	0.00	0.00	1500.0	0.0	0.0	0.00	0.00	0.0	
3	1879.7	7.59	147.40	1878.6	-21.2	13.5	2.00	147.40	-11.5	
4	5151.2	7.59	147.40	5121.4	-385.4	246.5	0.00	0.00	-209.3	
5	5530.9	0.00	0.00	5500.0	-406.6	260.0	2.00	180.00	-220.8	
6	5911.4	0.00	0.00	5880.4	-406.6	260.0	0.00	0.00	-220.8	
7	7031.4	84.00	270.00	6640.2	-406.6	-424.1	7.50	270.00	460.3	
8	7105.4	84.00	270.00	6647.9	-406.6	-497.7	0.00	0.00	533.5	
9	7215.6	89.51	270.00	6654.2	-406.6	-607.7	5.00	0.00	643.0	
10	10936.6	89.51	270.00	6686.0	-406.6	-4328.6	0.00	0.00	4347.6	BHL 975'FSL, 500'FWL



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.14-T5N-R64W

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

Peterson 14X-434

Wellbore #1

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

Standard Planning Report

10 March, 2014

Database:	Landmark	Local Co-ordinate Reference:	Well Peterson 14X-434
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-434	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-434					
Well Position	+N/-S	-91.1 ft	Northing:	1,388,593.88 ft	Latitude:	40.395860
	+E/-W	0.0 ft	Easting:	3,275,956.39 ft	Longitude:	-104.509210
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	264.63

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	
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,879.7	7.59	147.40	1,878.6	-21.2	13.5	2.00	2.00	0.00	147.40	
5,151.2	7.59	147.40	5,121.4	-385.4	246.5	0.00	0.00	0.00	0.00	
5,530.9	0.00	0.00	5,500.0	-406.6	260.0	2.00	-2.00	0.00	180.00	
5,911.4	0.00	0.00	5,880.4	-406.6	260.0	0.00	0.00	0.00	0.00	
7,031.4	84.00	270.00	6,640.2	-406.6	-424.1	7.50	7.50	0.00	270.00	
7,105.4	84.00	270.00	6,647.9	-406.6	-497.7	0.00	0.00	0.00	0.00	
7,215.6	89.51	270.00	6,654.2	-406.6	-607.7	5.00	5.00	0.00	0.00	
10,936.6	89.51	270.00	6,686.0	-406.6	-4,328.6	0.00	0.00	0.00	0.00	BHL 975'FSL, 500'F

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Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	North Reference:	True
Well:	Peterson 14X-434	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 1397'FSL & 310'FEL - SHL 1547'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
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 #1									
1,600.0	2.00	147.40	1,600.0	-1.5	0.9	-0.8	2.00	2.00	0.00
1,700.0	4.00	147.40	1,699.8	-5.9	3.8	-3.2	2.00	2.00	0.00
1,800.0	6.00	147.40	1,799.5	-13.2	8.5	-7.2	2.00	2.00	0.00
1,879.7	7.59	147.40	1,878.6	-21.2	13.5	-11.5	2.00	2.00	0.00
1,900.0	7.59	147.40	1,898.7	-23.4	15.0	-12.7	0.00	0.00	0.00
2,000.0	7.59	147.40	1,997.8	-34.6	22.1	-18.8	0.00	0.00	0.00
2,100.0	7.59	147.40	2,097.0	-45.7	29.2	-24.8	0.00	0.00	0.00
2,200.0	7.59	147.40	2,196.1	-56.8	36.3	-30.9	0.00	0.00	0.00
2,300.0	7.59	147.40	2,295.2	-68.0	43.5	-36.9	0.00	0.00	0.00
2,400.0	7.59	147.40	2,394.3	-79.1	50.6	-43.0	0.00	0.00	0.00
2,500.0	7.59	147.40	2,493.4	-90.2	57.7	-49.0	0.00	0.00	0.00
2,600.0	7.59	147.40	2,592.6	-101.4	64.8	-55.1	0.00	0.00	0.00
2,700.0	7.59	147.40	2,691.7	-112.5	71.9	-61.1	0.00	0.00	0.00
2,800.0	7.59	147.40	2,790.8	-123.6	79.1	-67.2	0.00	0.00	0.00
2,900.0	7.59	147.40	2,889.9	-134.8	86.2	-73.2	0.00	0.00	0.00
3,000.0	7.59	147.40	2,989.1	-145.9	93.3	-79.2	0.00	0.00	0.00
3,100.0	7.59	147.40	3,088.2	-157.0	100.4	-85.3	0.00	0.00	0.00
3,200.0	7.59	147.40	3,187.3	-168.2	107.5	-91.3	0.00	0.00	0.00
3,300.0	7.59	147.40	3,286.4	-179.3	114.7	-97.4	0.00	0.00	0.00
3,400.0	7.59	147.40	3,385.6	-190.4	121.8	-103.4	0.00	0.00	0.00
3,422.6	7.59	147.40	3,408.0	-193.0	123.4	-104.8	0.00	0.00	0.00
PARKMAN									
3,500.0	7.59	147.40	3,484.7	-201.6	128.9	-109.5	0.00	0.00	0.00
3,600.0	7.59	147.40	3,583.8	-212.7	136.0	-115.5	0.00	0.00	0.00
3,700.0	7.59	147.40	3,682.9	-223.8	143.1	-121.6	0.00	0.00	0.00
3,800.0	7.59	147.40	3,782.0	-235.0	150.3	-127.6	0.00	0.00	0.00
3,900.0	7.59	147.40	3,881.2	-246.1	157.4	-133.7	0.00	0.00	0.00
4,000.0	7.59	147.40	3,980.3	-257.3	164.5	-139.7	0.00	0.00	0.00
4,100.0	7.59	147.40	4,079.4	-268.4	171.6	-145.8	0.00	0.00	0.00
4,171.2	7.59	147.40	4,150.0	-276.3	176.7	-150.1	0.00	0.00	0.00
SUSSEX									
4,200.0	7.59	147.40	4,178.5	-279.5	178.7	-151.8	0.00	0.00	0.00
4,300.0	7.59	147.40	4,277.7	-290.7	185.9	-157.9	0.00	0.00	0.00
4,400.0	7.59	147.40	4,376.8	-301.8	193.0	-163.9	0.00	0.00	0.00

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Well:	Peterson 14X-434	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	7.59	147.40	4,475.9	-312.9	200.1	-170.0	0.00	0.00	0.00
4,594.9	7.59	147.40	4,570.0	-323.5	206.9	-175.7	0.00	0.00	0.00
SHANNON									
4,600.0	7.59	147.40	4,575.0	-324.1	207.2	-176.0	0.00	0.00	0.00
4,700.0	7.59	147.40	4,674.2	-335.2	214.3	-182.1	0.00	0.00	0.00
4,800.0	7.59	147.40	4,773.3	-346.3	221.5	-188.1	0.00	0.00	0.00
4,900.0	7.59	147.40	4,872.4	-357.5	228.6	-194.1	0.00	0.00	0.00
5,000.0	7.59	147.40	4,971.5	-368.6	235.7	-200.2	0.00	0.00	0.00
5,100.0	7.59	147.40	5,070.6	-379.7	242.8	-206.2	0.00	0.00	0.00
5,151.2	7.59	147.40	5,121.4	-385.4	246.5	-209.3	0.00	0.00	0.00
5,200.0	6.62	147.40	5,169.8	-390.5	249.7	-212.1	2.00	-2.00	0.00
5,300.0	4.62	147.40	5,269.3	-398.8	255.0	-216.6	2.00	-2.00	0.00
5,400.0	2.62	147.40	5,369.1	-404.1	258.4	-219.5	2.00	-2.00	0.00
5,500.0	0.62	147.40	5,469.1	-406.5	259.9	-220.8	2.00	-2.00	0.00
5,530.9	0.00	0.00	5,500.0	-406.6	260.0	-220.8	2.00	-2.00	0.00
5,600.0	0.00	0.00	5,569.1	-406.6	260.0	-220.8	0.00	0.00	0.00
5,700.0	0.00	0.00	5,669.1	-406.6	260.0	-220.8	0.00	0.00	0.00
5,800.0	0.00	0.00	5,769.1	-406.6	260.0	-220.8	0.00	0.00	0.00
5,900.0	0.00	0.00	5,869.1	-406.6	260.0	-220.8	0.00	0.00	0.00
5,911.4	0.00	0.00	5,880.5	-406.6	260.0	-220.8	0.00	0.00	0.00
KOP #2									
6,000.0	6.65	270.00	5,968.9	-406.6	254.9	-215.7	7.50	7.50	0.00
6,100.0	14.15	270.00	6,067.2	-406.6	236.8	-197.8	7.50	7.50	0.00
6,200.0	21.65	270.00	6,162.3	-406.6	206.1	-167.2	7.50	7.50	0.00
6,284.6	27.99	270.00	6,239.0	-406.6	170.6	-131.9	7.50	7.50	0.00
SHARON SPRINGS									
6,300.0	29.15	270.00	6,252.5	-406.6	163.3	-124.5	7.50	7.50	0.00
6,400.0	36.65	270.00	6,336.4	-406.6	109.0	-70.5	7.50	7.50	0.00
6,500.0	44.15	270.00	6,412.5	-406.6	44.2	-6.0	7.50	7.50	0.00
6,600.0	51.65	270.00	6,479.5	-406.6	-29.9	67.8	7.50	7.50	0.00
6,700.0	59.15	270.00	6,536.3	-406.6	-112.2	149.7	7.50	7.50	0.00
6,800.0	66.65	270.00	6,581.8	-406.6	-201.1	238.3	7.50	7.50	0.00
6,900.0	74.15	270.00	6,615.3	-406.6	-295.3	332.0	7.50	7.50	0.00
7,000.0	81.65	270.00	6,636.3	-406.6	-393.0	429.3	7.50	7.50	0.00
7,031.4	84.00	270.00	6,640.2	-406.6	-424.1	460.3	7.49	7.49	0.00
7"									
7,100.0	84.00	270.00	6,647.4	-406.6	-492.3	528.2	0.00	0.00	0.00
7,105.4	84.00	270.00	6,647.9	-406.6	-497.7	533.5	0.00	0.00	0.00
7,200.0	88.73	270.00	6,653.9	-406.6	-592.1	627.5	5.00	5.00	0.00
7,215.6	89.51	270.00	6,654.2	-406.6	-607.7	643.1	4.99	4.99	0.00
End of Build									
7,300.0	89.51	270.00	6,654.9	-406.6	-692.1	727.1	0.00	0.00	0.00
7,400.0	89.51	270.00	6,655.8	-406.6	-792.1	826.6	0.00	0.00	0.00
7,500.0	89.51	270.00	6,656.6	-406.6	-892.1	926.2	0.00	0.00	0.00
7,600.0	89.51	270.00	6,657.5	-406.6	-992.1	1,025.8	0.00	0.00	0.00
7,700.0	89.51	270.00	6,658.3	-406.6	-1,092.1	1,125.3	0.00	0.00	0.00
7,800.0	89.51	270.00	6,659.2	-406.6	-1,192.1	1,224.9	0.00	0.00	0.00
7,900.0	89.51	270.00	6,660.0	-406.6	-1,292.1	1,324.4	0.00	0.00	0.00
8,000.0	89.51	270.00	6,660.9	-406.6	-1,392.1	1,424.0	0.00	0.00	0.00
8,100.0	89.51	270.00	6,661.7	-406.6	-1,492.1	1,523.6	0.00	0.00	0.00
8,200.0	89.51	270.00	6,662.6	-406.6	-1,592.1	1,623.1	0.00	0.00	0.00
8,300.0	89.51	270.00	6,663.5	-406.6	-1,692.1	1,722.7	0.00	0.00	0.00

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Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	North Reference:	True
Well:	Peterson 14X-434	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)
8,400.0	89.51	270.00	6,664.3	-406.6	-1,792.1	1,822.2	0.00	0.00	0.00
8,500.0	89.51	270.00	6,665.2	-406.6	-1,892.1	1,921.8	0.00	0.00	0.00
8,600.0	89.51	270.00	6,666.0	-406.6	-1,992.0	2,021.3	0.00	0.00	0.00
8,700.0	89.51	270.00	6,666.9	-406.6	-2,092.0	2,120.9	0.00	0.00	0.00
8,800.0	89.51	270.00	6,667.7	-406.6	-2,192.0	2,220.5	0.00	0.00	0.00
8,900.0	89.51	270.00	6,668.6	-406.6	-2,292.0	2,320.0	0.00	0.00	0.00
9,000.0	89.51	270.00	6,669.4	-406.6	-2,392.0	2,419.6	0.00	0.00	0.00
9,100.0	89.51	270.00	6,670.3	-406.6	-2,492.0	2,519.1	0.00	0.00	0.00
9,200.0	89.51	270.00	6,671.1	-406.6	-2,592.0	2,618.7	0.00	0.00	0.00
9,300.0	89.51	270.00	6,672.0	-406.6	-2,692.0	2,718.3	0.00	0.00	0.00
9,400.0	89.51	270.00	6,672.9	-406.6	-2,792.0	2,817.8	0.00	0.00	0.00
9,500.0	89.51	270.00	6,673.7	-406.6	-2,892.0	2,917.4	0.00	0.00	0.00
9,600.0	89.51	270.00	6,674.6	-406.6	-2,992.0	3,016.9	0.00	0.00	0.00
9,700.0	89.51	270.00	6,675.4	-406.6	-3,092.0	3,116.5	0.00	0.00	0.00
9,800.0	89.51	270.00	6,676.3	-406.6	-3,192.0	3,216.0	0.00	0.00	0.00
9,900.0	89.51	270.00	6,677.1	-406.6	-3,292.0	3,315.6	0.00	0.00	0.00
10,000.0	89.51	270.00	6,678.0	-406.6	-3,392.0	3,415.2	0.00	0.00	0.00
10,100.0	89.51	270.00	6,678.8	-406.6	-3,492.0	3,514.7	0.00	0.00	0.00
10,200.0	89.51	270.00	6,679.7	-406.6	-3,592.0	3,614.3	0.00	0.00	0.00
10,300.0	89.51	270.00	6,680.6	-406.6	-3,692.0	3,713.8	0.00	0.00	0.00
10,400.0	89.51	270.00	6,681.4	-406.6	-3,792.0	3,813.4	0.00	0.00	0.00
10,500.0	89.51	270.00	6,682.3	-406.6	-3,892.0	3,912.9	0.00	0.00	0.00
10,600.0	89.51	270.00	6,683.1	-406.6	-3,992.0	4,012.5	0.00	0.00	0.00
10,700.0	89.51	270.00	6,684.0	-406.6	-4,092.0	4,112.1	0.00	0.00	0.00
10,800.0	89.51	270.00	6,684.8	-406.6	-4,192.0	4,211.6	0.00	0.00	0.00
10,900.0	89.51	270.00	6,685.7	-406.6	-4,292.0	4,311.2	0.00	0.00	0.00
10,936.6	89.51	270.00	6,686.0	-406.6	-4,328.6	4,347.6	0.00	0.00	0.00
BHL 975'FSL, 500'FWL									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,031.4	6,640.2	7"	7	7-1/2

