

PETROLEUM DEVELOPMENT CORP Weld County CO

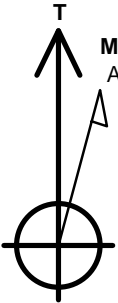
Well Name: **Lajco 17R-403**

Surface Location: Lajco 4N67W17R Pad Sec.17-T4N-R67W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 4794.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1359713.08	3163455.85	40.319330	-104.913800	
RKB - 13' WELL @ 4807.0ft (RKB - 13')						

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
50' E/W Hardline (17R-403)	1.0	-2474.2	764.2	Rectangle (Sides: L3962.4 W100.0)
SHL 340'FNL & 2186'FEL	1.0	0.0	0.0	Point
BHL 500'FSL & 1495'FEL	7144.0	-4455.4	764.2	Point



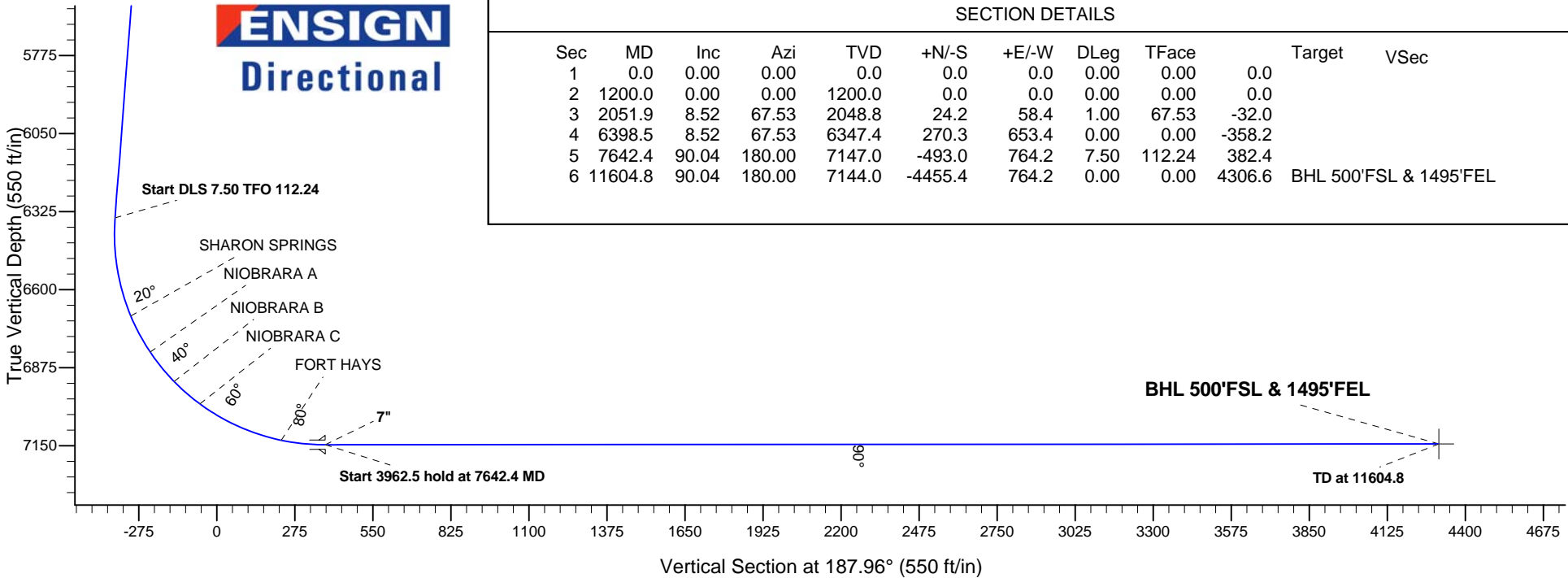
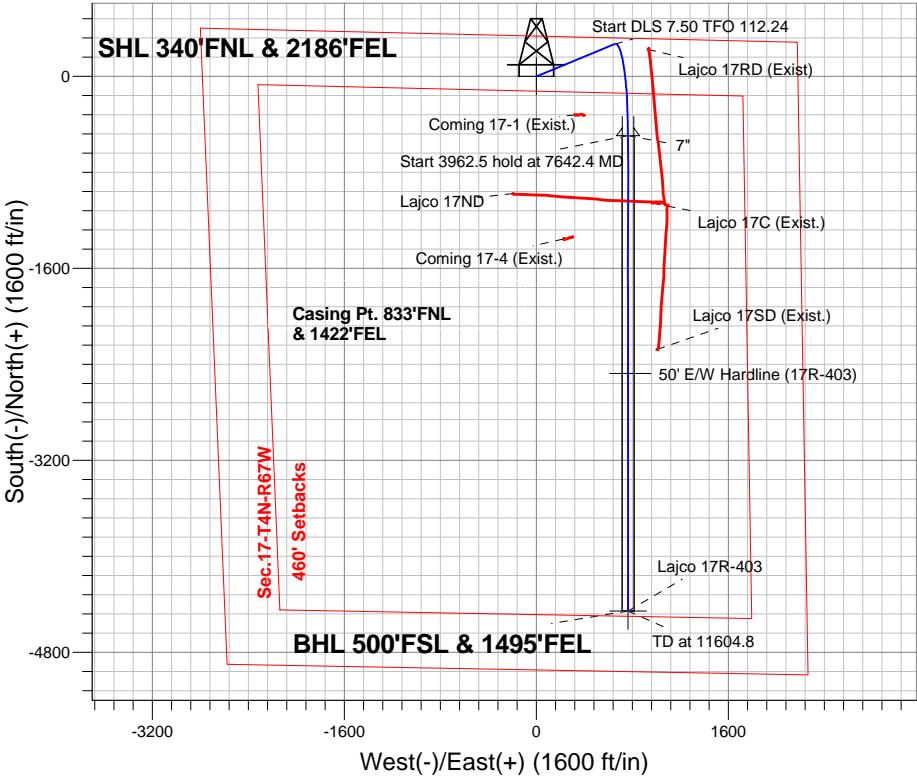
Azimuths to True North
Magnetic North: 8.39°

Magnetic Field
Strength: 52646.1snT
Dip Angle: 66.82°
Date: 7/7/2015
Model: IGRF2010

ANNOTATIONS

TVD	MD	Annotation
1200.0	1200.0	KOP - Start Build 1.00
6347.4	6398.5	Start DLS 7.50 TFO 112.24
7147.0	7642.4	Start 3962.5 hold at 7642.4 MD
7144.0	11604.8	TD at 11604.8

Lajco 4N67W17R Pad Sec.17-T4N-R67W
Lajco 17R-403
Plan #2 (7-7-15)





PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.17-T4N-R67W

Lajco 4N67W17R Pad Sec.17-T4N-R67W

Lajco 17R-403

Wellbore #1

Plan: Plan #2 (7-7-15)

Standard Planning Report

08 July, 2015

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well Lajco 17R-403
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Project:	SEC.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	North Reference:	True
Well:	Lajco 17R-403	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (7-7-15)		

Project	SEC.17-T4N-R67W, Weld County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site						Lajco 4N67W17R Pad Sec.17-T4N-R67W											
Site Position:						Northing:			1,359,711.77 ft			Latitude:			40.319300		
From:			Lat/Long			Easting:			3,164,903.08 ft			Longitude:			-104.908610		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			0.38 °		

Well	Lajco 17R-403					
Well Position	+N-S	10.9 ft	Northing:	1,359,713.08 ft	Latitude:	40.319330
	+E-W	-1,447.3 ft	Easting:	3,163,455.85 ft	Longitude:	-104.913800
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,794.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/7/2015	8.39	66.82	52,646

Design	Plan #2 (7-7-15)			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	187.96

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	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,051.9	8.52	67.53	2,048.8	24.2	58.4	1.00	1.00	0.00	67.53	
6,398.5	8.52	67.53	6,347.4	270.3	653.4	0.00	0.00	0.00	0.00	
7,642.4	90.04	180.00	7,147.0	-493.0	764.2	7.50	6.55	9.04	112.24	
11,604.8	90.04	180.00	7,144.0	-4,455.4	764.2	0.00	0.00	0.00	0.00	BHL 500'FSL & 14%

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well Lajco 17R-403
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Project:	SEC.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	North Reference:	True
Well:	Lajco 17R-403	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (7-7-15)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
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
KOP - Start Build 1.00									
1,300.0	1.00	67.53	1,300.0	0.3	0.8	-0.4	1.00	1.00	0.00
1,400.0	2.00	67.53	1,400.0	1.3	3.2	-1.8	1.00	1.00	0.00
1,500.0	3.00	67.53	1,499.9	3.0	7.3	-4.0	1.00	1.00	0.00
1,600.0	4.00	67.53	1,599.7	5.3	12.9	-7.1	1.00	1.00	0.00
1,700.0	5.00	67.53	1,699.4	8.3	20.1	-11.0	1.00	1.00	0.00
1,800.0	6.00	67.53	1,798.9	12.0	29.0	-15.9	1.00	1.00	0.00
1,900.0	7.00	67.53	1,898.3	16.3	39.5	-21.6	1.00	1.00	0.00
2,000.0	8.00	67.53	1,997.4	21.3	51.5	-28.2	1.00	1.00	0.00
2,051.9	8.52	67.53	2,048.8	24.2	58.4	-32.0	1.00	1.00	0.00
2,100.0	8.52	67.53	2,096.3	26.9	65.0	-35.6	0.00	0.00	0.00
2,200.0	8.52	67.53	2,195.2	32.5	78.7	-43.1	0.00	0.00	0.00
2,300.0	8.52	67.53	2,294.1	38.2	92.4	-50.6	0.00	0.00	0.00
2,400.0	8.52	67.53	2,393.0	43.9	106.1	-58.1	0.00	0.00	0.00
2,500.0	8.52	67.53	2,491.9	49.5	119.8	-65.7	0.00	0.00	0.00
2,600.0	8.52	67.53	2,590.8	55.2	133.4	-73.2	0.00	0.00	0.00
2,700.0	8.52	67.53	2,689.7	60.9	147.1	-80.7	0.00	0.00	0.00
2,800.0	8.52	67.53	2,788.6	66.5	160.8	-88.2	0.00	0.00	0.00
2,900.0	8.52	67.53	2,887.5	72.2	174.5	-95.7	0.00	0.00	0.00
3,000.0	8.52	67.53	2,986.4	77.8	188.2	-103.2	0.00	0.00	0.00
3,100.0	8.52	67.53	3,085.3	83.5	201.9	-110.7	0.00	0.00	0.00
3,200.0	8.52	67.53	3,184.2	89.2	215.6	-118.2	0.00	0.00	0.00
3,300.0	8.52	67.53	3,283.1	94.8	229.3	-125.7	0.00	0.00	0.00
3,400.0	8.52	67.53	3,382.0	100.5	243.0	-133.2	0.00	0.00	0.00
3,483.9	8.52	67.53	3,465.0	105.3	254.5	-139.5	0.00	0.00	0.00
PARKMAN									
3,500.0	8.52	67.53	3,480.9	106.2	256.6	-140.7	0.00	0.00	0.00
3,600.0	8.52	67.53	3,579.8	111.8	270.3	-148.2	0.00	0.00	0.00
3,700.0	8.52	67.53	3,678.7	117.5	284.0	-155.7	0.00	0.00	0.00
3,800.0	8.52	67.53	3,777.6	123.1	297.7	-163.2	0.00	0.00	0.00
3,900.0	8.52	67.53	3,876.5	128.8	311.4	-170.7	0.00	0.00	0.00
4,000.0	8.52	67.53	3,975.4	134.5	325.1	-178.2	0.00	0.00	0.00
4,014.8	8.52	67.53	3,990.0	135.3	327.1	-179.3	0.00	0.00	0.00
SUSSEX									
4,100.0	8.52	67.53	4,074.3	140.1	338.8	-185.7	0.00	0.00	0.00
4,200.0	8.52	67.53	4,173.2	145.8	352.5	-193.2	0.00	0.00	0.00
4,300.0	8.52	67.53	4,272.1	151.5	366.2	-200.7	0.00	0.00	0.00
4,400.0	8.52	67.53	4,371.0	157.1	379.9	-208.2	0.00	0.00	0.00
4,500.0	8.52	67.53	4,469.9	162.8	393.5	-215.7	0.00	0.00	0.00
4,550.7	8.52	67.53	4,520.0	165.7	400.5	-219.5	0.00	0.00	0.00

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Project:	SEC.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	North Reference:	True
Well:	Lajco 17R-403	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (7-7-15)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
SHANNON									
4,600.0	8.52	67.53	4,568.7	168.5	407.2	-223.2	0.00	0.00	0.00
4,700.0	8.52	67.53	4,667.6	174.1	420.9	-230.7	0.00	0.00	0.00
4,800.0	8.52	67.53	4,766.5	179.8	434.6	-238.3	0.00	0.00	0.00
4,900.0	8.52	67.53	4,865.4	185.4	448.3	-245.8	0.00	0.00	0.00
5,000.0	8.52	67.53	4,964.3	191.1	462.0	-253.3	0.00	0.00	0.00
5,100.0	8.52	67.53	5,063.2	196.8	475.7	-260.8	0.00	0.00	0.00
5,200.0	8.52	67.53	5,162.1	202.4	489.4	-268.3	0.00	0.00	0.00
5,300.0	8.52	67.53	5,261.0	208.1	503.1	-275.8	0.00	0.00	0.00
5,400.0	8.52	67.53	5,359.9	213.8	516.7	-283.3	0.00	0.00	0.00
5,500.0	8.52	67.53	5,458.8	219.4	530.4	-290.8	0.00	0.00	0.00
5,600.0	8.52	67.53	5,557.7	225.1	544.1	-298.3	0.00	0.00	0.00
5,700.0	8.52	67.53	5,656.6	230.7	557.8	-305.8	0.00	0.00	0.00
5,800.0	8.52	67.53	5,755.5	236.4	571.5	-313.3	0.00	0.00	0.00
5,900.0	8.52	67.53	5,854.4	242.1	585.2	-320.8	0.00	0.00	0.00
6,000.0	8.52	67.53	5,953.3	247.7	598.9	-328.3	0.00	0.00	0.00
6,100.0	8.52	67.53	6,052.2	253.4	612.6	-335.8	0.00	0.00	0.00
6,200.0	8.52	67.53	6,151.1	259.1	626.3	-343.3	0.00	0.00	0.00
6,300.0	8.52	67.53	6,250.0	264.7	639.9	-350.8	0.00	0.00	0.00
6,398.5	8.52	67.53	6,347.4	270.3	653.4	-358.2	0.00	0.00	0.00
Start DLS 7.50 TFO 112.24									
6,400.0	8.48	68.22	6,348.9	270.4	653.6	-358.3	7.36	-2.75	46.23
6,500.0	9.00	119.10	6,447.9	269.3	667.3	-359.2	7.50	0.52	50.88
6,600.0	14.21	146.86	6,545.9	255.2	680.9	-347.1	7.50	5.21	27.77
6,700.0	20.85	158.68	6,641.2	228.3	694.1	-322.3	7.50	6.64	11.82
6,756.2	24.79	162.55	6,693.0	207.7	701.3	-302.9	7.50	7.01	6.89
SHARON SPRINGS									
6,800.0	27.91	164.85	6,732.2	189.1	706.7	-285.2	7.50	7.13	5.24
6,900.0	35.15	168.66	6,817.4	138.2	718.5	-236.4	7.50	7.23	3.81
6,903.2	35.38	168.75	6,820.0	136.4	718.9	-234.7	7.50	7.29	3.09
NIORARA A									
7,000.0	42.47	171.29	6,895.3	76.5	729.3	-176.8	7.50	7.32	2.62
7,039.9	45.40	172.15	6,924.0	49.1	733.3	-150.3	7.50	7.35	2.14
NIORARA B									
7,100.0	49.83	173.28	6,964.5	5.1	738.9	-107.4	7.50	7.37	1.89
7,162.7	54.46	174.32	7,003.0	-44.1	744.2	-59.4	7.50	7.39	1.65
NIORARA C									
7,200.0	57.22	174.88	7,023.9	-74.8	747.1	-29.4	7.50	7.40	1.50
7,300.0	64.62	176.23	7,072.5	-161.9	753.9	55.9	7.50	7.41	1.35
7,400.0	72.04	177.42	7,109.4	-254.6	759.0	147.0	7.50	7.42	1.19
7,484.4	78.31	178.35	7,131.0	-336.2	762.0	227.3	7.50	7.42	1.10
FORT HAYS									
7,500.0	79.47	178.52	7,134.0	-351.4	762.4	242.4	7.50	7.43	1.07
7,600.0	86.89	179.56	7,145.9	-450.6	764.0	340.4	7.50	7.43	1.04
7,642.4	90.04	180.00	7,147.0	-493.0	764.2	382.4	7.50	7.43	1.03
Start 3962.5 hold at 7642.4 MD - 7"									
7,700.0	90.04	180.00	7,147.0	-550.6	764.2	439.4	0.00	0.00	0.00
7,800.0	90.04	180.00	7,146.9	-650.6	764.2	538.5	0.00	0.00	0.00
7,900.0	90.04	180.00	7,146.8	-750.6	764.2	637.5	0.00	0.00	0.00
8,000.0	90.04	180.00	7,146.7	-850.6	764.2	736.5	0.00	0.00	0.00
8,100.0	90.04	180.00	7,146.7	-950.6	764.2	835.6	0.00	0.00	0.00
8,200.0	90.04	180.00	7,146.6	-1,050.6	764.2	934.6	0.00	0.00	0.00

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Well:	Lajco 17R-403	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (7-7-15)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,300.0	90.04	180.00	7,146.5	-1,150.6	764.2	1,033.6	0.00	0.00	0.00
8,400.0	90.04	180.00	7,146.4	-1,250.6	764.2	1,132.7	0.00	0.00	0.00
8,500.0	90.04	180.00	7,146.4	-1,350.6	764.2	1,231.7	0.00	0.00	0.00
8,600.0	90.04	180.00	7,146.3	-1,450.6	764.2	1,330.8	0.00	0.00	0.00
8,700.0	90.04	180.00	7,146.2	-1,550.6	764.2	1,429.8	0.00	0.00	0.00
8,800.0	90.04	180.00	7,146.1	-1,650.6	764.2	1,528.8	0.00	0.00	0.00
8,900.0	90.04	180.00	7,146.0	-1,750.6	764.2	1,627.9	0.00	0.00	0.00
9,000.0	90.04	180.00	7,146.0	-1,850.6	764.2	1,726.9	0.00	0.00	0.00
9,100.0	90.04	180.00	7,145.9	-1,950.6	764.2	1,825.9	0.00	0.00	0.00
9,200.0	90.04	180.00	7,145.8	-2,050.6	764.2	1,925.0	0.00	0.00	0.00
9,300.0	90.04	180.00	7,145.7	-2,150.6	764.2	2,024.0	0.00	0.00	0.00
9,400.0	90.04	180.00	7,145.7	-2,250.6	764.2	2,123.0	0.00	0.00	0.00
9,500.0	90.04	180.00	7,145.6	-2,350.6	764.2	2,222.1	0.00	0.00	0.00
9,600.0	90.04	180.00	7,145.5	-2,450.6	764.2	2,321.1	0.00	0.00	0.00
9,700.0	90.04	180.00	7,145.4	-2,550.6	764.2	2,420.1	0.00	0.00	0.00
9,800.0	90.04	180.00	7,145.4	-2,650.6	764.2	2,519.2	0.00	0.00	0.00
9,900.0	90.04	180.00	7,145.3	-2,750.6	764.2	2,618.2	0.00	0.00	0.00
10,000.0	90.04	180.00	7,145.2	-2,850.6	764.2	2,717.3	0.00	0.00	0.00
10,100.0	90.04	180.00	7,145.1	-2,950.6	764.2	2,816.3	0.00	0.00	0.00
10,200.0	90.04	180.00	7,145.1	-3,050.6	764.2	2,915.3	0.00	0.00	0.00
10,300.0	90.04	180.00	7,145.0	-3,150.6	764.2	3,014.4	0.00	0.00	0.00
10,400.0	90.04	180.00	7,144.9	-3,250.6	764.2	3,113.4	0.00	0.00	0.00
10,500.0	90.04	180.00	7,144.8	-3,350.6	764.2	3,212.4	0.00	0.00	0.00
10,600.0	90.04	180.00	7,144.8	-3,450.6	764.2	3,311.5	0.00	0.00	0.00
10,700.0	90.04	180.00	7,144.7	-3,550.6	764.2	3,410.5	0.00	0.00	0.00
10,800.0	90.04	180.00	7,144.6	-3,650.6	764.2	3,509.5	0.00	0.00	0.00
10,900.0	90.04	180.00	7,144.5	-3,750.6	764.2	3,608.6	0.00	0.00	0.00
11,000.0	90.04	180.00	7,144.5	-3,850.6	764.2	3,707.6	0.00	0.00	0.00
11,100.0	90.04	180.00	7,144.4	-3,950.6	764.2	3,806.6	0.00	0.00	0.00
11,200.0	90.04	180.00	7,144.3	-4,050.6	764.2	3,905.7	0.00	0.00	0.00
11,300.0	90.04	180.00	7,144.2	-4,150.6	764.2	4,004.7	0.00	0.00	0.00
11,400.0	90.04	180.00	7,144.2	-4,250.6	764.2	4,103.8	0.00	0.00	0.00
11,500.0	90.04	180.00	7,144.1	-4,350.6	764.2	4,202.8	0.00	0.00	0.00
11,600.0	90.04	180.00	7,144.0	-4,450.6	764.2	4,301.8	0.00	0.00	0.00
11,604.8	90.04	180.00	7,144.0	-4,455.4	764.2	4,306.6	0.00	0.00	0.00
TD at 11604.8									

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N-S (ft)	+E-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
BHL 500'FSL & 1495'I	0.00	0.00	7,144.0	-4,455.4	764.2	1,355,262.98	3,164,249.45	40.307100	-104.911060
- plan hits target center									
- Point									
SHL 340'FNL & 2186'	0.00	0.00	1.0	0.0	0.0	1,359,713.09	3,163,455.85	40.319330	-104.913800
- plan hits target center									
- Point									
50' E/W Hardline (17F	0.00	0.00	1.0	-2,474.2	764.2	1,357,244.10	3,164,236.36	40.312538	-104.911060
- plan misses target center by 2589.5ft at 1.0ft MD (1.0 TVD, 0.0 N, 0.0 E)									
- Rectangle (sides W3,962.4 H100.0 D0.0)									

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well Lajco 17R-403
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Project:	SEC.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	North Reference:	True
Well:	Lajco 17R-403	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (7-7-15)		
	7,642.4 7,147.0 7"		7 7-1/2

