

PETROLEUM DEVELOPMENT CORP Weld County CO

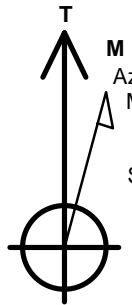
Well Name: **Lajco 17R-223**

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	1359742.20	3163452.87	40.319410	-104.913810	
RKB - 13' WELL @ 4807.0ft (RKB - 13')						

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
50'E/W Hardline (17R-223)	1.0	-2544.0	1319.2	Rectangle (Sides: L3902.0 W100.0)
SHL 310'FNL & 2186'FEL	1.0	0.0	0.0	Point
BHL 500'FSL & 943'FEL	6931.0	-4495.5	1319.2	Point



Azimuths to True North
 Magnetic North: 8.39°

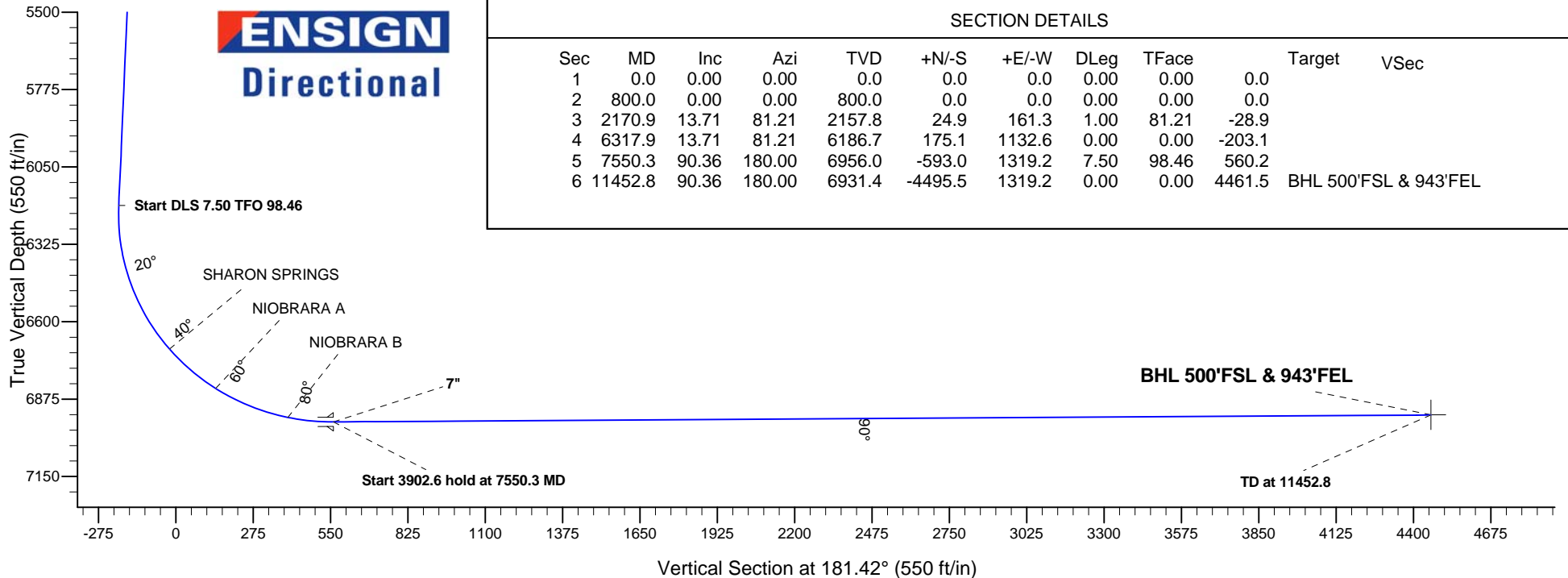
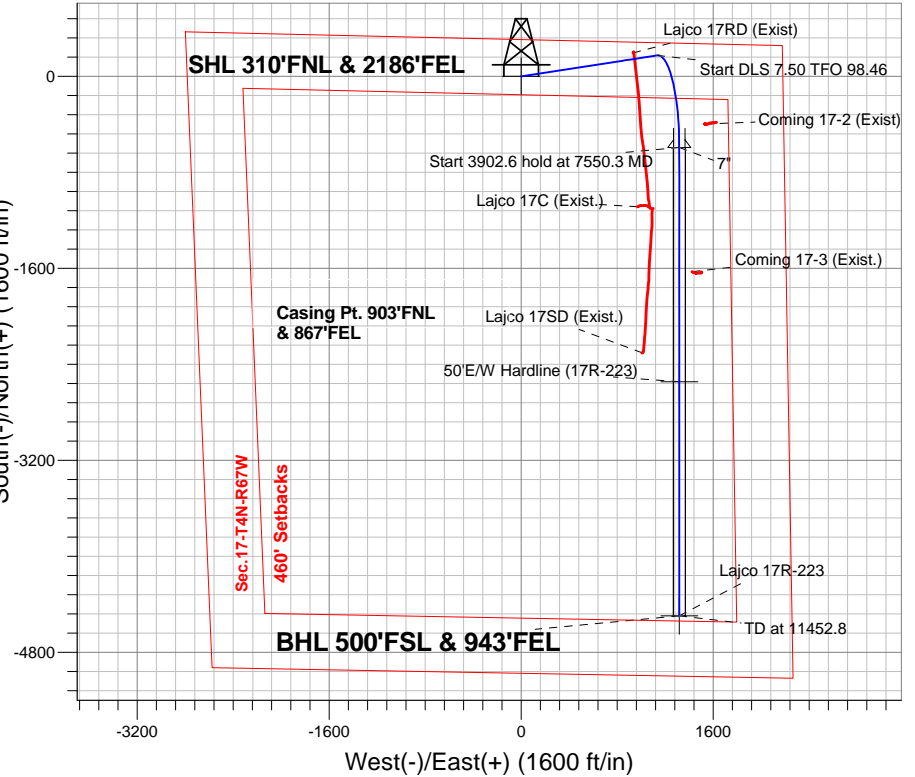
Magnetic Field
 Strength: 52646.2snT
 Dip Angle: 66.82°
 Date: 7/7/2015
 Model: IGRF2010

ANNOTATIONS

TVD	MD	Annotation
800.0	800.0	KOP - Start Build 1.00
6186.7	6317.9	Start DLS 7.50 TFO 98.46
6956.0	7550.3	Start 3902.6 hold at 7550.3 MD
6931.4	11452.8	TD at 11452.8

Lajco 4N67W17R Pad Sec.17-T4N-R67W
 Lajco 17R-223
 Plan #2 (7-7-15)

South(-)/North(+) (1600 ft/in)



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	Target	VSec
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	800.0	0.00	0.00	800.0	0.0	0.0	0.00	0.00	0.0	
3	2170.9	13.71	81.21	2157.8	24.9	161.3	1.00	81.21	-28.9	
4	6317.9	13.71	81.21	6186.7	175.1	1132.6	0.00	0.00	-203.1	
5	7550.3	90.36	180.00	6956.0	-593.0	1319.2	7.50	98.46	560.2	
6	11452.8	90.36	180.00	6931.4	-4495.5	1319.2	0.00	0.00	4461.5	BHL 500'FSL & 943'FEL



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.17-T4N-R67W

Lajco 4N67W17R Pad Sec.17-T4N-R67W

Lajco 17R-223

Wellbore #1

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

Standard Planning Report

09 July, 2015

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well Lajco 17R-223
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-223	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-223					
Well Position	+N-S	40.0 ft	Northing:	1,359,742.20 ft	Latitude:	40.319410
	+E-W	-1,450.0 ft	Easting:	3,163,452.87 ft	Longitude:	-104.913810
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	181.42

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	
800.0	0.00	0.00	800.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,170.9	13.71	81.21	2,157.8	24.9	161.3	1.00	1.00	0.00	81.21	
6,317.9	13.71	81.21	6,186.7	175.1	1,132.6	0.00	0.00	0.00	0.00	
7,550.3	90.36	180.00	6,956.0	-593.0	1,319.2	7.50	6.22	8.02	98.46	
11,452.8	90.36	180.00	6,931.4	-4,495.5	1,319.2	0.00	0.00	0.00	0.00	BHL 500'FSL & 94°