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,422.6	3,408.0	PARKMAN			
4,171.2	4,150.0	SUSSEX			
4,594.9	4,570.0	SHANNON			
6,284.6	6,239.0	SHARON SPRINGS			

Database:	Landmark	Local Co-ordinate Reference:	Well Peterson 14X-434
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-434	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (3-07-14)		

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 #1
5,911.4	5,880.5	-406.6	260.0	KOP #2
7,215.6	6,654.2	-406.6	-607.7	End of Build



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.14-T5N-R64W

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

Peterson 14X-434

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-434
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-434	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	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,000.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date 3/7/2014			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	10,936.6	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						
Foo's 14-2 (Exist.) - Wellbore #1 - Wellbore #1	8,112.0	6,647.8	100.6	-79.0	0.560	Level 1, CC, ES, SF
Peterson 14-1 (Exist.) - Wellbore #1 - Wellbore #1	6,820.5	6,571.7	209.1	60.7	1.409	Level 3, CC, ES, SF
Peterson 5 (Exist.) - Wellbore #1 - Wellbore #1	7,605.1	6,644.5	180.7	14.3	1.086	Level 2, CC, ES, SF
Peterson 14WX-HZ Pad Sec.14-T5N-R64W						
Peterson 14X-234 - Wellbore #1 - Plan #1 (3-07-14)	1,000.0	1,000.0	29.3	25.0	6.856	CC, ES
Peterson 14X-234 - Wellbore #1 - Plan #1 (3-07-14)	10,936.6	10,825.1	343.7	117.3	1.518	SF
Peterson 14X-304 - Wellbore #1 - Plan #1 (3-07-14)	1,500.0	1,500.0	29.1	22.6	4.472	CC, ES
Peterson 14X-304 - Wellbore #1 - Plan #1 (3-07-14)	10,936.6	10,869.8	433.3	191.3	1.791	SF
Peterson 14Y-304 - Wellbore #1 - Plan #1 (3-07-14)	200.0	200.0	91.1	90.4	135.134	CC, ES
Peterson 14Y-304 - Wellbore #1 - Plan #1 (3-07-14)	10,936.6	10,967.2	907.0	659.9	3.670	SF
Peterson 14Y-414 - Wellbore #1 - Plan #1 (3-07-14)	800.0	800.0	58.4	55.0	17.309	CC, ES
Peterson 14Y-414 - Wellbore #1 - Plan #1 (3-07-14)	10,936.6	10,984.3	569.8	321.4	2.294	SF

Offset Design		Peterson 14WX-HZ Pad (Exist) Sec.14-T5N-R64W - Foo's 14-2 (Exist.) - Wellbore #1 - Wellbore #1										Offset Site Error:		0.0 ft			
Survey Program: 6852-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)						
7,200.0	6,653.9	6,639.9	6,639.9	24.1	132.8	78.66	-306.0	-1,504.1	917.6	764.0	153.55	5.976					
7,300.0	6,654.9	6,640.9	6,640.9	26.3	132.8	86.05	-306.0	-1,504.1	818.2	659.7	158.56	5.161					
7,400.0	6,655.8	6,641.8	6,641.8	28.7	132.8	86.54	-306.0	-1,504.1	719.1	558.1	161.01	4.466					
7,500.0	6,656.6	6,642.6	6,642.6	31.1	132.9	87.02	-306.0	-1,504.1	620.3	456.7	163.52	3.793					
7,600.0	6,657.5	6,643.5	6,643.5	33.6	132.9	87.51	-306.0	-1,504.1	521.8	355.7	166.09	3.142					
7,700.0	6,658.3	6,644.3	6,644.3	36.1	132.9	87.99	-306.0	-1,504.1	424.2	255.5	168.70	2.514					
7,800.0	6,659.2	6,645.2	6,645.2	38.6	132.9	88.48	-306.0	-1,504.1	327.9	156.5	171.33	1.914					
7,900.0	6,660.0	6,646.0	6,646.0	41.2	132.9	88.97	-306.0	-1,504.1	234.7	60.7	173.98	1.349 Level 3					
8,000.0	6,660.9	6,646.9	6,646.9	43.9	132.9	89.45	-306.0	-1,504.1	150.6	-26.0	176.65	0.853 Level 1					
8,100.0	6,661.7	6,647.7	6,647.7	46.5	133.0	89.94	-306.0	-1,504.1	101.3	-78.0	179.33	0.565 Level 1					
8,112.0	6,661.8	6,647.8	6,647.8	46.8	133.0	90.00	-306.0	-1,504.1	100.6	-79.0	179.65	0.560 Level 1, CC, ES, SF					
8,200.0	6,662.6	6,648.6	6,648.6	49.2	133.0	90.43	-306.0	-1,504.1	133.6	-48.4	182.01	0.734 Level 1					
8,300.0	6,663.5	6,649.5	6,649.5	51.8	133.0	90.92	-306.0	-1,504.1	213.2	28.5	184.70	1.154 Level 2					
8,400.0	6,664.3	6,650.3	6,650.3	54.5	133.0	91.40	-306.0	-1,504.1	305.0	117.6	187.38	1.628					

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-434
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-434	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 - Foo's 14-2 (Exist.) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 6852-UNKNOWN												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)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,500.0	6,665.2	6,651.2	6,651.2	57.2	133.0	91.89	-306.0	-1,504.1	400.8	210.7	190.07	2.109	
8,600.0	6,666.0	6,652.0	6,652.0	59.9	133.0	92.37	-306.0	-1,504.1	498.2	305.4	192.74	2.585	
8,700.0	6,666.9	6,652.9	6,652.9	62.7	133.1	92.86	-306.0	-1,504.1	596.5	401.1	195.41	3.052	
8,800.0	6,667.7	6,653.7	6,653.7	65.4	133.1	93.35	-306.0	-1,504.1	695.2	497.2	198.07	3.510	
8,900.0	6,668.6	6,654.6	6,654.6	68.1	133.1	93.83	-306.0	-1,504.1	794.3	593.6	200.72	3.957	
9,000.0	6,669.4	6,655.4	6,655.4	70.9	133.1	94.32	-306.0	-1,504.1	893.6	690.2	203.36	4.394	
9,100.0	6,670.3	6,656.3	6,656.3	73.6	133.1	94.80	-306.0	-1,504.1	993.0	787.0	205.99	4.821	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peterson 14X-434
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-434	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		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)					
0.0	0.0	0.0	0.0	0.0	0.0	-160.33	-615.7	-220.1	654.1						
100.0	100.0	82.0	82.0	0.1	1.6	-160.33	-615.7	-220.1	653.8	652.1	1.75	373.068			
200.0	200.0	182.0	182.0	0.3	3.6	-160.33	-615.7	-220.1	653.8	649.9	3.98	164.389			
300.0	300.0	282.0	282.0	0.6	5.6	-160.33	-615.7	-220.1	653.8	647.6	6.20	105.421			
400.0	400.0	382.0	382.0	0.8	7.6	-160.33	-615.7	-220.1	653.8	645.4	8.43	77.589			
500.0	500.0	482.0	482.0	1.0	9.6	-160.33	-615.7	-220.1	653.8	643.2	10.65	61.383			
600.0	600.0	582.0	582.0	1.2	11.6	-160.33	-615.7	-220.1	653.8	641.0	12.88	50.778			
700.0	700.0	682.0	682.0	1.5	13.6	-160.33	-615.7	-220.1	653.8	638.7	15.10	43.297			
800.0	800.0	782.0	782.0	1.7	15.6	-160.33	-615.7	-220.1	653.8	636.5	17.33	37.737			
900.0	900.0	882.0	882.0	1.9	17.6	-160.33	-615.7	-220.1	653.8	634.3	19.55	33.443			
1,000.0	1,000.0	982.0	982.0	2.1	19.6	-160.33	-615.7	-220.1	653.8	632.1	21.78	30.026			
1,100.0	1,100.0	1,082.0	1,082.0	2.4	21.6	-160.33	-615.7	-220.1	653.8	629.8	24.00	27.243			
1,200.0	1,200.0	1,182.0	1,182.0	2.6	23.6	-160.33	-615.7	-220.1	653.8	627.6	26.22	24.932			
1,300.0	1,300.0	1,282.0	1,282.0	2.8	25.6	-160.33	-615.7	-220.1	653.8	625.4	28.45	22.982			
1,400.0	1,400.0	1,382.0	1,382.0	3.0	27.6	-160.33	-615.7	-220.1	653.8	623.2	30.67	21.315			
1,500.0	1,500.0	1,482.0	1,482.0	3.3	29.6	-160.33	-615.7	-220.1	653.8	620.9	32.90	19.874			
1,600.0	1,600.0	1,582.0	1,582.0	3.5	31.6	52.40	-615.7	-220.1	652.8	617.7	35.09	18.603			
1,700.0	1,699.8	1,681.8	1,681.8	3.6	33.6	52.82	-615.7	-220.1	649.6	612.3	37.24	17.443			
1,800.0	1,799.5	1,781.5	1,781.5	3.8	35.6	53.52	-615.7	-220.1	644.3	605.0	39.38	16.362			
1,900.0	1,898.7	1,880.7	1,880.7	4.0	37.6	54.48	-615.7	-220.1	637.2	595.7	41.52	15.346			
2,000.0	1,997.8	1,979.8	1,979.8	4.3	39.6	55.45	-615.7	-220.1	629.6	585.8	43.72	14.399			
2,100.0	2,097.0	2,079.0	2,079.0	4.5	41.6	56.45	-615.7	-220.1	622.1	576.2	45.94	13.543			
2,200.0	2,196.1	2,178.1	2,178.1	4.8	43.6	57.47	-615.7	-220.1	614.9	566.7	48.16	12.767			
2,300.0	2,295.2	2,277.2	2,277.2	5.0	45.5	58.51	-615.7	-220.1	607.8	557.4	50.40	12.060			
2,400.0	2,394.3	2,376.3	2,376.3	5.3	47.5	59.58	-615.7	-220.1	601.0	548.3	52.64	11.416			
2,500.0	2,493.4	2,475.4	2,475.4	5.6	49.5	60.67	-615.7	-220.1	594.3	539.4	54.90	10.826			
2,600.0	2,592.6	2,574.6	2,574.6	5.9	51.5	61.79	-615.7	-220.1	587.9	530.8	57.16	10.285			
2,700.0	2,691.7	2,673.7	2,673.7	6.2	53.5	62.93	-615.7	-220.1	581.8	522.3	59.43	9.789			
2,800.0	2,790.8	2,772.8	2,772.8	6.4	55.5	64.09	-615.7	-220.1	575.8	514.1	61.71	9.331			
2,900.0	2,889.9	2,871.9	2,871.9	6.8	57.4	65.28	-615.7	-220.1	570.1	506.1	64.00	8.909			
3,000.0	2,989.1	2,971.1	2,971.1	7.1	59.4	66.49	-615.7	-220.1	564.7	498.4	66.29	8.519			
3,100.0	3,088.2	3,070.2	3,070.2	7.4	61.4	67.72	-615.7	-220.1	559.5	490.9	68.58	8.158			
3,200.0	3,187.3	3,169.3	3,169.3	7.7	63.4	68.97	-615.7	-220.1	554.6	483.7	70.88	7.824			
3,300.0	3,286.4	3,268.4	3,268.4	8.0	65.4	70.25	-615.7	-220.1	550.0	476.8	73.19	7.514			
3,400.0	3,385.6	3,367.6	3,367.6	8.3	67.4	71.54	-615.7	-220.1	545.6	470.1	75.50	7.227			
3,500.0	3,484.7	3,466.7	3,466.7	8.6	69.3	72.86	-615.7	-220.1	541.5	463.7	77.81	6.959			
3,600.0	3,583.8	3,565.8	3,565.8	8.9	71.3	74.19	-615.7	-220.1	537.8	457.6	80.13	6.711			
3,700.0	3,682.9	3,664.9	3,664.9	9.3	73.3	75.55	-615.7	-220.1	534.3	451.8	82.45	6.480			
3,800.0	3,782.0	3,764.0	3,764.0	9.6	75.3	76.92	-615.7	-220.1	531.1	446.3	84.77	6.265			
3,900.0	3,881.2	3,863.2	3,863.2	9.9	77.3	78.30	-615.7	-220.1	528.2	441.1	87.09	6.065			
4,000.0	3,980.3	3,962.3	3,962.3	10.2	79.2	79.70	-615.7	-220.1	525.7	436.3	89.42	5.879			
4,100.0	4,079.4	4,061.4	4,061.4	10.6	81.2	81.11	-615.7	-220.1	523.5	431.7	91.74	5.706			
4,200.0	4,178.5	4,160.5	4,160.5	10.9	83.2	82.53	-615.7	-220.1	521.6	427.5	94.07	5.545			
4,300.0	4,277.7	4,259.7	4,259.7	11.2	85.2	83.96	-615.7	-220.1	520.0	423.6	96.39	5.395			
4,400.0	4,376.8	4,358.8	4,358.8	11.6	87.2	85.40	-615.7	-220.1	518.8	420.1	98.72	5.255			
4,500.0	4,475.9	4,457.9	4,457.9	11.9	89.2	86.85	-615.7	-220.1	517.9	416.8	101.04	5.126			
4,600.0	4,575.0	4,557.0	4,557.0	12.2	91.1	88.30	-615.7	-220.1	517.3	414.0	103.36	5.005			
4,700.0	4,674.2	4,656.2	4,656.2	12.6	93.1	89.75	-615.7	-220.1	517.1	411.4	105.68	4.893			
4,717.4	4,691.4	4,673.4	4,673.4	12.6	93.5	90.00	-615.7	-220.1	517.1	411.0	106.08	4.875			
4,800.0	4,773.3	4,755.3	4,755.3	12.9	95.1	91.20	-615.7	-220.1	517.2	409.2	107.99	4.789			
4,900.0	4,872.4	4,854.4	4,854.4	13.2	97.1	92.65	-615.7	-220.1	517.6	407.3	110.30	4.693			