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,483.9	3,465.0	PARKMAN		0.00		
4,014.8	3,990.0	SUSSEX		0.00		
4,550.7	4,520.0	SHANNON		0.00		
6,756.2	6,693.0	SHARON SPRINGS		0.00		
6,903.2	6,820.0	NIOBRARA A		0.00		
7,039.9	6,924.0	NIOBRARA B		0.00		
7,162.7	7,003.0	NIOBRARA C		0.00		
7,484.4	7,131.0	FORT HAYS		0.00		
	7,152.0	CODELL		0.00		

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
1,200.0	1,200.0	0.0	0.0	KOP - Start Build 1.00	
6,398.5	6,347.4	24.2	58.4	Start DLS 7.50 TFO 112.24	
7,642.4	7,147.0	270.3	653.4	Start 3962.5 hold at 7642.4 MD	
11,604.8	7,144.0	-493.0	764.2	TD at 11604.8	



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.17-T4N-R67W

Lajco 4N67W17R Pad Sec.17-T4N-R67W

Lajco 17R-403

Wellbore #1

Plan #2 (7-7-15)

Anticollision Report

08 July, 2015



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17R-403
Project:	SEC.17-T4N-R67W	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Reference Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lajco 17R-403	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (7-7-15)	Offset TVD Reference:	Offset Datum

Reference	Plan #2 (7-7-15)
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	7/8/2015		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	11,604.8	Plan #2 (7-7-15) (Wellbore #1)	MWD	MWD - Standard	

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Lajco 4N67W17R Pad Sec.17-T4N-R67W						
Lajco 17M-323 - Wellbore #1 - Plan #2 (7-2-15)	1,200.0	1,200.0	32.8	27.6	6.343	CC
Lajco 17M-323 - Wellbore #1 - Plan #2 (7-2-15)	1,300.0	1,300.0	33.1	27.5	5.906	ES
Lajco 17M-323 - Wellbore #1 - Plan #2 (7-2-15)	11,604.8	11,460.2	671.2	499.2	3.902	SF
Lajco 17M-423 - Wellbore #1 - Plan #2 (7-2-15)	1,738.4	1,737.6	68.4	60.8	9.048	CC
Lajco 17M-423 - Wellbore #1 - Plan #2 (7-2-15)	1,800.0	1,798.9	68.7	60.8	8.757	ES
Lajco 17M-423 - Wellbore #1 - Plan #2 (7-2-15)	11,604.8	11,558.2	912.1	735.5	5.163	SF
Lajco 17R-223 - Wellbore #1 - Plan #2 (7-7-15)	800.0	800.0	29.3	25.9	8.683	CC
Lajco 17R-223 - Wellbore #1 - Plan #2 (7-7-15)	1,000.0	999.9	29.7	25.4	7.001	ES
Lajco 17R-223 - Wellbore #1 - Plan #2 (7-7-15)	11,604.8	11,440.6	591.7	422.8	3.503	SF
Lajco 17R-243 - Wellbore #1 - Plan #2 (7-2-15)	1,200.0	1,200.0	18.2	13.0	3.524	CC
Lajco 17R-243 - Wellbore #1 - Plan #2 (7-2-15)	1,300.0	1,300.0	18.6	13.0	3.310	ES
Lajco 17R-243 - Wellbore #1 - Plan #2 (7-2-15)	11,604.8	11,376.4	349.4	213.3	2.568	SF
Lajco 17R-303 - Wellbore #1 - Plan #2 (7-7-15)	1,053.6	1,053.6	14.8	10.3	3.292	CC
Lajco 17R-303 - Wellbore #1 - Plan #2 (7-7-15)	1,200.0	1,199.9	15.2	10.0	2.954	ES
Lajco 17R-303 - Wellbore #1 - Plan #2 (7-7-15)	11,604.8	11,466.7	348.8	180.2	2.069	SF
Lajco 17U-203 - Wellbore #1 - Plan #2 (7-7-15)	200.0	200.0	58.4	57.7	86.543	CC
Lajco 17U-203 - Wellbore #1 - Plan #2 (7-7-15)	400.0	399.7	58.9	57.3	37.798	ES
Lajco 17U-203 - Wellbore #1 - Plan #2 (7-7-15)	900.0	891.8	88.4	84.3	21.710	SF
Lajco 17U-343 - Wellbore #1 - Plan #2 (7-7-15)	400.0	400.0	43.8	42.2	27.842	CC
Lajco 17U-343 - Wellbore #1 - Plan #2 (7-7-15)	500.0	499.9	43.9	41.9	21.825	ES
Lajco 17U-343 - Wellbore #1 - Plan #2 (7-7-15)	900.0	896.8	56.2	52.4	14.651	SF
Lajco Pad Sec.17-T4N-R67W						
Coming 17-1 (Exist.) - Wellbore #1 - Wellbore #1	3,330.0	3,310.2	435.4	418.7	26.173	CC
Coming 17-1 (Exist.) - Wellbore #1 - Wellbore #1	7,452.3	7,114.4	443.4	407.9	12.502	ES
Coming 17-1 (Exist.) - Wellbore #1 - Wellbore #1	7,500.0	7,124.3	445.6	409.8	12.430	SF
Coming 17-4 (Exist.) - Wellbore #1 - Wellbore #1	8,504.7	7,123.6	539.2	492.1	11.441	CC, ES
Coming 17-4 (Exist.) - Wellbore #1 - Wellbore #1	8,600.0	7,123.3	547.6	498.9	11.244	SF
Lajco 17C (Exist.) - Wellbore #1 - Wellbore #1	8,205.7	7,144.2	201.8	160.7	4.909	CC, ES, SF
Lajco 17ND - Wellbore #1 - Wellbore #1	8,127.7	7,321.8	961.5	919.3	22.772	CC, ES
Lajco 17ND - Wellbore #1 - Wellbore #1	8,400.0	7,320.4	999.3	952.9	21.530	SF
Lajco 17RD (Exist.) - Wellbore #1 - Wellbore #1	6,838.2	6,970.8	226.9	184.8	5.389	CC, ES, SF
Lajco 17SD (Exist.) - Wellbore #1 - Wellbore #1	9,424.9	7,318.2	240.3	167.2	3.288	CC, ES, SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17R-403
Project:	SEC.17-T4N-R67W	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Reference Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lajco 17R-403	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (7-7-15)	Offset TVD Reference:	Offset Datum

Offset Design Lajco 4N67W17R Pad Sec.17-T4N-R67W - Lajco 17M-323 - Wellbore #1 - Plan #2 (7-2-15)													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	-32.8	0.0	32.8					
100.0	100.0	100.0	100.0	0.1	0.1	-180.00	-32.8	0.0	32.8	32.6	0.22	145.893		
200.0	200.0	200.0	200.0	0.3	0.3	-180.00	-32.8	0.0	32.8	32.1	0.67	48.631		
300.0	300.0	300.0	300.0	0.6	0.6	-180.00	-32.8	0.0	32.8	31.7	1.12	29.179		
400.0	400.0	400.0	400.0	0.8	0.8	-180.00	-32.8	0.0	32.8	31.2	1.57	20.842		
500.0	500.0	500.0	500.0	1.0	1.0	-180.00	-32.8	0.0	32.8	30.8	2.02	16.210		
600.0	600.0	600.0	600.0	1.2	1.2	-180.00	-32.8	0.0	32.8	30.3	2.47	13.263		
700.0	700.0	700.0	700.0	1.5	1.5	-180.00	-32.8	0.0	32.8	29.9	2.92	11.223		
800.0	800.0	800.0	800.0	1.7	1.7	-180.00	-32.8	0.0	32.8	29.4	3.37	9.726		
900.0	900.0	900.0	900.0	1.9	1.9	-180.00	-32.8	0.0	32.8	29.0	3.82	8.582		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-180.00	-32.8	0.0	32.8	28.5	4.27	7.679		
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	-180.00	-32.8	0.0	32.8	28.1	4.72	6.947		
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	-180.00	-32.8	0.0	32.8	27.6	5.17	6.343 CC		
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	113.86	-32.8	0.0	33.1	27.5	5.61	5.906 ES		
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	117.86	-32.8	0.0	34.3	28.2	6.05	5.670		
1,500.0	1,499.9	1,499.9	1,499.9	3.2	3.3	123.90	-32.8	0.0	36.5	30.0	6.48	5.632		
1,600.0	1,599.7	1,599.7	1,599.7	3.4	3.5	131.09	-32.8	0.0	40.2	33.3	6.92	5.813		
1,700.0	1,699.4	1,699.4	1,699.4	3.7	3.7	138.46	-32.8	0.0	45.8	38.4	7.37	6.218		
1,800.0	1,798.9	1,798.9	1,798.9	3.9	3.9	145.25	-32.8	0.0	53.4	45.6	7.80	6.837		
1,900.0	1,898.3	1,898.3	1,898.3	4.2	4.2	151.07	-32.8	0.0	63.0	54.8	8.24	7.646		
2,000.0	1,997.4	1,997.4	1,997.4	4.4	4.4	155.86	-32.8	0.0	74.7	66.0	8.68	8.613		
2,100.0	2,096.3	2,097.6	2,097.6	4.7	4.6	160.04	-32.0	0.2	87.5	78.4	9.11	9.606		
2,200.0	2,195.2	2,198.1	2,198.0	5.0	4.8	163.79	-29.5	0.9	99.5	90.0	9.56	10.412		
2,300.0	2,294.1	2,298.7	2,298.6	5.3	5.1	167.30	-25.3	2.1	110.5	100.5	10.00	11.044		
2,400.0	2,393.0	2,399.5	2,399.2	5.6	5.3	170.73	-19.4	3.7	120.5	110.0	10.45	11.530		
2,500.0	2,491.9	2,499.9	2,499.3	5.9	5.5	174.15	-11.9	5.8	129.7	118.8	10.90	11.899		
2,600.0	2,590.8	2,599.2	2,598.3	6.2	5.7	177.21	-4.0	8.0	138.9	127.6	11.35	12.243		
2,700.0	2,689.7	2,698.6	2,697.3	6.6	6.0	179.88	3.9	10.2	148.5	136.7	11.81	12.583		
2,800.0	2,788.6	2,797.9	2,796.2	6.9	6.2	-177.77	11.7	12.3	158.5	146.2	12.27	12.915		
2,900.0	2,887.5	2,897.2	2,895.2	7.2	6.4	-175.70	19.6	14.5	168.6	155.9	12.74	13.234		
3,000.0	2,986.4	2,996.5	2,994.2	7.6	6.7	-173.87	27.5	16.7	178.9	165.7	13.21	13.540		
3,100.0	3,085.3	3,095.8	3,093.2	7.9	6.9	-172.24	35.3	18.9	189.4	175.7	13.69	13.831		
3,200.0	3,184.2	3,195.1	3,192.1	8.2	7.2	-170.78	43.2	21.1	200.0	185.9	14.18	14.107		
3,300.0	3,283.1	3,294.4	3,291.1	8.6	7.4	-169.47	51.1	23.2	210.8	196.1	14.67	14.369		
3,400.0	3,382.0	3,393.7	3,390.1	8.9	7.7	-168.28	58.9	25.4	221.6	206.5	15.16	14.616		
3,500.0	3,480.9	3,493.0	3,489.1	9.2	7.9	-167.21	66.8	27.6	232.6	216.9	15.66	14.850		
3,600.0	3,579.8	3,592.4	3,588.0	9.6	8.1	-166.23	74.7	29.8	243.6	227.4	16.16	15.070		
3,700.0	3,678.7	3,691.7	3,687.0	9.9	8.4	-165.34	82.5	32.0	254.6	238.0	16.67	15.278		
3,800.0	3,777.6	3,791.0	3,786.0	10.3	8.6	-164.52	90.4	34.1	265.7	248.6	17.17	15.475		
3,900.0	3,876.5	3,890.3	3,885.0	10.6	8.9	-163.77	98.3	36.3	276.9	259.2	17.68	15.661		
4,000.0	3,975.4	3,989.6	3,983.9	11.0	9.2	-163.07	106.1	38.5	288.1	269.9	18.19	15.837		
4,100.0	4,074.3	4,088.9	4,082.9	11.3	9.4	-162.43	114.0	40.7	299.4	280.7	18.71	16.004		
4,200.0	4,173.2	4,188.2	4,181.9	11.7	9.7	-161.84	121.9	42.8	310.7	291.4	19.22	16.161		
4,300.0	4,272.1	4,287.5	4,280.9	12.0	9.9	-161.28	129.7	45.0	322.0	302.3	19.74	16.311		
4,400.0	4,371.0	4,386.8	4,379.8	12.3	10.2	-160.77	137.6	47.2	333.3	313.1	20.26	16.453		
4,500.0	4,469.9	4,486.2	4,478.8	12.7	10.4	-160.28	145.5	49.4	344.7	323.9	20.78	16.588		
4,600.0	4,568.7	4,585.5	4,577.8	13.0	10.7	-159.83	153.3	51.6	356.1	334.8	21.30	16.716		
4,700.0	4,667.6	4,684.8	4,676.8	13.4	10.9	-159.41	161.2	53.7	367.5	345.7	21.83	16.838		
4,800.0	4,766.5	4,784.1	4,775.7	13.7	11.2	-159.01	169.1	55.9	378.9	356.6	22.35	16.954		
4,900.0	4,865.4	4,883.4	4,874.7	14.1	11.5	-158.64	176.9	58.1	390.4	367.5	22.88	17.065		
5,000.0	4,964.3	4,982.7	4,973.7	14.4	11.7	-158.28	184.8	60.3	401.9	378.5	23.40	17.171		

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 Lajco 17R-403
Project:	SEC.17-T4N-R67W	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Reference Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lajco 17R-403	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (7-7-15)	Offset TVD Reference:	Offset Datum

Offset Design Lajco 4N67W17R Pad Sec.17-T4N-R67W - Lajco 17M-323 - Wellbore #1 - Plan #2 (7-2-15)													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	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
5,100.0	5,063.2	5,082.0	5,072.7	14.8	12.0	-157.95		192.7	62.5	413.3	389.4	23.93	17.271	
5,200.0	5,162.1	5,181.3	5,171.6	15.1	12.2	-157.63		200.5	64.6	424.8	400.4	24.46	17.368	
5,300.0	5,261.0	5,280.6	5,270.6	15.5	12.5	-157.34		208.4	66.8	436.3	411.4	24.99	17.460	
5,400.0	5,359.9	5,380.0	5,369.6	15.9	12.7	-157.05		216.3	69.0	447.9	422.3	25.52	17.548	
5,500.0	5,458.8	5,479.3	5,468.6	16.2	13.0	-156.78		224.1	71.2	459.4	433.3	26.05	17.633	
5,600.0	5,557.7	5,578.6	5,567.5	16.6	13.3	-156.53		232.0	73.4	470.9	444.3	26.58	17.714	
5,700.0	5,656.6	5,677.9	5,666.5	16.9	13.5	-156.28		239.8	75.5	482.5	455.3	27.12	17.792	
5,800.0	5,755.5	5,777.2	5,765.5	17.3	13.8	-156.05		247.7	77.7	494.0	466.4	27.65	17.866	
5,900.0	5,854.4	5,876.5	5,864.5	17.6	14.0	-155.83		255.6	79.9	505.6	477.4	28.18	17.938	
6,000.0	5,953.3	5,975.8	5,963.4	18.0	14.3	-155.62		263.4	82.1	517.1	488.4	28.72	18.007	
6,100.0	6,052.2	6,075.1	6,062.4	18.3	14.6	-155.41		271.3	84.3	528.7	499.5	29.25	18.073	
6,200.0	6,151.1	6,174.4	6,161.4	18.7	14.8	-155.22		279.2	86.4	540.3	510.5	29.79	18.137	
6,300.0	6,250.0	6,275.0	6,261.6	19.0	15.1	-155.16		285.9	88.6	551.8	521.5	30.29	18.217	
6,400.0	6,348.9	6,376.0	6,362.5	19.4	15.2	-155.93		281.6	90.9	563.1	532.4	30.62	18.389	
6,500.0	6,447.9	6,474.5	6,459.4	19.7	15.3	-150.22		264.6	93.0	574.5	543.8	30.71	18.704	
6,600.0	6,545.9	6,571.0	6,551.5	19.9	15.3	120.59		236.0	95.0	586.2	555.5	30.74	19.071	
6,700.0	6,641.2	6,665.7	6,637.7	20.1	15.2	107.06		196.8	96.9	598.0	567.3	30.74	19.451	
6,800.0	6,732.2	6,758.9	6,717.1	20.2	15.2	99.36		148.2	98.7	609.6	578.8	30.78	19.805	
6,900.0	6,817.4	6,850.0	6,788.4	20.3	15.2	94.22		91.6	100.3	620.7	589.8	30.88	20.096	
7,000.0	6,895.3	6,941.4	6,852.7	20.4	15.2	90.46		26.8	101.7	631.0	599.9	31.11	20.282	
7,100.0	6,964.5	7,031.0	6,907.8	20.6	15.4	87.60		-43.8	102.9	640.4	608.9	31.49	20.332	
7,200.0	7,023.9	7,119.8	6,953.9	20.7	15.7	85.39		-119.6	104.0	648.5	616.5	32.06	20.226	
7,300.0	7,072.5	7,207.9	6,990.6	21.0	16.1	83.69		-199.6	104.8	655.3	622.5	32.84	19.952	
7,400.0	7,109.4	7,295.4	7,017.7	21.4	16.7	82.44		-282.8	105.4	660.6	626.7	33.85	19.513	
7,500.0	7,134.0	7,382.4	7,035.1	21.9	17.4	81.58		-368.0	105.8	664.2	629.1	35.09	18.926	
7,600.0	7,145.9	7,469.1	7,042.7	22.6	18.2	81.11		-454.4	106.0	666.1	629.6	36.55	18.227	
7,700.0	7,147.0	7,564.6	7,042.5	23.4	19.2	80.98		-549.8	106.0	666.5	628.0	38.46	17.329	
7,800.0	7,146.9	7,664.6	7,041.7	24.4	20.4	80.92		-649.8	106.0	666.6	625.8	40.75	16.356	
7,900.0	7,146.8	7,764.6	7,041.0	25.5	21.7	80.87		-749.8	106.0	666.7	623.4	43.26	15.411	
8,000.0	7,146.7	7,864.6	7,040.2	26.7	23.1	80.81		-849.8	106.0	666.8	620.8	45.94	14.514	
8,100.0	7,146.7	7,964.6	7,039.5	28.0	24.5	80.75		-949.8	106.0	666.9	618.1	48.77	13.675	
8,200.0	7,146.6	8,064.6	7,038.7	29.3	26.0	80.69		-1,049.8	106.0	667.0	615.3	51.72	12.897	
8,300.0	7,146.5	8,164.6	7,038.0	30.7	27.6	80.64		-1,149.8	106.0	667.1	612.3	54.77	12.180	
8,400.0	7,146.4	8,264.6	7,037.2	32.2	29.2	80.58		-1,249.8	106.0	667.2	609.3	57.91	11.522	
8,500.0	7,146.4	8,364.6	7,036.4	33.7	30.8	80.52		-1,349.8	106.0	667.3	606.2	61.12	10.918	
8,600.0	7,146.3	8,464.6	7,035.7	35.3	32.5	80.46		-1,449.8	106.0	667.4	603.0	64.39	10.365	
8,700.0	7,146.2	8,564.6	7,034.9	36.8	34.2	80.40		-1,549.8	106.0	667.6	599.8	67.72	9.858	
8,800.0	7,146.1	8,664.6	7,034.2	38.5	35.9	80.35		-1,649.8	106.0	667.7	596.6	71.09	9.392	
8,900.0	7,146.0	8,764.6	7,033.4	40.1	37.6	80.29		-1,749.8	106.0	667.8	593.3	74.49	8.964	
9,000.0	7,146.0	8,864.6	7,032.7	41.8	39.4	80.23		-1,849.8	106.0	667.9	590.0	77.94	8.570	
9,100.0	7,145.9	8,964.6	7,031.9	43.5	41.2	80.17		-1,949.8	106.0	668.0	586.6	81.41	8.206	
9,200.0	7,145.8	9,064.6	7,031.1	45.2	43.0	80.12		-2,049.7	106.0	668.1	583.2	84.90	7.870	
9,300.0	7,145.7	9,164.6	7,030.4	46.9	44.7	80.06		-2,149.7	106.0	668.2	579.8	88.42	7.558	
9,400.0	7,145.7	9,264.6	7,029.6	48.6	46.5	80.00		-2,249.7	106.0	668.4	576.4	91.95	7.268	
9,500.0	7,145.6	9,364.6	7,028.9	50.4	48.4	79.94		-2,349.7	106.0	668.5	573.0	95.51	6.999	
9,600.0	7,145.5	9,464.6	7,028.1	52.2	50.2	79.89		-2,449.7	106.0	668.6	569.5	99.08	6.748	
9,700.0	7,145.4	9,564.6	7,027.4	53.9	52.0	79.83		-2,549.7	106.0	668.7	566.1	102.66	6.514	
9,800.0	7,145.4	9,664.6	7,026.6	55.7	53.8	79.77		-2,649.7	106.0	668.8	562.6	106.25	6.295	
9,900.0	7,145.3	9,764.6	7,025.8	57.5	55.7	79.71		-2,749.7	106.0	669.0	559.1	109.86	6.089	
10,000.0	7,145.2	9,864.6	7,025.1	59.3	57.5	79.66		-2,849.7	106.0	669.1	555.6	113.47	5.897	
10,100.0	7,145.1	9,964.6	7,024.3	61.1	59.4	79.60		-2,949.7	106.0	669.2	552.1	117.09	5.715	

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 Lajco 17R-403
Project:	SEC.17-T4N-R67W	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Reference Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lajco 17R-403	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (7-7-15)	Offset TVD Reference:	Offset Datum