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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-223	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
KOP - Start Build 1.00									
900.0	1.00	81.21	900.0	0.1	0.9	-0.2	1.00	1.00	0.00
1,000.0	2.00	81.21	1,000.0	0.5	3.4	-0.6	1.00	1.00	0.00
1,100.0	3.00	81.21	1,099.9	1.2	7.8	-1.4	1.00	1.00	0.00
1,200.0	4.00	81.21	1,199.7	2.1	13.8	-2.5	1.00	1.00	0.00
1,300.0	5.00	81.21	1,299.4	3.3	21.5	-3.9	1.00	1.00	0.00
1,400.0	6.00	81.21	1,398.9	4.8	31.0	-5.6	1.00	1.00	0.00
1,500.0	7.00	81.21	1,498.3	6.5	42.2	-7.6	1.00	1.00	0.00
1,600.0	8.00	81.21	1,597.4	8.5	55.1	-9.9	1.00	1.00	0.00
1,700.0	9.00	81.21	1,696.3	10.8	69.7	-12.5	1.00	1.00	0.00
1,800.0	10.00	81.21	1,794.9	13.3	86.0	-15.4	1.00	1.00	0.00
1,900.0	11.00	81.21	1,893.3	16.1	104.0	-18.7	1.00	1.00	0.00
2,000.0	12.00	81.21	1,991.2	19.1	123.7	-22.2	1.00	1.00	0.00
2,100.0	13.00	81.21	2,088.9	22.4	145.1	-26.0	1.00	1.00	0.00
2,170.9	13.71	81.21	2,157.8	24.9	161.3	-28.9	1.00	1.00	0.00
2,200.0	13.71	81.21	2,186.1	26.0	168.1	-30.1	0.00	0.00	0.00
2,300.0	13.71	81.21	2,283.3	29.6	191.5	-34.3	0.00	0.00	0.00
2,400.0	13.71	81.21	2,380.4	33.2	215.0	-38.5	0.00	0.00	0.00
2,500.0	13.71	81.21	2,477.6	36.9	238.4	-42.7	0.00	0.00	0.00
2,600.0	13.71	81.21	2,574.7	40.5	261.8	-46.9	0.00	0.00	0.00
2,700.0	13.71	81.21	2,671.9	44.1	285.2	-51.1	0.00	0.00	0.00
2,800.0	13.71	81.21	2,769.0	47.7	308.6	-55.3	0.00	0.00	0.00
2,900.0	13.71	81.21	2,866.2	51.3	332.1	-59.5	0.00	0.00	0.00
3,000.0	13.71	81.21	2,963.3	55.0	355.5	-63.7	0.00	0.00	0.00
3,100.0	13.71	81.21	3,060.5	58.6	378.9	-67.9	0.00	0.00	0.00
3,200.0	13.71	81.21	3,157.6	62.2	402.3	-72.1	0.00	0.00	0.00
3,300.0	13.71	81.21	3,254.8	65.8	425.7	-76.3	0.00	0.00	0.00
3,400.0	13.71	81.21	3,351.9	69.5	449.2	-80.5	0.00	0.00	0.00
3,500.0	13.71	81.21	3,449.1	73.1	472.6	-84.7	0.00	0.00	0.00
3,516.4	13.71	81.21	3,465.0	73.7	476.4	-85.4	0.00	0.00	0.00
PARKMAN									
3,600.0	13.71	81.21	3,546.2	76.7	496.0	-88.9	0.00	0.00	0.00
3,700.0	13.71	81.21	3,643.4	80.3	519.4	-93.1	0.00	0.00	0.00
3,800.0	13.71	81.21	3,740.5	83.9	542.8	-97.3	0.00	0.00	0.00
3,900.0	13.71	81.21	3,837.7	87.6	566.3	-101.5	0.00	0.00	0.00
4,000.0	13.71	81.21	3,934.9	91.2	589.7	-105.7	0.00	0.00	0.00
4,056.8	13.71	81.21	3,990.0	93.2	603.0	-108.1	0.00	0.00	0.00
SUSSEX									
4,100.0	13.71	81.21	4,032.0	94.8	613.1	-109.9	0.00	0.00	0.00
4,200.0	13.71	81.21	4,129.2	98.4	636.5	-114.1	0.00	0.00	0.00
4,300.0	13.71	81.21	4,226.3	102.1	660.0	-118.3	0.00	0.00	0.00
4,400.0	13.71	81.21	4,323.5	105.7	683.4	-122.5	0.00	0.00	0.00
4,500.0	13.71	81.21	4,420.6	109.3	706.8	-126.7	0.00	0.00	0.00
4,600.0	13.71	81.21	4,517.8	112.9	730.2	-130.9	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-223	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)
4,602.3	13.71	81.21	4,520.0	113.0	730.8	-131.0	0.00	0.00	0.00
SHANNON									
4,700.0	13.71	81.21	4,614.9	116.5	753.6	-135.1	0.00	0.00	0.00
4,800.0	13.71	81.21	4,712.1	120.2	777.1	-139.3	0.00	0.00	0.00
4,900.0	13.71	81.21	4,809.2	123.8	800.5	-143.5	0.00	0.00	0.00
5,000.0	13.71	81.21	4,906.4	127.4	823.9	-147.7	0.00	0.00	0.00
5,100.0	13.71	81.21	5,003.5	131.0	847.3	-151.9	0.00	0.00	0.00
5,200.0	13.71	81.21	5,100.7	134.6	870.7	-156.1	0.00	0.00	0.00
5,300.0	13.71	81.21	5,197.8	138.3	894.2	-160.3	0.00	0.00	0.00
5,400.0	13.71	81.21	5,295.0	141.9	917.6	-164.5	0.00	0.00	0.00
5,500.0	13.71	81.21	5,392.1	145.5	941.0	-168.7	0.00	0.00	0.00
5,600.0	13.71	81.21	5,489.3	149.1	964.4	-172.9	0.00	0.00	0.00
5,700.0	13.71	81.21	5,586.4	152.8	987.8	-177.1	0.00	0.00	0.00
5,800.0	13.71	81.21	5,683.6	156.4	1,011.3	-181.3	0.00	0.00	0.00
5,900.0	13.71	81.21	5,780.7	160.0	1,034.7	-185.5	0.00	0.00	0.00
6,000.0	13.71	81.21	5,877.9	163.6	1,058.1	-189.7	0.00	0.00	0.00
6,100.0	13.71	81.21	5,975.0	167.2	1,081.5	-193.9	0.00	0.00	0.00
6,200.0	13.71	81.21	6,072.2	170.9	1,104.9	-198.1	0.00	0.00	0.00
6,300.0	13.71	81.21	6,169.3	174.5	1,128.4	-202.3	0.00	0.00	0.00
6,317.9	13.71	81.21	6,186.7	175.1	1,132.6	-203.1	0.00	0.00	0.00
Start DLS 7.50 TFO 98.46									
6,400.0	14.15	106.92	6,266.5	173.7	1,151.8	-202.1	7.50	0.54	31.32
6,500.0	17.77	131.13	6,362.7	160.1	1,175.0	-189.1	7.50	3.62	24.20
6,600.0	23.28	145.82	6,456.4	133.7	1,197.6	-163.2	7.50	5.50	14.69
6,700.0	29.63	154.83	6,545.9	94.9	1,219.3	-125.0	7.50	6.35	9.01
6,800.0	36.39	160.82	6,629.7	44.4	1,239.6	-75.1	7.50	6.76	5.99
6,887.1	42.46	164.63	6,697.0	-8.4	1,255.9	-22.7	7.50	6.97	4.38
SHARON SPRINGS									
6,900.0	43.37	165.12	6,706.4	-16.9	1,258.2	-14.3	7.50	7.04	3.79
7,000.0	50.47	168.44	6,774.7	-87.9	1,274.7	56.4	7.50	7.10	3.31
7,100.0	57.65	171.13	6,833.4	-167.6	1,289.0	135.6	7.50	7.18	2.69
7,106.8	58.14	171.29	6,837.0	-173.3	1,289.9	141.3	7.50	7.21	2.45
NIORARA A									
7,200.0	64.87	173.42	6,881.4	-254.4	1,300.7	222.1	7.50	7.23	2.28
7,300.0	72.13	175.45	6,918.1	-346.9	1,309.7	314.4	7.50	7.26	2.03
7,386.4	78.42	177.08	6,940.0	-430.2	1,315.1	397.6	7.50	7.28	1.88
NIORARA B									
7,400.0	79.41	177.33	6,942.6	-443.6	1,315.8	410.9	7.50	7.28	1.83
7,500.0	86.70	179.12	6,954.7	-542.8	1,318.8	510.0	7.50	7.29	1.79
7,550.3	90.36	180.00	6,956.0	-593.0	1,319.2	560.2	7.50	7.29	1.76
Start 3902.6 hold at 7550.3 MD - 7"									
7,600.0	90.36	180.00	6,955.7	-642.7	1,319.2	609.9	0.00	0.00	0.00
7,700.0	90.36	180.00	6,955.1	-742.7	1,319.2	709.9	0.00	0.00	0.00
7,800.0	90.36	180.00	6,954.4	-842.7	1,319.2	809.8	0.00	0.00	0.00
7,900.0	90.36	180.00	6,953.8	-942.7	1,319.2	909.8	0.00	0.00	0.00
8,000.0	90.36	180.00	6,953.2	-1,042.7	1,319.2	1,009.8	0.00	0.00	0.00
8,100.0	90.36	180.00	6,952.5	-1,142.7	1,319.2	1,109.7	0.00	0.00	0.00
8,200.0	90.36	180.00	6,951.9	-1,242.7	1,319.2	1,209.7	0.00	0.00	0.00
8,300.0	90.36	180.00	6,951.3	-1,342.7	1,319.2	1,309.7	0.00	0.00	0.00
8,400.0	90.36	180.00	6,950.6	-1,442.7	1,319.2	1,409.6	0.00	0.00	0.00
8,500.0	90.36	180.00	6,950.0	-1,542.7	1,319.2	1,509.6	0.00	0.00	0.00
8,600.0	90.36	180.00	6,949.4	-1,642.7	1,319.2	1,609.6	0.00	0.00	0.00

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Well:	Lajco 17R-223	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)
8,700.0	90.36	180.00	6,948.7	-1,742.7	1,319.2	1,709.5	0.00	0.00	0.00
8,800.0	90.36	180.00	6,948.1	-1,842.7	1,319.2	1,809.5	0.00	0.00	0.00
8,900.0	90.36	180.00	6,947.5	-1,942.7	1,319.2	1,909.5	0.00	0.00	0.00
9,000.0	90.36	180.00	6,946.8	-2,042.7	1,319.2	2,009.4	0.00	0.00	0.00
9,100.0	90.36	180.00	6,946.2	-2,142.7	1,319.2	2,109.4	0.00	0.00	0.00
9,200.0	90.36	180.00	6,945.6	-2,242.7	1,319.2	2,209.4	0.00	0.00	0.00
9,300.0	90.36	180.00	6,944.9	-2,342.7	1,319.2	2,309.3	0.00	0.00	0.00
9,400.0	90.36	180.00	6,944.3	-2,442.7	1,319.2	2,409.3	0.00	0.00	0.00
9,500.0	90.36	180.00	6,943.7	-2,542.7	1,319.2	2,509.3	0.00	0.00	0.00
9,600.0	90.36	180.00	6,943.1	-2,642.7	1,319.2	2,609.2	0.00	0.00	0.00
9,700.0	90.36	180.00	6,942.4	-2,742.7	1,319.2	2,709.2	0.00	0.00	0.00
9,800.0	90.36	180.00	6,941.8	-2,842.7	1,319.2	2,809.2	0.00	0.00	0.00
9,900.0	90.36	180.00	6,941.2	-2,942.7	1,319.2	2,909.1	0.00	0.00	0.00
10,000.0	90.36	180.00	6,940.5	-3,042.7	1,319.2	3,009.1	0.00	0.00	0.00
10,100.0	90.36	180.00	6,939.9	-3,142.7	1,319.2	3,109.1	0.00	0.00	0.00
10,200.0	90.36	180.00	6,939.3	-3,242.7	1,319.2	3,209.0	0.00	0.00	0.00
10,300.0	90.36	180.00	6,938.6	-3,342.7	1,319.2	3,309.0	0.00	0.00	0.00
10,400.0	90.36	180.00	6,938.0	-3,442.7	1,319.2	3,409.0	0.00	0.00	0.00
10,500.0	90.36	180.00	6,937.4	-3,542.7	1,319.2	3,509.0	0.00	0.00	0.00
10,600.0	90.36	180.00	6,936.7	-3,642.7	1,319.2	3,608.9	0.00	0.00	0.00
10,700.0	90.36	180.00	6,936.1	-3,742.7	1,319.2	3,708.9	0.00	0.00	0.00
10,800.0	90.36	180.00	6,935.5	-3,842.7	1,319.2	3,808.9	0.00	0.00	0.00
10,900.0	90.36	180.00	6,934.8	-3,942.7	1,319.2	3,908.8	0.00	0.00	0.00
11,000.0	90.36	180.00	6,934.2	-4,042.7	1,319.2	4,008.8	0.00	0.00	0.00
11,100.0	90.36	180.00	6,933.6	-4,142.7	1,319.2	4,108.8	0.00	0.00	0.00
11,200.0	90.36	180.00	6,932.9	-4,242.7	1,319.2	4,208.7	0.00	0.00	0.00
11,300.0	90.36	180.00	6,932.3	-4,342.7	1,319.2	4,308.7	0.00	0.00	0.00
11,400.0	90.36	180.00	6,931.7	-4,442.7	1,319.2	4,408.7	0.00	0.00	0.00
11,452.8	90.36	180.00	6,931.4	-4,495.5	1,319.2	4,461.4	0.00	0.00	0.00
TD at 11452.8									

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									
SHL 310'FNL & 2186'	0.00	0.00	1.0	0.0	0.0	1,359,742.21	3,163,452.87	40.319410	-104.913810
- plan hits target center									
- Point									
BHL 500'FSL & 943'F	0.00	0.00	6,931.0	-4,495.5	1,319.2	1,355,255.72	3,164,801.72	40.307070	-104.909080
- plan misses target center by 0.4ft at 11452.8ft MD (6931.4 TVD, -4495.5 N, 1319.2 E)									
- Point									
50'E/W Hardline (17R	0.00	0.00	1.0	-2,544.0	1,319.2	1,357,207.09	3,164,788.80	40.312427	-104.909080
- plan misses target center by 2865.7ft at 1.0ft MD (1.0 TVD, 0.0 N, 0.0 E)									
- Rectangle (sides W3,902.0 H100.0 D0.0)									

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well Lajco 17R-223
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-223	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (7-7-15)		

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,550.3	6,956.0	7"	7	7-1/2

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,516.4	3,465.0	PARKMAN		0.00	
4,056.8	3,990.0	SUSSEX		0.00	
4,602.3	4,520.0	SHANNON		0.00	
6,887.1	6,697.0	SHARON SPRINGS		0.00	
7,106.8	6,837.0	NIOBRARA A		0.00	
7,386.4	6,940.0	NIOBRARA B		0.00	
	7,018.0	NIOBRARA C		0.00	
	7,142.0	FORT HAYS		0.00	
	7,163.0	CODELL		0.00	

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
800.0	800.0	0.0	0.0	KOP - Start Build 1.00
6,317.9	6,186.7	24.9	161.3	Start DLS 7.50 TFO 98.46
7,550.3	6,956.0	175.1	1,132.6	Start 3902.6 hold at 7550.3 MD
11,452.8	6,931.4	-593.0	1,319.2	TD at 11452.8



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.17-T4N-R67W

Lajco 4N67W17R Pad Sec.17-T4N-R67W

Lajco 17R-223

Wellbore #1

Plan #2 (7-7-15)