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-434
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-434	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												Offset Site Error:	0.0 ft
Survey Program: 6900-UNKNOWN												Offset Well Error:	0.0 ft
Peterson 14WX-HZ Pad (Exist) Sec.14-T5N-R64W - Peterson 14-1 (Exist.) - Wellbore #1 - Wellbore #1													
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
5,000.0	4,971.5	4,953.5	4,953.5	13.6	99.1	94.10	-615.7	-220.1	518.4	405.8	112.61	4.604	
5,100.0	5,070.6	5,052.6	5,052.6	13.9	101.1	95.54	-615.7	-220.1	519.5	404.6	114.91	4.521	
5,200.0	5,169.8	5,151.8	5,151.8	14.2	103.0	96.94	-615.7	-220.1	520.9	403.8	117.19	4.445	
5,300.0	5,269.3	5,251.3	5,251.3	14.4	105.0	98.03	-615.7	-220.1	522.2	402.8	119.40	4.374	
5,400.0	5,369.1	5,351.1	5,351.1	14.6	107.0	98.73	-615.7	-220.1	523.1	401.6	121.59	4.302	
5,500.0	5,469.1	5,451.1	5,451.1	14.8	109.0	99.04	-615.7	-220.1	523.6	399.8	123.76	4.231	
5,600.0	5,569.1	5,551.1	5,551.1	15.0	111.0	-113.54	-615.7	-220.1	523.6	400.3	123.27	4.248	
5,700.0	5,669.1	5,651.1	5,651.1	15.1	113.0	-113.54	-615.7	-220.1	523.6	398.2	125.46	4.174	
5,800.0	5,769.1	5,751.1	5,751.1	15.3	115.0	-113.54	-615.7	-220.1	523.6	396.0	127.65	4.102	
5,900.0	5,869.1	5,851.1	5,851.1	15.4	117.0	-113.54	-615.7	-220.1	523.6	393.8	129.84	4.033	
6,000.0	5,968.9	5,950.9	5,950.9	15.6	119.0	-23.91	-615.7	-220.1	518.9	385.1	133.78	3.879	
6,100.0	6,067.2	6,049.2	6,049.2	15.6	121.0	-25.27	-615.7	-220.1	502.5	369.2	133.26	3.770	
6,200.0	6,162.3	6,144.3	6,144.3	15.7	122.9	-27.83	-615.7	-220.1	474.7	343.6	131.10	3.621	
6,300.0	6,252.5	6,234.5	6,234.5	15.7	124.7	-31.99	-615.7	-220.1	436.6	308.6	128.05	3.410	
6,400.0	6,336.4	6,318.4	6,318.4	15.7	126.4	-38.38	-615.7	-220.1	389.9	264.1	125.75	3.100	
6,500.0	6,412.5	6,394.5	6,394.5	15.7	127.9	-47.79	-615.7	-220.1	337.0	210.0	126.96	2.654	
6,600.0	6,479.5	6,461.5	6,461.5	15.7	129.2	-60.57	-615.7	-220.1	282.6	149.0	133.64	2.115	
6,700.0	6,536.3	6,518.3	6,518.3	15.7	130.4	-75.18	-615.7	-220.1	235.3	92.6	142.63	1.650	
6,800.0	6,581.8	6,563.8	6,563.8	16.7	131.3	-87.95	-615.7	-220.1	209.9	62.1	147.88	1.420 Level 3	
6,820.5	6,589.7	6,571.7	6,571.7	17.0	131.4	-90.00	-615.7	-220.1	209.1	60.7	148.39	1.409 Level 3, CC, ES, SF	
6,900.0	6,615.3	6,597.3	6,597.3	18.2	131.9	-95.61	-615.7	-220.1	222.2	72.9	149.34	1.488 Level 3	
7,000.0	6,636.3	6,618.3	6,618.3	20.0	132.4	-96.85	-615.7	-220.1	271.3	120.2	151.08	1.796	
7,100.0	6,647.4	6,629.4	6,629.4	22.0	132.6	-97.75	-615.7	-220.1	343.3	190.4	152.93	2.245	
7,200.0	6,653.9	6,635.9	6,635.9	24.1	132.7	-92.26	-615.7	-220.1	426.8	270.3	156.50	2.727	
7,300.0	6,654.9	6,636.9	6,636.9	26.3	132.7	-91.11	-615.7	-220.1	516.3	357.4	158.87	3.250	
7,400.0	6,655.8	6,637.8	6,637.8	28.7	132.8	-91.34	-615.7	-220.1	609.1	447.9	161.21	3.778	
7,500.0	6,656.6	6,638.6	6,638.6	31.1	132.8	-91.57	-615.7	-220.1	703.8	540.2	163.62	4.301	
7,600.0	6,657.5	6,639.5	6,639.5	33.6	132.8	-91.81	-615.7	-220.1	799.8	633.8	166.09	4.816	
7,700.0	6,658.3	6,640.3	6,640.3	36.1	132.8	-92.04	-615.7	-220.1	896.7	728.1	168.61	5.318	
7,800.0	6,659.2	6,641.2	6,641.2	38.6	132.8	-92.28	-615.7	-220.1	994.3	823.1	171.16	5.809	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peterson 14X-434
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-434	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												Offset Site Error:	0.0 ft
Survey Program: 6887-UNKNOWN												Offset Well Error:	0.0 ft
Peterson 14WX-HZ Pad (Exist) Sec.14-T5N-R64W - Peterson 5 (Exist.) - Wellbore #1 - Wellbore #1													
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)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
6,600.0	6,479.5	6,466.5	6,466.5	15.7	129.3	16.76	-225.9	-997.2	984.0	887.8	96.21	10.227	
6,700.0	6,536.3	6,523.3	6,523.3	15.7	130.5	21.71	-225.9	-997.2	903.3	814.2	89.08	10.141	
6,800.0	6,581.8	6,568.8	6,568.8	16.7	131.4	29.80	-225.9	-997.2	816.3	726.0	90.32	9.038	
6,900.0	6,615.3	6,602.3	6,602.3	18.2	132.0	43.31	-225.9	-997.2	724.8	617.1	107.66	6.732	
7,000.0	6,636.3	6,623.3	6,623.3	20.0	132.5	64.10	-225.9	-997.2	630.7	493.3	137.32	4.593	
7,100.0	6,647.4	6,634.4	6,634.4	22.0	132.7	73.72	-225.9	-997.2	536.2	387.9	148.28	3.616	
7,200.0	6,653.9	6,640.9	6,640.9	24.1	132.8	87.16	-225.9	-997.2	443.6	287.1	156.52	2.834	
7,300.0	6,654.9	6,641.9	6,641.9	26.3	132.8	89.17	-225.9	-997.2	354.6	195.6	158.98	2.230	
7,400.0	6,655.8	6,642.8	6,642.8	28.7	132.9	89.44	-225.9	-997.2	273.4	112.0	161.35	1.694	
7,500.0	6,656.6	6,643.6	6,643.6	31.1	132.9	89.72	-225.9	-997.2	209.1	45.3	163.80	1.276 Level 3	
7,600.0	6,657.5	6,644.5	6,644.5	33.6	132.9	89.99	-225.9	-997.2	180.8	14.5	166.30	1.087 Level 2	
7,605.1	6,657.5	6,644.5	6,644.5	33.7	132.9	90.00	-225.9	-997.2	180.7	14.3	166.43	1.086 Level 2, CC, ES, SF	
7,700.0	6,658.3	6,645.3	6,645.3	36.1	132.9	90.26	-225.9	-997.2	204.1	35.3	168.85	1.209 Level 2	
7,800.0	6,659.2	6,646.2	6,646.2	38.6	132.9	90.53	-225.9	-997.2	265.8	94.4	171.43	1.551	
7,900.0	6,660.0	6,647.0	6,647.0	41.2	132.9	90.80	-225.9	-997.2	345.9	171.8	174.04	1.987	
8,000.0	6,660.9	6,647.9	6,647.9	43.9	133.0	91.07	-225.9	-997.2	434.3	257.6	176.67	2.458	
8,100.0	6,661.7	6,648.7	6,648.7	46.5	133.0	91.34	-225.9	-997.2	526.9	347.5	179.32	2.938	
8,200.0	6,662.6	6,649.6	6,649.6	49.2	133.0	91.61	-225.9	-997.2	621.7	439.8	181.99	3.416	
8,300.0	6,663.5	6,650.5	6,650.5	51.8	133.0	91.88	-225.9	-997.2	718.0	533.3	184.66	3.888	
8,400.0	6,664.3	6,651.3	6,651.3	54.5	133.0	92.15	-225.9	-997.2	815.2	627.8	187.34	4.351	
8,500.0	6,665.2	6,652.2	6,652.2	57.2	133.0	92.42	-225.9	-997.2	912.9	722.9	190.03	4.804	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peterson 14X-434
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-434	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-234 - 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	174.54	-29.1	2.8	29.3						
100.0	100.0	100.0	100.0	0.1	0.1	174.54	-29.1	2.8	29.3	29.1	0.22	130.259			
200.0	200.0	200.0	200.0	0.3	0.3	174.54	-29.1	2.8	29.3	28.6	0.67	43.420			
300.0	300.0	300.0	300.0	0.6	0.6	174.54	-29.1	2.8	29.3	28.2	1.12	26.052			
400.0	400.0	400.0	400.0	0.8	0.8	174.54	-29.1	2.8	29.3	27.7	1.57	18.608			
500.0	500.0	500.0	500.0	1.0	1.0	174.54	-29.1	2.8	29.3	27.3	2.02	14.473			
600.0	600.0	600.0	600.0	1.2	1.2	174.54	-29.1	2.8	29.3	26.8	2.47	11.842			
700.0	700.0	700.0	700.0	1.5	1.5	174.54	-29.1	2.8	29.3	26.4	2.92	10.020			
800.0	800.0	800.0	800.0	1.7	1.7	174.54	-29.1	2.8	29.3	25.9	3.37	8.684			
900.0	900.0	900.0	900.0	1.9	1.9	174.54	-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	174.54	-29.1	2.8	29.3	25.0	4.27	6.856 CC, ES			
1,100.0	1,100.0	1,099.0	1,099.0	2.4	2.3	173.71	-30.7	3.4	30.9	26.3	4.69	6.597			
1,200.0	1,200.0	1,197.7	1,197.6	2.6	2.5	171.67	-35.5	5.2	36.0	30.9	5.09	7.064			
1,300.0	1,300.0	1,296.0	1,295.5	2.8	2.7	169.31	-43.4	8.2	44.4	38.9	5.51	8.066			
1,400.0	1,400.0	1,393.6	1,392.4	3.0	2.9	167.21	-54.4	12.3	56.3	50.4	5.94	9.484			
1,500.0	1,500.0	1,490.3	1,487.9	3.3	3.2	165.54	-68.3	17.6	71.5	65.2	6.38	11.217			
1,600.0	1,600.0	1,588.5	1,584.6	3.5	3.4	17.14	-84.5	23.7	87.4	80.7	6.75	12.957			
1,700.0	1,699.8	1,687.7	1,682.2	3.6	3.7	17.01	-100.8	29.9	100.1	92.9	7.12	14.046			
1,800.0	1,799.5	1,787.3	1,780.2	3.8	4.1	17.45	-117.3	36.2	109.4	101.9	7.51	14.565			
1,900.0	1,898.7	1,887.1	1,878.4	4.0	4.4	18.36	-133.8	42.4	115.5	107.6	7.91	14.596			
2,000.0	1,997.8	1,986.9	1,976.7	4.3	4.8	19.38	-150.3	48.7	120.6	112.2	8.34	14.451			
2,100.0	2,097.0	2,086.8	2,075.0	4.5	5.1	20.31	-166.8	54.9	125.7	116.9	8.79	14.304			
2,200.0	2,196.1	2,186.6	2,173.3	4.8	5.5	21.18	-183.3	61.2	130.9	121.6	9.24	14.159			
2,300.0	2,295.2	2,286.5	2,271.6	5.0	5.9	21.97	-199.8	67.4	136.0	126.3	9.70	14.017			
2,400.0	2,394.3	2,386.3	2,369.8	5.3	6.2	22.71	-216.3	73.7	141.2	131.1	10.18	13.879			
2,500.0	2,493.4	2,486.2	2,468.1	5.6	6.6	23.40	-232.8	79.9	146.5	135.8	10.65	13.745			
2,600.0	2,592.6	2,586.0	2,566.4	5.9	7.0	24.04	-249.3	86.1	151.7	140.6	11.14	13.616			
2,700.0	2,691.7	2,685.9	2,664.7	6.2	7.4	24.63	-265.8	92.4	157.0	145.3	11.63	13.492			
2,800.0	2,790.8	2,785.7	2,762.9	6.4	7.8	25.19	-282.2	98.6	162.2	150.1	12.13	13.372			
2,900.0	2,889.9	2,885.6	2,861.2	6.8	8.2	25.71	-298.7	104.9	167.5	154.9	12.64	13.257			
3,000.0	2,989.1	2,985.4	2,959.5	7.1	8.6	26.20	-315.2	111.1	172.8	159.7	13.14	13.147			
3,100.0	3,088.2	3,085.2	3,057.8	7.4	9.0	26.66	-331.7	117.4	178.1	164.5	13.66	13.042			
3,200.0	3,187.3	3,185.1	3,156.1	7.7	9.4	27.10	-348.2	123.6	183.5	169.3	14.18	12.941			
3,300.0	3,286.4	3,284.9	3,254.3	8.0	9.8	27.51	-364.7	129.9	188.8	174.1	14.70	12.845			
3,400.0	3,385.6	3,384.8	3,352.6	8.3	10.1	27.89	-381.2	136.1	194.1	178.9	15.22	12.752			
3,500.0	3,484.7	3,484.6	3,450.9	8.6	10.5	28.26	-397.7	142.4	199.5	183.7	15.75	12.664			
3,600.0	3,583.8	3,584.5	3,549.2	8.9	10.9	28.61	-414.2	148.6	204.8	188.6	16.28	12.580			
3,700.0	3,682.9	3,684.3	3,647.5	9.3	11.3	28.94	-430.7	154.9	210.2	193.4	16.82	12.499			
3,800.0	3,782.0	3,784.2	3,745.7	9.6	11.8	29.25	-447.2	161.1	215.6	198.2	17.36	12.421			
3,900.0	3,881.2	3,884.0	3,844.0	9.9	12.2	29.55	-463.7	167.4	221.0	203.1	17.90	12.347			
4,000.0	3,980.3	3,983.9	3,942.3	10.2	12.6	29.83	-480.2	173.6	226.4	207.9	18.44	12.276			
4,100.0	4,079.4	4,083.7	4,040.6	10.6	13.0	30.10	-496.7	179.9	231.7	212.8	18.98	12.208			
4,200.0	4,178.5	4,183.6	4,138.8	10.9	13.4	30.36	-513.2	186.1	237.1	217.6	19.53	12.143			
4,300.0	4,277.7	4,283.4	4,237.1	11.2	13.8	30.60	-529.7	192.4	242.5	222.5	20.08	12.080			
4,400.0	4,376.8	4,383.3	4,335.4	11.6	14.2	30.84	-546.2	198.6	247.9	227.3	20.63	12.020			
4,500.0	4,475.9	4,483.1	4,433.7	11.9	14.6	31.07	-562.7	204.9	253.4	232.2	21.18	11.962			
4,600.0	4,575.0	4,583.0	4,532.0	12.2	15.0	31.28	-579.2	211.1	258.8	237.0	21.73	11.907			
4,700.0	4,674.2	4,682.8	4,630.2	12.6	15.4	31.49	-595.7	217.4	264.2	241.9	22.29	11.854			
4,800.0	4,773.3	4,782.7	4,728.5	12.9	15.8	31.69	-612.2	223.6	269.6	246.8	22.84	11.802			
4,900.0	4,872.4	4,882.5	4,826.8	13.2	16.2	31.88	-628.7	229.8	275.0	251.6	23.40	11.753			
5,000.0	4,971.5	4,982.4	4,925.1	13.6	16.6	32.06	-645.2	236.1	280.4	256.5	23.96	11.705			