Offset Design Lajco 4N67W17R Pad Sec.17-T4N-R67W - Lajco 17M-323 - Wellbore #1 - Plan #2 (7-2-15)												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	7,145.1	10,064.6	7,023.6	62.9	61.2	79.54	-3,049.7	106.0	669.3	548.6	120.72	5.544	
10,300.0	7,145.0	10,164.6	7,022.8	64.7	63.1	79.48	-3,149.7	106.0	669.5	545.1	124.36	5.383	
10,400.0	7,144.9	10,264.6	7,022.0	66.6	64.9	79.43	-3,249.7	106.0	669.6	541.6	128.00	5.231	
10,500.0	7,144.8	10,364.6	7,021.3	68.4	66.8	79.37	-3,349.7	106.0	669.7	538.1	131.65	5.087	
10,600.0	7,144.8	10,464.6	7,020.5	70.2	68.7	79.31	-3,449.7	106.0	669.8	534.5	135.30	4.951	
10,700.0	7,144.7	10,564.5	7,019.8	72.1	70.5	79.25	-3,549.7	106.0	670.0	531.0	138.96	4.821	
10,800.0	7,144.6	10,664.5	7,019.0	73.9	72.4	79.20	-3,649.7	106.0	670.1	527.5	142.62	4.698	
10,900.0	7,144.5	10,764.5	7,018.3	75.8	74.3	79.14	-3,749.7	106.0	670.2	523.9	146.29	4.582	
11,000.0	7,144.5	10,864.5	7,017.5	77.6	76.2	79.08	-3,849.7	106.0	670.3	520.4	149.95	4.470	
11,100.0	7,144.4	10,964.5	7,016.7	79.5	78.1	79.03	-3,949.6	106.0	670.5	516.9	153.62	4.364	
11,200.0	7,144.3	11,064.5	7,016.0	81.3	79.9	78.97	-4,049.6	106.0	670.6	513.3	157.30	4.263	
11,300.0	7,144.2	11,164.5	7,015.2	83.2	81.8	78.91	-4,149.6	106.0	670.7	509.8	160.97	4.167	
11,400.0	7,144.2	11,264.5	7,014.5	85.0	83.7	78.85	-4,249.6	106.0	670.9	506.2	164.65	4.075	
11,500.0	7,144.1	11,364.5	7,013.7	86.9	85.6	78.80	-4,349.6	106.0	671.0	502.7	168.33	3.986	
11,545.8	7,144.0	11,410.3	7,013.4	87.8	86.5	78.77	-4,395.4	106.0	671.1	501.0	170.01	3.947	
11,600.0	7,144.0	11,460.2	7,013.0	88.8	87.4	78.74	-4,445.2	106.0	671.1	499.2	171.93	3.904	
11,604.8	7,144.0	11,460.2	7,013.0	88.9	87.4	78.74	-4,445.2	106.0	671.2	499.2	172.02	3.902 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17R-403
Project:	SEC.17-T4N-R67W	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Reference Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lajco 17R-403	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (7-7-15)	Offset TVD Reference:	Offset Datum

Offset Design Lajco 4N67W17R Pad Sec.17-T4N-R67W - Lajco 17M-423 - Wellbore #1 - Plan #2 (7-2-15)													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	Semi Major Axis (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	0.0	-2.19	72.9	-2.8	72.9				
100.0	100.0	100.0	100.0	0.1	0.1	0.1	-2.19	72.9	-2.8	72.9	72.7	0.22	324.403	
200.0	200.0	200.0	200.0	0.3	0.3	0.3	-2.19	72.9	-2.8	72.9	72.2	0.67	108.134	
300.0	300.0	300.0	300.0	0.6	0.6	0.6	-2.19	72.9	-2.8	72.9	71.8	1.12	64.881	
400.0	400.0	400.0	400.0	0.8	0.8	0.8	-2.19	72.9	-2.8	72.9	71.3	1.57	46.343	
500.0	500.0	500.0	500.0	1.0	1.0	1.0	-2.19	72.9	-2.8	72.9	70.9	2.02	36.045	
600.0	600.0	600.0	600.0	1.2	1.2	1.2	-2.19	72.9	-2.8	72.9	70.4	2.47	29.491	
700.0	700.0	700.0	700.0	1.5	1.5	1.5	-2.19	72.9	-2.8	72.9	70.0	2.92	24.954	
800.0	800.0	800.0	800.0	1.7	1.7	1.7	-2.19	72.9	-2.8	72.9	69.5	3.37	21.627	
900.0	900.0	900.0	900.0	1.9	1.9	1.9	-2.19	72.9	-2.8	72.9	69.1	3.82	19.083	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	2.1	-2.19	72.9	-2.8	72.9	68.6	4.27	17.074	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	2.4	-2.19	72.9	-2.8	72.9	68.2	4.72	15.448	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	2.6	-2.19	72.9	-2.8	72.9	67.7	5.17	14.104	
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	2.8	-70.37	72.9	-2.8	72.6	67.0	5.61	12.942	
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	3.0	-72.34	72.9	-2.8	71.8	65.7	6.05	11.872	
1,500.0	1,499.9	1,499.9	1,499.9	3.2	3.3	3.3	-75.73	72.9	-2.8	70.6	64.1	6.49	10.882	
1,600.0	1,599.7	1,599.7	1,599.7	3.4	3.5	3.5	-80.63	72.9	-2.8	69.3	62.4	6.93	10.002	
1,700.0	1,699.4	1,699.4	1,699.4	3.7	3.7	3.7	-87.11	72.9	-2.8	68.5	61.1	7.38	9.276	
1,738.4	1,737.6	1,737.6	1,737.6	3.8	3.8	3.8	-90.00	72.9	-2.8	68.4	60.8	7.56	9.048 CC	
1,800.0	1,798.9	1,798.9	1,798.9	3.9	3.9	3.9	-95.08	72.9	-2.8	68.7	60.8	7.84	8.757 ES	
1,900.0	1,898.3	1,897.1	1,897.1	4.2	4.2	4.2	-104.00	73.6	-3.2	71.4	63.1	8.30	8.602	
2,000.0	1,997.4	1,994.9	1,994.9	4.4	4.4	4.4	-112.86	75.8	-4.4	78.1	69.3	8.76	8.916	
2,100.0	2,096.3	2,092.3	2,092.2	4.7	4.6	4.6	-120.60	79.4	-6.4	88.7	79.5	9.22	9.628	
2,200.0	2,195.2	2,190.5	2,190.2	5.0	4.8	4.8	-126.42	84.2	-9.1	102.0	92.3	9.67	10.541	
2,300.0	2,294.1	2,289.1	2,288.7	5.3	5.0	5.0	-130.88	89.1	-11.9	116.1	106.0	10.13	11.460	
2,400.0	2,393.0	2,387.7	2,387.1	5.6	5.3	5.3	-134.35	94.1	-14.6	130.8	120.2	10.60	12.347	
2,500.0	2,491.9	2,486.4	2,485.6	5.9	5.5	5.5	-137.12	99.0	-17.4	145.9	134.9	11.06	13.192	
2,600.0	2,590.8	2,585.0	2,584.1	6.2	5.7	5.7	-139.37	103.9	-20.1	161.3	149.7	11.53	13.990	
2,700.0	2,689.7	2,683.6	2,682.5	6.6	5.9	5.9	-141.23	108.9	-22.9	176.8	164.8	12.00	14.739	
2,800.0	2,788.6	2,782.3	2,781.0	6.9	6.2	6.2	-142.79	113.8	-25.7	192.5	180.1	12.47	15.442	
2,900.0	2,887.5	2,880.9	2,879.5	7.2	6.4	6.4	-144.11	118.8	-28.4	208.4	195.4	12.94	16.100	
3,000.0	2,986.4	2,979.5	2,978.0	7.6	6.6	6.6	-145.24	123.7	-31.2	224.3	210.9	13.42	16.716	
3,100.0	3,085.3	3,078.2	3,076.4	7.9	6.9	6.9	-146.23	128.6	-33.9	240.3	226.4	13.89	17.294	
3,200.0	3,184.2	3,176.8	3,174.9	8.2	7.1	7.1	-147.09	133.6	-36.7	256.3	241.9	14.37	17.836	
3,300.0	3,283.1	3,275.4	3,273.4	8.6	7.3	7.3	-147.85	138.5	-39.4	272.4	257.6	14.85	18.344	
3,400.0	3,382.0	3,374.1	3,371.9	8.9	7.6	7.6	-148.52	143.5	-42.2	288.6	273.2	15.33	18.822	
3,500.0	3,480.9	3,472.7	3,470.3	9.2	7.8	7.8	-149.13	148.4	-45.0	304.7	288.9	15.81	19.272	
3,600.0	3,579.8	3,571.4	3,568.8	9.6	8.0	8.0	-149.67	153.3	-47.7	320.9	304.6	16.29	19.696	
3,700.0	3,678.7	3,670.0	3,667.3	9.9	8.3	8.3	-150.16	158.3	-50.5	337.2	320.4	16.78	20.096	
3,800.0	3,777.6	3,768.6	3,765.7	10.3	8.5	8.5	-150.60	163.2	-53.2	353.4	336.2	17.26	20.474	
3,900.0	3,876.5	3,867.3	3,864.2	10.6	8.7	8.7	-151.01	168.2	-56.0	369.7	351.9	17.75	20.832	
4,000.0	3,975.4	3,965.9	3,962.7	11.0	9.0	9.0	-151.38	173.1	-58.7	386.0	367.8	18.23	21.170	
4,100.0	4,074.3	4,064.5	4,061.2	11.3	9.2	9.2	-151.72	178.0	-61.5	402.3	383.6	18.72	21.491	
4,200.0	4,173.2	4,163.2	4,159.6	11.7	9.5	9.5	-152.04	183.0	-64.3	418.6	399.4	19.21	21.796	
4,300.0	4,272.1	4,261.8	4,258.1	12.0	9.7	9.7	-152.33	187.9	-67.0	434.9	415.2	19.69	22.085	
4,400.0	4,371.0	4,360.4	4,356.6	12.3	9.9	9.9	-152.60	192.9	-69.8	451.3	431.1	20.18	22.361	
4,500.0	4,469.9	4,459.1	4,455.0	12.7	10.2	10.2	-152.85	197.8	-72.5	467.6	446.9	20.67	22.623	
4,600.0	4,568.7	4,557.7	4,553.5	13.0	10.4	10.4	-153.09	202.7	-75.3	484.0	462.8	21.16	22.874	
4,700.0	4,667.6	4,656.3	4,652.0	13.4	10.7	10.7	-153.31	207.7	-78.0	500.3	478.7	21.65	23.112	
4,800.0	4,766.5	4,755.0	4,750.5	13.7	10.9	10.9	-153.51	212.6	-80.8	516.7	494.6	22.14	23.340	
4,900.0	4,865.4	4,853.6	4,848.9	14.1	11.1	11.1	-153.70	217.5	-83.6	533.1	510.5	22.63	23.558	

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 Lajco 17R-403
Project:	SEC.17-T4N-R67W	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Reference Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lajco 17R-403	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (7-7-15)	Offset TVD Reference:	Offset Datum

Offset Design Lajco 4N67W17R Pad Sec.17-T4N-R67W - Lajco 17M-423 - Wellbore #1 - Plan #2 (7-2-15)													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	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
5,000.0	4,964.3	4,952.2	4,947.4	14.4	11.4	-153.89		222.5	-86.3	549.5	526.3	23.12	23.767	
5,100.0	5,063.2	5,050.9	5,045.9	14.8	11.6	-154.06		227.4	-89.1	565.8	542.2	23.61	23.967	
5,200.0	5,162.1	5,149.5	5,144.4	15.1	11.9	-154.22		232.4	-91.8	582.2	558.1	24.10	24.159	
5,300.0	5,261.0	5,248.1	5,242.8	15.5	12.1	-154.37		237.3	-94.6	598.6	574.0	24.59	24.343	
5,400.0	5,359.9	5,346.8	5,341.3	15.9	12.3	-154.51		242.2	-97.3	615.0	589.9	25.08	24.519	
5,500.0	5,458.8	5,445.4	5,439.8	16.2	12.6	-154.65		247.2	-100.1	631.4	605.9	25.58	24.689	
5,600.0	5,557.7	5,544.0	5,538.2	16.6	12.8	-154.78		252.1	-102.9	647.8	621.8	26.07	24.852	
5,700.0	5,656.6	5,642.7	5,636.7	16.9	13.1	-154.90		257.1	-105.6	664.2	637.7	26.56	25.009	
5,800.0	5,755.5	5,741.3	5,735.2	17.3	13.3	-155.02		262.0	-108.4	680.7	653.6	27.05	25.160	
5,900.0	5,854.4	5,839.9	5,833.7	17.6	13.5	-155.13		266.9	-111.1	697.1	669.5	27.55	25.306	
6,000.0	5,953.3	5,938.6	5,932.1	18.0	13.8	-155.24		271.9	-113.9	713.5	685.5	28.04	25.446	
6,100.0	6,052.2	6,037.2	6,030.6	18.3	14.0	-155.34		276.8	-116.6	729.9	701.4	28.53	25.581	
6,200.0	6,151.1	6,135.9	6,129.1	18.7	14.3	-155.44		281.8	-119.4	746.3	717.3	29.03	25.712	
6,300.0	6,250.0	6,234.5	6,227.5	19.0	14.5	-155.53		286.7	-122.2	762.8	733.2	29.52	25.838	
6,400.0	6,348.9	6,333.1	6,326.0	19.4	14.7	-155.63		291.6	-124.9	779.2	749.2	30.01	25.961	
6,500.0	6,447.9	6,432.2	6,425.0	19.7	14.9	-155.73		296.5	-127.7	795.7	765.4	30.50	26.087	
6,600.0	6,546.8	6,531.0	6,523.8	20.0	15.1	-155.82		301.4	-130.5	812.2	781.5	31.00	26.213	
6,700.0	6,645.7	6,630.0	6,622.8	20.3	15.3	-155.91		306.3	-133.3	828.7	797.3	31.50	26.339	
6,800.0	6,744.6	6,728.9	6,721.7	20.6	15.5	-156.00		311.2	-136.1	845.2	812.4	32.00	26.465	
6,900.0	6,843.5	6,827.8	6,820.6	20.9	15.7	-156.09		316.1	-138.9	861.7	827.5	32.50	26.591	
7,000.0	6,942.4	6,926.7	6,919.5	21.2	15.9	-156.18		321.0	-141.7	878.2	842.6	33.00	26.717	
7,100.0	7,041.3	7,025.6	7,018.4	21.5	16.1	-156.27		325.9	-144.5	894.7	857.7	33.50	26.843	
7,200.0	7,140.2	7,124.5	7,117.3	21.8	16.3	-156.36		330.8	-147.3	911.2	872.8	34.00	26.969	
7,300.0	7,239.1	7,223.4	7,216.2	22.1	16.5	-156.45		335.7	-150.1	927.7	887.9	34.50	27.095	
7,400.0	7,338.0	7,322.3	7,315.1	22.4	16.7	-156.54		340.6	-152.9	944.2	903.0	35.00	27.221	
7,500.0	7,436.9	7,421.2	7,414.0	22.7	16.9	-156.63		345.5	-155.7	960.7	918.1	35.50	27.347	
7,600.0	7,535.8	7,520.1	7,512.9	23.0	17.1	-156.72		350.4	-158.5	977.2	933.2	36.00	27.473	
7,700.0	7,634.7	7,619.0	7,611.8	23.3	17.3	-156.81		355.3	-161.3	993.7	948.3	36.50	27.599	
7,800.0	7,733.6	7,717.9	7,710.7	23.6	17.5	-156.90		360.2	-164.1	1010.2	963.4	37.00	27.725	
7,900.0	7,832.5	7,816.8	7,809.6	23.9	17.7	-156.99		365.1	-166.9	1026.7	978.5	37.50	27.851	
8,000.0	7,931.4	7,915.7	7,908.5	24.2	17.9	-157.08		370.0	-169.7	1043.2	993.6	38.00	27.977	
8,100.0	8,030.3	8,014.6	8,007.4	24.5	18.1	-157.17		374.9	-172.5	1059.7	1008.7	38.50	28.103	
8,200.0	8,129.2	8,113.5	8,106.3	24.8	18.3	-157.26		379.8	-175.3	1076.2	1023.8	39.00	28.229	
8,300.0	8,228.1	8,212.4	8,205.2	25.1	18.5	-157.35		384.7	-178.1	1092.7	1038.9	39.50	28.355	
8,400.0	8,327.0	8,311.3	8,304.1	25.4	18.7	-157.44		389.6	-180.9	1109.2	1054.0	40.00	28.481	
8,500.0	8,425.9	8,410.2	8,403.0	25.7	18.9	-157.53		394.5	-183.7	1125.7	1069.1	40.50	28.607	
8,600.0	8,524.8	8,509.1	8,501.9	26.0	19.1	-157.62		399.4	-186.5	1142.2	1084.2	41.00	28.733	
8,700.0	8,623.7	8,608.0	8,600.8	26.3	19.3	-157.71		404.3	-189.3	1158.7	1099.3	41.50	28.859	
8,800.0	8,722.6	8,706.9	8,699.7	26.6	19.5	-157.80		409.2	-192.1	1175.2	1114.4	42.00	28.985	
8,900.0	8,821.5	8,805.8	8,798.6	26.9	19.7	-157.89		414.1	-194.9	1191.7	1129.5	42.50	29.111	
9,000.0	8,920.4	8,904.7	8,897.5	27.2	19.9	-157.98		419.0	-197.7	1208.2	1144.6	43.00	29.237	
9,100.0	9,019.3	9,003.6	8,996.4	27.5	20.1	-158.07		423.9	-200.5	1224.7	1159.7	43.50	29.363	
9,200.0	9,118.2	9,102.5	9,095.3	27.8	20.3	-158.16		428.8	-203.3	1241.2	1174.8	44.00	29.489	
9,300.0	9,217.1	9,201.4	9,194.2	28.1	20.5	-158.25		433.7	-206.1	1257.7	1189.9	44.50	29.615	
9,400.0	9,316.0	9,300.3	9,293.1	28.4	20.7	-158.34		438.6	-208.9	1274.2	1205.0	45.00	29.741	
9,500.0	9,414.9	9,399.2	9,392.0	28.7	20.9	-158.43		443.5	-211.7	1290.7	1220.1	45.50	29.867	
9,600.0	9,513.8	9,498.1	9,490.9	29.0	21.1	-158.52		448.4	-214.5	1307.2	1235.2	46.00	29.993	
9,700.0	9,612.7	9,597.0	9,589.8	29.3	21.3	-158.61		453.3	-217.3	1323.7	1250.3	46.50	30.119	
9,800.0	9,711.6	9,695.9	9,688.7	29.6	21.5	-158.70		458.2	-220.1	1340.2	1265.4	47.00	30.245	
9,900.0	9,810.5	9,794.8	9,787.6	29.9	21.7	-158.79		463.1	-222.9	1356.7	1280.5	47.50	30.371	
10,000.0	9,909.4	9,893.7	9,886.5	30.2	21.9	-158.88		468.0	-225.7	1373.2	1295.6	48.00	30.497	

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 Lajco 17R-403
Project:	SEC.17-T4N-R67W	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Reference Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lajco 17R-403	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (7-7-15)	Offset TVD Reference:	Offset Datum

Offset Design Lajco 4N67W17R Pad Sec.17-T4N-R67W - Lajco 17M-423 - Wellbore #1 - Plan #2 (7-2-15)												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
10,100.0	7,145.1	10,067.6	7,144.0	61.1	60.7	89.93	-2,950.6	-147.8	912.0	791.5	120.56	7.565	
10,200.0	7,145.1	10,167.6	7,144.0	62.9	62.6	89.93	-3,050.6	-147.8	912.0	787.7	124.27	7.339	
10,300.0	7,145.0	10,267.6	7,144.0	64.7	64.4	89.94	-3,150.6	-147.8	912.0	784.0	127.98	7.126	
10,400.0	7,144.9	10,367.6	7,144.0	66.6	66.3	89.94	-3,250.6	-147.8	912.0	780.3	131.70	6.925	
10,500.0	7,144.8	10,467.6	7,144.0	68.4	68.2	89.95	-3,350.6	-147.8	912.0	776.6	135.43	6.734	
10,600.0	7,144.8	10,567.6	7,144.0	70.2	70.0	89.95	-3,450.6	-147.8	912.0	772.9	139.16	6.554	
10,700.0	7,144.7	10,667.6	7,144.0	72.1	71.9	89.96	-3,550.6	-147.8	912.0	769.1	142.90	6.382	
10,800.0	7,144.6	10,767.6	7,144.0	73.9	73.8	89.96	-3,650.6	-147.8	912.0	765.4	146.64	6.219	
10,900.0	7,144.5	10,867.6	7,144.0	75.8	75.7	89.97	-3,750.6	-147.8	912.0	761.6	150.39	6.064	
11,000.0	7,144.5	10,967.6	7,144.0	77.6	77.5	89.97	-3,850.6	-147.8	912.0	757.9	154.14	5.917	
11,100.0	7,144.4	11,067.6	7,144.0	79.5	79.4	89.98	-3,950.6	-147.8	912.0	754.1	157.90	5.776	
11,200.0	7,144.3	11,167.6	7,144.0	81.3	81.3	89.98	-4,050.6	-147.8	912.0	750.4	161.66	5.642	
11,300.0	7,144.2	11,267.6	7,144.0	83.2	83.2	89.99	-4,150.6	-147.8	912.0	746.6	165.43	5.513	
11,400.0	7,144.2	11,367.6	7,144.0	85.0	85.1	89.99	-4,250.6	-147.8	912.0	742.8	169.19	5.390	
11,500.0	7,144.1	11,467.6	7,144.0	86.9	87.0	90.00	-4,350.6	-147.8	912.0	739.1	172.97	5.273	
11,568.2	7,144.0	11,535.8	7,144.0	88.2	88.2	90.00	-4,418.8	-147.8	912.0	736.5	175.54	5.196	
11,600.0	7,144.0	11,558.2	7,144.0	88.8	88.7	90.00	-4,441.2	-147.8	912.1	735.5	176.56	5.166	
11,604.8	7,144.0	11,558.2	7,144.0	88.9	88.7	90.00	-4,441.2	-147.8	912.1	735.5	176.65	5.163 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17R-403
Project:	SEC.17-T4N-R67W	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Reference Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lajco 17R-403	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (7-7-15)	Offset TVD Reference:	Offset Datum