Anticollision Report

09 July, 2015



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17R-223
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-223	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	7/9/2015		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	11,452.8	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)	Distance 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)	800.0	800.0	62.0	58.6	18.388	CC
Lajco 17M-323 - Wellbore #1 - Plan #2 (7-2-15)	1,000.0	1,000.0	62.5	58.2	14.729	ES
Lajco 17M-323 - Wellbore #1 - Plan #2 (7-2-15)	1,400.0	1,398.9	72.5	66.4	12.004	SF
Lajco 17M-423 - Wellbore #1 - Plan #2 (7-2-15)	1,076.7	1,076.6	43.2	38.6	9.439	CC
Lajco 17M-423 - Wellbore #1 - Plan #2 (7-2-15)	1,100.0	1,099.9	43.2	38.5	9.237	ES
Lajco 17M-423 - Wellbore #1 - Plan #2 (7-2-15)	1,300.0	1,299.4	45.8	40.2	8.213	SF
Lajco 17R-243 - Wellbore #1 - Plan #2 (7-2-15)	800.0	800.0	47.4	44.1	14.072	CC
Lajco 17R-243 - Wellbore #1 - Plan #2 (7-2-15)	1,000.0	1,000.0	47.9	43.7	11.293	ES
Lajco 17R-243 - Wellbore #1 - Plan #2 (7-2-15)	11,452.8	11,376.4	812.0	635.9	4.611	SF
Lajco 17R-303 - Wellbore #1 - Plan #2 (7-7-15)	800.0	800.0	14.6	11.2	4.322	CC
Lajco 17R-303 - Wellbore #1 - Plan #2 (7-7-15)	900.0	900.0	14.7	10.9	3.867	ES
Lajco 17R-303 - Wellbore #1 - Plan #2 (7-7-15)	11,452.8	11,475.1	243.0	73.7	1.435	Level 3, SF
Lajco 17R-403 - Wellbore #1 - Plan #2 (7-7-15)	800.0	800.0	29.3	25.9	8.683	CC
Lajco 17R-403 - Wellbore #1 - Plan #2 (7-7-15)	1,000.0	1,000.0	29.7	25.4	6.998	ES
Lajco 17R-403 - Wellbore #1 - Plan #2 (7-7-15)	11,452.8	11,604.8	591.9	422.6	3.498	SF
Lajco 17U-203 - Wellbore #1 - Plan #2 (7-7-15)	200.0	200.0	29.1	28.5	43.228	CC
Lajco 17U-203 - Wellbore #1 - Plan #2 (7-7-15)	300.0	299.9	29.3	28.2	26.299	ES
Lajco 17U-203 - Wellbore #1 - Plan #2 (7-7-15)	11,452.8	11,686.7	806.0	627.3	4.510	SF
Lajco 17U-343 - Wellbore #1 - Plan #2 (7-7-15)	400.0	400.0	14.6	13.0	9.264	CC
Lajco 17U-343 - Wellbore #1 - Plan #2 (7-7-15)	500.0	499.9	14.8	12.8	7.357	ES
Lajco 17U-343 - Wellbore #1 - Plan #2 (7-7-15)	11,452.8	11,704.4	504.3	330.2	2.896	SF
Lajco Pad Sec.17-T4N-R67W						
Coming 17-2 (Exist.) - Wellbore #1 - Wellbore #1	7,363.8	6,914.8	217.9	181.8	6.038	CC, ES, SF
Coming 17-3 (Exist.) - Wellbore #1 - Wellbore #1	8,586.7	6,948.4	107.9	56.4	2.097	CC, ES, SF
Lajco 17C (Exist.) - Wellbore #1 - Wellbore #1	8,042.8	6,947.3	349.3	307.7	8.397	CC, ES
Lajco 17C (Exist.) - Wellbore #1 - Wellbore #1	8,100.0	6,946.9	354.0	311.5	8.340	SF
Lajco 17RD (Exist.) - Wellbore #1 - Wellbore #1	5,456.9	5,550.4	50.1	13.8	1.381	Level 3, CC, ES, SF
Lajco 17SD (Exist.) - Wellbore #1 - Wellbore #1	9,261.9	7,116.9	311.7	238.3	4.243	CC, ES
Lajco 17SD (Exist.) - Wellbore #1 - Wellbore #1	9,300.0	7,116.7	314.0	239.9	4.235	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17R-223
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-223	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
Reference	Offset	Semi Major Axis		Distance		Warning								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	177.42	-61.9	2.8	62.0					
100.0	100.0	100.0	100.0	0.1	0.1	177.42	-61.9	2.8	62.0	61.8	0.22	275.820		
200.0	200.0	200.0	200.0	0.3	0.3	177.42	-61.9	2.8	62.0	61.3	0.67	91.940		
300.0	300.0	300.0	300.0	0.6	0.6	177.42	-61.9	2.8	62.0	60.9	1.12	55.164		
400.0	400.0	400.0	400.0	0.8	0.8	177.42	-61.9	2.8	62.0	60.4	1.57	39.403		
500.0	500.0	500.0	500.0	1.0	1.0	177.42	-61.9	2.8	62.0	60.0	2.02	30.647		
600.0	600.0	600.0	600.0	1.2	1.2	177.42	-61.9	2.8	62.0	59.5	2.47	25.075		
700.0	700.0	700.0	700.0	1.5	1.5	177.42	-61.9	2.8	62.0	59.1	2.92	21.217		
800.0	800.0	800.0	800.0	1.7	1.7	177.42	-61.9	2.8	62.0	58.6	3.37	18.388 CC		
900.0	900.0	900.0	900.0	1.9	1.9	97.01	-61.9	2.8	62.1	58.3	3.81	16.299		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	99.39	-61.9	2.8	62.5	58.2	4.24	14.729 ES		
1,100.0	1,099.9	1,099.9	1,099.9	2.3	2.4	103.28	-61.9	2.8	63.3	58.6	4.68	13.533		
1,200.0	1,199.7	1,199.7	1,199.7	2.5	2.6	108.49	-61.9	2.8	65.0	59.9	5.13	12.683		
1,300.0	1,299.4	1,299.4	1,299.4	2.8	2.8	114.74	-61.9	2.8	67.9	62.3	5.58	12.174		
1,400.0	1,398.9	1,398.9	1,398.9	3.0	3.0	121.58	-61.9	2.8	72.5	66.4	6.04	12.004 SF		
1,500.0	1,498.3	1,498.3	1,498.3	3.3	3.3	128.51	-61.9	2.8	79.0	72.5	6.50	12.161		
1,600.0	1,597.4	1,597.4	1,597.4	3.6	3.5	135.11	-61.9	2.8	87.8	80.8	6.95	12.618		
1,700.0	1,696.3	1,696.3	1,696.3	3.9	3.7	141.07	-61.9	2.8	98.8	91.4	7.41	13.337		
1,800.0	1,794.9	1,794.9	1,794.9	4.2	3.9	146.28	-61.9	2.8	112.2	104.3	7.86	14.273		
1,900.0	1,893.3	1,893.3	1,893.3	4.5	4.1	150.72	-61.9	2.8	127.8	119.5	8.31	15.386		
2,000.0	1,991.2	1,991.2	1,991.2	4.9	4.4	154.47	-61.9	2.8	145.6	136.8	8.75	16.638		
2,100.0	2,088.9	2,090.8	2,090.8	5.3	4.6	157.85	-61.2	3.0	165.0	155.8	9.19	17.945		
2,200.0	2,186.1	2,190.3	2,190.3	5.7	4.8	161.09	-58.9	3.6	185.1	175.5	9.63	19.223		
2,300.0	2,283.3	2,290.1	2,289.9	6.2	5.0	164.15	-54.9	4.7	205.1	195.0	10.08	20.341		
2,400.0	2,380.4	2,389.9	2,389.6	6.6	5.3	167.01	-49.1	6.3	224.5	214.0	10.54	21.309		
2,500.0	2,477.6	2,489.5	2,488.9	7.1	5.5	169.73	-41.8	8.4	243.4	232.4	10.99	22.148		
2,600.0	2,574.7	2,587.1	2,586.2	7.6	5.7	172.12	-34.1	10.5	262.4	250.9	11.45	22.924		
2,700.0	2,671.9	2,684.7	2,683.5	8.0	5.9	174.19	-26.4	12.6	281.8	269.9	11.91	23.657		
2,800.0	2,769.0	2,782.4	2,780.8	8.5	6.2	175.99	-18.6	14.8	301.5	289.1	12.38	24.345		
2,900.0	2,866.2	2,880.0	2,878.1	9.0	6.4	177.57	-10.9	16.9	321.4	308.6	12.86	24.988		
3,000.0	2,963.3	2,977.6	2,975.4	9.5	6.6	178.97	-3.2	19.1	341.6	328.3	13.35	25.588		
3,100.0	3,060.5	3,075.2	3,072.7	10.0	6.9	-179.79	4.6	21.2	362.0	348.1	13.84	26.146		
3,200.0	3,157.6	3,172.9	3,170.0	10.5	7.1	-178.69	12.3	23.4	382.4	368.1	14.34	26.666		
3,300.0	3,254.8	3,270.5	3,267.2	11.0	7.3	-177.69	20.0	25.5	403.1	388.2	14.85	27.150		
3,400.0	3,351.9	3,368.1	3,364.5	11.5	7.6	-176.79	27.8	27.6	423.8	408.4	15.35	27.601		
3,500.0	3,449.1	3,465.7	3,461.8	12.0	7.8	-175.97	35.5	29.8	444.6	428.7	15.87	28.021		
3,600.0	3,546.2	3,563.3	3,559.1	12.5	8.1	-175.23	43.2	31.9	465.5	449.1	16.38	28.413		
3,700.0	3,643.4	3,661.0	3,656.4	13.0	8.3	-174.55	51.0	34.1	486.4	469.5	16.90	28.779		
3,800.0	3,740.5	3,758.6	3,753.7	13.5	8.6	-173.93	58.7	36.2	507.4	490.0	17.43	29.121		
3,900.0	3,837.7	3,856.2	3,851.0	14.0	8.8	-173.35	66.4	38.4	528.5	510.6	17.95	29.441		
4,000.0	3,934.9	3,953.8	3,948.3	14.5	9.1	-172.82	74.2	40.5	549.6	531.1	18.48	29.742		
4,100.0	4,032.0	4,051.5	4,045.6	15.0	9.3	-172.33	81.9	42.6	570.8	551.8	19.01	30.023		
4,200.0	4,129.2	4,149.1	4,142.9	15.5	9.6	-171.88	89.6	44.8	592.0	572.4	19.54	30.288		
4,300.0	4,226.3	4,246.7	4,240.2	16.0	9.8	-171.45	97.4	46.9	613.2	593.1	20.08	30.537		
4,400.0	4,323.5	4,344.3	4,337.5	16.5	10.1	-171.06	105.1	49.1	634.5	613.8	20.62	30.772		
4,500.0	4,420.6	4,442.0	4,434.8	17.0	10.3	-170.69	112.8	51.2	655.8	634.6	21.16	30.994		
4,600.0	4,517.8	4,539.6	4,532.1	17.5	10.6	-170.34	120.6	53.3	677.1	655.4	21.70	31.203		
4,700.0	4,614.9	4,637.2	4,629.3	18.0	10.8	-170.02	128.3	55.5	698.4	676.2	22.24	31.401		
4,800.0	4,712.1	4,734.8	4,726.6	18.5	11.1	-169.71	136.0	57.6	719.7	697.0	22.79	31.588		
4,900.0	4,809.2	4,832.5	4,823.9	19.0	11.3	-169.42	143.7	59.8	741.1	717.8	23.33	31.766		
5,000.0	4,906.4	4,930.1	4,921.2	19.5	11.6	-169.15	151.5	61.9	762.5	738.6	23.88	31.934		