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-434
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-434	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-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)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,070.6	5,082.2	5,023.3	13.9	17.0	32.24		-661.7	242.3	285.9	261.4	24.52	11.660	
5,200.0	5,169.8	5,185.0	5,124.6	14.2	17.4	32.41		-678.5	248.7	291.5	266.4	25.07	11.630	
5,300.0	5,269.3	5,295.5	5,233.8	14.4	17.7	32.48		-693.7	254.5	297.0	271.5	25.52	11.639	
5,400.0	5,369.1	5,406.2	5,343.9	14.6	18.0	32.44		-704.9	258.7	301.9	276.0	25.91	11.650	
5,500.0	5,469.1	5,517.1	5,454.5	14.8	18.2	32.29		-712.2	261.5	306.1	279.8	26.25	11.662	
5,600.0	5,569.1	5,628.3	5,565.6	15.0	18.3	179.50		-715.5	262.7	308.9	276.8	32.04	9.641	
5,700.0	5,669.1	5,731.8	5,669.1	15.1	18.5	179.48		-715.6	262.8	309.1	276.7	32.34	9.556	
5,800.0	5,769.1	5,831.8	5,769.2	15.3	18.6	179.55		-715.6	262.4	309.1	276.4	32.63	9.473	
5,842.1	5,811.2	5,874.0	5,811.2	15.3	18.6	180.00		-715.6	260.0	309.0	276.3	32.71	9.449	
5,900.0	5,869.1	5,931.1	5,867.9	15.4	18.7	-178.70		-715.6	253.0	309.1	276.4	32.75	9.439	
6,000.0	5,968.9	6,027.7	5,962.0	15.6	18.7	-85.58		-715.6	231.6	310.0	281.6	28.38	10.925	
6,100.0	6,067.2	6,122.3	6,050.9	15.6	18.8	-82.56		-715.6	199.3	311.7	282.9	28.81	10.821	
6,200.0	6,162.3	6,215.1	6,133.5	15.7	18.8	-79.72		-715.6	157.2	314.2	285.1	29.10	10.797	
6,300.0	6,252.5	6,306.3	6,209.2	15.7	18.7	-77.10		-715.6	106.4	317.2	287.9	29.29	10.829	
6,400.0	6,336.4	6,396.2	6,277.3	15.7	18.7	-74.73		-715.6	47.9	320.5	291.1	29.48	10.875	
6,500.0	6,412.5	6,484.8	6,337.3	15.7	18.7	-72.64		-715.6	-17.4	324.0	294.2	29.79	10.875	
6,600.0	6,479.5	6,572.5	6,388.8	15.7	18.8	-70.85		-715.6	-88.2	327.3	296.9	30.39	10.771	
6,700.0	6,536.3	6,659.3	6,431.5	15.7	18.8	-69.35		-715.6	-163.8	330.4	298.9	31.48	10.495	
6,800.0	6,581.8	6,745.4	6,465.1	16.7	19.1	-68.17		-715.6	-243.0	333.0	299.9	33.14	10.049	
6,900.0	6,615.3	6,831.1	6,489.4	18.2	19.8	-67.30		-715.6	-325.1	335.0	299.6	35.45	9.452	
7,000.0	6,636.3	6,916.3	6,504.4	20.0	21.1	-66.75		-715.6	-409.0	336.4	298.0	38.36	8.769	
7,100.0	6,647.4	7,003.5	6,510.0	22.0	22.7	-66.09		-715.6	-496.0	338.2	296.6	41.60	8.131	
7,200.0	6,653.9	7,100.7	6,510.6	24.1	24.7	-65.13		-715.6	-593.1	340.6	295.4	45.29	7.521	
7,300.0	6,654.9	7,200.7	6,511.3	26.3	26.9	-65.08		-715.6	-693.1	340.8	291.4	49.36	6.903	
7,400.0	6,655.8	7,300.7	6,512.0	28.7	29.2	-65.06		-715.6	-793.1	340.8	287.2	53.60	6.360	
7,500.0	6,656.6	7,400.7	6,512.7	31.1	31.6	-65.03		-715.6	-893.1	340.9	282.9	57.97	5.881	
7,600.0	6,657.5	7,500.7	6,513.4	33.6	34.0	-65.00		-715.6	-993.1	341.0	278.5	62.45	5.460	
7,700.0	6,658.3	7,600.7	6,514.1	36.1	36.5	-64.98		-715.6	-1,093.1	341.1	274.0	67.03	5.088	
7,800.0	6,659.2	7,700.7	6,514.7	38.6	39.1	-64.95		-715.6	-1,193.1	341.1	269.5	71.67	4.760	
7,900.0	6,660.0	7,800.7	6,515.4	41.2	41.6	-64.92		-715.6	-1,293.1	341.2	264.8	76.37	4.468	
8,000.0	6,660.9	7,900.7	6,516.1	43.9	44.2	-64.90		-715.6	-1,393.1	341.3	260.2	81.12	4.207	
8,100.0	6,661.7	8,000.7	6,516.8	46.5	46.9	-64.87		-715.6	-1,493.1	341.4	255.4	85.91	3.973	
8,200.0	6,662.6	8,100.7	6,517.5	49.2	49.5	-64.84		-715.6	-1,593.1	341.4	250.7	90.73	3.763	
8,300.0	6,663.5	8,200.7	6,518.1	51.8	52.2	-64.82		-715.6	-1,693.0	341.5	245.9	95.58	3.573	
8,400.0	6,664.3	8,300.7	6,518.8	54.5	54.9	-64.79		-715.6	-1,793.0	341.6	241.1	100.45	3.400	
8,500.0	6,665.2	8,400.7	6,519.5	57.2	57.6	-64.76		-715.6	-1,893.0	341.7	236.3	105.34	3.243	
8,600.0	6,666.0	8,500.7	6,520.2	59.9	60.3	-64.74		-715.6	-1,993.0	341.7	231.5	110.25	3.100	
8,700.0	6,666.9	8,600.7	6,520.9	62.7	63.0	-64.71		-715.6	-2,093.0	341.8	226.6	115.17	2.968	
8,800.0	6,667.7	8,700.7	6,521.5	65.4	65.7	-64.68		-715.6	-2,193.0	341.9	221.8	120.11	2.846	
8,900.0	6,668.6	8,800.7	6,522.2	68.1	68.4	-64.66		-715.6	-2,293.0	342.0	216.9	125.05	2.734	
9,000.0	6,669.4	8,900.7	6,522.9	70.9	71.1	-64.63		-715.6	-2,393.0	342.0	212.0	130.01	2.631	
9,100.0	6,670.3	9,000.7	6,523.6	73.6	73.9	-64.60		-715.6	-2,493.0	342.1	207.1	134.97	2.535	
9,200.0	6,671.1	9,100.7	6,524.3	76.3	76.6	-64.58		-715.6	-2,593.0	342.2	202.2	139.94	2.445	
9,300.0	6,672.0	9,200.7	6,524.9	79.1	79.4	-64.55		-715.6	-2,693.0	342.3	197.3	144.91	2.362	
9,400.0	6,672.9	9,300.7	6,525.6	81.9	82.1	-64.53		-715.6	-2,793.0	342.3	192.4	149.89	2.284	
9,500.0	6,673.7	9,400.7	6,526.3	84.6	84.9	-64.50		-715.6	-2,893.0	342.4	187.5	154.88	2.211	
9,600.0	6,674.6	9,500.7	6,527.0	87.4	87.6	-64.47		-715.6	-2,993.0	342.5	182.6	159.87	2.142	
9,700.0	6,675.4	9,600.7	6,527.7	90.1	90.4	-64.45		-715.6	-3,093.0	342.6	177.7	164.86	2.078	
9,800.0	6,676.3	9,700.7	6,528.3	92.9	93.2	-64.42		-715.6	-3,193.0	342.6	172.8	169.85	2.017	
9,900.0	6,677.1	9,800.7	6,529.0	95.7	95.9	-64.39		-715.6	-3,293.0	342.7	167.9	174.85	1.960	
10,000.0	6,678.0	9,900.7	6,529.7	98.5	98.7	-64.37		-715.6	-3,393.0	342.8	162.9	179.85	1.906	