Offset Design Lajco 4N67W17R Pad Sec.17-T4N-R67W - Lajco 17R-223 - Wellbore #1 - Plan #2 (7-7-15)													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 (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	0.0	-5.47	29.1	-2.8	29.3				
100.0	100.0	100.0	100.0	0.1	0.1	0.1	-5.47	29.1	-2.8	29.3	29.0	0.22	130.240	
200.0	200.0	200.0	200.0	0.3	0.3	0.3	-5.47	29.1	-2.8	29.3	28.6	0.67	43.413	
300.0	300.0	300.0	300.0	0.6	0.6	0.6	-5.47	29.1	-2.8	29.3	28.1	1.12	26.048	
400.0	400.0	400.0	400.0	0.8	0.8	0.8	-5.47	29.1	-2.8	29.3	27.7	1.57	18.606	
500.0	500.0	500.0	500.0	1.0	1.0	1.0	-5.47	29.1	-2.8	29.3	27.3	2.02	14.471	
600.0	600.0	600.0	600.0	1.2	1.2	1.2	-5.47	29.1	-2.8	29.3	26.8	2.47	11.840	
700.0	700.0	700.0	700.0	1.5	1.5	1.5	-5.47	29.1	-2.8	29.3	26.4	2.92	10.018	
800.0	800.0	800.0	800.0	1.7	1.7	1.7	-5.47	29.1	-2.8	29.3	25.9	3.37	8.683 CC	
900.0	900.0	900.0	900.0	1.9	1.9	1.9	-3.77	29.3	-1.9	29.3	25.5	3.81	7.702	
1,000.0	1,000.0	999.9	999.8	2.1	2.1	2.1	1.27	29.7	0.7	29.7	25.4	4.24	7.001 ES	
1,100.0	1,100.0	1,099.6	1,099.5	2.4	2.3	2.3	9.27	30.3	5.0	30.7	26.1	4.67	6.577	
1,200.0	1,200.0	1,199.2	1,198.9	2.6	2.5	2.5	19.30	31.3	11.0	33.1	28.0	5.12	6.478	
1,300.0	1,300.0	1,298.7	1,298.0	2.8	2.8	2.8	-38.46	32.5	18.6	36.8	31.2	5.56	6.612	
1,400.0	1,400.0	1,398.0	1,396.9	3.0	3.0	3.0	-30.19	33.9	28.0	41.0	35.0	6.00	6.841	
1,500.0	1,499.9	1,497.1	1,495.4	3.2	3.3	3.3	-23.15	35.6	39.1	45.8	39.3	6.44	7.109	
1,600.0	1,599.7	1,596.2	1,593.6	3.4	3.5	3.5	-17.09	37.6	51.8	50.9	44.0	6.88	7.397	
1,700.0	1,699.4	1,695.1	1,691.4	3.7	3.8	3.8	-11.79	39.8	66.2	56.3	49.0	7.32	7.695	
1,800.0	1,798.9	1,793.9	1,788.9	3.9	4.2	4.2	-7.10	42.3	82.2	62.0	54.3	7.76	7.996	
1,900.0	1,898.3	1,892.5	1,885.9	4.2	4.5	4.5	-2.90	45.0	99.8	68.0	59.8	8.19	8.296	
2,000.0	1,997.4	1,991.0	1,982.5	4.4	4.9	4.9	0.91	48.0	119.1	74.2	65.5	8.63	8.594	
2,100.0	2,096.3	2,089.4	2,078.5	4.7	5.3	5.3	4.40	51.2	140.0	80.8	71.7	9.08	8.900	
2,200.0	2,195.2	2,187.7	2,174.2	5.0	5.7	5.7	7.48	54.7	162.5	89.2	79.6	9.55	9.340	
2,300.0	2,294.1	2,287.2	2,270.9	5.3	6.1	6.1	10.08	58.3	185.8	98.3	88.3	10.02	9.809	
2,400.0	2,393.0	2,386.7	2,367.5	5.6	6.6	6.6	12.24	61.9	209.1	107.6	97.1	10.51	10.243	
2,500.0	2,491.9	2,486.2	2,464.2	5.9	7.0	7.0	14.05	65.5	232.4	117.1	106.1	11.00	10.642	
2,600.0	2,590.8	2,585.7	2,560.8	6.2	7.5	7.5	15.59	69.1	255.7	126.6	115.1	11.50	11.008	
2,700.0	2,689.7	2,685.2	2,657.5	6.6	8.0	8.0	16.91	72.7	279.0	136.2	124.2	12.01	11.343	
2,800.0	2,788.6	2,784.7	2,754.1	6.9	8.4	8.4	18.06	76.3	302.3	145.9	133.4	12.53	11.649	
2,900.0	2,887.5	2,884.2	2,850.8	7.2	8.9	8.9	19.06	79.9	325.6	155.6	142.6	13.05	11.929	
3,000.0	2,986.4	2,983.7	2,947.5	7.6	9.4	9.4	19.95	83.5	348.9	165.4	151.8	13.57	12.186	
3,100.0	3,085.3	3,083.1	3,044.1	7.9	9.9	9.9	20.74	87.1	372.2	175.2	161.1	14.11	12.421	
3,200.0	3,184.2	3,182.6	3,140.8	8.2	10.4	10.4	21.44	90.7	395.5	185.1	170.4	14.64	12.638	
3,300.0	3,283.1	3,282.1	3,237.4	8.6	10.9	10.9	22.08	94.3	418.8	194.9	179.7	15.18	12.837	
3,400.0	3,382.0	3,381.6	3,334.1	8.9	11.4	11.4	22.65	97.9	442.1	204.8	189.1	15.73	13.021	
3,500.0	3,480.9	3,481.1	3,430.7	9.2	11.9	11.9	23.17	101.5	465.4	214.7	198.4	16.28	13.192	
3,600.0	3,579.8	3,580.6	3,527.4	9.6	12.4	12.4	23.64	105.1	488.7	224.6	207.8	16.83	13.349	
3,700.0	3,678.7	3,680.1	3,624.1	9.9	12.9	12.9	24.07	108.7	512.0	234.6	217.2	17.38	13.495	
3,800.0	3,777.6	3,779.6	3,720.7	10.3	13.3	13.3	24.47	112.3	535.3	244.5	226.6	17.94	13.631	
3,900.0	3,876.5	3,879.1	3,817.4	10.6	13.8	13.8	24.84	115.9	558.6	254.5	236.0	18.50	13.758	
4,000.0	3,975.4	3,978.6	3,914.0	11.0	14.3	14.3	25.18	119.6	581.9	264.4	245.4	19.06	13.876	
4,100.0	4,074.3	4,078.1	4,010.7	11.3	14.8	14.8	25.49	123.2	605.2	274.4	254.8	19.62	13.986	
4,200.0	4,173.2	4,177.5	4,107.3	11.7	15.3	15.3	25.79	126.8	628.5	284.4	264.2	20.18	14.090	
4,300.0	4,272.1	4,277.0	4,204.0	12.0	15.8	15.8	26.06	130.4	651.8	294.4	273.6	20.75	14.187	
4,400.0	4,371.0	4,376.5	4,300.6	12.3	16.3	16.3	26.31	134.0	675.1	304.4	283.1	21.32	14.278	
4,500.0	4,469.9	4,476.0	4,397.3	12.7	16.8	16.8	26.55	137.6	698.4	314.4	292.5	21.89	14.363	
4,600.0	4,568.7	4,575.5	4,494.0	13.0	17.4	17.4	26.78	141.2	721.7	324.4	301.9	22.46	14.444	
4,700.0	4,667.6	4,675.0	4,590.6	13.4	17.9	17.9	26.99	144.8	745.0	334.4	311.4	23.03	14.520	
4,800.0	4,766.5	4,774.5	4,687.3	13.7	18.4	18.4	27.19	148.4	768.3	344.4	320.8	23.60	14.592	
4,900.0	4,865.4	4,874.0	4,783.9	14.1	18.9	18.9	27.37	152.0	791.6	354.4	330.2	24.18	14.661	
5,000.0	4,964.3	4,973.5	4,880.6	14.4	19.4	19.4	27.55	155.6	814.9	364.4	339.7	24.75	14.725	

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 Lajco 17R-403
Project:	SEC.17-T4N-R67W	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Reference Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lajco 17R-403	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (7-7-15)	Offset TVD Reference:	Offset Datum

Offset Design Lajco 4N67W17R Pad Sec.17-T4N-R67W - Lajco 17R-223 - Wellbore #1 - Plan #2 (7-7-15)													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	5,063.2	5,073.0	4,977.2	14.8	19.9	27.72	27.72	159.2	838.2	374.5	349.1	25.33	14.786	
5,200.0	5,162.1	5,172.4	5,073.9	15.1	20.4	27.88	27.88	162.8	861.5	384.5	358.6	25.90	14.844	
5,300.0	5,261.0	5,271.9	5,170.6	15.5	20.9	28.03	28.03	166.4	884.8	394.5	368.0	26.48	14.900	
5,400.0	5,359.9	5,371.4	5,267.2	15.9	21.4	28.17	28.17	170.0	908.1	404.6	377.5	27.06	14.952	
5,500.0	5,458.8	5,470.9	5,363.9	16.2	21.9	28.31	28.31	173.6	931.4	414.6	387.0	27.64	15.002	
5,600.0	5,557.7	5,570.4	5,460.5	16.6	22.4	28.44	28.44	177.2	954.7	424.6	396.4	28.21	15.050	
5,700.0	5,656.6	5,669.9	5,557.2	16.9	22.9	28.56	28.56	180.8	978.0	434.7	405.9	28.79	15.096	
5,800.0	5,755.5	5,769.4	5,653.8	17.3	23.4	28.68	28.68	184.4	1,001.3	444.7	415.3	29.37	15.139	
5,900.0	5,854.4	5,868.9	5,750.5	17.6	23.9	28.79	28.79	188.0	1,024.6	454.8	424.8	29.96	15.181	
6,000.0	5,953.3	5,968.4	5,847.1	18.0	24.4	28.90	28.90	191.6	1,047.9	464.8	434.3	30.54	15.221	
6,100.0	6,052.2	6,067.9	5,943.8	18.3	24.9	29.00	29.00	195.2	1,071.2	474.8	443.7	31.12	15.259	
6,200.0	6,151.1	6,167.4	6,040.5	18.7	25.4	29.10	29.10	198.8	1,094.5	484.9	453.2	31.70	15.295	
6,300.0	6,250.0	6,266.8	6,137.1	19.0	25.9	29.20	29.20	202.4	1,117.8	494.9	462.7	32.28	15.331	
6,400.0	6,348.9	6,362.5	6,230.0	19.4	26.4	28.76	28.76	204.6	1,140.2	505.2	472.3	32.87	15.370	
6,500.0	6,447.9	6,453.4	6,318.1	19.7	26.8	-20.22	-20.22	197.2	1,161.4	515.9	482.4	33.49	15.405	
6,600.0	6,545.9	6,543.7	6,404.0	19.9	27.1	-46.25	-46.25	179.2	1,182.2	526.5	492.6	33.90	15.531	
6,700.0	6,641.2	6,633.5	6,486.9	20.1	27.5	-56.50	-56.50	151.2	1,202.2	536.6	502.5	34.08	15.745	
6,800.0	6,732.2	6,723.0	6,565.8	20.2	27.8	-61.28	-61.28	113.4	1,221.3	546.1	512.0	34.07	16.029	
6,900.0	6,817.4	6,812.4	6,639.7	20.3	28.1	-63.87	-63.87	66.5	1,239.2	554.8	520.9	33.93	16.350	
7,000.0	6,895.3	6,900.0	6,706.4	20.4	28.4	-65.45	-65.45	12.3	1,255.4	562.6	528.8	33.80	16.647	
7,100.0	6,964.5	6,991.1	6,769.0	20.6	28.7	-66.55	-66.55	-52.1	1,270.6	569.4	535.6	33.78	16.854	
7,200.0	7,023.9	7,080.8	6,822.9	20.7	29.0	-67.40	-67.40	-122.5	1,283.7	575.0	540.9	34.03	16.894	
7,300.0	7,072.5	7,170.8	6,868.5	21.0	29.4	-68.15	-68.15	-199.2	1,294.8	579.3	544.6	34.68	16.705	
7,400.0	7,109.4	7,261.3	6,905.3	21.4	29.8	-68.86	-68.86	-281.4	1,303.8	582.4	546.6	35.80	16.267	
7,500.0	7,134.0	7,352.4	6,932.5	21.9	30.2	-69.58	-69.58	-368.0	1,310.5	584.2	546.8	37.42	15.611	
7,600.0	7,145.9	7,444.1	6,949.5	22.6	30.7	-70.34	-70.34	-458.0	1,314.7	584.7	545.2	39.49	14.805	
7,699.4	7,148.5	7,536.2	6,956.0	23.4	31.3	-70.77	-70.77	-549.8	1,316.4	584.6	543.0	41.63	14.043	
7,700.0	7,147.0	7,536.8	6,956.0	23.4	31.3	-70.92	-70.92	-550.4	1,316.4	584.3	542.6	41.66	14.027	
7,800.0	7,146.9	7,635.8	6,955.5	24.4	32.0	-70.88	-70.88	-649.4	1,316.4	584.5	540.6	43.88	13.321	
7,900.0	7,146.8	7,735.8	6,954.8	25.5	32.8	-70.83	-70.83	-749.4	1,316.4	584.7	538.4	46.28	12.634	
8,000.0	7,146.7	7,835.8	6,954.2	26.7	33.7	-70.78	-70.78	-849.4	1,316.4	584.8	536.0	48.83	11.977	
8,100.0	7,146.7	7,935.8	6,953.6	28.0	34.6	-70.73	-70.73	-949.4	1,316.4	585.0	533.5	51.51	11.356	
8,200.0	7,146.6	8,035.8	6,952.9	29.3	35.7	-70.68	-70.68	-1,049.4	1,316.4	585.2	530.9	54.31	10.775	
8,300.0	7,146.5	8,135.8	6,952.3	30.7	36.8	-70.62	-70.62	-1,149.4	1,316.4	585.4	528.2	57.20	10.233	
8,400.0	7,146.4	8,235.8	6,951.7	32.2	38.0	-70.57	-70.57	-1,249.4	1,316.4	585.6	525.4	60.18	9.731	
8,500.0	7,146.4	8,335.8	6,951.0	33.7	39.3	-70.52	-70.52	-1,349.4	1,316.4	585.8	522.5	63.22	9.266	
8,600.0	7,146.3	8,435.8	6,950.4	35.3	40.6	-70.47	-70.47	-1,449.4	1,316.4	585.9	519.6	66.32	8.835	
8,700.0	7,146.2	8,535.8	6,949.8	36.8	42.0	-70.42	-70.42	-1,549.4	1,316.4	586.1	516.7	69.47	8.437	
8,800.0	7,146.1	8,635.8	6,949.1	38.5	43.4	-70.37	-70.37	-1,649.4	1,316.4	586.3	513.6	72.67	8.068	
8,900.0	7,146.0	8,735.8	6,948.5	40.1	44.9	-70.32	-70.32	-1,749.4	1,316.4	586.5	510.6	75.90	7.727	
9,000.0	7,146.0	8,835.8	6,947.9	41.8	46.4	-70.27	-70.27	-1,849.4	1,316.4	586.7	507.5	79.17	7.411	
9,100.0	7,145.9	8,935.8	6,947.2	43.5	47.9	-70.22	-70.22	-1,949.4	1,316.4	586.9	504.4	82.47	7.117	
9,200.0	7,145.8	9,035.8	6,946.6	45.2	49.5	-70.16	-70.16	-2,049.4	1,316.4	587.1	501.3	85.79	6.843	
9,300.0	7,145.7	9,135.8	6,946.0	46.9	51.0	-70.11	-70.11	-2,149.4	1,316.4	587.3	498.1	89.13	6.589	
9,400.0	7,145.7	9,235.8	6,945.4	48.6	52.6	-70.06	-70.06	-2,249.4	1,316.4	587.4	494.9	92.49	6.351	
9,500.0	7,145.6	9,335.8	6,944.7	50.4	54.3	-70.01	-70.01	-2,349.3	1,316.4	587.6	491.8	95.88	6.129	
9,600.0	7,145.5	9,435.8	6,944.1	52.2	55.9	-69.96	-69.96	-2,449.3	1,316.4	587.8	488.5	99.27	5.921	
9,700.0	7,145.4	9,535.8	6,943.5	53.9	57.6	-69.91	-69.91	-2,549.3	1,316.4	588.0	485.3	102.68	5.727	
9,800.0	7,145.4	9,635.8	6,942.8	55.7	59.2	-69.86	-69.86	-2,649.3	1,316.4	588.2	482.1	106.10	5.544	
9,900.0	7,145.3	9,735.8	6,942.2	57.5	60.9	-69.81	-69.81	-2,749.3	1,316.4	588.4	478.9	109.54	5.372	
10,000.0	7,145.2	9,835.8	6,941.6	59.3	62.6	-69.76	-69.76	-2,849.3	1,316.4	588.6	475.6	112.98	5.210	

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 Lajco 17R-403
Project:	SEC.17-T4N-R67W	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Reference Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lajco 17R-403	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (7-7-15)	Offset TVD Reference:	Offset Datum

Offset Design Lajco 4N67W17R Pad Sec.17-T4N-R67W - Lajco 17R-223 - Wellbore #1 - Plan #2 (7-7-15)												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
10,100.0	7,145.1	9,935.8	6,940.9	61.1	64.3	-69.71	-2,949.3	1,316.4	588.8	472.3	116.43	5.057	
10,200.0	7,145.1	10,035.8	6,940.3	62.9	66.1	-69.66	-3,049.3	1,316.4	589.0	469.1	119.89	4.913	
10,300.0	7,145.0	10,135.8	6,939.7	64.7	67.8	-69.61	-3,149.3	1,316.4	589.2	465.8	123.36	4.776	
10,400.0	7,144.9	10,235.8	6,939.0	66.6	69.6	-69.55	-3,249.3	1,316.4	589.4	462.5	126.83	4.647	
10,500.0	7,144.8	10,335.8	6,938.4	68.4	71.3	-69.50	-3,349.3	1,316.4	589.6	459.3	130.30	4.524	
10,600.0	7,144.8	10,435.8	6,937.8	70.2	73.1	-69.45	-3,449.3	1,316.4	589.7	456.0	133.79	4.408	
10,700.0	7,144.7	10,535.8	6,937.1	72.1	74.9	-69.40	-3,549.3	1,316.4	589.9	452.7	137.27	4.298	
10,800.0	7,144.6	10,635.8	6,936.5	73.9	76.6	-69.35	-3,649.3	1,316.4	590.1	449.4	140.76	4.192	
10,900.0	7,144.5	10,735.8	6,935.9	75.8	78.4	-69.30	-3,749.3	1,316.4	590.3	446.1	144.25	4.092	
11,000.0	7,144.5	10,835.8	6,935.2	77.6	80.2	-69.25	-3,849.3	1,316.4	590.5	442.8	147.75	3.997	
11,100.0	7,144.4	10,935.8	6,934.6	79.5	82.0	-69.20	-3,949.3	1,316.4	590.7	439.5	151.25	3.906	
11,200.0	7,144.3	11,035.8	6,934.0	81.3	83.8	-69.15	-4,049.3	1,316.4	590.9	436.2	154.75	3.819	
11,300.0	7,144.2	11,135.8	6,933.4	83.2	85.6	-69.10	-4,149.3	1,316.4	591.1	432.9	158.25	3.735	
11,400.0	7,144.2	11,235.8	6,932.7	85.0	87.4	-69.05	-4,249.3	1,316.4	591.3	429.6	161.76	3.656	
11,500.0	7,144.1	11,335.8	6,932.1	86.9	89.3	-69.00	-4,349.3	1,316.4	591.5	426.3	165.26	3.579	
11,600.0	7,144.0	11,435.8	6,931.5	88.8	91.1	-68.95	-4,449.3	1,316.4	591.7	423.0	168.77	3.506	
11,604.8	7,144.0	11,440.6	6,931.4	88.9	91.2	-68.95	-4,454.1	1,316.4	591.7	422.8	168.94	3.503 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17R-403
Project:	SEC.17-T4N-R67W	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Reference Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lajco 17R-403	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (7-7-15)	Offset TVD Reference:	Offset Datum

Offset Design Lajco 4N67W17R Pad Sec.17-T4N-R67W - Lajco 17R-243 - Wellbore #1 - Plan #2 (7-2-15)													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	-180.00	-180.00	-18.2	0.0	18.2	18.2	0.00	N/A	
100.0	100.0	100.0	100.0	0.1	0.1	-180.00	-180.00	-18.2	0.0	18.2	18.0	0.22	81.060	
200.0	200.0	200.0	200.0	0.3	0.3	-180.00	-180.00	-18.2	0.0	18.2	17.5	0.67	27.020	
300.0	300.0	300.0	300.0	0.6	0.6	-180.00	-180.00	-18.2	0.0	18.2	17.1	1.12	16.212	
400.0	400.0	400.0	400.0	0.8	0.8	-180.00	-180.00	-18.2	0.0	18.2	16.6	1.57	11.580	
500.0	500.0	500.0	500.0	1.0	1.0	-180.00	-180.00	-18.2	0.0	18.2	16.2	2.02	9.007	
600.0	600.0	600.0	600.0	1.2	1.2	-180.00	-180.00	-18.2	0.0	18.2	15.7	2.47	7.369	
700.0	700.0	700.0	700.0	1.5	1.5	-180.00	-180.00	-18.2	0.0	18.2	15.3	2.92	6.235	
800.0	800.0	800.0	800.0	1.7	1.7	-180.00	-180.00	-18.2	0.0	18.2	14.8	3.37	5.404	
900.0	900.0	900.0	900.0	1.9	1.9	-180.00	-180.00	-18.2	0.0	18.2	14.4	3.82	4.768	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-180.00	-180.00	-18.2	0.0	18.2	13.9	4.27	4.266	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	-180.00	-180.00	-18.2	0.0	18.2	13.5	4.72	3.860	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	-180.00	-180.00	-18.2	0.0	18.2	13.0	5.17	3.524 CC	
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	114.96	-18.2	0.0	0.0	18.6	13.0	5.61	3.310 ES	
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	121.82	-18.2	0.0	0.0	19.8	13.8	6.05	3.278	
1,500.0	1,499.9	1,500.2	1,500.2	3.2	3.3	129.97	-17.7	0.7	21.7	15.3	6.48	3.355		
1,600.0	1,599.7	1,600.4	1,600.4	3.4	3.5	137.41	-16.2	2.9	23.8	16.9	6.91	3.443		
1,700.0	1,699.4	1,700.8	1,700.6	3.7	3.7	144.29	-13.7	6.5	26.0	18.6	7.34	3.540		
1,800.0	1,798.9	1,801.1	1,800.8	3.9	3.9	150.72	-10.2	11.5	28.3	20.6	7.77	3.647		
1,900.0	1,898.3	1,901.5	1,900.9	4.2	4.1	156.77	-5.7	18.0	30.9	22.7	8.20	3.765		
2,000.0	1,997.4	2,002.0	2,000.9	4.4	4.4	162.47	-0.2	26.0	33.6	25.0	8.62	3.897		
2,100.0	2,096.3	2,102.4	2,100.6	4.7	4.6	167.79	6.2	35.3	36.5	27.4	9.05	4.026		
2,200.0	2,195.2	2,202.3	2,199.8	5.0	4.9	172.38	12.9	44.9	39.4	29.9	9.50	4.146		
2,300.0	2,294.1	2,302.2	2,299.1	5.3	5.1	176.32	19.6	54.5	42.5	32.6	9.94	4.275		
2,400.0	2,393.0	2,402.1	2,398.3	5.6	5.4	179.70	26.3	64.1	45.8	35.4	10.40	4.406		
2,500.0	2,491.9	2,502.0	2,497.5	5.9	5.7	-177.38	32.9	73.7	49.3	38.4	10.86	4.537		
2,600.0	2,590.8	2,601.9	2,596.7	6.2	6.0	-174.85	39.6	83.3	52.8	41.5	11.32	4.663		
2,700.0	2,689.7	2,701.8	2,695.9	6.6	6.2	-172.64	46.3	93.0	56.5	44.7	11.80	4.785		
2,800.0	2,788.6	2,801.7	2,795.2	6.9	6.5	-170.70	52.9	102.6	60.2	47.9	12.28	4.900		
2,900.0	2,887.5	2,901.6	2,894.4	7.2	6.8	-168.99	59.6	112.2	64.0	51.2	12.77	5.008		
3,000.0	2,986.4	3,001.6	2,993.6	7.6	7.1	-167.47	66.3	121.8	67.8	54.5	13.26	5.110		
3,100.0	3,085.3	3,101.5	3,092.8	7.9	7.4	-166.11	73.0	131.4	71.7	57.9	13.76	5.206		
3,200.0	3,184.2	3,201.4	3,192.1	8.2	7.7	-164.90	79.6	141.0	75.6	61.3	14.27	5.296		
3,300.0	3,283.1	3,301.3	3,291.3	8.6	8.0	-163.80	86.3	150.6	79.5	64.7	14.78	5.380		
3,400.0	3,382.0	3,401.2	3,390.5	8.9	8.3	-162.81	93.0	160.3	83.5	68.2	15.29	5.459		
3,500.0	3,480.9	3,501.1	3,489.7	9.2	8.6	-161.91	99.6	169.9	87.5	71.7	15.81	5.533		
3,600.0	3,579.8	3,601.0	3,589.0	9.6	8.8	-161.08	106.3	179.5	91.5	75.2	16.33	5.602		
3,700.0	3,678.7	3,700.9	3,688.2	9.9	9.1	-160.33	113.0	189.1	95.5	78.7	16.85	5.667		
3,800.0	3,777.6	3,800.8	3,787.4	10.3	9.4	-159.64	119.7	198.7	99.5	82.2	17.38	5.728		
3,900.0	3,876.5	3,900.8	3,886.6	10.6	9.7	-159.00	126.3	208.3	103.6	85.7	17.91	5.785		
4,000.0	3,975.4	4,000.7	3,985.9	11.0	10.0	-158.41	133.0	217.9	107.7	89.2	18.44	5.839		
4,100.0	4,074.3	4,100.6	4,085.1	11.3	10.3	-157.86	139.7	227.6	111.7	92.8	18.97	5.890		
4,200.0	4,173.2	4,200.5	4,184.3	11.7	10.6	-157.35	146.3	237.2	115.8	96.3	19.51	5.938		
4,300.0	4,272.1	4,300.4	4,283.5	12.0	10.9	-156.88	153.0	246.8	119.9	99.9	20.05	5.983		
4,400.0	4,371.0	4,400.3	4,382.7	12.3	11.2	-156.43	159.7	256.4	124.0	103.4	20.59	6.025		
4,500.0	4,469.9	4,500.2	4,482.0	12.7	11.6	-156.02	166.4	266.0	128.1	107.0	21.13	6.066		
4,600.0	4,568.7	4,600.1	4,581.2	13.0	11.9	-155.63	173.0	275.6	132.3	110.6	21.67	6.104		
4,700.0	4,667.6	4,700.0	4,680.4	13.4	12.2	-155.27	179.7	285.3	136.4	114.2	22.21	6.140		
4,800.0	4,766.5	4,800.0	4,779.6	13.7	12.5	-154.92	186.4	294.9	140.5	117.8	22.76	6.175		
4,900.0	4,865.4	4,899.9	4,878.9	14.1	12.8	-154.60	193.0	304.5	144.6	121.3	23.30	6.207		
5,000.0	4,964.3	4,999.8	4,978.1	14.4	13.1	-154.29	199.7	314.1	148.8	124.9	23.85	6.239		