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-223
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-223	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
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)		
5,100.0	5,003.5	5,027.7	5,018.5	20.0	11.8	-168.89	159.2	64.1	783.9	759.5	24.43	32.094	
5,200.0	5,100.7	5,125.3	5,115.8	20.5	12.1	-168.65	166.9	66.2	805.3	780.4	24.97	32.246	
5,300.0	5,197.8	5,222.9	5,213.1	21.0	12.3	-168.41	174.7	68.3	826.8	801.2	25.52	32.391	
5,400.0	5,295.0	5,320.6	5,310.4	21.5	12.6	-168.19	182.4	70.5	848.2	822.1	26.07	32.529	
5,500.0	5,392.1	5,418.2	5,407.7	22.0	12.8	-167.99	190.1	72.6	869.7	843.0	26.63	32.661	
5,600.0	5,489.3	5,515.8	5,505.0	22.5	13.1	-167.79	197.9	74.8	891.1	863.9	27.18	32.787	
5,700.0	5,586.4	5,613.4	5,602.3	23.1	13.4	-167.60	205.6	76.9	912.6	884.9	27.73	32.907	
5,800.0	5,683.6	5,711.1	5,699.6	23.6	13.6	-167.42	213.3	79.1	934.1	905.8	28.29	33.022	
5,900.0	5,780.7	5,808.7	5,796.9	24.1	13.9	-167.24	221.1	81.2	955.6	926.7	28.84	33.132	
6,000.0	5,877.9	5,906.3	5,894.2	24.6	14.1	-167.08	228.8	83.3	977.1	947.7	29.40	33.237	
6,100.0	5,975.0	6,003.9	5,991.5	25.1	14.4	-166.92	236.5	85.5	998.6	968.6	29.95	33.338	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17R-223
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-223	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)	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	0.00	0.00	43.7	0.0	43.7				
100.0	100.0	100.0	100.0	0.1	0.1	0.00	0.00	43.7	0.0	43.7	43.5	0.22	194.518	
200.0	200.0	200.0	200.0	0.3	0.3	0.00	0.00	43.7	0.0	43.7	43.0	0.67	64.839	
300.0	300.0	300.0	300.0	0.6	0.6	0.00	0.00	43.7	0.0	43.7	42.6	1.12	38.904	
400.0	400.0	400.0	400.0	0.8	0.8	0.00	0.00	43.7	0.0	43.7	42.1	1.57	27.788	
500.0	500.0	500.0	500.0	1.0	1.0	0.00	0.00	43.7	0.0	43.7	41.7	2.02	21.613	
600.0	600.0	600.0	600.0	1.2	1.2	0.00	0.00	43.7	0.0	43.7	41.2	2.47	17.683	
700.0	700.0	700.0	700.0	1.5	1.5	0.00	0.00	43.7	0.0	43.7	40.8	2.92	14.963	
800.0	800.0	800.0	800.0	1.7	1.7	0.00	0.00	43.7	0.0	43.7	40.3	3.37	12.968	
900.0	900.0	900.0	900.0	1.9	1.9	-82.34	0.00	43.7	0.0	43.6	39.8	3.81	11.443	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-85.78	0.00	43.7	0.0	43.3	39.1	4.24	10.215	
1,076.7	1,076.6	1,076.6	1,076.6	2.3	2.3	-90.00	0.00	43.7	0.0	43.2	38.6	4.58	9.439 CC	
1,100.0	1,099.9	1,099.9	1,099.9	2.3	2.4	-91.55	0.00	43.7	0.0	43.2	38.5	4.68	9.237 ES	
1,200.0	1,199.7	1,199.7	1,199.7	2.5	2.6	-99.54	0.00	43.7	0.0	43.8	38.7	5.12	8.551	
1,300.0	1,299.4	1,299.4	1,299.4	2.8	2.8	-109.22	0.00	43.7	0.0	45.8	40.2	5.57	8.213 SF	
1,400.0	1,398.9	1,398.9	1,398.9	3.0	3.0	-119.63	0.00	43.7	0.0	49.8	43.7	6.03	8.261	
1,500.0	1,498.3	1,498.3	1,498.3	3.3	3.3	-129.61	0.00	43.7	0.0	56.3	49.8	6.47	8.690	
1,600.0	1,597.4	1,597.4	1,597.4	3.6	3.5	-138.36	0.00	43.7	0.0	65.4	58.5	6.92	9.454	
1,700.0	1,696.3	1,696.3	1,696.3	3.9	3.7	-145.59	0.00	43.7	0.0	77.1	69.7	7.36	10.483	
1,800.0	1,794.9	1,794.9	1,794.9	4.2	3.9	-151.37	0.00	43.7	0.0	91.2	83.5	7.79	11.712	
1,900.0	1,893.3	1,892.0	1,892.0	4.5	4.1	-155.60	0.00	44.4	-0.4	108.2	99.9	8.22	13.153	
2,000.0	1,991.2	1,988.5	1,988.5	4.9	4.4	-158.39	0.00	46.4	-1.5	128.2	119.6	8.66	14.808	
2,100.0	2,088.9	2,084.2	2,084.1	5.3	4.6	-160.14	0.00	49.9	-3.4	151.1	142.0	9.10	16.614	
2,200.0	2,186.1	2,180.1	2,179.8	5.7	4.8	-161.25	0.00	54.5	-6.0	176.6	167.0	9.55	18.493	
2,300.0	2,283.3	2,276.6	2,276.2	6.2	5.0	-162.14	0.00	59.4	-8.7	202.6	192.6	10.02	20.221	
2,400.0	2,380.4	2,373.1	2,372.5	6.6	5.2	-162.82	0.00	64.2	-11.4	228.6	218.1	10.49	21.787	
2,500.0	2,477.6	2,469.6	2,468.9	7.1	5.4	-163.37	0.00	69.0	-14.1	254.7	243.7	10.97	23.212	
2,600.0	2,574.7	2,566.2	2,565.3	7.6	5.7	-163.81	0.00	73.9	-16.8	280.8	269.3	11.46	24.511	
2,700.0	2,671.9	2,662.7	2,661.6	8.0	5.9	-164.18	0.00	78.7	-19.5	306.9	294.9	11.94	25.701	
2,800.0	2,769.0	2,759.2	2,758.0	8.5	6.1	-164.49	0.00	83.5	-22.2	333.0	320.6	12.43	26.792	
2,900.0	2,866.2	2,855.7	2,854.3	9.0	6.3	-164.76	0.00	88.4	-24.9	359.1	346.2	12.92	27.797	
3,000.0	2,963.3	2,952.2	2,950.7	9.5	6.6	-164.99	0.00	93.2	-27.6	385.2	371.8	13.41	28.724	
3,100.0	3,060.5	3,048.7	3,047.1	10.0	6.8	-165.19	0.00	98.0	-30.3	411.3	397.4	13.90	29.582	
3,200.0	3,157.6	3,145.3	3,143.4	10.5	7.0	-165.36	0.00	102.9	-33.0	437.5	423.1	14.40	30.378	
3,300.0	3,254.8	3,241.8	3,239.8	11.0	7.3	-165.52	0.00	107.7	-35.7	463.6	448.7	14.90	31.117	
3,400.0	3,351.9	3,338.3	3,336.1	11.5	7.5	-165.66	0.00	112.5	-38.4	489.7	474.3	15.40	31.807	
3,500.0	3,449.1	3,434.8	3,432.5	12.0	7.7	-165.79	0.00	117.4	-41.1	515.9	500.0	15.90	32.451	
3,600.0	3,546.2	3,531.3	3,528.8	12.5	7.9	-165.90	0.00	122.2	-43.8	542.0	525.6	16.40	33.053	
3,700.0	3,643.4	3,627.9	3,625.2	13.0	8.2	-166.00	0.00	127.0	-46.5	568.1	551.2	16.90	33.618	
3,800.0	3,740.5	3,724.4	3,721.6	13.5	8.4	-166.10	0.00	131.9	-49.2	594.3	576.9	17.40	34.148	
3,900.0	3,837.7	3,820.9	3,817.9	14.0	8.6	-166.18	0.00	136.7	-51.9	620.4	602.5	17.91	34.647	
4,000.0	3,934.9	3,917.4	3,914.3	14.5	8.9	-166.26	0.00	141.5	-54.6	646.6	628.2	18.41	35.117	
4,100.0	4,032.0	4,013.9	4,010.6	15.0	9.1	-166.34	0.00	146.4	-57.3	672.7	653.8	18.92	35.561	
4,200.0	4,129.2	4,110.4	4,107.0	15.5	9.3	-166.40	0.00	151.2	-60.0	698.9	679.4	19.42	35.980	
4,300.0	4,226.3	4,207.0	4,203.4	16.0	9.6	-166.47	0.00	156.0	-62.7	725.0	705.1	19.93	36.377	
4,400.0	4,323.5	4,303.5	4,299.7	16.5	9.8	-166.52	0.00	160.9	-65.4	751.2	730.7	20.44	36.753	
4,500.0	4,420.6	4,400.0	4,396.1	17.0	10.0	-166.58	0.00	165.7	-68.1	777.3	756.4	20.95	37.110	
4,600.0	4,517.8	4,496.5	4,492.4	17.5	10.3	-166.63	0.00	170.5	-70.8	803.5	782.0	21.45	37.449	
4,700.0	4,614.9	4,593.0	4,588.8	18.0	10.5	-166.68	0.00	175.4	-73.5	829.6	807.7	21.96	37.772	
4,800.0	4,712.1	4,689.6	4,685.2	18.5	10.7	-166.72	0.00	180.2	-76.2	855.8	833.3	22.47	38.079	
4,900.0	4,809.2	4,786.1	4,781.5	19.0	11.0	-166.76	0.00	185.0	-78.9	881.9	858.9	22.98	38.372	