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-434
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-434	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-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)	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)			
10,100.0	6,678.8	10,000.7	6,530.4	101.2	101.5	-64.34	-715.6	-3,493.0	342.9	158.0	184.85	1.855	
10,200.0	6,679.7	10,100.7	6,531.1	104.0	104.2	-64.31	-715.6	-3,593.0	342.9	153.1	189.85	1.806	
10,300.0	6,680.6	10,200.7	6,531.7	106.8	107.0	-64.29	-715.6	-3,693.0	343.0	148.2	194.85	1.760	
10,400.0	6,681.4	10,300.7	6,532.4	109.6	109.8	-64.26	-715.6	-3,793.0	343.1	143.2	199.85	1.717	
10,500.0	6,682.3	10,400.6	6,533.1	112.3	112.6	-64.24	-715.6	-3,893.0	343.2	138.3	204.86	1.675	
10,600.0	6,683.1	10,500.6	6,533.8	115.1	115.3	-64.21	-715.6	-3,993.0	343.2	133.4	209.86	1.636	
10,700.0	6,684.0	10,600.6	6,534.5	117.9	118.1	-64.18	-715.6	-4,093.0	343.3	128.4	214.86	1.598	
10,800.0	6,684.8	10,700.6	6,535.2	120.7	120.9	-64.16	-715.6	-4,193.0	343.4	123.5	219.87	1.562	
10,900.0	6,685.7	10,800.6	6,535.8	123.5	123.7	-64.13	-715.6	-4,293.0	343.5	118.6	224.87	1.527	
10,912.0	6,685.8	10,812.6	6,535.9	123.8	124.0	-64.13	-715.6	-4,305.0	343.5	118.0	225.47	1.523	
10,936.6	6,686.0	10,825.1	6,536.0	124.5	124.4	-64.12	-715.6	-4,317.5	343.7	117.3	226.40	1.518 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peterson 14X-434
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-434	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
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	0.00	29.1	0.0	29.1						
100.0	100.0	100.0	100.0	0.1	0.1	0.00	29.1	0.0	29.1	28.9	0.22	129.686			
200.0	200.0	200.0	200.0	0.3	0.3	0.00	29.1	0.0	29.1	28.5	0.67	43.229			
300.0	300.0	300.0	300.0	0.6	0.6	0.00	29.1	0.0	29.1	28.0	1.12	25.937			
400.0	400.0	400.0	400.0	0.8	0.8	0.00	29.1	0.0	29.1	27.6	1.57	18.527			
500.0	500.0	500.0	500.0	1.0	1.0	0.00	29.1	0.0	29.1	27.1	2.02	14.410			
600.0	600.0	600.0	600.0	1.2	1.2	0.00	29.1	0.0	29.1	26.7	2.47	11.790			
700.0	700.0	700.0	700.0	1.5	1.5	0.00	29.1	0.0	29.1	26.2	2.92	9.976			
800.0	800.0	800.0	800.0	1.7	1.7	0.00	29.1	0.0	29.1	25.8	3.37	8.646			
900.0	900.0	900.0	900.0	1.9	1.9	0.00	29.1	0.0	29.1	25.3	3.82	7.629			
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	0.00	29.1	0.0	29.1	24.9	4.27	6.826			
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	0.00	29.1	0.0	29.1	24.4	4.72	6.176			
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	0.00	29.1	0.0	29.1	24.0	5.17	5.639			
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	0.00	29.1	0.0	29.1	23.5	5.62	5.187			
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	0.00	29.1	0.0	29.1	23.1	6.07	4.803			
1,500.0	1,500.0	1,500.0	1,500.0	3.3	3.3	0.00	29.1	0.0	29.1	22.6	6.52	4.472 CC, ES			
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	-149.15	29.1	0.0	30.6	23.7	6.94	4.414			
1,700.0	1,699.8	1,699.8	1,699.8	3.6	3.7	-153.47	29.1	0.0	35.2	27.9	7.33	4.803			
1,800.0	1,799.5	1,799.5	1,799.5	3.8	3.9	-158.58	29.1	0.0	43.2	35.5	7.73	5.592			
1,900.0	1,898.7	1,898.7	1,898.7	4.0	4.2	-163.17	29.1	0.0	54.7	46.6	8.12	6.733			
2,000.0	1,997.8	1,997.8	1,997.8	4.3	4.4	-166.42	29.1	0.0	67.4	58.9	8.53	7.903			
2,100.0	2,097.0	2,098.1	2,098.0	4.5	4.6	-167.55	29.1	1.7	79.7	70.7	8.94	8.911			
2,200.0	2,196.1	2,198.6	2,198.4	4.8	4.8	-166.33	28.8	6.9	90.6	81.2	9.35	9.688			
2,300.0	2,295.2	2,298.4	2,297.9	5.0	5.0	-163.99	28.4	14.6	100.6	90.8	9.77	10.295			
2,400.0	2,394.3	2,397.8	2,397.0	5.3	5.2	-162.01	27.9	22.5	110.7	100.5	10.20	10.848			
2,500.0	2,493.4	2,497.2	2,496.1	5.6	5.4	-160.37	27.5	30.4	120.9	110.2	10.65	11.355			
2,600.0	2,592.6	2,596.6	2,595.2	5.9	5.7	-158.98	27.1	38.3	131.2	120.1	11.10	11.820			
2,700.0	2,691.7	2,696.1	2,694.3	6.2	5.9	-157.79	26.6	46.1	141.5	130.0	11.56	12.245			
2,800.0	2,790.8	2,795.5	2,793.5	6.4	6.1	-156.77	26.2	54.0	151.9	139.9	12.03	12.635			
2,900.0	2,889.9	2,894.9	2,892.6	6.8	6.3	-155.87	25.8	61.9	162.4	149.9	12.50	12.992			
3,000.0	2,989.1	2,994.3	2,991.7	7.1	6.6	-155.09	25.3	69.7	172.9	159.9	12.98	13.320			
3,100.0	3,088.2	3,093.8	3,090.8	7.4	6.8	-154.39	24.9	77.6	183.4	169.9	13.46	13.622			
3,200.0	3,187.3	3,193.2	3,189.9	7.7	7.1	-153.78	24.5	85.5	193.9	180.0	13.95	13.899			
3,300.0	3,286.4	3,292.6	3,289.0	8.0	7.3	-153.22	24.0	93.4	204.5	190.0	14.45	14.156			
3,400.0	3,385.6	3,392.0	3,388.1	8.3	7.5	-152.72	23.6	101.2	215.1	200.1	14.94	14.392			
3,500.0	3,484.7	3,491.4	3,487.2	8.6	7.8	-152.26	23.2	109.1	225.7	210.2	15.44	14.612			
3,600.0	3,583.8	3,590.9	3,586.3	8.9	8.0	-151.85	22.8	117.0	236.3	220.3	15.95	14.815			
3,700.0	3,682.9	3,690.3	3,685.4	9.3	8.3	-151.47	22.3	124.9	246.9	230.4	16.45	15.004			
3,800.0	3,782.0	3,789.7	3,784.6	9.6	8.5	-151.13	21.9	132.7	257.5	240.5	16.96	15.180			
3,900.0	3,881.2	3,889.1	3,883.7	9.9	8.8	-150.81	21.5	140.6	268.1	250.6	17.47	15.344			
4,000.0	3,980.3	3,988.6	3,982.8	10.2	9.0	-150.51	21.0	148.5	278.8	260.8	17.99	15.498			
4,100.0	4,079.4	4,088.0	4,081.9	10.6	9.3	-150.24	20.6	156.4	289.4	270.9	18.50	15.641			
4,200.0	4,178.5	4,187.4	4,181.0	10.9	9.5	-149.99	20.2	164.2	300.1	281.0	19.02	15.776			
4,300.0	4,277.7	4,286.8	4,280.1	11.2	9.8	-149.75	19.7	172.1	310.7	291.2	19.54	15.902			
4,400.0	4,376.8	4,386.2	4,379.2	11.6	10.0	-149.53	19.3	180.0	321.4	301.3	20.06	16.021			
4,500.0	4,475.9	4,485.7	4,478.3	11.9	10.3	-149.32	18.9	187.9	332.0	311.5	20.58	16.133			
4,600.0	4,575.0	4,585.1	4,577.4	12.2	10.6	-149.13	18.5	195.7	342.7	321.6	21.11	16.239			
4,700.0	4,674.2	4,684.5	4,676.5	12.6	10.8	-148.95	18.0	203.6	353.4	331.8	21.63	16.338			
4,800.0	4,773.3	4,783.9	4,775.6	12.9	11.1	-148.77	17.6	211.5	364.1	341.9	22.16	16.433			
4,900.0	4,872.4	4,883.4	4,874.8	13.2	11.3	-148.61	17.2	219.4	374.7	352.1	22.68	16.522			
5,000.0	4,971.5	4,982.8	4,973.9	13.6	11.6	-148.46	16.7	227.2	385.4	362.2	23.21	16.607			

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-434
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-434	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
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor			
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)				
5,100.0	5,070.6	5,082.2	5,073.0	13.9	11.8	-148.32	16.3	235.1	396.1	372.4	23.74	16.687			
5,200.0	5,169.8	5,181.7	5,172.1	14.2	12.1	-148.20	15.9	243.0	406.5	382.2	24.27	16.744			
5,300.0	5,269.3	5,281.3	5,271.5	14.4	12.4	-147.90	15.4	250.9	414.2	389.4	24.79	16.711			
5,400.0	5,369.1	5,380.3	5,370.2	14.6	12.6	-147.56	15.1	257.1	419.2	394.0	25.22	16.622			
5,500.0	5,469.1	5,479.4	5,469.3	14.8	12.8	-147.41	15.0	259.8	421.4	395.8	25.59	16.468			
5,600.0	5,569.1	5,579.2	5,569.1	15.0	12.9	0.00	14.9	260.0	421.5	395.3	26.28	16.038			
5,700.0	5,669.1	5,679.2	5,669.1	15.1	13.1	0.00	14.9	260.0	421.5	394.9	26.65	15.815			
5,800.0	5,769.1	5,779.2	5,769.1	15.3	13.3	0.00	14.9	260.0	421.5	394.5	27.03	15.596			
5,859.9	5,829.0	5,839.1	5,829.0	15.4	13.5	0.00	14.9	260.0	421.5	394.3	27.25	15.467			
5,900.0	5,869.1	5,879.2	5,869.0	15.4	13.5	-0.10	14.9	259.3	421.5	394.1	27.40	15.385			
6,000.0	5,968.9	5,978.5	5,967.8	15.6	13.6	89.12	14.9	248.5	421.6	394.3	27.32	15.431			
6,100.0	6,067.2	6,077.2	6,063.5	15.6	13.7	88.34	14.9	225.2	421.7	394.3	27.45	15.362			
6,200.0	6,162.3	6,175.1	6,154.9	15.7	13.8	87.60	14.9	190.0	421.9	394.4	27.53	15.324			
6,300.0	6,252.5	6,272.4	6,240.4	15.7	13.9	86.89	14.9	143.8	422.2	394.5	27.65	15.268			
6,400.0	6,336.4	6,369.0	6,318.9	15.7	14.1	86.25	14.9	87.5	422.5	394.5	27.93	15.128			
6,500.0	6,412.5	6,465.2	6,389.3	15.7	14.4	85.66	14.9	22.2	422.8	394.3	28.51	14.831			
6,600.0	6,479.5	6,560.9	6,450.7	15.7	14.9	85.15	14.9	-51.1	423.1	393.5	29.54	14.321			
6,700.0	6,536.3	6,656.1	6,502.3	15.7	15.8	84.72	15.0	-131.2	423.3	392.2	31.15	13.590			
6,800.0	6,581.8	6,750.0	6,542.9	16.7	16.9	84.38	15.0	-215.7	423.6	390.2	33.38	12.692			
6,900.0	6,615.3	6,845.8	6,573.4	18.2	18.4	84.12	15.0	-306.5	423.8	387.5	36.25	11.691			
7,000.0	6,636.3	6,940.4	6,592.2	20.0	20.0	83.97	15.0	-399.1	423.9	384.3	39.62	10.698			
7,100.0	6,647.4	7,034.6	6,599.3	22.0	21.9	83.52	15.0	-493.0	424.3	380.9	43.38	9.781			
7,200.0	6,653.9	7,133.5	6,599.1	24.1	24.0	82.59	15.0	-591.9	425.1	377.7	47.45	8.959			
7,300.0	6,654.9	7,233.5	6,598.7	26.3	26.2	82.41	15.0	-691.9	425.3	373.4	51.86	8.200			
7,400.0	6,655.8	7,333.5	6,598.4	28.7	28.5	82.25	15.0	-791.9	425.4	369.0	56.48	7.533			
7,500.0	6,656.6	7,433.5	6,598.0	31.1	31.0	82.09	15.0	-891.9	425.6	364.4	61.25	6.949			
7,600.0	6,657.5	7,533.5	6,597.7	33.6	33.4	81.93	15.0	-991.9	425.8	359.6	66.14	6.438			
7,700.0	6,658.3	7,633.5	6,597.3	36.1	36.0	81.77	15.0	-1,091.9	425.9	354.8	71.12	5.989			
7,800.0	6,659.2	7,733.5	6,597.0	38.6	38.5	81.61	15.0	-1,191.9	426.1	349.9	76.17	5.594			
7,900.0	6,660.0	7,833.5	6,596.6	41.2	41.1	81.45	15.0	-1,291.9	426.3	345.0	81.28	5.245			
8,000.0	6,660.9	7,933.4	6,596.3	43.9	43.7	81.29	15.0	-1,391.8	426.5	340.0	86.44	4.934			
8,100.0	6,661.7	8,033.4	6,595.9	46.5	46.4	81.13	15.0	-1,491.8	426.7	335.0	91.64	4.656			
8,200.0	6,662.6	8,133.4	6,595.6	49.2	49.1	80.97	15.0	-1,591.8	426.8	330.0	96.87	4.406			
8,300.0	6,663.5	8,233.4	6,595.2	51.8	51.7	80.81	15.0	-1,691.8	427.0	324.9	102.12	4.182			
8,400.0	6,664.3	8,333.4	6,594.9	54.5	54.4	80.65	15.0	-1,791.8	427.2	319.8	107.40	3.978			
8,500.0	6,665.2	8,433.4	6,594.5	57.2	57.1	80.49	15.0	-1,891.8	427.4	314.7	112.69	3.793			
8,600.0	6,666.0	8,533.4	6,594.2	59.9	59.8	80.33	15.0	-1,991.8	427.6	309.6	118.00	3.624			
8,700.0	6,666.9	8,633.4	6,593.8	62.7	62.6	80.17	15.0	-2,091.8	427.8	304.5	123.32	3.469			
8,800.0	6,667.7	8,733.4	6,593.5	65.4	65.3	80.01	15.0	-2,191.8	428.0	299.4	128.64	3.327			
8,900.0	6,668.6	8,833.4	6,593.1	68.1	68.0	79.86	15.0	-2,291.8	428.3	294.3	133.98	3.196			
9,000.0	6,669.4	8,933.4	6,592.8	70.9	70.8	79.70	15.0	-2,391.8	428.5	289.1	139.32	3.075			
9,100.0	6,670.3	9,033.4	6,592.5	73.6	73.5	79.54	15.0	-2,491.8	428.7	284.0	144.66	2.963			
9,200.0	6,671.1	9,133.4	6,592.1	76.3	76.3	79.38	15.0	-2,591.7	428.9	278.9	150.01	2.859			
9,300.0	6,672.0	9,233.4	6,591.8	79.1	79.0	79.22	15.0	-2,691.7	429.1	273.8	155.36	2.762			
9,400.0	6,672.9	9,333.3	6,591.4	81.9	81.8	79.06	15.0	-2,791.7	429.4	268.6	160.71	2.672			
9,500.0	6,673.7	9,433.3	6,591.1	84.6	84.5	78.91	15.0	-2,891.7	429.6	263.5	166.06	2.587			
9,600.0	6,674.6	9,533.3	6,590.7	87.4	87.3	78.75	15.0	-2,991.7	429.8	258.4	171.40	2.508			
9,700.0	6,675.4	9,633.3	6,590.4	90.1	90.1	78.59	15.0	-3,091.7	430.1	253.3	176.75	2.433			
9,800.0	6,676.3	9,733.3	6,590.0	92.9	92.8	78.43	15.0	-3,191.7	430.3	248.2	182.10	2.363			
9,900.0	6,677.1	9,833.3	6,589.7	95.7	95.6	78.28	15.0	-3,291.7	430.5	243.1	187.44	2.297			
10,000.0	6,678.0	9,933.3	6,589.3	98.5	98.4	78.12	15.0	-3,391.7	430.8	238.0	192.78	2.235			