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 Lajco 17R-403
Project:	SEC.17-T4N-R67W	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Reference Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lajco 17R-403	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (7-7-15)	Offset TVD Reference:	Offset Datum

Offset Design Lajco 4N67W17R Pad Sec.17-T4N-R67W - Lajco 17R-243 - Wellbore #1 - Plan #2 (7-2-15)													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	5,063.2	5,099.7	5,077.3	14.8	13.4	-154.00		206.4	323.7	152.9	128.5	24.40	6.268	
5,200.0	5,162.1	5,199.6	5,176.5	15.1	13.7	-153.73		213.0	333.3	157.1	132.1	24.94	6.297	
5,300.0	5,261.0	5,299.5	5,275.8	15.5	14.0	-153.47		219.7	342.9	161.2	135.7	25.49	6.323	
5,400.0	5,359.9	5,399.4	5,375.0	15.9	14.3	-153.22		226.4	352.6	165.4	139.3	26.04	6.349	
5,500.0	5,458.8	5,499.3	5,474.2	16.2	14.6	-152.99		233.1	362.2	169.5	142.9	26.60	6.374	
5,600.0	5,557.7	5,599.2	5,573.4	16.6	14.9	-152.76		239.7	371.8	173.7	146.5	27.15	6.397	
5,700.0	5,656.6	5,699.2	5,672.7	16.9	15.2	-152.55		246.4	381.4	177.8	150.1	27.70	6.420	
5,800.0	5,755.5	5,799.1	5,771.9	17.3	15.5	-152.35		253.1	391.0	182.0	153.7	28.25	6.442	
5,900.0	5,854.4	5,899.0	5,871.1	17.6	15.8	-152.15		259.7	400.6	186.2	157.3	28.81	6.462	
6,000.0	5,953.3	5,998.9	5,970.3	18.0	16.1	-151.97		266.4	410.2	190.3	161.0	29.36	6.482	
6,100.0	6,052.2	6,098.8	6,069.5	18.3	16.4	-151.79		273.1	419.9	194.5	164.6	29.92	6.501	
6,200.0	6,151.1	6,199.8	6,169.9	18.7	16.7	-151.93		278.7	429.6	198.5	168.1	30.42	6.526	
6,300.0	6,250.0	6,301.1	6,270.5	19.0	16.9	-155.19		273.3	439.3	201.8	171.3	30.50	6.618	
6,400.0	6,348.9	6,397.8	6,365.1	19.4	17.1	-162.33		255.7	448.5	206.3	176.0	30.23	6.823	
6,500.0	6,447.9	6,489.8	6,452.4	19.7	17.1	139.56		228.0	457.0	214.4	184.4	29.99	7.149	
6,600.0	6,545.9	6,579.0	6,533.1	19.9	17.2	105.39		191.2	464.9	225.7	195.6	30.04	7.512	
6,700.0	6,641.2	6,665.7	6,607.1	20.1	17.2	88.12		146.7	472.1	239.0	208.7	30.26	7.899	
6,800.0	6,732.2	6,750.0	6,673.8	20.2	17.2	77.45		95.5	478.6	253.4	222.9	30.47	8.316	
6,900.0	6,817.4	6,833.0	6,733.5	20.3	17.3	69.99		38.3	484.4	268.0	237.4	30.56	8.769	
7,000.0	6,895.3	6,914.3	6,785.7	20.4	17.3	64.49		-23.8	489.5	282.1	251.6	30.48	9.254	
7,100.0	6,964.5	6,994.4	6,830.4	20.6	17.4	60.34		-90.0	493.9	295.0	264.9	30.18	9.777	
7,200.0	7,023.9	7,073.4	6,867.6	20.7	17.6	57.19		-159.7	497.6	306.5	276.7	29.80	10.286	
7,300.0	7,072.5	7,150.0	6,896.5	21.0	17.9	54.86		-230.5	500.4	316.1	286.7	29.39	10.753	
7,400.0	7,109.4	7,229.2	6,918.9	21.4	18.4	53.16		-306.4	502.6	323.5	294.4	29.11	11.115	
7,500.0	7,134.0	7,306.4	6,933.1	21.9	19.0	52.06		-382.2	504.1	328.7	299.7	29.02	11.327	
7,600.0	7,145.9	7,383.3	6,939.6	22.6	19.7	51.49		-458.8	504.8	331.4	302.2	29.22	11.342	
7,700.0	7,147.0	7,473.5	6,939.6	23.4	20.6	51.35		-549.0	504.8	332.1	301.7	30.37	10.935	
7,800.0	7,146.9	7,573.5	6,938.8	24.4	21.7	51.26		-649.0	504.8	332.5	300.3	32.19	10.329	
7,900.0	7,146.8	7,673.5	6,938.0	25.5	22.9	51.17		-749.0	504.8	333.0	298.8	34.20	9.736	
8,000.0	7,146.7	7,773.5	6,937.3	26.7	24.3	51.08		-849.0	504.8	333.4	297.0	36.35	9.171	
8,100.0	7,146.7	7,873.5	6,936.5	28.0	25.7	50.99		-949.0	504.8	333.8	295.2	38.63	8.642	
8,200.0	7,146.6	7,973.5	6,935.8	29.3	27.1	50.90		-1,049.0	504.8	334.2	293.2	41.01	8.151	
8,300.0	7,146.5	8,073.5	6,935.0	30.7	28.6	50.81		-1,149.0	504.8	334.7	291.2	43.47	7.699	
8,400.0	7,146.4	8,173.5	6,934.3	32.2	30.2	50.72		-1,249.0	504.8	335.1	289.1	46.00	7.284	
8,500.0	7,146.4	8,273.5	6,933.5	33.7	31.8	50.63		-1,349.0	504.8	335.5	286.9	48.59	6.905	
8,600.0	7,146.3	8,373.5	6,932.7	35.3	33.4	50.54		-1,449.0	504.8	336.0	284.7	51.23	6.558	
8,700.0	7,146.2	8,473.5	6,932.0	36.8	35.1	50.45		-1,549.0	504.8	336.4	282.5	53.91	6.241	
8,800.0	7,146.1	8,573.5	6,931.2	38.5	36.8	50.36		-1,649.0	504.8	336.8	280.2	56.62	5.950	
8,900.0	7,146.0	8,673.5	6,930.5	40.1	38.5	50.27		-1,749.0	504.8	337.3	277.9	59.35	5.683	
9,000.0	7,146.0	8,773.5	6,929.7	41.8	40.2	50.18		-1,849.0	504.8	337.7	275.6	62.11	5.437	
9,100.0	7,145.9	8,873.5	6,929.0	43.5	41.9	50.09		-1,949.0	504.8	338.1	273.3	64.89	5.211	
9,200.0	7,145.8	8,973.5	6,928.2	45.2	43.7	50.00		-2,049.0	504.8	338.6	270.9	67.68	5.002	
9,300.0	7,145.7	9,073.5	6,927.4	46.9	45.5	49.91		-2,149.0	504.8	339.0	268.5	70.49	4.809	
9,400.0	7,145.7	9,173.5	6,926.7	48.6	47.3	49.83		-2,249.0	504.8	339.5	266.2	73.31	4.630	
9,500.0	7,145.6	9,273.5	6,925.9	50.4	49.0	49.74		-2,349.0	504.8	339.9	263.8	76.14	4.464	
9,600.0	7,145.5	9,373.5	6,925.2	52.2	50.8	49.65		-2,448.9	504.8	340.3	261.4	78.97	4.310	
9,700.0	7,145.4	9,473.5	6,924.4	53.9	52.7	49.56		-2,548.9	504.8	340.8	259.0	81.81	4.165	
9,800.0	7,145.4	9,573.5	6,923.7	55.7	54.5	49.48		-2,648.9	504.8	341.2	256.6	84.66	4.031	
9,900.0	7,145.3	9,673.5	6,922.9	57.5	56.3	49.39		-2,748.9	504.8	341.7	254.2	87.51	3.904	
10,000.0	7,145.2	9,773.5	6,922.1	59.3	58.1	49.30		-2,848.9	504.8	342.1	251.8	90.36	3.786	
10,100.0	7,145.1	9,873.5	6,921.4	61.1	60.0	49.22		-2,948.9	504.8	342.6	249.3	93.22	3.675	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17R-403
Project:	SEC.17-T4N-R67W	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Reference Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lajco 17R-403	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (7-7-15)	Offset TVD Reference:	Offset Datum

Offset Design Lajco 4N67W17R Pad Sec.17-T4N-R67W - Lajco 17R-243 - Wellbore #1 - Plan #2 (7-2-15)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,200.0	7,145.1	9,973.5	6,920.6	62.9	61.8	49.13	-3,048.9	504.8	343.0	246.9	96.07	3.570	
10,300.0	7,145.0	10,073.5	6,919.9	64.7	63.6	49.04	-3,148.9	504.8	343.5	244.5	98.93	3.472	
10,400.0	7,144.9	10,173.5	6,919.1	66.6	65.5	48.96	-3,248.9	504.8	343.9	242.1	101.78	3.379	
10,500.0	7,144.8	10,273.5	6,918.4	68.4	67.3	48.87	-3,348.9	504.8	344.3	239.7	104.64	3.291	
10,600.0	7,144.8	10,373.5	6,917.6	70.2	69.2	48.79	-3,448.9	504.8	344.8	237.3	107.49	3.208	
10,700.0	7,144.7	10,473.5	6,916.8	72.1	71.1	48.70	-3,548.9	504.8	345.2	234.9	110.35	3.129	
10,800.0	7,144.6	10,573.5	6,916.1	73.9	72.9	48.62	-3,648.9	504.8	345.7	232.5	113.20	3.054	
10,900.0	7,144.5	10,673.5	6,915.3	75.8	74.8	48.53	-3,748.9	504.8	346.1	230.1	116.05	2.983	
11,000.0	7,144.5	10,773.5	6,914.6	77.6	76.7	48.45	-3,848.9	504.8	346.6	227.7	118.89	2.915	
11,100.0	7,144.4	10,873.5	6,913.8	79.5	78.5	48.36	-3,948.9	504.8	347.1	225.3	121.74	2.851	
11,200.0	7,144.3	10,973.4	6,913.1	81.3	80.4	48.28	-4,048.9	504.8	347.5	222.9	124.58	2.789	
11,300.0	7,144.2	11,073.4	6,912.3	83.2	82.3	48.20	-4,148.9	504.8	348.0	220.5	127.42	2.731	
11,400.0	7,144.2	11,173.4	6,911.5	85.0	84.1	48.11	-4,248.9	504.8	348.4	218.2	130.25	2.675	
11,500.0	7,144.1	11,273.4	6,910.8	86.9	86.0	48.03	-4,348.8	504.8	348.9	215.8	133.09	2.621	
11,600.0	7,144.0	11,373.4	6,910.0	88.8	87.9	47.95	-4,448.8	504.8	349.3	213.4	135.92	2.570	
11,604.8	7,144.0	11,376.4	6,910.0	88.9	88.0	47.94	-4,451.8	504.8	349.4	213.3	136.03	2.568 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17R-403
Project:	SEC.17-T4N-R67W	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Reference Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lajco 17R-403	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (7-7-15)	Offset TVD Reference:	Offset Datum

Offset Design Lajco 4N67W17R Pad Sec.17-T4N-R67W - Lajco 17R-303 - Wellbore #1 - Plan #2 (7-7-15)													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 (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	-10.84	-10.84	14.6	-2.8	14.8	14.8	0.00	N/A	
100.0	100.0	100.0	100.0	0.1	0.1	-10.84	-10.84	14.6	-2.8	14.8	14.6	0.22	65.992	
200.0	200.0	200.0	200.0	0.3	0.3	-10.84	-10.84	14.6	-2.8	14.8	14.2	0.67	21.997	
300.0	300.0	300.0	300.0	0.6	0.6	-10.84	-10.84	14.6	-2.8	14.8	13.7	1.12	13.198	
400.0	400.0	400.0	400.0	0.8	0.8	-10.84	-10.84	14.6	-2.8	14.8	13.3	1.57	9.427	
500.0	500.0	500.0	500.0	1.0	1.0	-10.84	-10.84	14.6	-2.8	14.8	12.8	2.02	7.332	
600.0	600.0	600.0	600.0	1.2	1.2	-10.84	-10.84	14.6	-2.8	14.8	12.4	2.47	5.999	
700.0	700.0	700.0	700.0	1.5	1.5	-10.84	-10.84	14.6	-2.8	14.8	11.9	2.92	5.076	
800.0	800.0	800.0	800.0	1.7	1.7	-10.84	-10.84	14.6	-2.8	14.8	11.5	3.37	4.399	
900.0	900.0	900.0	900.0	1.9	1.9	-10.84	-10.84	14.6	-2.8	14.8	11.0	3.82	3.882	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-10.84	-10.84	14.6	-2.8	14.8	10.6	4.27	3.473	
1,053.6	1,053.6	1,053.6	1,053.6	2.3	2.2	-9.87	-9.87	14.6	-2.5	14.8	10.3	4.51	3.292 CC	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.3	-7.47	-7.47	14.7	-1.9	14.8	10.1	4.71	3.153	
1,200.0	1,200.0	1,199.9	1,199.9	2.6	2.6	2.45	2.45	15.2	0.6	15.2	10.0	5.14	2.954 ES	
1,300.0	1,300.0	1,299.8	1,299.8	2.8	2.8	-52.67	-52.67	15.9	4.9	16.1	10.6	5.57	2.895	
1,400.0	1,400.0	1,399.6	1,399.2	3.0	3.0	-41.23	-41.23	17.0	10.9	17.4	11.4	5.99	2.909	
1,500.0	1,499.9	1,499.3	1,498.7	3.2	3.2	-30.82	-30.82	18.3	18.6	19.1	12.7	6.42	2.973	
1,600.0	1,599.7	1,598.9	1,597.8	3.4	3.5	-21.42	-21.42	19.9	28.0	21.1	14.2	6.85	3.079	
1,700.0	1,699.4	1,698.5	1,696.8	3.7	3.7	-12.95	-12.95	21.9	39.1	23.4	16.2	7.28	3.219	
1,800.0	1,798.9	1,798.0	1,795.5	3.9	4.0	-5.33	-5.33	24.1	51.9	26.1	18.4	7.71	3.387	
1,900.0	1,898.3	1,897.5	1,893.8	4.2	4.3	1.53	1.53	26.6	66.3	29.1	21.0	8.13	3.579	
2,000.0	1,997.4	1,996.8	1,991.8	4.4	4.6	7.70	7.70	29.4	82.4	32.4	23.9	8.56	3.788	
2,100.0	2,096.3	2,096.1	2,089.4	4.7	4.9	13.20	13.20	32.5	100.2	36.3	27.3	9.01	4.029	
2,200.0	2,195.2	2,195.6	2,187.0	5.0	5.3	17.53	17.53	35.8	119.4	41.7	32.2	9.48	4.397	
2,300.0	2,294.1	2,295.4	2,284.8	5.3	5.6	20.83	20.83	39.2	138.9	47.5	37.5	9.97	4.760	
2,400.0	2,393.0	2,395.2	2,382.6	5.6	6.0	23.41	23.41	42.6	158.4	53.4	42.9	10.48	5.094	
2,500.0	2,491.9	2,495.0	2,480.5	5.9	6.4	25.48	25.48	46.0	177.9	59.4	48.4	10.99	5.400	
2,600.0	2,590.8	2,594.8	2,578.3	6.2	6.8	27.16	27.16	49.4	197.4	65.4	53.9	11.52	5.679	
2,700.0	2,689.7	2,694.6	2,676.1	6.6	7.2	28.56	28.56	52.8	216.9	71.5	59.4	12.05	5.933	
2,800.0	2,788.6	2,794.4	2,773.9	6.9	7.6	29.74	29.74	56.2	236.3	77.6	65.0	12.59	6.164	
2,900.0	2,887.5	2,894.2	2,871.7	7.2	8.0	30.74	30.74	59.6	255.8	83.8	70.6	13.14	6.375	
3,000.0	2,986.4	2,994.0	2,969.6	7.6	8.4	31.61	31.61	63.0	275.3	90.0	76.3	13.70	6.568	
3,100.0	3,085.3	3,093.8	3,067.4	7.9	8.8	32.37	32.37	66.3	294.8	96.2	81.9	14.26	6.745	
3,200.0	3,184.2	3,193.6	3,165.2	8.2	9.3	33.03	33.03	69.7	314.3	102.4	87.6	14.82	6.907	
3,300.0	3,283.1	3,293.4	3,263.0	8.6	9.7	33.62	33.62	73.1	333.8	108.6	93.2	15.39	7.056	
3,400.0	3,382.0	3,393.2	3,360.9	8.9	10.1	34.14	34.14	76.5	353.3	114.8	98.9	15.96	7.194	
3,500.0	3,480.9	3,493.0	3,458.7	9.2	10.5	34.61	34.61	79.9	372.7	121.1	104.5	16.54	7.321	
3,600.0	3,579.8	3,592.8	3,556.5	9.6	10.9	35.04	35.04	83.3	392.2	127.3	110.2	17.12	7.438	
3,700.0	3,678.7	3,692.6	3,654.3	9.9	11.4	35.42	35.42	86.7	411.7	133.6	115.9	17.70	7.548	
3,800.0	3,777.6	3,792.4	3,752.1	10.3	11.8	35.77	35.77	90.1	431.2	139.9	121.6	18.28	7.649	
3,900.0	3,876.5	3,892.2	3,850.0	10.6	12.2	36.09	36.09	93.5	450.7	146.1	127.3	18.87	7.744	
4,000.0	3,975.4	3,992.0	3,947.8	11.0	12.6	36.38	36.38	96.9	470.2	152.4	132.9	19.46	7.833	
4,100.0	4,074.3	4,091.8	4,045.6	11.3	13.1	36.65	36.65	100.2	489.7	158.7	138.6	20.05	7.915	
4,200.0	4,173.2	4,191.6	4,143.4	11.7	13.5	36.90	36.90	103.6	509.1	164.9	144.3	20.64	7.993	
4,300.0	4,272.1	4,291.4	4,241.2	12.0	13.9	37.13	37.13	107.0	528.6	171.2	150.0	21.23	8.066	
4,400.0	4,371.0	4,391.2	4,339.1	12.3	14.4	37.35	37.35	110.4	548.1	177.5	155.7	21.82	8.134	
4,500.0	4,469.9	4,491.0	4,436.9	12.7	14.8	37.55	37.55	113.8	567.6	183.8	161.4	22.42	8.199	
4,600.0	4,568.7	4,590.8	4,534.7	13.0	15.2	37.74	37.74	117.2	587.1	190.1	167.1	23.01	8.260	
4,700.0	4,667.6	4,690.6	4,632.5	13.4	15.7	37.91	37.91	120.6	606.6	196.4	172.8	23.61	8.317	
4,800.0	4,766.5	4,790.4	4,730.3	13.7	16.1	38.08	38.08	124.0	626.1	202.7	178.5	24.21	8.372	
4,900.0	4,865.4	4,890.2	4,828.2	14.1	16.5	38.23	38.23	127.4	645.5	209.0	184.2	24.81	8.423	

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 Lajco 17R-403
Project:	SEC.17-T4N-R67W	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Reference Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lajco 17R-403	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (7-7-15)	Offset TVD Reference:	Offset Datum