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-223
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-223	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
Reference	Offset	Semi Major Axis		Distance									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,906.4	4,882.6	4,877.9	19.5	11.2	-166.80	189.9	-81.6	908.1	884.6	23.49	38.651	
5,100.0	5,003.5	4,979.1	4,974.2	20.0	11.4	-166.84	194.7	-84.3	934.2	910.2	24.00	38.918	
5,200.0	5,100.7	5,075.6	5,070.6	20.5	11.7	-166.88	199.5	-87.0	960.4	935.9	24.52	39.174	
5,300.0	5,197.8	5,172.1	5,167.0	21.0	11.9	-166.91	204.4	-89.7	986.5	961.5	25.03	39.418	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17R-223
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-223	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 (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	176.63	176.63	-47.4	2.8	47.4				
100.0	100.0	100.0	100.0	0.1	0.1	176.63	176.63	-47.4	2.8	47.4	47.2	0.22	211.073	
200.0	200.0	200.0	200.0	0.3	0.3	176.63	176.63	-47.4	2.8	47.4	46.8	0.67	70.358	
300.0	300.0	300.0	300.0	0.6	0.6	176.63	176.63	-47.4	2.8	47.4	46.3	1.12	42.215	
400.0	400.0	400.0	400.0	0.8	0.8	176.63	176.63	-47.4	2.8	47.4	45.9	1.57	30.153	
500.0	500.0	500.0	500.0	1.0	1.0	176.63	176.63	-47.4	2.8	47.4	45.4	2.02	23.453	
600.0	600.0	600.0	600.0	1.2	1.2	176.63	176.63	-47.4	2.8	47.4	45.0	2.47	19.188	
700.0	700.0	700.0	700.0	1.5	1.5	176.63	176.63	-47.4	2.8	47.4	44.5	2.92	16.236	
800.0	800.0	800.0	800.0	1.7	1.7	176.63	176.63	-47.4	2.8	47.4	44.1	3.37	14.072 CC	
900.0	900.0	900.0	900.0	1.9	1.9	96.47	96.47	-47.4	2.8	47.5	43.7	3.81	12.476	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	99.58	99.58	-47.4	2.8	47.9	43.7	4.24	11.293 ES	
1,100.0	1,099.9	1,099.9	1,099.9	2.3	2.4	104.62	104.62	-47.4	2.8	48.8	44.1	4.68	10.431	
1,200.0	1,199.7	1,199.7	1,199.7	2.5	2.6	111.28	111.28	-47.4	2.8	50.7	45.6	5.12	9.893	
1,300.0	1,299.4	1,299.4	1,299.4	2.8	2.8	119.00	119.00	-47.4	2.8	54.1	48.5	5.58	9.694	
1,400.0	1,398.9	1,398.9	1,398.9	3.0	3.0	127.06	127.06	-47.4	2.8	59.3	53.3	6.03	9.836	
1,500.0	1,498.3	1,498.3	1,498.3	3.3	3.3	134.60	134.60	-46.9	3.5	66.0	59.5	6.48	10.180	
1,600.0	1,597.4	1,599.9	1,599.9	3.6	3.5	141.23	141.23	-45.4	5.7	73.2	66.3	6.92	10.574	
1,700.0	1,696.3	1,700.7	1,700.5	3.9	3.7	147.13	147.13	-42.9	9.3	80.9	73.6	7.36	10.994	
1,800.0	1,794.9	1,801.5	1,801.2	4.2	3.9	152.46	152.46	-39.3	14.3	89.2	81.4	7.80	11.435	
1,900.0	1,893.3	1,902.5	1,901.8	4.5	4.1	157.32	157.32	-34.8	20.9	97.9	89.6	8.23	11.893	
2,000.0	1,991.2	2,003.5	2,002.4	4.9	4.4	161.78	161.78	-29.3	28.9	107.1	98.4	8.66	12.367	
2,100.0	2,088.9	2,104.0	2,102.3	5.3	4.6	165.88	165.88	-22.8	38.2	116.9	107.8	9.08	12.863	
2,200.0	2,186.1	2,203.1	2,200.6	5.7	4.9	169.47	169.47	-16.2	47.7	128.4	118.9	9.52	13.484	
2,300.0	2,283.3	2,302.0	2,298.9	6.2	5.1	172.51	172.51	-9.6	57.3	140.7	130.8	9.98	14.101	
2,400.0	2,380.4	2,401.0	2,397.2	6.6	5.4	175.05	175.05	-3.0	66.8	153.4	143.0	10.45	14.682	
2,500.0	2,477.6	2,500.0	2,495.5	7.1	5.7	177.20	177.20	3.7	76.3	166.4	155.5	10.93	15.224	
2,600.0	2,574.7	2,599.0	2,593.8	7.6	5.9	179.04	179.04	10.3	85.8	179.6	168.1	11.42	15.725	
2,700.0	2,671.9	2,698.0	2,692.1	8.0	6.2	-179.37	-179.37	16.9	95.4	192.9	180.9	11.91	16.188	
2,800.0	2,769.0	2,796.9	2,790.4	8.5	6.5	-177.99	-177.99	23.5	104.9	206.3	193.9	12.42	16.614	
2,900.0	2,866.2	2,895.9	2,888.7	9.0	6.8	-176.78	-176.78	30.1	114.4	219.8	206.9	12.93	17.007	
3,000.0	2,963.3	2,994.9	2,987.0	9.5	7.1	-175.70	-175.70	36.7	123.9	233.5	220.0	13.44	17.368	
3,100.0	3,060.5	3,093.9	3,085.3	10.0	7.4	-174.75	-174.75	43.3	133.5	247.2	233.2	13.96	17.700	
3,200.0	3,157.6	3,192.9	3,183.6	10.5	7.6	-173.90	-173.90	49.9	143.0	260.9	246.4	14.49	18.006	
3,300.0	3,254.8	3,291.8	3,281.9	11.0	7.9	-173.13	-173.13	56.5	152.5	274.7	259.7	15.02	18.289	
3,400.0	3,351.9	3,390.8	3,380.2	11.5	8.2	-172.43	-172.43	63.1	162.0	288.6	273.0	15.56	18.550	
3,500.0	3,449.1	3,489.8	3,478.5	12.0	8.5	-171.80	-171.80	69.7	171.6	302.5	286.4	16.10	18.792	
3,600.0	3,546.2	3,588.8	3,576.8	12.5	8.8	-171.23	-171.23	76.4	181.1	316.4	299.8	16.64	19.017	
3,700.0	3,643.4	3,687.7	3,675.1	13.0	9.1	-170.70	-170.70	83.0	190.6	330.3	313.2	17.18	19.225	
3,800.0	3,740.5	3,786.7	3,773.4	13.5	9.4	-170.22	-170.22	89.6	200.1	344.3	326.6	17.73	19.419	
3,900.0	3,837.7	3,885.7	3,871.7	14.0	9.7	-169.77	-169.77	96.2	209.7	358.3	340.0	18.28	19.600	
4,000.0	3,934.9	3,984.7	3,970.0	14.5	10.0	-169.36	-169.36	102.8	219.2	372.3	353.5	18.83	19.769	
4,100.0	4,032.0	4,083.7	4,068.3	15.0	10.3	-168.97	-168.97	109.4	228.7	386.4	367.0	19.39	19.927	
4,200.0	4,129.2	4,182.6	4,166.6	15.5	10.6	-168.62	-168.62	116.0	238.2	400.4	380.5	19.95	20.075	
4,300.0	4,226.3	4,281.6	4,264.9	16.0	10.9	-168.29	-168.29	122.6	247.8	414.5	394.0	20.51	20.214	
4,400.0	4,323.5	4,380.6	4,363.2	16.5	11.2	-167.98	-167.98	129.2	257.3	428.6	407.5	21.07	20.344	
4,500.0	4,420.6	4,479.6	4,461.5	17.0	11.5	-167.69	-167.69	135.8	266.8	442.7	421.0	21.63	20.467	
4,600.0	4,517.8	4,578.5	4,559.8	17.5	11.8	-167.41	-167.41	142.4	276.3	456.8	434.6	22.19	20.583	
4,700.0	4,614.9	4,677.5	4,658.1	18.0	12.1	-167.16	-167.16	149.0	285.9	470.9	448.1	22.76	20.692	
4,800.0	4,712.1	4,776.5	4,756.3	18.5	12.4	-166.92	-166.92	155.7	295.4	485.0	461.7	23.32	20.795	
4,900.0	4,809.2	4,875.5	4,854.6	19.0	12.7	-166.69	-166.69	162.3	304.9	499.1	475.2	23.89	20.893	
5,000.0	4,906.4	4,974.5	4,952.9	19.5	13.0	-166.47	-166.47	168.9	314.4	513.2	488.8	24.46	20.985	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17R-223
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-223	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	5,003.5	5,073.4	5,051.2	20.0	13.3	-166.27		175.5	324.0	527.4	502.4	25.03	21.073	
5,200.0	5,100.7	5,172.4	5,149.5	20.5	13.6	-166.08		182.1	333.5	541.5	515.9	25.60	21.156	
5,300.0	5,197.8	5,271.4	5,247.8	21.0	13.9	-165.89		188.7	343.0	555.7	529.5	26.17	21.235	
5,400.0	5,295.0	5,370.4	5,346.1	21.5	14.2	-165.72		195.3	352.6	569.8	543.1	26.74	21.311	
5,500.0	5,392.1	5,469.4	5,444.4	22.0	14.5	-165.55		201.9	362.1	584.0	556.7	27.31	21.382	
5,600.0	5,489.3	5,568.3	5,542.7	22.5	14.8	-165.40		208.5	371.6	598.2	570.3	27.89	21.451	
5,700.0	5,586.4	5,667.3	5,641.0	23.1	15.1	-165.25		215.1	381.1	612.3	583.9	28.46	21.516	
5,800.0	5,683.6	5,766.3	5,739.3	23.6	15.4	-165.10		221.7	390.7	626.5	597.5	29.03	21.578	
5,900.0	5,780.7	5,865.3	5,837.6	24.1	15.7	-164.97		228.4	400.2	640.7	611.1	29.61	21.638	
6,000.0	5,877.9	5,964.2	5,935.9	24.6	16.0	-164.83		235.0	409.7	654.9	624.7	30.19	21.695	
6,100.0	5,975.0	6,063.2	6,034.2	25.1	16.3	-164.71		241.6	419.2	669.1	638.3	30.76	21.750	
6,200.0	6,072.2	6,162.6	6,132.9	25.6	16.6	-164.59		248.2	428.8	683.3	651.9	31.34	21.803	
6,300.0	6,169.3	6,272.5	6,242.2	26.1	16.9	-165.16		247.1	439.4	696.6	664.9	31.75	21.941	
6,400.0	6,266.5	6,379.8	6,347.7	26.6	17.0	-167.70		230.8	449.6	709.1	677.4	31.78	22.315	
6,500.0	6,362.7	6,484.8	6,447.6	27.0	17.1	-142.06		200.6	459.3	721.8	690.1	31.73	22.752	
6,600.0	6,456.4	6,587.5	6,540.6	27.4	17.2	-125.99		158.1	468.4	734.5	702.8	31.73	23.146	
6,700.0	6,545.9	6,688.1	6,625.4	27.7	17.2	-115.70		104.6	476.6	746.9	715.1	31.89	23.423	
6,800.0	6,629.7	6,786.8	6,701.0	28.1	17.2	-108.58		41.8	484.0	758.9	726.7	32.24	23.537	
6,900.0	6,706.4	6,883.7	6,766.9	28.4	17.3	-103.31		-28.9	490.5	770.2	737.4	32.82	23.465	
7,000.0	6,774.7	6,978.9	6,822.4	28.7	17.4	-99.25		-106.0	495.9	780.5	746.9	33.61	23.222	
7,100.0	6,833.4	7,072.7	6,867.3	29.1	17.6	-96.04		-188.2	500.3	789.7	755.1	34.59	22.828	
7,200.0	6,881.4	7,165.1	6,901.4	29.5	18.0	-93.51		-273.9	503.7	797.5	761.8	35.73	22.321	
7,300.0	6,918.1	7,256.3	6,924.8	30.0	18.6	-91.52		-361.9	506.0	803.9	766.9	36.99	21.732	
7,400.0	6,942.6	7,346.4	6,937.4	30.5	19.3	-90.03		-451.1	507.3	808.5	770.2	38.34	21.087	
7,500.0	6,954.7	7,438.0	6,939.8	31.1	20.2	-89.00		-542.6	507.6	811.4	771.6	39.80	20.385	
7,600.0	6,955.7	7,537.9	6,939.1	31.7	21.3	-88.83		-642.6	507.6	811.8	770.0	41.77	19.433	
7,700.0	6,955.1	7,637.9	6,938.3	32.5	22.5	-88.82		-742.6	507.6	811.8	767.6	44.21	18.361	
7,800.0	6,954.4	7,737.9	6,937.6	33.3	23.8	-88.81		-842.6	507.6	811.8	764.9	46.84	17.332	
7,900.0	6,953.8	7,837.9	6,936.8	34.3	25.2	-88.80		-942.6	507.6	811.8	762.2	49.62	16.359	
8,000.0	6,953.2	7,937.9	6,936.0	35.3	26.6	-88.79		-1,042.6	507.6	811.8	759.3	52.54	15.451	
8,100.0	6,952.5	8,037.9	6,935.3	36.4	28.1	-88.78		-1,142.6	507.6	811.8	756.2	55.57	14.609	
8,200.0	6,951.9	8,137.9	6,934.5	37.6	29.6	-88.77		-1,242.6	507.6	811.8	753.1	58.69	13.831	
8,300.0	6,951.3	8,237.9	6,933.8	38.9	31.2	-88.77		-1,342.6	507.6	811.8	749.9	61.90	13.115	
8,400.0	6,950.6	8,337.9	6,933.0	40.2	32.8	-88.76		-1,442.6	507.6	811.8	746.6	65.17	12.457	
8,500.0	6,950.0	8,437.9	6,932.3	41.5	34.5	-88.75		-1,542.6	507.6	811.8	743.3	68.50	11.851	
8,600.0	6,949.4	8,537.9	6,931.5	42.9	36.2	-88.74		-1,642.6	507.6	811.8	739.9	71.88	11.294	
8,700.0	6,948.7	8,637.9	6,930.7	44.4	37.9	-88.73		-1,742.6	507.6	811.8	736.5	75.31	10.780	
8,800.0	6,948.1	8,737.9	6,930.0	45.8	39.6	-88.72		-1,842.6	507.6	811.8	733.0	78.77	10.306	
8,900.0	6,947.5	8,837.9	6,929.2	47.3	41.3	-88.71		-1,942.6	507.6	811.8	729.6	82.26	9.868	
9,000.0	6,946.8	8,937.9	6,928.5	48.9	43.1	-88.70		-2,042.6	507.6	811.8	726.0	85.79	9.463	
9,100.0	6,946.2	9,037.9	6,927.7	50.5	44.8	-88.69		-2,142.6	507.6	811.8	722.5	89.34	9.087	
9,200.0	6,945.6	9,137.9	6,927.0	52.1	46.6	-88.69		-2,242.6	507.6	811.8	718.9	92.91	8.737	
9,300.0	6,944.9	9,237.9	6,926.2	53.7	48.4	-88.68		-2,342.6	507.6	811.8	715.3	96.51	8.412	
9,400.0	6,944.3	9,337.9	6,925.4	55.3	50.2	-88.67		-2,442.5	507.6	811.8	711.7	100.12	8.109	
9,500.0	6,943.7	9,437.9	6,924.7	57.0	52.0	-88.66		-2,542.5	507.6	811.8	708.1	103.75	7.825	
9,600.0	6,943.1	9,537.9	6,923.9	58.6	53.8	-88.65		-2,642.5	507.6	811.8	704.4	107.39	7.560	
9,700.0	6,942.4	9,637.9	6,923.2	60.3	55.6	-88.64		-2,742.5	507.6	811.8	700.8	111.04	7.311	
9,800.0	6,941.8	9,737.9	6,922.4	62.0	57.5	-88.63		-2,842.5	507.6	811.8	697.1	114.71	7.077	
9,900.0	6,941.2	9,837.9	6,921.7	63.7	59.3	-88.62		-2,942.5	507.6	811.8	693.5	118.39	6.857	
10,000.0	6,940.5	9,937.9	6,920.9	65.5	61.1	-88.61		-3,042.5	507.6	811.9	689.8	122.08	6.650	
10,100.0	6,939.9	10,037.9	6,920.1	67.2	63.0	-88.61		-3,142.5	507.6	811.9	686.1	125.77	6.455	