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-434
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-434	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	
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	6,678.8	10,033.3	6,589.0	101.2	101.2	77.96	15.0	-3,491.7	431.0	232.9	198.12	2.176					
10,200.0	6,679.7	10,133.3	6,588.6	104.0	103.9	77.81	15.0	-3,591.7	431.3	227.8	203.45	2.120					
10,300.0	6,680.6	10,233.3	6,588.3	106.8	106.7	77.65	15.0	-3,691.7	431.5	222.8	208.78	2.067					
10,400.0	6,681.4	10,333.3	6,587.9	109.6	109.5	77.50	15.0	-3,791.7	431.8	217.7	214.11	2.017					
10,500.0	6,682.3	10,433.3	6,587.6	112.3	112.3	77.34	15.0	-3,891.6	432.1	212.6	219.43	1.969					
10,600.0	6,683.1	10,533.3	6,587.2	115.1	115.1	77.18	15.0	-3,991.6	432.3	207.6	224.75	1.924					
10,700.0	6,684.0	10,633.3	6,586.9	117.9	117.9	77.03	15.0	-4,091.6	432.6	202.5	230.06	1.880					
10,800.0	6,684.8	10,733.2	6,586.5	120.7	120.6	76.87	15.0	-4,191.6	432.9	197.5	235.36	1.839					
10,900.0	6,685.7	10,833.2	6,586.2	123.5	123.1	76.72	15.0	-4,291.6	433.1	192.8	240.34	1.802					
10,936.6	6,686.0	10,869.8	6,586.0	124.5	123.8	76.66	15.0	-4,328.2	433.3	191.3	241.92	1.791 SF					

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peterson 14X-434
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-434	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	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	178.25	178.25	-91.1	2.8	91.1				
100.0	100.0	100.0	100.0	0.1	0.1	178.25	178.25	-91.1	2.8	91.1	90.9	0.22	405.402	
200.0	200.0	200.0	200.0	0.3	0.3	178.25	178.25	-91.1	2.8	91.1	90.4	0.67	135.134 CC, ES	
300.0	300.0	296.9	296.9	0.6	0.5	178.07	178.07	-92.7	3.1	92.8	91.7	1.10	84.682	
400.0	400.0	393.6	393.5	0.8	0.7	177.56	177.56	-97.5	4.2	97.8	96.3	1.52	64.225	
500.0	500.0	489.9	489.4	1.0	1.0	176.82	176.82	-105.4	5.8	106.1	104.1	1.97	53.835	
600.0	600.0	585.5	584.4	1.2	1.2	175.97	175.97	-116.4	8.2	117.7	115.3	2.44	48.262	
700.0	700.0	680.3	678.0	1.5	1.5	175.10	175.10	-130.4	11.2	132.7	129.7	2.93	45.316	
800.0	800.0	774.0	770.2	1.7	1.9	174.27	174.27	-147.1	14.8	150.8	147.4	3.43	43.915	
900.0	900.0	866.5	860.5	1.9	2.3	173.52	173.52	-166.5	18.9	172.2	168.3	3.96	43.477	
1,000.0	1,000.0	959.3	950.5	2.1	2.7	172.85	172.85	-188.8	23.7	196.6	192.1	4.51	43.595	
1,100.0	1,100.0	1,056.1	1,044.1	2.4	3.2	172.29	172.29	-212.7	28.8	221.8	216.7	5.07	43.712	
1,200.0	1,200.0	1,152.8	1,137.7	2.6	3.7	171.85	171.85	-236.6	33.9	247.0	241.3	5.64	43.779	
1,300.0	1,300.0	1,249.6	1,231.4	2.8	4.2	171.49	171.49	-260.5	39.0	272.2	266.0	6.21	43.810	
1,400.0	1,400.0	1,346.4	1,325.0	3.0	4.7	171.18	171.18	-284.4	44.1	297.4	290.6	6.79	43.820	
1,500.0	1,500.0	1,443.1	1,418.6	3.3	5.2	170.93	170.93	-308.3	49.2	322.6	315.3	7.36	43.819	
1,600.0	1,600.0	1,540.3	1,512.6	3.5	5.8	23.23	23.23	-332.3	54.3	346.3	339.2	7.13	48.604	
1,700.0	1,699.8	1,638.1	1,607.3	3.6	6.3	23.20	23.20	-356.5	59.5	366.9	359.3	7.57	48.440	
1,800.0	1,799.5	1,736.6	1,702.5	3.8	6.8	23.39	23.39	-380.8	64.7	384.3	376.2	8.03	47.846	
1,900.0	1,898.7	1,835.5	1,798.2	4.0	7.3	23.80	23.80	-405.2	69.9	398.6	390.1	8.50	46.894	
2,000.0	1,997.8	1,934.5	1,894.1	4.3	7.9	24.32	24.32	-429.7	75.2	412.0	403.0	8.98	45.853	
2,100.0	2,097.0	2,033.5	1,989.9	4.5	8.4	24.82	24.82	-454.1	80.4	425.3	415.9	9.48	44.883	
2,200.0	2,196.1	2,132.6	2,085.7	4.8	8.9	25.29	25.29	-478.6	85.6	438.8	428.8	9.98	43.977	
2,300.0	2,295.2	2,231.6	2,181.5	5.0	9.4	25.72	25.72	-503.1	90.8	452.2	441.7	10.48	43.133	
2,400.0	2,394.3	2,330.7	2,277.4	5.3	10.0	26.14	26.14	-527.5	96.1	465.7	454.7	11.00	42.344	
2,500.0	2,493.4	2,429.7	2,373.2	5.6	10.5	26.52	26.52	-552.0	101.3	479.2	467.7	11.52	41.607	
2,600.0	2,592.6	2,528.7	2,469.0	5.9	11.0	26.89	26.89	-576.5	106.5	492.7	480.6	12.04	40.917	
2,700.0	2,691.7	2,627.8	2,564.8	6.2	11.6	27.24	27.24	-600.9	111.8	506.2	493.6	12.57	40.272	
2,800.0	2,790.8	2,726.8	2,660.6	6.4	12.1	27.57	27.57	-625.4	117.0	519.8	506.7	13.10	39.667	
2,900.0	2,889.9	2,825.8	2,756.5	6.8	12.6	27.88	27.88	-649.9	122.2	533.3	519.7	13.64	39.099	
3,000.0	2,989.1	2,924.9	2,852.3	7.1	13.1	28.18	28.18	-674.3	127.5	546.9	532.7	14.18	38.565	
3,100.0	3,088.2	3,023.9	2,948.1	7.4	13.7	28.47	28.47	-698.8	132.7	560.5	545.8	14.73	38.063	
3,200.0	3,187.3	3,122.9	3,043.9	7.7	14.2	28.74	28.74	-723.3	137.9	574.1	558.8	15.27	37.590	
3,300.0	3,286.4	3,222.0	3,139.8	8.0	14.7	28.99	28.99	-747.7	143.1	587.7	571.9	15.82	37.143	
3,400.0	3,385.6	3,321.0	3,235.6	8.3	15.3	29.24	29.24	-772.2	148.4	601.4	585.0	16.38	36.722	
3,500.0	3,484.7	3,420.0	3,331.4	8.6	15.8	29.47	29.47	-796.7	153.6	615.0	598.1	16.93	36.323	
3,600.0	3,583.8	3,519.1	3,427.2	8.9	16.3	29.70	29.70	-821.1	158.8	628.6	611.2	17.49	35.945	
3,700.0	3,682.9	3,618.1	3,523.0	9.3	16.9	29.91	29.91	-845.6	164.1	642.3	624.3	18.05	35.587	
3,800.0	3,782.0	3,717.1	3,618.9	9.6	17.4	30.12	30.12	-870.0	169.3	656.0	637.4	18.61	35.247	
3,900.0	3,881.2	3,816.2	3,714.7	9.9	17.9	30.32	30.32	-894.5	174.5	669.6	650.5	19.17	34.925	
4,000.0	3,980.3	3,915.2	3,810.5	10.2	18.5	30.51	30.51	-919.0	179.7	683.3	663.6	19.74	34.618	
4,100.0	4,079.4	4,014.2	3,906.3	10.6	19.0	30.69	30.69	-943.4	185.0	697.0	676.7	20.31	34.325	
4,200.0	4,178.5	4,113.3	4,002.2	10.9	19.5	30.87	30.87	-967.9	190.2	710.7	689.8	20.87	34.047	
4,300.0	4,277.7	4,212.3	4,098.0	11.2	20.1	31.04	31.04	-992.4	195.4	724.4	703.0	21.44	33.781	
4,400.0	4,376.8	4,311.3	4,193.8	11.6	20.6	31.20	31.20	-1,016.8	200.7	738.1	716.1	22.02	33.527	
4,500.0	4,475.9	4,410.4	4,289.6	11.9	21.1	31.35	31.35	-1,041.3	205.9	751.8	729.3	22.59	33.284	
4,600.0	4,575.0	4,509.4	4,385.4	12.2	21.6	31.51	31.51	-1,065.8	211.1	765.6	742.4	23.16	33.052	
4,700.0	4,674.2	4,608.4	4,481.3	12.6	22.2	31.65	31.65	-1,090.2	216.3	779.3	755.5	23.74	32.830	
4,800.0	4,773.3	4,707.5	4,577.1	12.9	22.7	31.79	31.79	-1,114.7	221.6	793.0	768.7	24.31	32.617	
4,900.0	4,872.4	4,806.5	4,672.9	13.2	23.2	31.93	31.93	-1,139.2	226.8	806.7	781.9	24.89	32.413	
5,000.0	4,971.5	4,905.5	4,768.7	13.6	23.8	32.06	32.06	-1,163.6	232.0	820.5	795.0	25.47	32.216	