Offset Design Lajco 4N67W17R Pad Sec.17-T4N-R67W - Lajco 17R-303 - Wellbore #1 - Plan #2 (7-7-15)													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
5,000.0	4,964.3	4,990.0	4,926.0	14.4	17.0	38.38		130.8	665.0	215.3	189.9	25.41	8.472	
5,100.0	5,063.2	5,089.8	5,023.8	14.8	17.4	38.51		134.1	684.5	221.6	195.5	26.01	8.519	
5,200.0	5,162.1	5,189.6	5,121.6	15.1	17.8	38.64		137.5	704.0	227.9	201.2	26.61	8.563	
5,300.0	5,261.0	5,289.4	5,219.4	15.5	18.3	38.77		140.9	723.5	234.2	206.9	27.21	8.605	
5,400.0	5,359.9	5,389.2	5,317.3	15.9	18.7	38.88		144.3	743.0	240.4	212.6	27.81	8.645	
5,500.0	5,458.8	5,489.0	5,415.1	16.2	19.1	38.99		147.7	762.5	246.8	218.3	28.42	8.683	
5,600.0	5,557.7	5,588.8	5,512.9	16.6	19.6	39.10		151.1	781.9	253.1	224.0	29.02	8.719	
5,700.0	5,656.6	5,688.6	5,610.7	16.9	20.0	39.20		154.5	801.4	259.4	229.7	29.63	8.754	
5,800.0	5,755.5	5,788.4	5,708.6	17.3	20.4	39.29		157.9	820.9	265.7	235.4	30.23	8.788	
5,900.0	5,854.4	5,888.2	5,806.4	17.6	20.9	39.38		161.3	840.4	272.0	241.1	30.84	8.820	
6,000.0	5,953.3	5,988.0	5,904.2	18.0	21.3	39.47		164.7	859.9	278.3	246.8	31.44	8.850	
6,100.0	6,052.2	6,087.8	6,002.0	18.3	21.8	39.55		168.0	879.4	284.6	252.5	32.05	8.879	
6,200.0	6,151.1	6,187.6	6,099.8	18.7	22.2	39.63		171.4	898.8	290.9	258.2	32.65	8.908	
6,300.0	6,250.0	6,287.4	6,197.7	19.0	22.6	39.70		174.8	918.3	297.2	263.9	33.26	8.935	
6,400.0	6,348.9	6,385.6	6,293.9	19.4	23.1	39.12		178.0	937.5	303.5	269.7	33.87	8.963	
6,500.0	6,447.9	6,474.4	6,380.8	19.7	23.4	-10.58		174.3	954.8	310.1	275.8	34.35	9.029	
6,600.0	6,545.9	6,562.9	6,466.6	19.9	23.7	-37.44		160.4	971.9	316.2	281.7	34.50	9.164	
6,700.0	6,641.2	6,650.0	6,548.7	20.1	24.0	-48.60		137.0	988.4	321.7	287.3	34.36	9.362	
6,800.0	6,732.2	6,740.0	6,630.4	20.2	24.2	-54.36		102.9	1,004.7	326.5	292.5	33.99	9.606	
6,900.0	6,817.4	6,828.8	6,706.5	20.3	24.5	-57.99		59.9	1,019.9	330.6	297.1	33.51	9.867	
7,000.0	6,895.3	6,918.0	6,777.5	20.4	24.8	-60.65		7.9	1,034.2	334.0	300.9	33.09	10.092	
7,100.0	6,964.5	7,007.6	6,842.4	20.6	25.0	-62.87		-52.4	1,047.2	336.6	303.7	32.86	10.242	
7,200.0	7,023.9	7,100.0	6,901.5	20.7	25.3	-64.90		-122.3	1,059.1	338.5	305.5	33.03	10.247	
7,300.0	7,072.5	7,188.9	6,950.3	21.0	25.7	-66.78		-195.9	1,068.9	339.7	306.0	33.70	10.081	
7,400.0	7,109.4	7,280.8	6,991.5	21.4	26.1	-68.68		-277.6	1,077.3	340.3	305.3	34.91	9.746	
7,500.0	7,134.0	7,373.8	7,023.1	21.9	26.6	-70.60		-364.8	1,083.8	340.2	303.6	36.64	9.287	
7,600.0	7,145.9	7,467.9	7,044.2	22.6	27.1	-72.54		-456.3	1,088.1	339.7	300.9	38.76	8.763	
7,700.0	7,147.0	7,563.5	7,054.3	23.4	27.8	-74.13		-551.3	1,090.3	339.0	298.0	40.98	8.273	
7,720.4	7,146.9	7,583.2	7,054.9	23.6	27.9	-74.24		-570.9	1,090.5	339.0	297.6	41.43	8.182	
7,800.0	7,146.9	7,662.0	7,054.5	24.4	28.5	-74.19		-649.8	1,090.5	339.1	295.9	43.23	7.846	
7,900.0	7,146.8	7,762.0	7,053.6	25.5	29.4	-74.06		-749.8	1,090.5	339.4	293.7	45.66	7.433	
8,000.0	7,146.7	7,862.0	7,052.7	26.7	30.4	-73.93		-849.8	1,090.5	339.6	291.3	48.25	7.038	
8,100.0	7,146.7	7,962.0	7,051.8	28.0	31.5	-73.80		-949.8	1,090.5	339.8	288.8	50.97	6.666	
8,200.0	7,146.6	8,062.0	7,051.0	29.3	32.7	-73.67		-1,049.8	1,090.5	340.0	286.2	53.81	6.319	
8,300.0	7,146.5	8,162.0	7,050.1	30.7	33.9	-73.54		-1,149.8	1,090.5	340.3	283.5	56.75	5.996	
8,400.0	7,146.4	8,262.0	7,049.2	32.2	35.2	-73.41		-1,249.8	1,090.5	340.5	280.7	59.76	5.698	
8,500.0	7,146.4	8,362.0	7,048.3	33.7	36.6	-73.28		-1,349.7	1,090.5	340.7	277.9	62.85	5.422	
8,600.0	7,146.3	8,462.0	7,047.4	35.3	38.0	-73.15		-1,449.7	1,090.5	341.0	275.0	65.99	5.167	
8,700.0	7,146.2	8,562.0	7,046.5	36.8	39.5	-73.02		-1,549.7	1,090.5	341.2	272.0	69.18	4.932	
8,800.0	7,146.1	8,662.0	7,045.6	38.5	41.0	-72.89		-1,649.7	1,090.5	341.4	269.0	72.41	4.715	
8,900.0	7,146.0	8,762.0	7,044.8	40.1	42.5	-72.76		-1,749.7	1,090.5	341.7	266.0	75.68	4.515	
9,000.0	7,146.0	8,862.0	7,043.9	41.8	44.1	-72.63		-1,849.7	1,090.5	341.9	262.9	78.98	4.329	
9,100.0	7,145.9	8,962.0	7,043.0	43.5	45.7	-72.50		-1,949.7	1,090.5	342.2	259.9	82.30	4.157	
9,200.0	7,145.8	9,062.0	7,042.1	45.2	47.3	-72.37		-2,049.7	1,090.5	342.4	256.8	85.65	3.998	
9,300.0	7,145.7	9,162.0	7,041.2	46.9	48.9	-72.24		-2,149.7	1,090.5	342.7	253.6	89.02	3.849	
9,400.0	7,145.7	9,262.0	7,040.3	48.6	50.6	-72.11		-2,249.7	1,090.5	342.9	250.5	92.41	3.711	
9,500.0	7,145.6	9,362.0	7,039.5	50.4	52.3	-71.98		-2,349.7	1,090.5	343.1	247.3	95.81	3.582	
9,600.0	7,145.5	9,462.0	7,038.6	52.2	54.0	-71.85		-2,449.7	1,090.5	343.4	244.2	99.22	3.461	
9,700.0	7,145.4	9,562.0	7,037.7	53.9	55.7	-71.73		-2,549.7	1,090.5	343.7	241.0	102.64	3.348	
9,800.0	7,145.4	9,662.0	7,036.8	55.7	57.4	-71.60		-2,649.7	1,090.5	343.9	237.8	106.07	3.242	
9,900.0	7,145.3	9,762.0	7,035.9	57.5	59.1	-71.47		-2,749.6	1,090.5	344.2	234.6	109.51	3.143	

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 Lajco 17R-403
Project:	SEC.17-T4N-R67W	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Reference Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lajco 17R-403	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (7-7-15)	Offset TVD Reference:	Offset Datum

Offset Design Lajco 4N67W17R Pad Sec.17-T4N-R67W - Lajco 17R-303 - Wellbore #1 - Plan #2 (7-7-15)												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
10,000.0	7,145.2	9,861.9	7,035.0	59.3	60.9	-71.34	-2,849.6	1,090.5	344.4	231.5	112.96	3.049	
10,100.0	7,145.1	9,961.9	7,034.1	61.1	62.6	-71.21	-2,949.6	1,090.5	344.7	228.3	116.41	2.961	
10,200.0	7,145.1	10,061.9	7,033.3	62.9	64.4	-71.09	-3,049.6	1,090.5	344.9	225.1	119.87	2.878	
10,300.0	7,145.0	10,161.9	7,032.4	64.7	66.2	-70.96	-3,149.6	1,090.5	345.2	221.9	123.33	2.799	
10,400.0	7,144.9	10,261.9	7,031.5	66.6	68.0	-70.83	-3,249.6	1,090.5	345.5	218.7	126.79	2.725	
10,500.0	7,144.8	10,361.9	7,030.6	68.4	69.7	-70.71	-3,349.6	1,090.5	345.7	215.5	130.26	2.654	
10,600.0	7,144.8	10,461.9	7,029.7	70.2	71.5	-70.58	-3,449.6	1,090.5	346.0	212.3	133.72	2.587	
10,700.0	7,144.7	10,561.9	7,028.8	72.1	73.3	-70.45	-3,549.6	1,090.5	346.3	209.1	137.19	2.524	
10,800.0	7,144.6	10,661.9	7,028.0	73.9	75.1	-70.33	-3,649.6	1,090.5	346.5	205.9	140.66	2.464	
10,900.0	7,144.5	10,761.9	7,027.1	75.8	77.0	-70.20	-3,749.6	1,090.5	346.8	202.7	144.13	2.406	
11,000.0	7,144.5	10,861.9	7,026.2	77.6	78.8	-70.08	-3,849.6	1,090.5	347.1	199.5	147.59	2.352	
11,100.0	7,144.4	10,961.9	7,025.3	79.5	80.6	-69.95	-3,949.6	1,090.5	347.4	196.3	151.06	2.300	
11,200.0	7,144.3	11,061.9	7,024.4	81.3	82.4	-69.83	-4,049.6	1,090.5	347.6	193.1	154.53	2.250	
11,300.0	7,144.2	11,161.9	7,023.5	83.2	84.3	-69.70	-4,149.5	1,090.5	347.9	189.9	157.99	2.202	
11,400.0	7,144.2	11,261.9	7,022.6	85.0	86.1	-69.58	-4,249.5	1,090.5	348.2	186.8	161.46	2.157	
11,500.0	7,144.1	11,361.9	7,021.8	86.9	87.9	-69.45	-4,349.5	1,090.5	348.5	183.6	164.92	2.113	
11,600.0	7,144.0	11,461.9	7,020.9	88.8	89.8	-69.33	-4,449.5	1,090.5	348.8	180.4	168.38	2.071	
11,604.8	7,144.0	11,466.7	7,020.8	88.9	89.9	-69.32	-4,454.4	1,090.5	348.8	180.2	168.54	2.069 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17R-403
Project:	SEC.17-T4N-R67W	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Reference Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lajco 17R-403	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (7-7-15)	Offset TVD Reference:	Offset Datum

Offset Design Lajco 4N67W17R Pad Sec.17-T4N-R67W - Lajco 17U-203 - Wellbore #1 - Plan #2 (7-7-15)													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)	Distance 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	-2.74	58.3	-2.8	58.4				
100.0	100.0	100.0	100.0	0.1	0.1	-2.74	-2.74	58.3	-2.8	58.4	58.1	0.22	259.629	
200.0	200.0	200.0	200.0	0.3	0.3	-2.74	-2.74	58.3	-2.8	58.4	57.7	0.67	86.543 CC	
300.0	300.0	299.9	299.9	0.6	0.6	-1.46	-1.46	58.4	-1.5	58.4	57.3	1.11	52.446	
400.0	400.0	399.7	399.6	0.8	0.8	2.34	2.34	58.8	2.4	58.9	57.3	1.56	37.798 ES	
500.0	500.0	499.2	498.9	1.0	1.0	8.48	8.48	59.4	8.9	60.1	58.1	2.01	29.914	
600.0	600.0	598.2	597.5	1.2	1.3	16.49	16.49	60.3	17.9	63.0	60.5	2.48	25.429	
700.0	700.0	696.8	695.4	1.5	1.5	25.51	25.51	61.4	29.3	68.2	65.3	2.97	22.990	
800.0	800.0	794.7	792.3	1.7	1.9	34.51	34.51	62.8	43.2	76.6	73.1	3.50	21.899	
900.0	900.0	891.8	888.0	1.9	2.2	42.68	42.68	64.4	59.4	88.4	84.3	4.07	21.710 SF	
1,000.0	1,000.0	988.0	982.4	2.1	2.6	49.60	49.60	66.2	77.8	103.7	99.0	4.69	22.115	
1,100.0	1,100.0	1,083.2	1,075.4	2.4	3.0	55.25	55.25	68.2	98.4	122.2	116.9	5.34	22.890	
1,200.0	1,200.0	1,177.3	1,166.7	2.6	3.4	59.78	59.78	70.5	121.0	143.9	137.9	6.03	23.880	
1,300.0	1,300.0	1,270.5	1,256.5	2.8	3.9	-4.14	-4.14	72.9	145.5	167.6	161.7	5.90	28.413	
1,400.0	1,400.0	1,362.8	1,344.9	3.0	4.5	-1.24	-1.24	75.5	172.0	192.4	186.0	6.36	30.239	
1,500.0	1,499.9	1,454.3	1,431.9	3.2	5.0	1.15	1.15	78.3	200.3	218.1	211.3	6.83	31.941	
1,600.0	1,599.7	1,548.8	1,521.2	3.4	5.6	3.22	3.22	81.3	231.2	244.2	236.9	7.31	33.410	
1,700.0	1,699.4	1,645.4	1,612.3	3.7	6.3	4.94	4.94	84.4	262.9	268.9	261.1	7.79	34.513	
1,800.0	1,798.9	1,742.4	1,703.9	3.9	6.9	6.40	6.40	87.6	294.8	292.2	283.9	8.28	35.283	
1,900.0	1,898.3	1,839.8	1,795.8	4.2	7.6	7.69	7.69	90.7	326.7	313.9	305.2	8.78	35.771	
2,000.0	1,997.4	1,937.5	1,888.1	4.4	8.3	8.85	8.85	93.9	358.8	334.1	324.8	9.28	36.020	
2,100.0	2,096.3	2,035.5	1,980.6	4.7	8.9	9.93	9.93	97.0	391.0	353.0	343.2	9.78	36.074	
2,200.0	2,195.2	2,133.5	2,073.2	5.0	9.6	10.92	10.92	100.2	423.2	371.7	361.4	10.30	36.084	
2,300.0	2,294.1	2,231.6	2,165.7	5.3	10.3	11.82	11.82	103.4	455.3	390.5	379.7	10.82	36.086	
2,400.0	2,393.0	2,329.6	2,258.3	5.6	11.0	12.63	12.63	106.5	487.5	409.4	398.0	11.35	36.080	
2,500.0	2,491.9	2,427.7	2,350.8	5.9	11.7	13.37	13.37	109.7	519.7	428.3	416.5	11.88	36.067	
2,600.0	2,590.8	2,525.7	2,443.4	6.2	12.3	14.05	14.05	112.9	551.9	447.4	435.0	12.41	36.047	
2,700.0	2,689.7	2,623.7	2,535.9	6.6	13.0	14.68	14.68	116.0	584.0	466.5	453.5	12.95	36.023	
2,800.0	2,788.6	2,721.8	2,628.5	6.9	13.7	15.25	15.25	119.2	616.2	485.6	472.1	13.49	35.993	
2,900.0	2,887.5	2,819.8	2,721.0	7.2	14.4	15.79	15.79	122.4	648.4	504.8	490.7	14.04	35.959	
3,000.0	2,986.4	2,917.9	2,813.6	7.6	15.1	16.28	16.28	125.5	680.6	524.0	509.4	14.59	35.922	
3,100.0	3,085.3	3,015.9	2,906.1	7.9	15.7	16.74	16.74	128.7	712.8	543.2	528.1	15.14	35.883	
3,200.0	3,184.2	3,113.9	2,998.7	8.2	16.4	17.16	17.16	131.9	744.9	562.5	546.8	15.70	35.841	
3,300.0	3,283.1	3,212.0	3,091.3	8.6	17.1	17.56	17.56	135.0	777.1	581.8	565.6	16.25	35.797	
3,400.0	3,382.0	3,310.0	3,183.8	8.9	17.8	17.94	17.94	138.2	809.3	601.2	584.4	16.81	35.753	
3,500.0	3,480.9	3,408.1	3,276.4	9.2	18.5	18.28	18.28	141.4	841.5	620.5	603.2	17.38	35.707	
3,600.0	3,579.8	3,506.1	3,368.9	9.6	19.2	18.61	18.61	144.5	873.6	639.9	622.0	17.94	35.661	
3,700.0	3,678.7	3,604.1	3,461.5	9.9	19.8	18.92	18.92	147.7	905.8	659.3	640.8	18.51	35.615	
3,800.0	3,777.6	3,702.2	3,554.0	10.3	20.5	19.21	19.21	150.9	938.0	678.7	659.7	19.08	35.568	
3,900.0	3,876.5	3,800.2	3,646.6	10.6	21.2	19.49	19.49	154.0	970.2	698.2	678.5	19.66	35.522	
4,000.0	3,975.4	3,898.3	3,739.1	11.0	21.9	19.75	19.75	157.2	1,002.3	717.6	697.4	20.23	35.475	
4,100.0	4,074.3	3,996.3	3,831.7	11.3	22.6	20.00	20.00	160.4	1,034.5	737.1	716.3	20.80	35.430	
4,200.0	4,173.2	4,094.3	3,924.2	11.7	23.3	20.23	20.23	163.5	1,066.7	756.6	735.2	21.38	35.384	
4,300.0	4,272.1	4,192.4	4,016.8	12.0	24.0	20.45	20.45	166.7	1,098.9	776.1	754.1	21.96	35.339	
4,400.0	4,371.0	4,290.4	4,109.4	12.3	24.6	20.66	20.66	169.9	1,131.1	795.6	773.0	22.54	35.295	
4,500.0	4,469.9	4,388.5	4,201.9	12.7	25.3	20.87	20.87	173.0	1,163.2	815.1	791.9	23.12	35.252	
4,600.0	4,568.7	4,486.5	4,294.5	13.0	26.0	21.06	21.06	176.2	1,195.4	834.6	810.9	23.70	35.209	
4,700.0	4,667.6	4,584.5	4,387.0	13.4	26.7	21.24	21.24	179.4	1,227.6	854.1	829.8	24.29	35.167	
4,800.0	4,766.5	4,682.6	4,479.6	13.7	27.4	21.42	21.42	182.5	1,259.8	873.6	848.8	24.87	35.125	
4,900.0	4,865.4	4,780.6	4,572.1	14.1	28.1	21.58	21.58	185.7	1,291.9	893.2	867.7	25.46	35.085	
5,000.0	4,964.3	4,878.6	4,664.7	14.4	28.8	21.74	21.74	188.9	1,324.1	912.7	886.7	26.04	35.045	

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 Lajco 17R-403
Project:	SEC.17-T4N-R67W	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Reference Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lajco 17R-403	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (7-7-15)	Offset TVD Reference:	Offset Datum

Offset Design Lajco 4N67W17R Pad Sec.17-T4N-R67W - Lajco 17U-203 - Wellbore #1 - Plan #2 (7-7-15)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference	Offset	Semi Major Axis		Distance									Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
5,100.0	5,063.2	4,976.7	4,757.2	14.8	29.4	21.90	192.0	1,356.3	932.3	905.6	26.63	35.006	
5,200.0	5,162.1	5,074.7	4,849.8	15.1	30.1	22.04	195.2	1,388.5	951.8	924.6	27.22	34.968	
5,300.0	5,261.0	5,172.8	4,942.3	15.5	30.8	22.19	198.4	1,420.7	971.4	943.6	27.81	34.930	
5,400.0	5,359.9	5,270.8	5,034.9	15.9	31.5	22.32	201.5	1,452.8	991.0	962.6	28.40	34.894	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17R-403
Project:	SEC.17-T4N-R67W	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Reference Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lajco 17R-403	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (7-7-15)	Offset TVD Reference:	Offset Datum