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-223
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-223	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 (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,200.0	6,939.3	10,137.9	6,919.4	68.9	64.8	88.60	-3,242.5	507.6	811.9	682.4	129.48	6.270	
10,300.0	6,938.6	10,237.9	6,918.6	70.7	66.7	88.59	-3,342.5	507.6	811.9	678.7	133.19	6.096	
10,400.0	6,938.0	10,337.9	6,917.9	72.5	68.5	88.58	-3,442.5	507.6	811.9	675.0	136.91	5.930	
10,500.0	6,937.4	10,437.9	6,917.1	74.2	70.4	88.57	-3,542.5	507.6	811.9	671.2	140.63	5.773	
10,600.0	6,936.7	10,537.9	6,916.4	76.0	72.3	88.56	-3,642.5	507.6	811.9	667.5	144.36	5.624	
10,700.0	6,936.1	10,637.9	6,915.6	77.8	74.1	88.55	-3,742.5	507.6	811.9	663.8	148.10	5.482	
10,800.0	6,935.5	10,737.9	6,914.8	79.6	76.0	88.54	-3,842.5	507.6	811.9	660.0	151.84	5.347	
10,900.0	6,934.8	10,837.9	6,914.1	81.4	77.9	88.53	-3,942.5	507.6	811.9	656.3	155.59	5.218	
11,000.0	6,934.2	10,937.9	6,913.3	83.2	79.7	88.53	-4,042.5	507.6	811.9	652.5	159.34	5.095	
11,100.0	6,933.6	11,037.9	6,912.6	85.0	81.6	88.52	-4,142.5	507.6	811.9	648.8	163.09	4.978	
11,200.0	6,932.9	11,137.9	6,911.8	86.8	83.5	88.51	-4,242.5	507.6	811.9	645.0	166.85	4.866	
11,300.0	6,932.3	11,237.9	6,911.0	88.6	85.4	88.50	-4,342.5	507.6	811.9	641.3	170.61	4.759	
11,400.0	6,931.7	11,337.9	6,910.3	90.4	87.2	88.49	-4,442.5	507.6	811.9	637.5	174.38	4.656	
11,423.0	6,931.5	11,361.0	6,910.1	90.9	87.7	88.49	-4,465.5	507.6	811.9	636.7	175.24	4.633	
11,452.8	6,931.4	11,376.4	6,910.0	91.4	88.0	88.49	-4,481.0	507.6	812.0	635.9	176.09	4.611 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17R-223
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-223	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)	+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	-14.6	0.0	14.6	14.6	0.00	N/A	
100.0	100.0	100.0	100.0	0.1	0.1	-180.00	-180.00	-14.6	0.0	14.6	14.3	0.22	64.833	
200.0	200.0	200.0	200.0	0.3	0.3	-180.00	-180.00	-14.6	0.0	14.6	13.9	0.67	21.611	
300.0	300.0	300.0	300.0	0.6	0.6	-180.00	-180.00	-14.6	0.0	14.6	13.4	1.12	12.967	
400.0	400.0	400.0	400.0	0.8	0.8	-180.00	-180.00	-14.6	0.0	14.6	13.0	1.57	9.262	
500.0	500.0	500.0	500.0	1.0	1.0	-180.00	-180.00	-14.6	0.0	14.6	12.5	2.02	7.204	
600.0	600.0	600.0	600.0	1.2	1.2	-180.00	-180.00	-14.6	0.0	14.6	12.1	2.47	5.894	
700.0	700.0	700.0	700.0	1.5	1.5	-180.00	-180.00	-14.6	0.0	14.6	11.7	2.92	4.987	
800.0	800.0	800.0	800.0	1.7	1.7	-180.00	-180.00	-14.6	0.0	14.6	11.2	3.37	4.322 CC	
900.0	900.0	900.0	900.0	1.9	1.9	102.14	102.14	-14.6	0.0	14.7	10.9	3.81	3.867 ES	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	111.64	111.64	-14.6	0.0	15.5	11.3	4.24	3.653	
1,100.0	1,099.9	1,100.0	1,100.0	2.3	2.3	122.61	122.61	-14.4	0.9	17.1	12.4	4.67	3.659	
1,200.0	1,199.7	1,200.2	1,200.1	2.5	2.6	131.51	131.51	-14.0	3.4	19.1	14.1	5.09	3.763	
1,300.0	1,299.4	1,300.4	1,300.2	2.8	2.8	138.61	138.61	-13.2	7.8	21.6	16.0	5.52	3.908	
1,400.0	1,398.9	1,400.6	1,400.3	3.0	3.0	144.27	144.27	-12.2	13.8	24.2	18.3	5.95	4.068	
1,500.0	1,498.3	1,500.9	1,500.3	3.3	3.2	148.84	148.84	-10.8	21.6	27.0	20.6	6.39	4.230	
1,600.0	1,597.4	1,601.3	1,600.2	3.6	3.5	152.57	152.57	-9.2	31.1	30.0	23.1	6.84	4.385	
1,700.0	1,696.3	1,701.8	1,700.0	3.9	3.7	155.67	155.67	-7.2	42.3	33.0	25.7	7.29	4.529	
1,800.0	1,794.9	1,802.3	1,799.6	4.2	4.0	158.29	158.29	-5.0	55.2	36.1	28.4	7.74	4.662	
1,900.0	1,893.3	1,902.8	1,899.1	4.5	4.3	160.54	160.54	-2.4	69.9	39.2	31.0	8.20	4.783	
2,000.0	1,991.2	2,003.5	1,998.3	4.9	4.6	162.49	162.49	0.5	86.3	42.4	33.7	8.67	4.892	
2,100.0	2,088.9	2,104.1	2,097.3	5.3	4.9	164.20	164.20	3.6	104.5	45.6	36.4	9.13	4.990	
2,200.0	2,186.1	2,204.4	2,195.6	5.7	5.3	165.78	165.78	7.0	123.9	49.0	39.4	9.61	5.100	
2,300.0	2,283.3	2,304.3	2,293.5	6.2	5.7	167.24	167.24	10.4	143.4	52.8	42.7	10.11	5.224	
2,400.0	2,380.4	2,404.2	2,391.5	6.6	6.0	168.49	168.49	13.8	162.9	56.6	46.0	10.61	5.338	
2,500.0	2,477.6	2,504.1	2,489.4	7.1	6.4	169.59	169.59	17.2	182.5	60.5	49.3	11.11	5.442	
2,600.0	2,574.7	2,604.1	2,587.3	7.6	6.8	170.56	170.56	20.6	202.0	64.3	52.7	11.61	5.538	
2,700.0	2,671.9	2,704.0	2,685.3	8.0	7.2	171.42	171.42	24.0	221.5	68.2	56.1	12.12	5.625	
2,800.0	2,769.0	2,803.9	2,783.2	8.5	7.6	172.18	172.18	27.4	241.0	72.1	59.4	12.63	5.706	
2,900.0	2,866.2	2,903.8	2,881.2	9.0	8.1	172.87	172.87	30.7	260.5	76.0	62.8	13.14	5.781	
3,000.0	2,963.3	3,003.7	2,979.1	9.5	8.5	173.49	173.49	34.1	280.0	79.9	66.2	13.65	5.850	
3,100.0	3,060.5	3,103.7	3,077.0	10.0	8.9	174.05	174.05	37.5	299.5	83.8	69.6	14.17	5.913	
3,200.0	3,157.6	3,203.6	3,175.0	10.5	9.3	174.56	174.56	40.9	319.0	87.7	73.0	14.69	5.972	
3,300.0	3,254.8	3,303.5	3,272.9	11.0	9.7	175.03	175.03	44.3	338.5	91.6	76.4	15.21	6.027	
3,400.0	3,351.9	3,403.4	3,370.8	11.5	10.1	175.46	175.46	47.7	358.0	95.6	79.8	15.73	6.078	
3,500.0	3,449.1	3,503.3	3,468.8	12.0	10.6	175.86	175.86	51.1	377.5	99.5	83.3	16.25	6.125	
3,600.0	3,546.2	3,603.3	3,566.7	12.5	11.0	176.22	176.22	54.5	397.1	103.5	86.7	16.77	6.169	
3,700.0	3,643.4	3,703.2	3,664.7	13.0	11.4	176.56	176.56	57.9	416.6	107.4	90.1	17.30	6.210	
3,800.0	3,740.5	3,803.1	3,762.6	13.5	11.8	176.88	176.88	61.3	436.1	111.4	93.5	17.82	6.249	
3,900.0	3,837.7	3,903.0	3,860.5	14.0	12.3	177.17	177.17	64.7	455.6	115.3	97.0	18.35	6.285	
4,000.0	3,934.9	4,002.9	3,958.5	14.5	12.7	177.44	177.44	68.1	475.1	119.3	100.4	18.88	6.319	
4,100.0	4,032.0	4,102.9	4,056.4	15.0	13.1	177.70	177.70	71.5	494.6	123.2	103.8	19.40	6.350	
4,200.0	4,129.2	4,202.8	4,154.4	15.5	13.6	177.94	177.94	74.9	514.1	127.2	107.3	19.93	6.380	
4,300.0	4,226.3	4,302.7	4,252.3	16.0	14.0	178.16	178.16	78.3	533.6	131.2	110.7	20.47	6.409	
4,400.0	4,323.5	4,402.6	4,350.2	16.5	14.4	178.38	178.38	81.7	553.1	135.1	114.1	21.00	6.435	
4,500.0	4,420.6	4,502.5	4,448.2	17.0	14.9	178.58	178.58	85.1	572.6	139.1	117.6	21.53	6.461	
4,600.0	4,517.8	4,602.5	4,546.1	17.5	15.3	178.76	178.76	88.4	592.1	143.1	121.0	22.06	6.484	
4,700.0	4,614.9	4,702.4	4,644.0	18.0	15.7	178.94	178.94	91.8	611.7	147.0	124.4	22.60	6.507	
4,800.0	4,712.1	4,802.3	4,742.0	18.5	16.2	179.11	179.11	95.2	631.2	151.0	127.9	23.13	6.528	
4,900.0	4,809.2	4,902.2	4,839.9	19.0	16.6	179.27	179.27	98.6	650.7	155.0	131.3	23.67	6.549	
5,000.0	4,906.4	5,002.1	4,937.9	19.5	17.0	179.43	179.43	102.0	670.2	159.0	134.7	24.20	6.568	