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-434
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-434	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)			
5,100.0	5,070.6	5,004.6	4,864.6	13.9	24.3	32.19	-1,188.1	237.3	834.2	808.2	26.05	32.028		
5,200.0	5,169.8	5,103.6	4,960.3	14.2	24.8	32.37	-1,212.5	242.5	848.3	821.7	26.60	31.889		
5,300.0	5,269.3	5,236.5	5,089.5	14.4	25.4	32.56	-1,243.1	249.0	863.3	836.2	27.14	31.815		
5,400.0	5,369.1	5,377.4	5,227.9	14.6	25.8	32.64	-1,269.2	254.6	876.6	849.0	27.59	31.770		
5,500.0	5,469.1	5,519.6	5,368.6	14.8	26.2	32.63	-1,288.7	258.8	887.9	859.9	27.97	31.744		
5,600.0	5,569.1	5,662.9	5,511.3	15.0	26.4	179.90	-1,301.4	261.5	896.7	856.4	40.29	22.258		
5,700.0	5,669.1	5,807.0	5,655.3	15.1	26.6	179.83	-1,307.1	262.7	900.6	860.0	40.64	22.161		
5,800.0	5,769.1	5,920.8	5,769.1	15.3	26.7	179.82	-1,307.5	262.8	900.9	860.0	40.91	22.019		
5,900.0	5,869.1	6,020.9	5,869.2	15.4	26.8	179.92	-1,307.5	261.3	900.9	859.7	41.15	21.891		
5,920.0	5,889.1	6,040.9	5,889.1	15.5	26.8	-90.00	-1,307.5	259.8	900.9	871.4	29.51	30.523		
6,000.0	5,968.9	6,120.3	5,967.7	15.6	26.9	-89.60	-1,307.5	248.7	900.9	871.1	29.76	30.271		
6,100.0	6,067.2	6,218.7	6,062.8	15.6	26.9	-89.12	-1,307.5	223.6	901.0	871.0	29.95	30.078		
6,200.0	6,162.3	6,316.2	6,153.1	15.7	26.9	-88.66	-1,307.5	187.0	901.1	871.1	30.07	29.966		
6,300.0	6,252.5	6,412.8	6,237.2	15.7	26.9	-88.22	-1,307.5	139.7	901.3	871.1	30.19	29.856		
6,400.0	6,336.4	6,508.7	6,314.2	15.7	26.9	-87.81	-1,307.5	82.6	901.5	871.1	30.42	29.637		
6,500.0	6,412.5	6,603.8	6,382.9	15.7	26.9	-87.44	-1,307.5	16.9	901.8	870.9	30.91	29.173		
6,600.0	6,479.5	6,698.4	6,442.5	15.7	26.9	-87.11	-1,307.5	-56.4	902.0	870.2	31.83	28.343		
6,700.0	6,536.3	6,792.4	6,492.4	15.7	27.0	-86.83	-1,307.5	-136.0	902.3	869.0	33.30	27.092		
6,800.0	6,581.8	6,886.0	6,532.0	16.7	27.1	-86.60	-1,307.5	-220.8	902.5	867.1	35.41	25.484		
6,900.0	6,615.3	6,979.2	6,560.9	18.2	27.2	-86.43	-1,307.5	-309.4	902.6	864.5	38.15	23.660		
7,000.0	6,636.3	7,072.3	6,578.7	20.0	27.6	-86.31	-1,307.5	-400.6	902.8	861.3	41.44	21.787		
7,100.0	6,647.4	7,164.9	6,585.3	22.0	28.2	-86.07	-1,307.5	-493.0	903.0	857.9	45.11	20.020		
7,200.0	6,653.9	7,264.0	6,585.4	24.1	29.1	-85.65	-1,307.5	-592.1	903.5	854.2	49.26	18.341		
7,300.0	6,654.9	7,364.0	6,585.4	26.3	30.5	-85.59	-1,307.5	-692.1	903.6	849.9	53.63	16.847		
7,400.0	6,655.8	7,464.0	6,585.4	28.7	32.2	-85.53	-1,307.5	-792.1	903.6	845.4	58.21	15.524		
7,500.0	6,656.6	7,564.0	6,585.4	31.1	34.2	-85.48	-1,307.5	-892.1	903.7	840.7	62.95	14.356		
7,600.0	6,657.5	7,664.0	6,585.4	33.6	36.3	-85.43	-1,307.5	-992.1	903.8	835.9	67.82	13.326		
7,700.0	6,658.3	7,764.0	6,585.4	36.1	38.6	-85.38	-1,307.5	-1,092.1	903.8	831.0	72.79	12.416		
7,800.0	6,659.2	7,864.0	6,585.5	38.6	41.0	-85.32	-1,307.5	-1,192.1	903.9	826.0	77.85	11.610		
7,900.0	6,660.0	7,964.0	6,585.5	41.2	43.4	-85.27	-1,307.5	-1,292.1	904.0	821.0	82.98	10.894		
8,000.0	6,660.9	8,064.0	6,585.5	43.9	45.9	-85.22	-1,307.5	-1,392.1	904.0	815.9	88.16	10.254		
8,100.0	6,661.7	8,164.0	6,585.5	46.5	48.4	-85.16	-1,307.5	-1,492.1	904.1	810.7	93.40	9.680		
8,200.0	6,662.6	8,264.0	6,585.5	49.2	50.9	-85.11	-1,307.5	-1,592.1	904.2	805.5	98.66	9.164		
8,300.0	6,663.5	8,364.0	6,585.5	51.8	53.5	-85.06	-1,307.5	-1,692.1	904.2	800.3	103.97	8.697		
8,400.0	6,664.3	8,464.0	6,585.6	54.5	56.1	-85.00	-1,307.5	-1,792.1	904.3	795.0	109.30	8.274		
8,500.0	6,665.2	8,564.0	6,585.6	57.2	58.7	-84.95	-1,307.5	-1,892.1	904.4	789.7	114.65	7.888		
8,600.0	6,666.0	8,664.0	6,585.6	59.9	61.4	-84.90	-1,307.5	-1,992.1	904.5	784.4	120.03	7.535		
8,700.0	6,666.9	8,764.0	6,585.6	62.7	64.0	-84.85	-1,307.5	-2,092.1	904.5	779.1	125.42	7.212		
8,800.0	6,667.7	8,864.0	6,585.6	65.4	66.7	-84.79	-1,307.5	-2,192.1	904.6	773.8	130.83	6.914		
8,900.0	6,668.6	8,964.0	6,585.7	68.1	69.4	-84.74	-1,307.5	-2,292.0	904.7	768.4	136.25	6.640		
9,000.0	6,669.4	9,064.0	6,585.7	70.9	72.1	-84.69	-1,307.5	-2,392.0	904.8	763.1	141.69	6.386		
9,100.0	6,670.3	9,164.0	6,585.7	73.6	74.8	-84.63	-1,307.5	-2,492.0	904.9	757.7	147.13	6.150		
9,200.0	6,671.1	9,264.0	6,585.7	76.3	77.5	-84.58	-1,307.5	-2,592.0	904.9	752.3	152.59	5.931		
9,300.0	6,672.0	9,364.0	6,585.7	79.1	80.2	-84.53	-1,307.5	-2,692.0	905.0	747.0	158.05	5.726		
9,400.0	6,672.9	9,464.0	6,585.7	81.9	82.9	-84.48	-1,307.5	-2,792.0	905.1	741.6	163.52	5.535		
9,500.0	6,673.7	9,564.0	6,585.8	84.6	85.7	-84.42	-1,307.5	-2,892.0	905.2	736.2	168.99	5.356		
9,600.0	6,674.6	9,664.0	6,585.8	87.4	88.4	-84.37	-1,307.5	-2,992.0	905.3	730.8	174.48	5.188		
9,700.0	6,675.4	9,763.9	6,585.8	90.1	91.1	-84.32	-1,307.5	-3,092.0	905.3	725.4	179.96	5.031		
9,800.0	6,676.3	9,863.9	6,585.8	92.9	93.9	-84.27	-1,307.5	-3,192.0	905.4	720.0	185.45	4.882		
9,900.0	6,677.1	9,963.9	6,585.8	95.7	96.6	-84.21	-1,307.5	-3,292.0	905.5	714.6	190.95	4.742		
10,000.0	6,678.0	10,063.9	6,585.8	98.5	99.4	-84.16	-1,307.5	-3,392.0	905.6	709.1	196.44	4.610		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peterson 14X-434
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-434	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)	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)			
10,100.0	6,678.8	10,163.9	6,585.9	101.2	102.1	-84.11	-1,307.5	-3,492.0	905.7	703.7	201.95	4.485	
10,200.0	6,679.7	10,263.9	6,585.9	104.0	104.9	-84.05	-1,307.5	-3,592.0	905.8	698.3	207.45	4.366	
10,300.0	6,680.6	10,363.9	6,585.9	106.8	107.6	-84.00	-1,307.5	-3,692.0	905.9	692.9	212.96	4.254	
10,400.0	6,681.4	10,463.9	6,585.9	109.6	110.4	-83.95	-1,307.5	-3,792.0	905.9	687.5	218.47	4.147	
10,500.0	6,682.3	10,563.9	6,585.9	112.3	113.1	-83.90	-1,307.5	-3,892.0	906.0	682.1	223.98	4.045	
10,600.0	6,683.1	10,663.9	6,585.9	115.1	115.9	-83.84	-1,307.5	-3,992.0	906.1	676.6	229.49	3.948	
10,700.0	6,684.0	10,763.9	6,586.0	117.9	118.7	-83.79	-1,307.5	-4,092.0	906.2	671.2	235.00	3.856	
10,800.0	6,684.8	10,863.9	6,586.0	120.7	121.4	-83.74	-1,307.5	-4,192.0	906.3	665.8	240.52	3.768	
10,900.0	6,685.7	10,963.9	6,586.0	123.5	124.2	-83.69	-1,307.5	-4,292.0	906.4	660.4	246.03	3.684	
10,936.6	6,686.0	10,967.2	6,586.0	124.5	124.3	-83.68	-1,307.5	-4,295.3	907.0	659.9	247.14	3.670 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peterson 14X-434
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-434	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	177.26	-58.3	2.8	58.4						
100.0	100.0	100.0	100.0	0.1	0.1	177.26	-58.3	2.8	58.4	58.1	0.22	259.632			
200.0	200.0	200.0	200.0	0.3	0.3	177.26	-58.3	2.8	58.4	57.7	0.67	86.544			
300.0	300.0	300.0	300.0	0.6	0.6	177.26	-58.3	2.8	58.4	57.2	1.12	51.926			
400.0	400.0	400.0	400.0	0.8	0.8	177.26	-58.3	2.8	58.4	56.8	1.57	37.090			
500.0	500.0	500.0	500.0	1.0	1.0	177.26	-58.3	2.8	58.4	56.3	2.02	28.848			
600.0	600.0	600.0	600.0	1.2	1.2	177.26	-58.3	2.8	58.4	55.9	2.47	23.603			
700.0	700.0	700.0	700.0	1.5	1.5	177.26	-58.3	2.8	58.4	55.4	2.92	19.972			
800.0	800.0	800.0	800.0	1.7	1.7	177.26	-58.3	2.8	58.4	55.0	3.37	17.309	CC, ES		
900.0	900.0	898.0	898.0	1.9	1.9	176.90	-59.9	3.2	60.0	56.2	3.79	15.837			
1,000.0	1,000.0	995.8	995.7	2.1	2.1	175.93	-64.7	4.6	65.0	60.8	4.19	15.511			
1,100.0	1,100.0	1,093.1	1,092.6	2.4	2.2	174.60	-72.7	6.9	73.4	68.8	4.61	15.926			
1,200.0	1,200.0	1,189.8	1,188.6	2.6	2.5	173.19	-83.8	10.0	85.1	80.1	5.04	16.889			
1,300.0	1,300.0	1,285.6	1,283.2	2.8	2.7	171.87	-97.8	14.0	100.2	94.7	5.49	18.255			
1,400.0	1,400.0	1,380.3	1,376.3	3.0	3.0	170.71	-114.6	18.7	118.6	112.6	5.95	19.911			
1,500.0	1,500.0	1,476.6	1,470.5	3.3	3.3	169.74	-134.2	24.3	139.5	133.1	6.44	21.657			
1,600.0	1,600.0	1,574.6	1,566.3	3.5	3.7	21.69	-154.2	30.0	159.1	152.3	6.75	23.581			
1,700.0	1,699.8	1,673.3	1,662.7	3.6	4.1	21.60	-174.4	35.7	175.5	168.3	7.14	24.566			
1,800.0	1,799.5	1,772.4	1,759.5	3.8	4.5	21.92	-194.7	41.4	188.7	181.1	7.55	24.989			
1,900.0	1,898.7	1,871.9	1,856.7	4.0	4.9	22.60	-215.0	47.2	198.8	190.8	7.98	24.920			
2,000.0	1,997.8	1,971.4	1,954.0	4.3	5.4	23.39	-235.4	53.0	207.8	199.4	8.43	24.660			
2,100.0	2,097.0	2,070.9	2,051.2	4.5	5.8	24.12	-255.7	58.7	217.0	208.1	8.89	24.400			
2,200.0	2,196.1	2,170.5	2,148.5	4.8	6.2	24.79	-276.1	64.5	226.1	216.8	9.37	24.144			
2,300.0	2,295.2	2,270.0	2,245.8	5.0	6.7	25.40	-296.5	70.3	235.3	225.5	9.85	23.894			
2,400.0	2,394.3	2,369.6	2,343.1	5.3	7.1	25.97	-316.8	76.0	244.5	234.2	10.34	23.651			
2,500.0	2,493.4	2,469.1	2,440.3	5.6	7.6	26.50	-337.2	81.8	253.7	242.9	10.84	23.417			
2,600.0	2,592.6	2,568.7	2,537.6	5.9	8.0	26.99	-357.5	87.6	263.0	251.7	11.34	23.191			
2,700.0	2,691.7	2,668.2	2,634.9	6.2	8.5	27.45	-377.9	93.3	272.3	260.4	11.85	22.974			
2,800.0	2,790.8	2,767.8	2,732.1	6.4	8.9	27.87	-398.3	99.1	281.5	269.2	12.37	22.766			
2,900.0	2,889.9	2,867.3	2,829.4	6.8	9.4	28.27	-418.6	104.9	290.8	278.0	12.89	22.568			
3,000.0	2,989.1	2,966.9	2,926.7	7.1	9.8	28.65	-439.0	110.6	300.2	286.7	13.41	22.378			
3,100.0	3,088.2	3,066.4	3,024.0	7.4	10.3	29.00	-459.4	116.4	309.5	295.5	13.94	22.197			
3,200.0	3,187.3	3,166.0	3,121.2	7.7	10.7	29.33	-479.7	122.2	318.8	304.3	14.48	22.023			
3,300.0	3,286.4	3,265.5	3,218.5	8.0	11.2	29.65	-500.1	128.0	328.2	313.1	15.01	21.858			
3,400.0	3,385.6	3,365.1	3,315.8	8.3	11.7	29.94	-520.4	133.7	337.5	322.0	15.55	21.701			
3,500.0	3,484.7	3,464.6	3,413.0	8.6	12.1	30.22	-540.8	139.5	346.9	330.8	16.10	21.550			
3,600.0	3,583.8	3,564.2	3,510.3	8.9	12.6	30.49	-561.2	145.3	356.2	339.6	16.64	21.406			
3,700.0	3,682.9	3,663.7	3,607.6	9.3	13.0	30.74	-581.5	151.0	365.6	348.4	17.19	21.269			
3,800.0	3,782.0	3,763.2	3,704.9	9.6	13.5	30.98	-601.9	156.8	375.0	357.3	17.74	21.138			
3,900.0	3,881.2	3,862.8	3,802.1	9.9	14.0	31.20	-622.3	162.6	384.4	366.1	18.29	21.012			
4,000.0	3,980.3	3,962.3	3,899.4	10.2	14.4	31.42	-642.6	168.3	393.8	374.9	18.85	20.892			
4,100.0	4,079.4	4,061.9	3,996.7	10.6	14.9	31.63	-663.0	174.1	403.2	383.8	19.41	20.777			
4,200.0	4,178.5	4,161.4	4,093.9	10.9	15.4	31.82	-683.3	179.9	412.6	392.6	19.96	20.667			
4,300.0	4,277.7	4,261.0	4,191.2	11.2	15.8	32.01	-703.7	185.6	422.0	401.5	20.52	20.562			
4,400.0	4,376.8	4,360.5	4,288.5	11.6	16.3	32.19	-724.1	191.4	431.4	410.3	21.09	20.460			
4,500.0	4,475.9	4,460.1	4,385.7	11.9	16.7	32.36	-744.4	197.2	440.8	419.2	21.65	20.363			
4,600.0	4,575.0	4,559.6	4,483.0	12.2	17.2	32.53	-764.8	202.9	450.3	428.0	22.21	20.270			
4,700.0	4,674.2	4,659.2	4,580.3	12.6	17.7	32.69	-785.1	208.7	459.7	436.9	22.78	20.180			
4,800.0	4,773.3	4,758.7	4,677.6	12.9	18.1	32.84	-805.5	214.5	469.1	445.8	23.35	20.094			
4,900.0	4,872.4	4,858.3	4,774.8	13.2	18.6	32.98	-825.9	220.3	478.5	454.6	23.91	20.012			
5,000.0	4,971.5	4,957.8	4,872.1	13.6	19.1	33.12	-846.2	226.0	488.0	463.5	24.48	19.932			