Offset Design Lajco 4N67W17R Pad Sec.17-T4N-R67W - Lajco 17U-343 - Wellbore #1 - Plan #2 (7-7-15)													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
0.0	0.0	0.0	0.0	0.0	0.0	0.0	-3.65	43.7	-2.8	43.8				
100.0	100.0	100.0	100.0	0.1	0.1	0.1	-3.65	43.7	-2.8	43.8	43.6	0.22	194.895	
200.0	200.0	200.0	200.0	0.3	0.3	0.3	-3.65	43.7	-2.8	43.8	43.1	0.67	64.965	
300.0	300.0	300.0	300.0	0.6	0.6	0.6	-3.65	43.7	-2.8	43.8	42.7	1.12	38.979	
400.0	400.0	400.0	400.0	0.8	0.8	0.8	-3.65	43.7	-2.8	43.8	42.2	1.57	27.842 CC	
500.0	500.0	499.9	499.9	1.0	1.0	1.0	-1.95	43.9	-1.5	43.9	41.9	2.01	21.825 ES	
600.0	600.0	599.7	599.6	1.2	1.2	1.2	3.08	44.4	2.4	44.5	42.0	2.45	18.159	
700.0	700.0	699.2	698.9	1.5	1.4	1.4	11.04	45.2	8.8	46.1	43.2	2.89	15.929	
800.0	800.0	798.3	797.5	1.7	1.7	1.7	20.98	46.4	17.8	49.7	46.4	3.35	14.831	
900.0	900.0	896.8	895.4	1.9	2.0	2.0	31.40	47.9	29.2	56.2	52.4	3.84	14.651 SF	
1,000.0	1,000.0	994.7	992.3	2.1	2.2	2.2	40.92	49.6	43.0	66.1	61.8	4.36	15.169	
1,100.0	1,100.0	1,091.8	1,088.0	2.4	2.6	2.6	48.84	51.7	59.2	79.5	74.6	4.92	16.162	
1,200.0	1,200.0	1,188.0	1,182.5	2.6	2.9	2.9	55.10	54.1	77.5	96.2	90.7	5.51	17.443	
1,300.0	1,300.0	1,283.4	1,275.6	2.8	3.3	3.3	-7.61	56.8	98.1	115.1	109.4	5.72	20.119	
1,400.0	1,400.0	1,378.1	1,367.5	3.0	3.8	3.8	-3.90	59.7	120.7	135.2	129.0	6.17	21.900	
1,500.0	1,499.9	1,472.2	1,458.1	3.2	4.2	4.2	-0.94	62.9	145.5	156.3	149.7	6.63	23.580	
1,600.0	1,599.7	1,567.8	1,549.8	3.4	4.8	4.8	1.52	66.4	172.5	178.0	170.9	7.09	25.098	
1,700.0	1,699.4	1,665.5	1,643.4	3.7	5.3	5.3	3.51	70.0	200.4	198.5	191.0	7.56	26.252	
1,800.0	1,798.9	1,763.5	1,737.2	3.9	5.9	5.9	5.17	73.6	228.3	217.5	209.5	8.04	27.066	
1,900.0	1,898.3	1,861.8	1,831.4	4.2	6.5	6.5	6.60	77.2	256.3	234.9	226.4	8.52	27.590	
2,000.0	1,997.4	1,960.4	1,925.8	4.4	7.0	7.0	7.89	80.8	284.4	250.8	241.8	9.00	27.868	
2,100.0	2,096.3	2,059.2	2,020.4	4.7	7.6	7.6	9.08	84.5	312.6	265.3	255.8	9.49	27.943	
2,200.0	2,195.2	2,158.0	2,115.1	5.0	8.2	8.2	10.16	88.1	340.7	279.6	269.6	10.00	27.972	
2,300.0	2,294.1	2,256.8	2,209.8	5.3	8.8	8.8	11.14	91.8	368.9	294.0	283.5	10.50	27.993	
2,400.0	2,393.0	2,355.7	2,304.4	5.6	9.4	9.4	12.03	95.4	397.1	308.5	297.5	11.02	28.007	
2,500.0	2,491.9	2,454.5	2,399.1	5.9	10.0	10.0	12.84	99.0	425.3	323.1	311.6	11.53	28.015	
2,600.0	2,590.8	2,553.3	2,493.8	6.2	10.6	10.6	13.58	102.7	453.4	337.7	325.7	12.05	28.016	
2,700.0	2,689.7	2,652.2	2,588.4	6.6	11.2	11.2	14.26	106.3	481.6	352.4	339.8	12.58	28.012	
2,800.0	2,788.6	2,751.0	2,683.1	6.9	11.8	11.8	14.88	110.0	509.8	367.1	354.0	13.11	28.003	
2,900.0	2,887.5	2,849.8	2,777.8	7.2	12.4	12.4	15.46	113.6	537.9	381.9	368.2	13.64	27.990	
3,000.0	2,986.4	2,948.7	2,872.4	7.6	12.9	12.9	15.99	117.2	566.1	396.7	382.5	14.18	27.974	
3,100.0	3,085.3	3,047.5	2,967.1	7.9	13.5	13.5	16.48	120.9	594.3	411.5	396.8	14.72	27.955	
3,200.0	3,184.2	3,146.4	3,061.8	8.2	14.1	14.1	16.94	124.5	622.4	426.4	411.1	15.26	27.934	
3,300.0	3,283.1	3,245.2	3,156.4	8.6	14.7	14.7	17.37	128.2	650.6	441.2	425.4	15.81	27.910	
3,400.0	3,382.0	3,344.0	3,251.1	8.9	15.3	15.3	17.77	131.8	678.8	456.1	439.8	16.36	27.885	
3,500.0	3,480.9	3,442.9	3,345.8	9.2	15.9	15.9	18.15	135.4	707.0	471.1	454.2	16.91	27.859	
3,600.0	3,579.8	3,541.7	3,440.4	9.6	16.5	16.5	18.50	139.1	735.1	486.0	468.5	17.46	27.832	
3,700.0	3,678.7	3,640.5	3,535.1	9.9	17.1	17.1	18.83	142.7	763.3	501.0	482.9	18.02	27.804	
3,800.0	3,777.6	3,739.4	3,629.7	10.3	17.7	17.7	19.14	146.4	791.5	515.9	497.4	18.58	27.776	
3,900.0	3,876.5	3,838.2	3,724.4	10.6	18.3	18.3	19.44	150.0	819.6	530.9	511.8	19.13	27.747	
4,000.0	3,975.4	3,937.0	3,819.1	11.0	18.9	18.9	19.72	153.6	847.8	545.9	526.2	19.70	27.718	
4,100.0	4,074.3	4,035.9	3,913.7	11.3	19.5	19.5	19.98	157.3	876.0	560.9	540.7	20.26	27.689	
4,200.0	4,173.2	4,134.7	4,008.4	11.7	20.1	20.1	20.23	160.9	904.2	576.0	555.1	20.82	27.660	
4,300.0	4,272.1	4,233.5	4,103.1	12.0	20.7	20.7	20.47	164.6	932.3	591.0	569.6	21.39	27.631	
4,400.0	4,371.0	4,332.4	4,197.7	12.3	21.4	21.4	20.69	168.2	960.5	606.0	584.1	21.96	27.602	
4,500.0	4,469.9	4,431.2	4,292.4	12.7	22.0	22.0	20.91	171.8	988.7	621.1	598.6	22.52	27.574	
4,600.0	4,568.7	4,530.0	4,387.1	13.0	22.6	22.6	21.11	175.5	1,016.8	636.1	613.1	23.09	27.546	
4,700.0	4,667.6	4,628.9	4,481.7	13.4	23.2	23.2	21.31	179.1	1,045.0	651.2	627.5	23.67	27.518	
4,800.0	4,766.5	4,727.7	4,576.4	13.7	23.8	23.8	21.49	182.8	1,073.2	666.3	642.0	24.24	27.490	
4,900.0	4,865.4	4,826.5	4,671.1	14.1	24.4	24.4	21.67	186.4	1,101.4	681.4	656.6	24.81	27.463	
5,000.0	4,964.3	4,925.4	4,765.7	14.4	25.0	25.0	21.84	190.1	1,129.5	696.5	671.1	25.38	27.437	

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 Lajco 17R-403
Project:	SEC.17-T4N-R67W	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Reference Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lajco 17R-403	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (7-7-15)	Offset TVD Reference:	Offset Datum

Offset Design Lajco 4N67W17R Pad Sec.17-T4N-R67W - Lajco 17U-343 - Wellbore #1 - Plan #2 (7-7-15)												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
5,100.0	5,063.2	5,024.2	4,860.4	14.8	25.6	22.00	193.7	1,157.7	711.5	685.6	25.96	27.411	
5,200.0	5,162.1	5,123.0	4,955.1	15.1	26.2	22.16	197.3	1,185.9	726.6	700.1	26.53	27.385	
5,300.0	5,261.0	5,221.9	5,049.7	15.5	26.8	22.31	201.0	1,214.0	741.7	714.6	27.11	27.360	
5,400.0	5,359.9	5,320.7	5,144.4	15.9	27.4	22.45	204.6	1,242.2	756.9	729.2	27.69	27.335	
5,500.0	5,458.8	5,419.6	5,239.1	16.2	28.0	22.59	208.3	1,270.4	772.0	743.7	28.27	27.311	
5,600.0	5,557.7	5,518.4	5,333.7	16.6	28.6	22.72	211.9	1,298.5	787.1	758.2	28.84	27.287	
5,700.0	5,656.6	5,617.2	5,428.4	16.9	29.2	22.85	215.5	1,326.7	802.2	772.8	29.42	27.263	
5,800.0	5,755.5	5,716.1	5,523.0	17.3	29.8	22.97	219.2	1,354.9	817.3	787.3	30.00	27.240	
5,900.0	5,854.4	5,814.9	5,617.7	17.6	30.4	23.09	222.8	1,383.1	832.5	801.9	30.58	27.218	
6,000.0	5,953.3	5,913.7	5,712.4	18.0	31.0	23.21	226.5	1,411.2	847.6	816.4	31.17	27.196	
6,100.0	6,052.2	6,012.6	5,807.0	18.3	31.6	23.32	230.1	1,439.4	862.7	831.0	31.75	27.174	
6,200.0	6,151.1	6,111.4	5,901.7	18.7	32.2	23.43	233.7	1,467.6	877.9	845.5	32.33	27.153	
6,300.0	6,250.0	6,210.2	5,996.4	19.0	32.8	23.53	237.4	1,495.7	893.0	860.1	32.91	27.132	
6,400.0	6,348.9	6,309.1	6,091.0	19.4	33.4	22.96	241.0	1,523.9	908.1	874.6	33.50	27.110	
6,500.0	6,447.9	6,407.7	6,185.5	19.7	34.0	-26.59	244.7	1,552.0	923.1	889.0	34.13	27.043	
6,600.0	6,545.9	6,504.9	6,278.6	19.9	34.6	-53.83	248.2	1,579.7	937.7	903.2	34.56	27.137	
6,700.0	6,641.2	6,600.9	6,370.6	20.1	35.1	-65.58	247.8	1,607.1	952.5	917.7	34.80	27.369	
6,800.0	6,732.2	6,700.1	6,464.8	20.2	35.6	-71.70	235.1	1,635.2	967.3	932.4	34.97	27.665	
6,900.0	6,817.4	6,803.3	6,560.2	20.3	36.1	-75.47	208.4	1,663.7	982.0	946.9	35.11	27.968	
7,000.0	6,895.3	6,910.9	6,655.1	20.4	36.6	-78.07	166.5	1,692.0	996.3	961.0	35.31	28.214	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17R-403
Project:	SEC.17-T4N-R67W	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Reference Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lajco 17R-403	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (7-7-15)	Offset TVD Reference:	Offset Datum

Offset Design Lajco Pad Sec.17-T4N-R67W - Coming 17-1 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error: 0.0 ft	
Survey Program: 100-NS-GYRO-MS													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (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	128.92	-324.2	401.6	516.2					
100.0	100.0	91.0	91.0	0.1	0.1	128.92	-324.3	401.7	516.3	516.1	0.23	2,213.585		
200.0	200.0	193.2	193.2	0.3	0.3	128.94	-324.6	401.7	516.5	515.8	0.66	783.283		
300.0	300.0	295.1	295.1	0.6	0.5	128.94	-324.5	401.6	516.3	515.2	1.02	505.610		
400.0	400.0	394.4	394.4	0.8	0.6	128.92	-324.1	401.4	515.9	514.5	1.40	368.100		
500.0	500.0	494.6	494.6	1.0	0.8	128.95	-324.1	401.0	515.6	513.8	1.85	279.354		
600.0	600.0	593.9	593.9	1.2	1.0	128.96	-324.1	400.7	515.4	513.1	2.29	225.530		
700.0	700.0	694.6	694.6	1.5	1.3	128.97	-324.0	400.5	515.1	512.4	2.74	188.198		
800.0	800.0	797.1	797.0	1.7	1.5	129.02	-324.0	399.8	514.6	511.4	3.22	159.960		
900.0	900.0	899.0	899.0	1.9	1.8	129.09	-323.8	398.6	513.6	509.9	3.70	138.778		
1,000.0	1,000.0	999.7	999.7	2.1	2.0	129.15	-323.5	397.3	512.4	508.2	4.18	122.460		
1,100.0	1,100.0	1,096.9	1,096.9	2.4	2.3	129.22	-323.3	396.1	511.3	506.7	4.66	109.749		
1,200.0	1,200.0	1,197.2	1,197.2	2.6	2.6	129.29	-323.3	395.1	510.6	505.4	5.14	99.256		
1,300.0	1,300.0	1,297.3	1,297.3	2.8	2.8	61.92	-323.2	394.2	509.3	503.7	5.62	90.608		
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.1	62.22	-322.5	393.2	506.9	500.9	6.08	83.318		
1,500.0	1,499.9	1,496.4	1,496.4	3.2	3.3	62.66	-321.7	392.4	503.8	497.3	6.53	77.174		
1,600.0	1,599.7	1,598.9	1,598.8	3.4	3.6	63.37	-321.4	391.5	500.1	493.1	7.01	71.390		
1,700.0	1,699.4	1,698.5	1,698.4	3.7	3.8	64.26	-320.9	390.3	495.4	487.9	7.48	66.212		
1,800.0	1,798.9	1,796.9	1,796.8	3.9	4.1	65.31	-320.2	389.4	490.2	482.2	7.96	61.574		
1,900.0	1,898.3	1,898.1	1,898.0	4.2	4.3	66.62	-319.5	388.4	484.4	475.9	8.46	57.230		
2,000.0	1,997.4	1,995.3	1,995.3	4.4	4.6	68.11	-318.9	387.4	478.1	469.1	8.97	53.279		
2,100.0	2,096.3	2,095.7	2,095.6	4.7	4.8	69.83	-318.3	386.4	471.7	462.2	9.51	49.594		
2,200.0	2,195.2	2,193.1	2,193.0	5.0	5.1	71.57	-317.8	385.1	465.5	455.5	10.05	46.305		
2,300.0	2,294.1	2,289.6	2,289.5	5.3	5.3	73.36	-317.8	384.0	460.2	449.6	10.60	43.415		
2,400.0	2,393.0	2,387.8	2,387.7	5.6	5.6	75.20	-317.9	383.3	455.7	444.6	11.16	40.842		
2,500.0	2,491.9	2,487.9	2,487.8	5.9	5.9	77.07	-317.7	382.6	451.7	439.9	11.73	38.497		
2,600.0	2,590.8	2,589.1	2,589.0	6.2	6.1	79.01	-317.3	381.7	447.7	435.3	12.32	36.335		
2,700.0	2,689.7	2,687.3	2,687.2	6.6	6.4	80.95	-316.8	380.5	443.9	431.0	12.91	34.393		
2,800.0	2,788.6	2,785.5	2,785.4	6.9	6.6	82.89	-316.3	379.5	440.9	427.4	13.50	32.661		
2,900.0	2,887.5	2,882.9	2,882.8	7.2	6.9	84.84	-316.0	378.6	438.6	424.5	14.09	31.123		
3,000.0	2,986.4	2,979.9	2,979.7	7.6	7.1	86.81	-316.1	377.8	437.2	422.5	14.67	29.799		
3,100.0	3,085.3	3,080.4	3,080.3	7.9	7.4	88.94	-316.5	376.5	436.4	421.2	15.25	28.610		
3,200.0	3,184.2	3,181.1	3,181.0	8.2	7.6	91.10	-316.4	374.9	435.8	419.9	15.85	27.488		
3,300.0	3,283.1	3,280.5	3,280.3	8.6	7.9	93.17	-315.9	373.5	435.4	418.9	16.45	26.460		
3,330.0	3,312.8	3,310.2	3,310.1	8.7	8.0	93.80	-315.8	373.0	435.4	418.7	16.63	26.173 CC		
3,400.0	3,382.0	3,379.8	3,379.7	8.9	8.2	95.24	-315.3	372.2	435.5	418.4	17.05	25.544		
3,500.0	3,480.9	3,475.3	3,475.1	9.2	8.4	97.18	-314.8	371.3	436.3	418.7	17.62	24.762		
3,600.0	3,579.8	3,572.7	3,572.5	9.6	8.6	99.18	-315.0	370.4	438.4	420.2	18.19	24.102		
3,700.0	3,678.7	3,670.8	3,670.6	9.9	8.9	101.21	-315.5	369.1	441.2	422.5	18.75	23.527		
3,800.0	3,777.6	3,770.4	3,770.1	10.3	9.1	103.25	-315.9	367.8	444.6	425.3	19.32	23.014		
3,900.0	3,876.5	3,867.6	3,867.4	10.6	9.3	105.23	-316.3	366.4	448.5	428.6	19.88	22.563		
4,000.0	3,975.4	3,966.1	3,965.9	11.0	9.6	107.29	-317.1	364.2	453.3	432.9	20.43	22.190		
4,100.0	4,074.3	4,065.7	4,065.4	11.3	9.8	109.30	-317.7	362.3	458.5	437.5	20.98	21.853		
4,200.0	4,173.2	4,162.1	4,161.7	11.7	10.1	111.23	-318.3	360.2	464.2	442.7	21.51	21.577		
4,300.0	4,272.1	4,262.4	4,262.0	12.0	10.3	113.19	-319.4	358.0	470.9	448.9	22.05	21.355		
4,400.0	4,371.0	4,360.3	4,359.9	12.3	10.6	115.01	-319.8	356.1	477.5	455.0	22.58	21.150		
4,500.0	4,469.9	4,460.6	4,460.3	12.7	10.8	116.82	-320.6	354.2	485.0	461.9	23.11	20.992		
4,600.0	4,568.7	4,561.4	4,561.0	13.0	11.1	118.61	-320.6	352.2	492.2	468.5	23.64	20.821		
4,700.0	4,667.6	4,657.6	4,657.2	13.4	11.3	120.29	-320.7	350.1	499.8	475.7	24.16	20.691		
4,800.0	4,766.5	4,754.5	4,754.0	13.7	11.6	121.96	-321.3	347.6	508.5	483.9	24.67	20.617		
4,900.0	4,865.4	4,855.6	4,855.1	14.1	11.8	123.57	-321.9	345.7	517.6	492.4	25.18	20.556		

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 Lajco 17R-403
Project:	SEC.17-T4N-R67W	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Reference Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lajco 17R-403	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (7-7-15)	Offset TVD Reference:	Offset Datum

Offset Design Lajco Pad Sec.17-T4N-R67W - Coming 17-1 (Exist.) - Wellbore #1 - Wellbore #1												Offset Site Error: 0.0 ft	
Survey Program: 100-NS-GYRO-MS												Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)			
5,000.0	4,964.3	4,955.9	4,955.4	14.4	12.1	125.07	-322.0	344.3	526.4	500.7	25.69	20.487	
5,100.0	5,063.2	5,055.6	5,055.1	14.8	12.3	126.49	-322.0	343.1	535.5	509.3	26.21	20.433	
5,200.0	5,162.1	5,153.5	5,153.0	15.1	12.6	127.91	-321.7	341.3	544.7	518.0	26.71	20.393	
5,300.0	5,261.0	5,250.2	5,249.7	15.5	12.9	129.28	-321.8	339.3	554.6	527.4	27.21	20.386	
5,400.0	5,359.9	5,348.5	5,348.0	15.9	13.1	130.61	-322.0	337.4	565.0	537.3	27.70	20.398	
5,500.0	5,458.8	5,448.0	5,447.4	16.2	13.4	131.90	-322.3	335.5	575.7	547.5	28.20	20.419	
5,600.0	5,557.7	5,548.5	5,548.0	16.6	13.6	133.11	-322.5	334.1	586.4	557.7	28.69	20.439	
5,700.0	5,656.6	5,649.5	5,648.9	16.9	13.9	134.33	-322.1	332.4	597.0	567.8	29.18	20.457	
5,800.0	5,755.5	5,749.2	5,748.6	17.3	14.2	135.48	-321.5	330.9	607.5	577.9	29.67	20.476	
5,900.0	5,854.4	5,846.5	5,845.9	17.6	14.4	136.57	-320.9	329.5	618.3	588.2	30.15	20.507	
6,000.0	5,953.3	5,945.6	5,945.0	18.0	14.7	137.61	-320.7	328.2	629.6	598.9	30.64	20.551	
6,100.0	6,052.2	6,047.0	6,046.4	18.3	14.9	138.60	-320.3	327.4	640.6	609.5	31.12	20.588	
6,200.0	6,151.1	6,144.8	6,144.2	18.7	15.2	139.53	-319.7	326.6	651.7	620.1	31.59	20.632	
6,300.0	6,250.0	6,239.8	6,239.2	19.0	15.4	140.42	-319.4	325.6	663.3	631.3	32.05	20.694	
6,400.0	6,348.9	6,335.6	6,335.0	19.4	15.7	140.56	-319.8	324.5	675.7	643.2	32.53	20.775	
6,500.0	6,447.9	6,434.6	6,434.0	19.7	15.9	91.08	-320.2	323.1	682.6	649.7	32.99	20.693	
6,600.0	6,545.9	6,535.1	6,534.4	19.9	16.2	65.68	-320.4	321.9	678.4	645.4	33.04	20.534	
6,700.0	6,641.2	6,632.6	6,631.9	20.1	16.4	57.24	-320.5	321.2	663.5	630.8	32.74	20.263	
6,800.0	6,732.2	6,722.9	6,722.3	20.2	16.6	55.54	-320.7	320.8	639.3	607.1	32.25	19.823	
6,900.0	6,817.4	6,808.0	6,807.3	20.3	16.8	57.56	-320.7	320.2	607.7	575.8	31.84	19.087	
7,000.0	6,895.3	6,887.9	6,887.3	20.4	17.0	62.27	-320.6	319.6	570.5	538.7	31.81	17.937	
7,100.0	6,964.5	6,953.9	6,953.3	20.6	17.2	68.38	-320.6	319.3	531.2	498.9	32.25	16.469	
7,200.0	7,023.9	7,011.5	7,010.8	20.7	17.3	75.36	-321.0	318.8	494.1	461.0	33.11	14.923	
7,300.0	7,072.5	7,062.3	7,061.6	21.0	17.4	82.41	-321.2	318.3	463.8	429.7	34.11	13.595	
7,400.0	7,109.4	7,100.1	7,099.5	21.4	17.5	87.78	-321.1	318.0	446.0	411.0	35.01	12.739	
7,452.3	7,123.8	7,114.4	7,113.7	21.6	17.6	89.58	-321.0	317.9	443.4	407.9	35.47	12.502 ES	
7,500.0	7,134.0	7,124.3	7,123.7	21.9	17.6	90.57	-321.0	317.8	445.6	409.8	35.85	12.430 SF	
7,600.0	7,145.9	7,135.8	7,135.1	22.6	17.6	90.45	-321.0	317.7	464.8	428.1	36.72	12.657	
7,700.0	7,147.0	7,136.5	7,135.8	23.4	17.6	89.45	-321.0	317.7	502.1	464.4	37.68	13.324	
7,800.0	7,146.9	7,136.1	7,135.4	24.4	17.6	89.39	-321.0	317.7	555.0	516.2	38.84	14.290	
7,900.0	7,146.8	7,135.6	7,134.9	25.5	17.6	89.33	-321.0	317.7	619.7	579.6	40.10	15.454	
8,000.0	7,146.7	7,135.1	7,134.5	26.7	17.6	89.27	-321.0	317.7	692.8	651.3	41.44	16.716	
8,100.0	7,146.7	7,134.7	7,134.0	28.0	17.6	89.21	-321.0	317.7	771.9	729.0	42.86	18.009	
8,200.0	7,146.6	7,134.2	7,133.5	29.3	17.6	89.16	-321.0	317.7	855.4	811.1	44.34	19.290	
8,300.0	7,146.5	7,133.8	7,133.1	30.7	17.6	89.10	-321.0	317.7	942.2	896.3	45.88	20.536	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17R-403
Project:	SEC.17-T4N-R67W	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Reference Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lajco 17R-403	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (7-7-15)	Offset TVD Reference:	Offset Datum