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-223
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-223	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
5,100.0	5,003.5	5,102.1	5,035.8	20.0	17.5	179.57	179.57	105.4	689.7	162.9	138.2	24.74	6.586	
5,200.0	5,100.7	5,202.0	5,133.7	20.5	17.9	179.71	179.71	108.8	709.2	166.9	141.6	25.27	6.604	
5,300.0	5,197.8	5,301.9	5,231.7	21.0	18.3	179.84	179.84	112.2	728.7	170.9	145.1	25.81	6.621	
5,400.0	5,295.0	5,401.8	5,329.6	21.5	18.8	179.97	179.97	115.6	748.2	174.9	148.5	26.35	6.637	
5,500.0	5,392.1	5,501.7	5,427.6	22.0	19.2	-179.91	-179.91	119.0	767.7	178.8	152.0	26.89	6.652	
5,600.0	5,489.3	5,601.7	5,525.5	22.5	19.6	-179.80	-179.80	122.4	787.2	182.8	155.4	27.42	6.666	
5,700.0	5,586.4	5,701.6	5,623.4	23.1	20.1	-179.69	-179.69	125.8	806.7	186.8	158.8	27.96	6.680	
5,800.0	5,683.6	5,801.5	5,721.4	23.6	20.5	-179.58	-179.58	129.2	826.2	190.8	162.3	28.50	6.694	
5,900.0	5,780.7	5,901.4	5,819.3	24.1	20.9	-179.48	-179.48	132.6	845.8	194.8	165.7	29.04	6.706	
6,000.0	5,877.9	6,001.3	5,917.2	24.6	21.4	-179.38	-179.38	136.0	865.3	198.7	169.2	29.58	6.719	
6,100.0	5,975.0	6,101.3	6,015.2	25.1	21.8	-179.29	-179.29	139.4	884.8	202.7	172.6	30.12	6.731	
6,200.0	6,072.2	6,201.2	6,113.1	25.6	22.3	-179.20	-179.20	142.8	904.3	206.7	176.1	30.66	6.742	
6,300.0	6,169.3	6,301.1	6,211.1	26.1	22.7	-179.11	-179.11	146.1	923.8	210.7	179.5	31.20	6.753	
6,400.0	6,266.5	6,400.0	6,308.0	26.6	23.1	-179.01	-179.01	149.0	943.1	214.2	182.5	31.73	6.750	
6,500.0	6,362.7	6,497.0	6,402.9	27.0	23.5	-178.91	-178.91	142.6	962.0	217.5	185.2	32.21	6.751	
6,600.0	6,456.4	6,594.9	6,497.0	27.4	23.8	-178.80	-178.80	123.8	980.8	220.8	188.2	32.67	6.760	
6,700.0	6,545.9	6,693.8	6,588.9	27.7	24.1	-178.70	-178.70	92.5	999.2	224.3	191.2	33.09	6.778	
6,800.0	6,629.7	6,793.6	6,676.9	28.1	24.4	-178.60	-178.60	48.8	1,016.8	227.8	194.3	33.49	6.802	
6,900.0	6,706.4	6,894.5	6,759.4	28.4	24.7	-178.50	-178.50	-6.8	1,033.3	231.2	197.3	33.90	6.821	
7,000.0	6,774.7	6,996.5	6,834.7	28.7	25.0	-178.40	-178.40	-73.7	1,048.4	234.5	200.2	34.38	6.821	
7,100.0	6,833.4	7,099.5	6,901.2	29.1	25.3	-178.30	-178.30	-151.0	1,061.8	237.7	202.6	35.03	6.784	
7,200.0	6,881.4	7,203.5	6,957.4	29.5	25.7	-178.20	-178.20	-237.7	1,073.2	240.5	204.5	35.95	6.690	
7,300.0	6,918.1	7,308.5	7,002.0	30.0	26.2	-178.10	-178.10	-332.3	1,082.2	242.9	205.7	37.21	6.527	
7,400.0	6,942.6	7,414.4	7,033.5	30.5	26.8	-178.00	-178.00	-433.0	1,088.7	244.8	205.9	38.90	6.294	
7,500.0	6,954.7	7,521.0	7,051.3	31.1	27.5	-177.90	-177.90	-538.1	1,092.4	246.2	205.2	41.02	6.002	
7,600.0	6,955.7	7,626.7	7,054.8	31.7	28.3	-177.80	-177.80	-643.6	1,093.3	246.7	203.4	43.33	5.693	
7,700.0	6,955.1	7,726.7	7,053.9	32.5	29.1	-177.70	-177.70	-743.6	1,093.3	246.6	201.0	45.62	5.406	
7,800.0	6,954.4	7,826.7	7,053.0	33.3	30.1	-177.60	-177.60	-843.6	1,093.3	246.5	198.4	48.06	5.129	
7,900.0	6,953.8	7,926.7	7,052.2	34.3	31.1	-177.50	-177.50	-943.6	1,093.3	246.4	195.8	50.64	4.865	
8,000.0	6,953.2	8,026.7	7,051.3	35.3	32.3	-177.40	-177.40	-1,043.6	1,093.3	246.3	193.0	53.34	4.617	
8,100.0	6,952.5	8,126.7	7,050.4	36.4	33.5	-177.30	-177.30	-1,143.6	1,093.3	246.2	190.1	56.14	4.386	
8,200.0	6,951.9	8,226.7	7,049.5	37.6	34.8	-177.20	-177.20	-1,243.6	1,093.3	246.1	187.1	59.02	4.170	
8,300.0	6,951.3	8,326.7	7,048.6	38.9	36.1	-177.10	-177.10	-1,343.6	1,093.3	246.0	184.0	61.98	3.969	
8,400.0	6,950.6	8,426.7	7,047.7	40.2	37.5	-177.00	-177.00	-1,443.6	1,093.3	245.9	180.9	65.00	3.783	
8,500.0	6,950.0	8,526.7	7,046.8	41.5	38.9	-176.90	-176.90	-1,543.6	1,093.3	245.8	177.7	68.08	3.610	
8,600.0	6,949.4	8,626.7	7,046.0	42.9	40.4	-176.80	-176.80	-1,643.6	1,093.3	245.7	174.5	71.21	3.450	
8,700.0	6,948.7	8,726.7	7,045.1	44.4	42.0	-176.70	-176.70	-1,743.6	1,093.3	245.6	171.2	74.38	3.302	
8,800.0	6,948.1	8,826.7	7,044.2	45.8	43.5	-176.60	-176.60	-1,843.6	1,093.3	245.5	167.9	77.60	3.164	
8,900.0	6,947.5	8,926.7	7,043.3	47.3	45.1	-176.50	-176.50	-1,943.5	1,093.3	245.4	164.6	80.84	3.036	
9,000.0	6,946.8	9,026.7	7,042.4	48.9	46.7	-176.40	-176.40	-2,043.5	1,093.3	245.3	161.2	84.12	2.916	
9,100.0	6,946.2	9,126.7	7,041.5	50.5	48.3	-176.30	-176.30	-2,143.5	1,093.3	245.2	157.8	87.42	2.805	
9,200.0	6,945.6	9,226.7	7,040.7	52.1	50.0	-176.20	-176.20	-2,243.5	1,093.3	245.1	154.4	90.75	2.701	
9,300.0	6,944.9	9,326.7	7,039.8	53.7	51.7	-176.10	-176.10	-2,343.5	1,093.3	245.0	150.9	94.10	2.604	
9,400.0	6,944.3	9,426.7	7,038.9	55.3	53.4	-176.00	-176.00	-2,443.5	1,093.3	244.9	147.4	97.48	2.513	
9,500.0	6,943.7	9,526.7	7,038.0	57.0	55.1	-175.90	-175.90	-2,543.5	1,093.3	244.8	143.9	100.87	2.427	
9,600.0	6,943.1	9,626.7	7,037.1	58.6	56.8	-175.80	-175.80	-2,643.5	1,093.3	244.7	140.4	104.27	2.347	
9,700.0	6,942.4	9,726.7	7,036.2	60.3	58.5	-175.70	-175.70	-2,743.5	1,093.3	244.6	136.9	107.70	2.271	
9,800.0	6,941.8	9,826.7	7,035.3	62.0	60.3	-175.60	-175.60	-2,843.5	1,093.3	244.5	133.4	111.13	2.200	
9,900.0	6,941.2	9,926.7	7,034.5	63.7	62.0	-175.50	-175.50	-2,943.5	1,093.3	244.4	129.8	114.58	2.133	
10,000.0	6,940.5	10,026.7	7,033.6	65.5	63.8	-175.40	-175.40	-3,043.5	1,093.3	244.3	126.3	118.05	2.070	
10,100.0	6,939.9	10,126.7	7,032.7	67.2	65.5	-175.30	-175.30	-3,143.5	1,093.3	244.2	122.7	121.52	2.010	