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-434
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-434	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)	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	5,070.6	5,057.4	4,969.4	13.9	19.5	33.26	-866.6	231.8	497.4	472.4	25.05	19.855		
5,200.0	5,169.8	5,156.9	5,066.6	14.2	20.0	33.42	-887.0	237.6	507.2	481.6	25.61	19.808		
5,300.0	5,269.3	5,256.1	5,163.6	14.4	20.5	33.47	-907.3	243.3	519.5	493.4	26.08	19.918		
5,400.0	5,369.1	5,370.3	5,275.4	14.6	20.9	33.33	-929.4	249.6	533.7	507.2	26.50	20.136		
5,500.0	5,469.1	5,491.3	5,394.8	14.8	21.2	33.08	-948.3	254.9	546.9	520.0	26.86	20.360		
5,600.0	5,569.1	5,613.2	5,515.8	15.0	21.5	-179.89	-962.4	258.9	558.3	523.1	35.24	15.846		
5,700.0	5,669.1	5,736.1	5,638.3	15.1	21.7	179.84	-971.6	261.5	565.8	530.2	35.65	15.871		
5,800.0	5,769.1	5,859.6	5,761.8	15.3	21.9	179.73	-975.7	262.7	569.2	533.2	36.01	15.808		
5,900.0	5,869.1	5,966.9	5,869.1	15.4	22.0	179.72	-976.0	262.8	569.4	533.1	36.30	15.687		
6,000.0	5,968.9	6,067.3	5,969.2	15.6	22.1	-90.28	-976.0	257.6	569.4	540.8	28.63	19.889		
6,100.0	6,067.2	6,167.6	6,067.8	15.6	22.2	-90.28	-976.0	239.5	569.4	540.6	28.79	19.776		
6,200.0	6,162.3	6,268.0	6,163.2	15.7	22.2	-90.27	-976.0	208.6	569.4	540.5	28.88	19.719		
6,300.0	6,252.5	6,368.3	6,253.8	15.7	22.2	-90.25	-976.0	165.5	569.4	540.4	28.96	19.662		
6,400.0	6,336.4	6,468.6	6,337.8	15.7	22.2	-90.23	-976.0	110.9	569.4	540.2	29.16	19.528		
6,500.0	6,412.5	6,568.9	6,414.0	15.7	22.2	-90.21	-976.0	45.7	569.4	539.8	29.63	19.217		
6,600.0	6,479.5	6,669.2	6,481.0	15.7	22.2	-90.19	-976.0	-28.8	569.4	538.8	30.54	18.642		
6,700.0	6,536.3	6,769.4	6,537.6	15.7	22.2	-90.16	-976.0	-111.4	569.4	537.3	32.05	17.768		
6,800.0	6,581.8	6,869.6	6,583.0	16.7	22.3	-90.13	-976.0	-200.6	569.4	535.2	34.22	16.640		
6,900.0	6,615.3	6,969.7	6,616.2	18.2	22.6	-90.09	-976.0	-295.0	569.4	532.3	37.05	15.366		
7,000.0	6,636.3	7,069.8	6,636.8	20.0	23.3	-90.06	-976.0	-392.9	569.4	528.9	40.47	14.070		
7,100.0	6,647.4	7,169.8	6,647.8	22.0	24.4	-90.05	-976.0	-492.3	569.4	525.1	44.32	12.846		
7,200.0	6,653.9	7,269.9	6,654.2	24.1	26.1	-90.02	-976.0	-592.1	569.4	520.9	48.51	11.738		
7,300.0	6,654.9	7,369.9	6,655.1	26.3	28.1	-90.02	-976.0	-692.1	569.4	516.4	52.95	10.754		
7,400.0	6,655.8	7,469.9	6,655.9	28.7	30.2	-90.02	-976.0	-792.1	569.4	511.8	57.58	9.889		
7,500.0	6,656.6	7,569.9	6,656.8	31.1	32.5	-90.02	-976.0	-892.1	569.4	507.0	62.38	9.128		
7,600.0	6,657.5	7,669.9	6,657.7	33.6	34.9	-90.02	-976.0	-992.1	569.4	502.1	67.30	8.460		
7,700.0	6,658.3	7,769.9	6,658.5	36.1	37.3	-90.02	-976.0	-1,092.1	569.4	497.1	72.33	7.872		
7,800.0	6,659.2	7,869.9	6,659.4	38.6	39.8	-90.02	-976.0	-1,192.1	569.4	492.0	77.43	7.353		
7,900.0	6,660.0	7,969.9	6,660.2	41.2	42.3	-90.02	-976.0	-1,292.1	569.4	486.8	82.61	6.893		
8,000.0	6,660.9	8,069.9	6,661.1	43.9	44.9	-90.02	-976.0	-1,392.1	569.4	481.5	87.83	6.482		
8,100.0	6,661.7	8,169.9	6,661.9	46.5	47.5	-90.02	-976.0	-1,492.1	569.4	476.3	93.11	6.115		
8,200.0	6,662.6	8,269.9	6,662.8	49.2	50.1	-90.02	-976.0	-1,592.1	569.4	471.0	98.42	5.785		
8,300.0	6,663.5	8,369.9	6,663.6	51.8	52.7	-90.02	-976.0	-1,692.1	569.4	465.6	103.76	5.487		
8,400.0	6,664.3	8,469.9	6,664.5	54.5	55.3	-90.02	-976.0	-1,792.1	569.4	460.2	109.14	5.217		
8,500.0	6,665.2	8,569.9	6,665.4	57.2	58.0	-90.02	-976.0	-1,892.1	569.4	454.9	114.53	4.971		
8,600.0	6,666.0	8,669.9	6,666.2	59.9	60.7	-90.02	-976.0	-1,992.0	569.4	449.4	119.95	4.747		
8,700.0	6,666.9	8,769.9	6,667.1	62.7	63.4	-90.02	-976.0	-2,092.0	569.4	444.0	125.38	4.541		
8,800.0	6,667.7	8,869.9	6,667.9	65.4	66.1	-90.02	-976.0	-2,192.0	569.4	438.6	130.83	4.352		
8,900.0	6,668.6	8,969.9	6,668.8	68.1	68.8	-90.02	-976.0	-2,292.0	569.4	433.1	136.29	4.178		
9,000.0	6,669.4	9,069.9	6,669.6	70.9	71.5	-90.02	-976.0	-2,392.0	569.4	427.6	141.77	4.016		
9,100.0	6,670.3	9,169.9	6,670.5	73.6	74.2	-90.02	-976.0	-2,492.0	569.4	422.1	147.25	3.867		
9,200.0	6,671.1	9,269.9	6,671.3	76.3	77.0	-90.02	-976.0	-2,592.0	569.4	416.6	152.75	3.728		
9,300.0	6,672.0	9,369.9	6,672.2	79.1	79.7	-90.02	-976.0	-2,692.0	569.4	411.1	158.25	3.598		
9,400.0	6,672.9	9,469.9	6,673.0	81.9	82.4	-90.02	-976.0	-2,792.0	569.4	405.6	163.76	3.477		
9,500.0	6,673.7	9,569.9	6,673.9	84.6	85.2	-90.02	-976.0	-2,892.0	569.4	400.1	169.28	3.363		
9,600.0	6,674.6	9,669.9	6,674.8	87.4	87.9	-90.02	-976.0	-2,992.0	569.4	394.6	174.81	3.257		
9,700.0	6,675.4	9,769.9	6,675.6	90.1	90.7	-90.02	-976.0	-3,092.0	569.4	389.0	180.34	3.157		
9,800.0	6,676.3	9,869.9	6,676.5	92.9	93.4	-90.02	-976.0	-3,192.0	569.4	383.5	185.87	3.063		
9,900.0	6,677.1	9,969.9	6,677.3	95.7	96.2	-90.02	-976.0	-3,292.0	569.4	378.0	191.41	2.975		
10,000.0	6,678.0	10,069.9	6,678.2	98.5	98.9	-90.02	-976.0	-3,392.0	569.4	372.4	196.96	2.891		
10,100.0	6,678.8	10,169.9	6,679.0	101.2	101.7	-90.02	-976.0	-3,492.0	569.4	366.9	202.51	2.812		

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

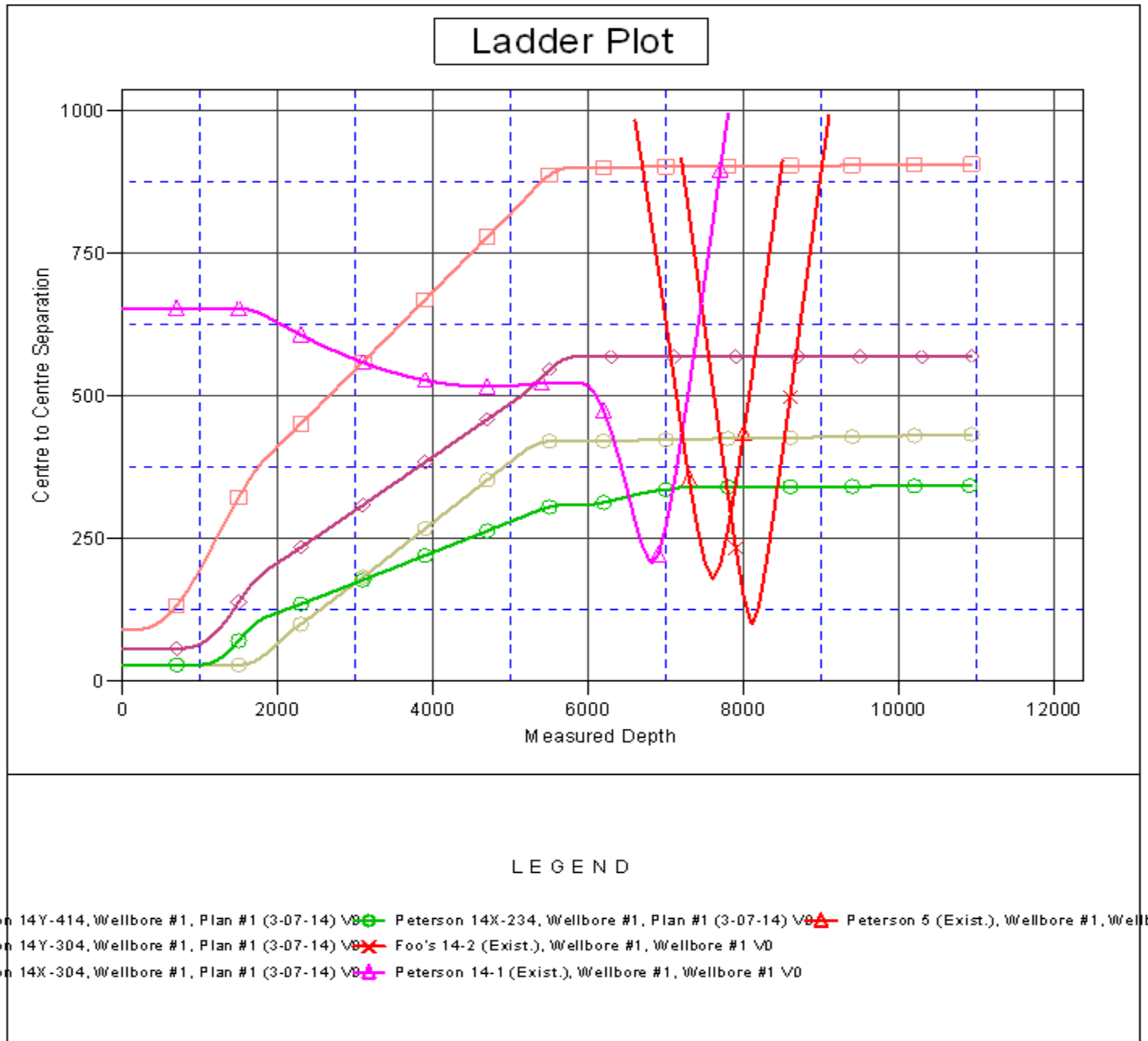
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peterson 14X-434
Project:	SEC.14-T5N-R64W	TVD Reference:	WELL @ 4586.0ft (RKB - 15')
Reference Site:	Peterson 14WX-HZ Pad Sec.14-T5N-R64W	MD Reference:	WELL @ 4586.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peterson 14X-434	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)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,200.0	6,679.7	10,269.9	6,679.9	104.0	104.5	-90.02	-976.0	-3,592.0	569.4	361.3	208.06	2.737	
10,300.0	6,680.6	10,369.9	6,680.7	106.8	107.2	-90.02	-976.0	-3,692.0	569.4	355.8	213.62	2.665	
10,400.0	6,681.4	10,469.9	6,681.6	109.6	110.0	-90.02	-976.0	-3,792.0	569.4	350.2	219.18	2.598	
10,500.0	6,682.3	10,569.9	6,682.5	112.3	112.8	-90.02	-976.0	-3,892.0	569.4	344.6	224.74	2.533	
10,600.0	6,683.1	10,669.9	6,683.3	115.1	115.6	-90.02	-976.0	-3,992.0	569.4	339.1	230.31	2.472	
10,700.0	6,684.0	10,769.9	6,684.2	117.9	118.3	-90.02	-976.0	-4,092.0	569.4	333.5	235.87	2.414	
10,800.0	6,684.8	10,869.9	6,685.0	120.7	121.1	-90.02	-976.0	-4,192.0	569.4	327.9	241.44	2.358	
10,900.0	6,685.7	10,969.9	6,685.9	123.5	123.9	-90.02	-976.0	-4,292.0	569.4	322.4	247.02	2.305	
10,910.7	6,685.8	10,980.5	6,686.0	123.8	124.2	-90.02	-976.0	-4,302.6	569.4	321.8	247.61	2.299	
10,936.6	6,686.0	10,984.3	6,686.0	124.5	124.3	-90.02	-976.0	-4,306.4	569.8	321.4	248.44	2.294 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peterson 14X-434
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-434	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 Depths are relative to WELL @ 4586.0ft (RKB - 15')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Peterson 14X-434
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.64°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peterson 14X-434
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-434	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 Depths are relative to WELL @ 4586.0ft (RKB - 15')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Peterson 14X-434
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.64°