Offset Design Lajco Pad Sec.17-T4N-R67W - Coming 17-4 (Exist.) - Wellbore #1 - Wellbore #1												Offset Site Error: 0.0 ft	
Survey Program: 100-NS-GYRO-MS												Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance				Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)		Minimum Separation (ft)	Separation Factor
7,700.0	7,147.0	7,126.2	7,125.3	23.4	15.6	89.99	-1,355.3	225.0	968.6	933.0	35.65	27.172	11.441 CC, ES 11.244 SF
7,800.0	7,146.9	7,125.9	7,125.0	24.4	15.6	89.96	-1,355.3	225.0	887.3	850.5	36.81	24.108	
7,900.0	7,146.8	7,125.6	7,124.7	25.5	15.6	89.93	-1,355.3	225.0	810.2	772.1	38.07	21.284	
8,000.0	7,146.7	7,125.2	7,124.3	26.7	15.6	89.89	-1,355.3	225.0	738.6	699.1	39.41	18.738	
8,100.0	7,146.7	7,124.9	7,124.0	28.0	15.6	89.86	-1,355.3	225.0	674.2	633.4	40.84	16.510	
8,200.0	7,146.6	7,124.6	7,123.7	29.3	15.6	89.83	-1,355.3	225.0	619.4	577.0	42.32	14.635	
8,300.0	7,146.5	7,124.3	7,123.4	30.7	15.6	89.79	-1,355.3	225.0	576.8	532.9	43.86	13.152	
8,400.0	7,146.4	7,124.0	7,123.1	32.2	15.6	89.76	-1,355.3	225.0	549.3	503.9	45.44	12.090	
8,500.0	7,146.4	7,123.7	7,122.8	33.7	15.6	89.72	-1,355.3	225.0	539.3	492.2	47.05	11.461	
8,504.7	7,146.3	7,123.6	7,122.7	33.8	15.6	89.72	-1,355.3	225.0	539.2	492.1	47.13		
8,600.0	7,146.3	7,123.3	7,122.4	35.3	15.6	89.69	-1,355.3	225.0	547.6	498.9	48.70		
8,700.0	7,146.2	7,123.0	7,122.1	36.8	15.6	89.66	-1,355.3	225.0	573.5	523.1	50.38	11.384	
8,800.0	7,146.1	7,122.7	7,121.8	38.5	15.6	89.62	-1,355.3	225.0	614.8	562.7	52.08	11.805	
8,900.0	7,146.0	7,122.4	7,121.5	40.1	15.6	89.59	-1,355.3	225.0	668.6	614.8	53.80	12.428	
9,000.0	7,146.0	7,122.1	7,121.2	41.8	15.6	89.56	-1,355.3	225.0	732.2	676.7	55.54	13.183	
9,100.0	7,145.9	7,121.7	7,120.8	43.5	15.6	89.52	-1,355.3	225.0	803.2	745.9	57.30	14.019	
9,200.0	7,145.8	7,121.4	7,120.5	45.2	15.6	89.49	-1,355.3	225.0	879.9	820.9	59.06	14.898	
9,300.0	7,145.7	7,121.1	7,120.2	46.9	15.6	89.45	-1,355.3	225.0	960.9	900.1	60.84	15.793	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17R-403
Project:	SEC.17-T4N-R67W	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Reference Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lajco 17R-403	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (7-7-15)	Offset TVD Reference:	Offset Datum

Offset Design Lajco Pad Sec.17-T4N-R67W - Lajco 17C (Exist.) - Wellbore #1 - Wellbore #1												Offset Site Error: 0.0 ft		
Survey Program: 700-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)			
7,300.0	7,072.5	7,070.7	7,069.7	21.0	14.2	-21.57	-1,056.3	966.3	919.3	896.6	22.74	40.431		
7,400.0	7,109.4	7,107.2	7,106.2	21.4	14.3	-34.46	-1,056.3	966.2	828.0	803.7	24.33	34.034		
7,500.0	7,134.0	7,131.5	7,130.5	21.9	14.3	-55.12	-1,056.3	966.1	733.7	704.5	29.20	25.129		
7,600.0	7,145.9	7,143.3	7,142.3	22.6	14.3	-80.66	-1,056.3	966.0	638.5	605.2	33.34	19.150		
7,700.0	7,147.0	7,144.4	7,143.4	23.4	14.3	-90.24	-1,056.3	966.0	544.5	510.2	34.34	15.856		
7,800.0	7,146.9	7,144.4	7,143.4	24.4	14.3	-90.22	-1,056.3	966.0	453.2	417.7	35.50	12.765		
7,900.0	7,146.8	7,144.3	7,143.3	25.5	14.3	-90.21	-1,056.3	966.0	366.3	329.6	36.76	9.965		
8,000.0	7,146.7	7,144.3	7,143.3	26.7	14.3	-90.20	-1,056.3	966.0	288.2	250.1	38.11	7.562		
8,100.0	7,146.7	7,144.2	7,143.2	28.0	14.3	-90.18	-1,056.3	966.0	227.9	188.3	39.54	5.763		
8,200.0	7,146.6	7,144.2	7,143.2	29.3	14.3	-90.17	-1,056.3	966.0	201.9	160.9	41.02	4.922		
8,205.7	7,146.6	7,144.2	7,143.2	29.4	14.3	-90.17	-1,056.3	966.0	201.8	160.7	41.11	4.909	CC, ES, SF	
8,300.0	7,146.5	7,144.1	7,143.1	30.7	14.3	-90.16	-1,056.3	966.0	222.8	180.2	42.56	5.234		
8,400.0	7,146.4	7,144.1	7,143.1	32.2	14.3	-90.14	-1,056.3	966.0	280.2	236.0	44.15	6.346		
8,500.0	7,146.4	7,144.0	7,143.0	33.7	14.3	-90.13	-1,056.3	966.0	356.8	311.1	45.77	7.797		
8,600.0	7,146.3	7,144.0	7,143.0	35.3	14.3	-90.11	-1,056.3	966.0	442.9	395.5	47.42	9.341		
8,700.0	7,146.2	7,143.9	7,142.9	36.8	14.3	-90.10	-1,056.3	966.0	533.9	484.8	49.10	10.874		
8,800.0	7,146.1	7,143.9	7,142.9	38.5	14.3	-90.09	-1,056.3	966.0	627.6	576.8	50.80	12.354		
8,900.0	7,146.0	7,143.8	7,142.8	40.1	14.3	-90.07	-1,056.3	966.0	723.0	670.5	52.53	13.765		
9,000.0	7,146.0	7,143.8	7,142.8	41.8	14.3	-90.06	-1,056.3	966.0	819.5	765.3	54.27	15.101		
9,100.0	7,145.9	7,143.7	7,142.7	43.5	14.3	-90.05	-1,056.3	966.0	916.8	860.8	56.03	16.364		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17R-403
Project:	SEC.17-T4N-R67W	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Reference Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lajco 17R-403	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (7-7-15)	Offset TVD Reference:	Offset Datum

Offset Design Lajco Pad Sec.17-T4N-R67W - Lajco 17ND - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 703-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)			
7,900.0	7,146.8	7,323.0	7,145.8	25.5	27.3	90.19	-978.3	-197.3	988.1	949.0	39.04	25.311	
8,000.0	7,146.7	7,322.5	7,145.3	26.7	27.3	90.16	-978.3	-197.3	969.9	929.5	40.39	24.016	
8,100.0	7,146.7	7,322.0	7,144.8	28.0	27.3	90.13	-978.3	-197.3	961.9	920.1	41.81	23.006	
8,127.7	7,146.6	7,321.8	7,144.6	28.3	27.3	90.12	-978.3	-197.3	961.5	919.3	42.22	22.772 CC, ES	
8,200.0	7,146.6	7,321.5	7,144.3	29.3	27.2	90.10	-978.3	-197.3	964.2	920.9	43.30	22.270	
8,300.0	7,146.5	7,320.9	7,143.8	30.7	27.2	90.07	-978.3	-197.3	976.8	932.0	44.83	21.787	
8,400.0	7,146.4	7,320.4	7,143.3	32.2	27.2	90.04	-978.3	-197.3	999.3	952.9	46.42	21.530 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17R-403
Project:	SEC.17-T4N-R67W	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Reference Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lajco 17R-403	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (7-7-15)	Offset TVD Reference:	Offset Datum

Offset Design Lajco Pad Sec.17-T4N-R67W - Lajco 17RD (Exist) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 735-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
3,000.0	2,986.4	3,291.4	3,189.7	7.6	12.8	56.70		-437.1	999.7	983.2	965.4	17.86	55.040	
3,100.0	3,085.3	3,393.2	3,285.5	7.9	13.4	55.78		-402.6	996.5	953.6	934.9	18.74	50.879	
3,200.0	3,184.2	3,481.6	3,368.8	8.2	13.9	54.98		-373.4	993.1	924.2	904.7	19.54	47.298	
3,300.0	3,283.1	3,566.3	3,448.9	8.6	14.4	54.18		-346.0	990.7	896.1	875.8	20.32	44.092	
3,400.0	3,382.0	3,661.0	3,538.3	8.9	15.0	53.17		-314.8	988.9	868.7	847.5	21.20	40.978	
3,500.0	3,480.9	3,761.9	3,633.0	9.2	15.7	51.90		-280.0	987.6	841.3	819.1	22.16	37.962	
3,600.0	3,579.8	3,861.5	3,726.2	9.6	16.3	50.55		-245.1	985.6	813.4	790.3	23.13	35.162	
3,700.0	3,678.7	3,956.0	3,814.7	9.9	16.9	49.18		-211.9	983.5	785.8	761.7	24.07	32.640	
3,800.0	3,777.6	4,050.3	3,903.5	10.3	17.5	47.85		-180.3	980.6	758.5	733.5	24.98	30.362	
3,900.0	3,876.5	4,141.7	3,990.0	10.6	18.0	46.58		-150.8	977.4	731.8	706.0	25.86	28.304	
4,000.0	3,975.4	4,238.0	4,080.9	11.0	18.6	45.04		-118.9	975.0	706.1	679.3	26.79	26.353	
4,100.0	4,074.3	4,342.5	4,179.0	11.3	19.3	43.21		-83.5	971.3	679.7	651.9	27.82	24.432	
4,200.0	4,173.2	4,439.2	4,269.5	11.7	19.9	41.28		-49.5	967.5	653.0	624.2	28.82	22.659	
4,300.0	4,272.1	4,526.7	4,351.3	12.0	20.5	39.38		-18.6	964.2	627.3	597.6	29.75	21.085	
4,400.0	4,371.0	4,618.6	4,437.9	12.3	21.1	37.38		12.2	961.5	603.6	572.9	30.68	19.673	
4,500.0	4,469.9	4,714.0	4,527.9	12.7	21.7	35.22		43.6	958.1	580.3	548.7	31.61	18.358	
4,600.0	4,568.7	4,808.7	4,617.4	13.0	22.2	32.98		74.0	954.8	558.2	525.6	32.51	17.166	
4,700.0	4,667.6	4,901.0	4,705.2	13.4	22.7	30.79		102.4	951.3	536.9	503.5	33.36	16.091	
4,800.0	4,766.5	4,991.3	4,792.0	13.7	23.2	28.82		127.2	948.4	517.4	483.2	34.14	15.155	
4,900.0	4,865.4	5,084.7	4,882.7	14.1	23.6	27.05		149.2	945.9	499.4	464.5	34.86	14.325	
5,000.0	4,964.3	5,180.5	4,976.3	14.4	24.0	25.38		169.7	943.6	482.3	446.8	35.54	13.571	
5,100.0	5,063.2	5,276.0	5,070.0	14.8	24.4	23.86		188.0	941.5	466.0	429.8	36.18	12.882	
5,200.0	5,162.1	5,371.9	5,164.7	15.1	24.7	22.71		202.7	939.9	450.6	413.8	36.75	12.261	
5,300.0	5,261.0	5,469.8	5,261.9	15.5	25.0	21.88		214.5	938.6	435.6	398.3	37.27	11.687	
5,400.0	5,359.9	5,568.5	5,360.2	15.9	25.2	21.37		223.7	937.4	420.8	383.0	37.76	11.143	
5,500.0	5,458.8	5,665.2	5,456.6	16.2	25.4	21.19		230.1	936.4	406.2	368.0	38.20	10.632	
5,600.0	5,557.7	5,761.1	5,552.5	16.6	25.5	21.58		232.6	936.3	392.3	353.7	38.59	10.166	
5,700.0	5,656.6	5,861.0	5,652.4	16.9	25.6	22.48		232.2	936.6	378.8	339.9	38.95	9.727	
5,800.0	5,755.5	5,960.2	5,751.5	17.3	25.7	23.51		231.3	936.6	365.1	325.8	39.30	9.292	
5,900.0	5,854.4	6,059.5	5,850.9	17.6	25.8	24.62		230.4	936.5	351.5	311.9	39.65	8.867	
6,000.0	5,953.3	6,158.7	5,950.1	18.0	25.9	25.77		229.8	936.3	337.9	297.9	40.00	8.448	
6,100.0	6,052.2	6,257.7	6,049.1	18.3	26.0	27.01		229.3	936.0	324.4	284.0	40.36	8.037	
6,200.0	6,151.1	6,357.7	6,149.1	18.7	26.1	28.34		228.9	935.5	310.7	270.0	40.72	7.631	
6,300.0	6,250.0	6,456.6	6,248.0	19.0	26.1	29.74		228.7	934.9	297.1	256.0	41.08	7.233	
6,400.0	6,348.9	6,555.5	6,346.9	19.4	26.2	30.64		228.2	934.1	283.6	242.2	41.43	6.844	
6,500.0	6,447.9	6,653.8	6,445.2	19.7	26.3	-20.43		227.6	933.4	269.3	227.7	41.64	6.468	
6,600.0	6,545.9	6,752.1	6,543.5	19.9	26.4	-51.35		226.7	932.7	253.4	211.6	41.83	6.059	
6,700.0	6,641.2	6,847.2	6,638.5	20.1	26.5	-69.50		225.8	932.1	238.0	195.9	42.05	5.660	
6,800.0	6,732.2	6,937.6	6,729.0	20.2	26.6	-84.74		225.2	931.7	227.9	185.7	42.15	5.406	
6,838.2	6,765.5	6,970.8	6,762.2	20.2	26.6	-90.31		225.0	931.6	226.9	184.8	42.10	5.389 CC, ES, SF	
6,900.0	6,817.4	7,022.8	6,814.1	20.3	26.7	-98.95		224.8	931.6	230.0	188.2	41.79	5.504	
7,000.0	6,895.3	7,101.2	6,892.5	20.4	26.8	-111.23		224.6	931.3	250.5	209.8	40.68	6.157	
7,100.0	6,964.5	7,169.8	6,961.1	20.6	26.8	-120.32		224.6	931.0	291.7	252.6	39.09	7.462	
7,200.0	7,023.9	7,228.8	7,020.1	20.7	26.9	-126.07		224.7	930.8	351.3	313.8	37.54	9.358	
7,300.0	7,072.5	7,277.2	7,068.5	21.0	26.9	-128.45		224.7	930.8	425.1	388.5	36.66	11.598	
7,400.0	7,109.4	7,314.3	7,105.6	21.4	27.0	-126.98		224.7	930.8	509.2	472.0	37.11	13.720	
7,500.0	7,134.0	7,339.1	7,130.4	21.9	27.0	-119.80		224.7	930.7	600.2	560.4	39.77	15.091	
7,600.0	7,145.9	7,351.1	7,142.4	22.6	27.0	-102.18		224.7	930.7	695.6	650.8	44.77	15.535	
7,700.0	7,147.0	7,352.3	7,143.6	23.4	27.0	-90.02		224.7	930.7	793.0	745.9	47.01	16.867	
7,800.0	7,146.9	7,352.2	7,143.6	24.4	27.0	-90.02		224.7	930.7	891.0	842.8	48.17	18.496	
7,900.0	7,146.8	7,352.2	7,143.6	25.5	27.0	-90.01		224.7	930.7	989.4	940.0	49.43	20.015	

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 Lajco 17R-403
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Reference Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lajco 17R-403	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (7-7-15)	Offset TVD Reference:	Offset Datum

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17R-403
Project:	SEC.17-T4N-R67W	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
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Reference Well:	Lajco 17R-403	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (7-7-15)	Offset TVD Reference:	Offset Datum

Offset Design Lajco Pad Sec.17-T4N-R67W - Lajco 17SD (Exist.) - Wellbore #1 - Wellbore #1												Offset Site Error:		0.0 ft	
Survey Program: 735-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)				
8,500.0	7,146.4	7,322.0	7,145.0	33.7	25.6	-90.80	-2,275.5	1,004.5	955.6	898.6	57.00	16.766			
8,600.0	7,146.3	7,321.6	7,144.6	35.3	25.6	-90.70	-2,275.5	1,004.5	859.1	800.5	58.65	14.648			
8,700.0	7,146.2	7,321.2	7,144.2	36.8	25.6	-90.60	-2,275.5	1,004.5	763.7	703.3	60.34	12.657			
8,800.0	7,146.1	7,320.8	7,143.7	38.5	25.6	-90.50	-2,275.5	1,004.5	669.5	607.4	62.04	10.790			
8,900.0	7,146.0	7,320.4	7,143.3	40.1	25.6	-90.40	-2,275.5	1,004.5	577.3	513.5	63.77	9.052			
9,000.0	7,146.0	7,319.9	7,142.9	41.8	25.6	-90.30	-2,275.5	1,004.5	488.1	422.6	65.52	7.450			
9,100.0	7,145.9	7,319.5	7,142.5	43.5	25.6	-90.20	-2,275.5	1,004.5	404.1	336.8	67.28	6.006			
9,200.0	7,145.8	7,319.1	7,142.1	45.2	25.6	-90.11	-2,275.5	1,004.5	329.1	260.1	69.05	4.766			
9,300.0	7,145.7	7,318.7	7,141.7	46.9	25.6	-90.01	-2,275.5	1,004.5	270.8	200.0	70.84	3.823			
9,400.0	7,145.7	7,318.3	7,141.3	48.6	25.6	-89.92	-2,275.5	1,004.5	241.6	169.0	72.64	3.326			
9,424.9	7,145.7	7,318.2	7,141.2	49.1	25.6	-89.89	-2,275.5	1,004.5	240.3	167.2	73.09	3.288	CC, ES, SF		
9,500.0	7,145.6	7,317.9	7,140.9	50.4	25.6	-89.82	-2,275.5	1,004.5	251.8	177.4	74.44	3.383			
9,600.0	7,145.5	7,317.6	7,140.5	52.2	25.6	-89.73	-2,275.5	1,004.5	297.4	221.1	76.26	3.900			
9,700.0	7,145.4	7,317.2	7,140.1	53.9	25.6	-89.64	-2,275.5	1,004.5	365.3	287.3	78.08	4.679			
9,800.0	7,145.4	7,316.8	7,139.8	55.7	25.6	-89.55	-2,275.5	1,004.5	445.5	365.6	79.91	5.576			
9,900.0	7,145.3	7,316.4	7,139.4	57.5	25.6	-89.46	-2,275.5	1,004.5	532.5	450.7	81.74	6.514			
10,000.0	7,145.2	7,316.0	7,139.0	59.3	25.6	-89.37	-2,275.5	1,004.5	623.3	539.8	83.58	7.458			
10,100.0	7,145.1	7,315.7	7,138.6	61.1	25.6	-89.28	-2,275.5	1,004.5	716.6	631.2	85.43	8.389			
10,200.0	7,145.1	7,315.3	7,138.3	62.9	25.6	-89.19	-2,275.5	1,004.5	811.5	724.3	87.28	9.299			
10,300.0	7,145.0	7,314.9	7,137.9	64.7	25.6	-89.11	-2,275.5	1,004.5	907.5	818.4	89.13	10.182			

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Site Error:	0.0ft	North Reference:	True
Reference Well:	Lajco 17R-403	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (7-7-15)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4807.0ft (RKB - 13')

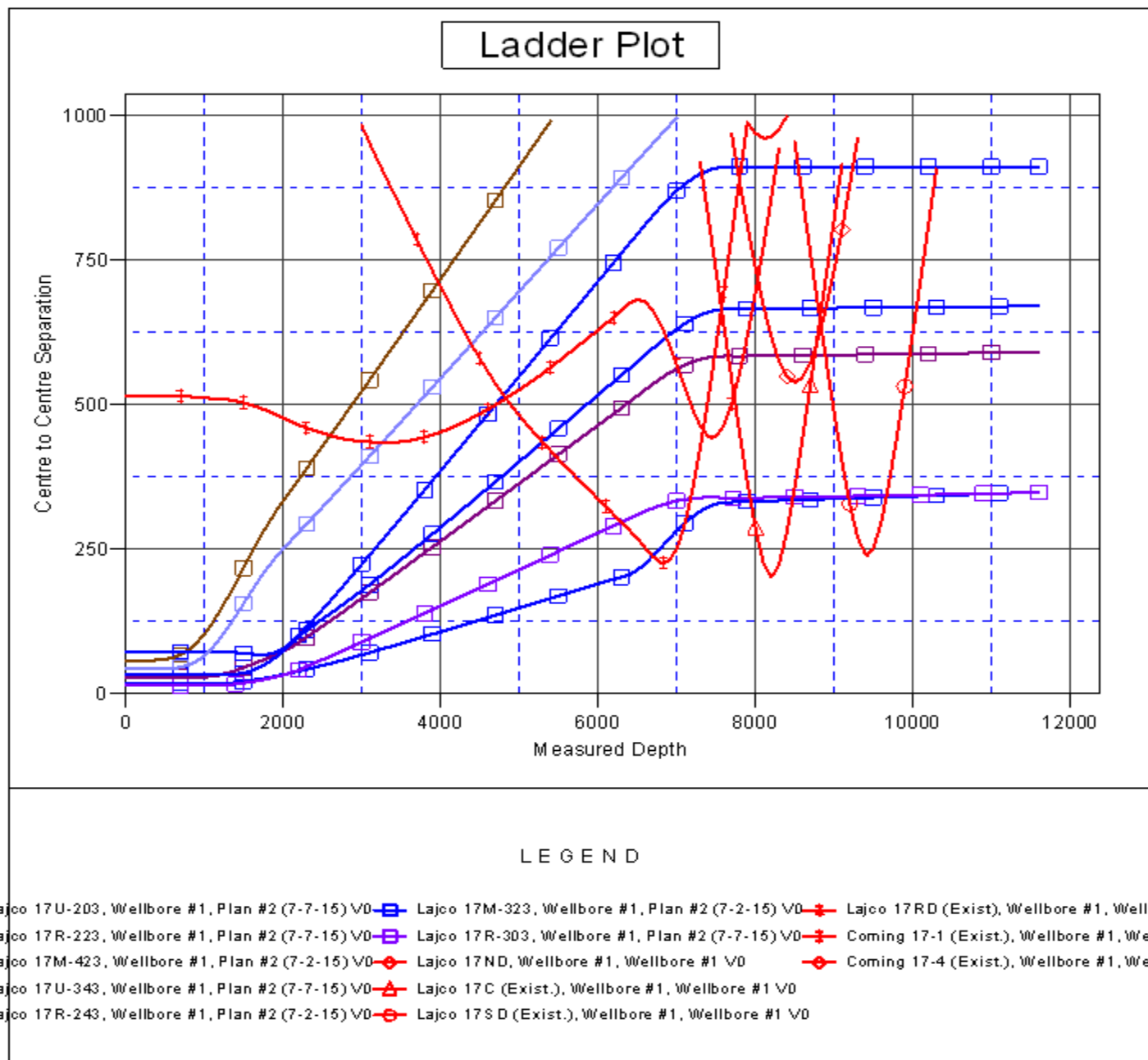
Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Lajco 17R-403

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.38°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17R-403
Project:	SEC.17-T4N-R67W	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Reference Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
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