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-223
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-223	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
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)			
10,200.0	6,939.3	10,226.7	7,031.8	68.9	67.3	112.28	-3,243.5	1,093.3	244.1	119.1	125.01	1.953	
10,300.0	6,938.6	10,326.7	7,030.9	70.7	69.1	112.22	-3,343.5	1,093.3	244.0	115.5	128.50	1.899	
10,400.0	6,938.0	10,426.7	7,030.0	72.5	70.9	112.17	-3,443.5	1,093.3	243.9	111.9	132.01	1.848	
10,500.0	6,937.4	10,526.7	7,029.2	74.2	72.7	112.11	-3,543.5	1,093.3	243.8	108.3	135.52	1.799	
10,600.0	6,936.7	10,626.7	7,028.3	76.0	74.5	112.06	-3,643.5	1,093.3	243.8	104.7	139.04	1.753	
10,700.0	6,936.1	10,726.7	7,027.4	77.8	76.3	112.00	-3,743.5	1,093.3	243.7	101.1	142.57	1.709	
10,800.0	6,935.5	10,826.7	7,026.5	79.6	78.1	111.95	-3,843.5	1,093.3	243.6	97.5	146.11	1.667	
10,900.0	6,934.8	10,926.7	7,025.6	81.4	80.0	111.89	-3,943.5	1,093.3	243.5	93.8	149.65	1.627	
11,000.0	6,934.2	11,026.7	7,024.7	83.2	81.8	111.83	-4,043.5	1,093.3	243.4	90.2	153.21	1.589	
11,100.0	6,933.6	11,126.7	7,023.8	85.0	83.6	111.78	-4,143.5	1,093.3	243.3	86.5	156.76	1.552	
11,200.0	6,932.9	11,226.7	7,023.0	86.8	85.5	111.72	-4,243.5	1,093.3	243.2	82.9	160.33	1.517	
11,300.0	6,932.3	11,326.7	7,022.1	88.6	87.3	111.67	-4,343.4	1,093.3	243.1	79.2	163.90	1.483 Level 3	
11,400.0	6,931.7	11,426.7	7,021.2	90.4	89.1	111.61	-4,443.4	1,093.3	243.0	75.5	167.47	1.451 Level 3	
11,440.1	6,931.4	11,466.8	7,020.8	91.2	89.9	111.59	-4,483.5	1,093.3	243.0	74.1	168.91	1.438 Level 3	
11,452.8	6,931.4	11,475.1	7,020.8	91.4	90.0	111.59	-4,491.9	1,093.3	243.0	73.7	169.28	1.435 Level 3, SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17R-223
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-223	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-403 - 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)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	174.53	174.53	-29.1	2.8	29.3				
100.0	100.0	100.0	100.0	0.1	0.1	174.53	174.53	-29.1	2.8	29.3	29.0	0.22	130.240	
200.0	200.0	200.0	200.0	0.3	0.3	174.53	174.53	-29.1	2.8	29.3	28.6	0.67	43.413	
300.0	300.0	300.0	300.0	0.6	0.6	174.53	174.53	-29.1	2.8	29.3	28.1	1.12	26.048	
400.0	400.0	400.0	400.0	0.8	0.8	174.53	174.53	-29.1	2.8	29.3	27.7	1.57	18.606	
500.0	500.0	500.0	500.0	1.0	1.0	174.53	174.53	-29.1	2.8	29.3	27.3	2.02	14.471	
600.0	600.0	600.0	600.0	1.2	1.2	174.53	174.53	-29.1	2.8	29.3	26.8	2.47	11.840	
700.0	700.0	700.0	700.0	1.5	1.5	174.53	174.53	-29.1	2.8	29.3	26.4	2.92	10.018	
800.0	800.0	800.0	800.0	1.7	1.7	174.53	174.53	-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	95.03	95.03	-29.1	2.8	29.3	25.5	3.81	7.701	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	100.06	100.06	-29.1	2.8	29.7	25.4	4.24	6.998 ES	
1,100.0	1,099.9	1,099.9	1,099.9	2.3	2.4	108.07	108.07	-29.1	2.8	30.7	26.1	4.68	6.570	
1,200.0	1,199.7	1,199.7	1,199.7	2.5	2.6	118.12	118.12	-29.1	2.8	33.2	28.0	5.12	6.471	
1,300.0	1,299.4	1,299.9	1,299.9	2.8	2.8	127.93	127.93	-28.8	3.6	36.8	31.3	5.56	6.619	
1,400.0	1,398.9	1,400.2	1,400.1	3.0	3.0	136.24	136.24	-27.8	6.0	41.1	35.1	6.00	6.855	
1,500.0	1,498.3	1,500.6	1,500.5	3.3	3.2	143.33	143.33	-26.1	10.1	45.9	39.4	6.43	7.131	
1,600.0	1,597.4	1,601.1	1,600.8	3.6	3.5	149.44	149.44	-23.8	15.8	51.0	44.2	6.87	7.430	
1,700.0	1,696.3	1,701.8	1,701.1	3.9	3.7	154.79	154.79	-20.7	23.1	56.5	49.2	7.30	7.738	
1,800.0	1,794.9	1,802.5	1,801.4	4.2	3.9	159.53	159.53	-17.0	32.0	62.3	54.5	7.73	8.051	
1,900.0	1,893.3	1,903.4	1,901.6	4.5	4.2	163.80	163.80	-12.7	42.6	68.3	60.1	8.17	8.365	
2,000.0	1,991.2	2,004.3	2,001.7	4.9	4.4	167.67	167.67	-7.6	54.9	74.6	66.0	8.60	8.676	
2,100.0	2,088.9	2,104.6	2,100.9	5.3	4.7	171.19	171.19	-2.0	68.4	81.4	72.4	9.03	9.010	
2,200.0	2,186.1	2,204.1	2,199.3	5.7	5.0	174.27	174.27	3.6	82.0	89.9	80.4	9.48	9.483	
2,300.0	2,283.3	2,303.6	2,297.7	6.2	5.3	176.83	176.83	9.3	95.7	99.1	89.1	9.96	9.951	
2,400.0	2,380.4	2,403.1	2,396.1	6.6	5.6	178.96	178.96	14.9	109.3	108.4	98.0	10.44	10.382	
2,500.0	2,477.6	2,502.6	2,494.5	7.1	5.9	-179.26	-179.26	20.5	122.9	117.8	106.9	10.93	10.778	
2,600.0	2,574.7	2,602.1	2,592.9	7.6	6.3	-177.74	-177.74	26.2	136.5	127.4	116.0	11.44	11.140	
2,700.0	2,671.9	2,701.6	2,691.3	8.0	6.6	-176.43	-176.43	31.8	150.1	137.0	125.1	11.95	11.471	
2,800.0	2,769.0	2,801.1	2,789.7	8.5	6.9	-175.29	-175.29	37.4	163.8	146.7	134.2	12.46	11.773	
2,900.0	2,866.2	2,900.6	2,888.1	9.0	7.2	-174.30	-174.30	43.1	177.4	156.4	143.5	12.98	12.048	
3,000.0	2,963.3	3,000.1	2,986.5	9.5	7.6	-173.42	-173.42	48.7	191.0	166.2	152.7	13.51	12.301	
3,100.0	3,060.5	3,099.6	3,084.9	10.0	7.9	-172.64	-172.64	54.3	204.6	176.0	162.0	14.05	12.532	
3,200.0	3,157.6	3,199.0	3,183.2	10.5	8.2	-171.94	-171.94	60.0	218.2	185.9	171.3	14.58	12.745	
3,300.0	3,254.8	3,298.5	3,281.6	11.0	8.6	-171.32	-171.32	65.6	231.9	195.7	180.6	15.13	12.940	
3,400.0	3,351.9	3,398.0	3,380.0	11.5	8.9	-170.75	-170.75	71.2	245.5	205.6	190.0	15.67	13.121	
3,500.0	3,449.1	3,497.5	3,478.4	12.0	9.2	-170.23	-170.23	76.9	259.1	215.5	199.3	16.22	13.287	
3,600.0	3,546.2	3,597.0	3,576.8	12.5	9.6	-169.76	-169.76	82.5	272.7	225.4	208.7	16.77	13.441	
3,700.0	3,643.4	3,696.5	3,675.2	13.0	9.9	-169.33	-169.33	88.1	286.3	235.4	218.1	17.33	13.584	
3,800.0	3,740.5	3,796.0	3,773.6	13.5	10.3	-168.94	-168.94	93.8	300.0	245.3	227.4	17.89	13.717	
3,900.0	3,837.7	3,895.5	3,872.0	14.0	10.6	-168.57	-168.57	99.4	313.6	255.3	236.8	18.45	13.840	
4,000.0	3,934.9	3,995.0	3,970.4	14.5	10.9	-168.24	-168.24	105.0	327.2	265.3	246.2	19.01	13.956	
4,100.0	4,032.0	4,094.5	4,068.8	15.0	11.3	-167.92	-167.92	110.7	340.8	275.2	255.7	19.57	14.063	
4,200.0	4,129.2	4,193.9	4,167.2	15.5	11.6	-167.63	-167.63	116.3	354.4	285.2	265.1	20.14	14.164	
4,300.0	4,226.3	4,293.4	4,265.6	16.0	12.0	-167.36	-167.36	122.0	368.1	295.2	274.5	20.70	14.259	
4,400.0	4,323.5	4,392.9	4,364.0	16.5	12.3	-167.11	-167.11	127.6	381.7	305.2	283.9	21.27	14.347	
4,500.0	4,420.6	4,492.4	4,462.4	17.0	12.7	-166.87	-166.87	133.2	395.3	315.2	293.4	21.84	14.431	
4,600.0	4,517.8	4,591.9	4,560.7	17.5	13.0	-166.65	-166.65	138.9	408.9	325.2	302.8	22.41	14.510	
4,700.0	4,614.9	4,691.4	4,659.1	18.0	13.4	-166.44	-166.44	144.5	422.5	335.2	312.2	22.99	14.584	
4,800.0	4,712.1	4,790.9	4,757.5	18.5	13.7	-166.24	-166.24	150.1	436.2	345.2	321.7	23.56	14.654	
4,900.0	4,809.2	4,890.4	4,855.9	19.0	14.1	-166.05	-166.05	155.8	449.8	355.2	331.1	24.13	14.720	
5,000.0	4,906.4	4,989.9	4,954.3	19.5	14.4	-165.88	-165.88	161.4	463.4	365.3	340.6	24.71	14.783	

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-223
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-223	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-403 - 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)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
5,100.0	5,003.5	5,089.4	5,052.7	20.0	14.8	-165.71	167.0	477.0	375.3	350.0	25.28	14.842		
5,200.0	5,100.7	5,188.9	5,151.1	20.5	15.1	-165.55	172.7	490.6	385.3	359.5	25.86	14.899		
5,300.0	5,197.8	5,288.3	5,249.5	21.0	15.5	-165.40	178.3	504.2	395.3	368.9	26.44	14.953		
5,400.0	5,295.0	5,387.8	5,347.9	21.5	15.8	-165.26	183.9	517.9	405.4	378.4	27.02	15.004		
5,500.0	5,392.1	5,487.3	5,446.3	22.0	16.2	-165.12	189.6	531.5	415.4	387.8	27.60	15.052		
5,600.0	5,489.3	5,586.8	5,544.7	22.5	16.5	-165.00	195.2	545.1	425.5	397.3	28.18	15.099		
5,700.0	5,586.4	5,686.3	5,643.1	23.1	16.9	-164.87	200.8	558.7	435.5	406.7	28.76	15.143		
5,800.0	5,683.6	5,785.8	5,741.5	23.6	17.2	-164.75	206.5	572.3	445.5	416.2	29.34	15.185		
5,900.0	5,780.7	5,885.3	5,839.9	24.1	17.6	-164.64	212.1	586.0	455.6	425.7	29.92	15.226		
6,000.0	5,877.9	5,984.8	5,938.2	24.6	17.9	-164.53	217.7	599.6	465.6	435.1	30.50	15.264		
6,100.0	5,975.0	6,084.3	6,036.6	25.1	18.3	-164.43	223.4	613.2	475.7	444.6	31.09	15.302		
6,200.0	6,072.2	6,183.8	6,135.0	25.6	18.6	-164.33	229.0	626.8	485.7	454.0	31.67	15.337		
6,300.0	6,169.3	6,283.2	6,233.4	26.1	19.0	-164.24	234.6	640.4	495.8	463.5	32.25	15.371		
6,400.0	6,266.5	6,382.5	6,331.6	26.6	19.3	-170.71	240.2	654.0	506.4	473.7	32.73	15.474		
6,500.0	6,362.7	6,490.0	6,437.9	27.0	19.6	-148.07	240.9	668.8	518.2	485.0	33.16	15.627		
6,600.0	6,456.4	6,601.4	6,547.2	27.4	19.9	-134.83	225.8	683.9	529.8	496.4	33.37	15.874		
6,700.0	6,545.9	6,715.2	6,655.4	27.7	20.1	-127.11	194.0	698.9	541.0	507.6	33.40	16.196		
6,800.0	6,629.7	6,831.2	6,759.5	28.1	20.2	-122.26	145.3	713.3	551.4	518.0	33.33	16.543		
6,900.0	6,706.4	6,949.1	6,856.6	28.4	20.4	-118.96	80.1	726.7	560.7	527.4	33.29	16.841		
7,000.0	6,774.7	7,068.4	6,943.6	28.7	20.5	-116.51	-0.5	738.8	568.7	535.3	33.45	17.002		
7,100.0	6,833.4	7,188.6	7,017.7	29.1	20.7	-114.58	-94.4	749.0	575.2	541.2	33.97	16.933		
7,200.0	6,881.4	7,309.1	7,076.4	29.5	21.0	-112.97	-199.3	757.2	580.1	545.1	34.96	16.592		
7,300.0	6,918.1	7,429.4	7,117.9	30.0	21.5	-111.56	-311.9	762.9	583.2	546.7	36.48	15.988		
7,400.0	6,942.6	7,548.8	7,141.4	30.5	22.2	-110.30	-428.8	766.2	584.6	546.1	38.47	15.195		
7,500.0	6,954.7	7,663.1	7,147.0	31.1	23.1	-109.23	-542.9	767.0	584.4	543.6	40.80	14.322		
7,541.8	6,956.6	7,704.9	7,147.0	31.3	23.5	-109.02	-584.7	767.0	584.2	542.5	41.75	13.995		
7,600.0	6,955.7	7,763.1	7,146.9	31.7	24.0	-109.10	-642.9	767.0	584.4	541.3	43.08	13.565		
7,700.0	6,955.1	7,863.1	7,146.8	32.5	25.1	-109.15	-742.9	767.0	584.6	539.2	45.42	12.871		
7,800.0	6,954.4	7,963.1	7,146.8	33.3	26.2	-109.20	-842.9	767.0	584.8	536.8	47.92	12.202		
7,900.0	6,953.8	8,063.1	7,146.7	34.3	27.5	-109.25	-942.9	767.0	585.0	534.4	50.57	11.568		
8,000.0	6,953.2	8,163.1	7,146.6	35.3	28.8	-109.31	-1,042.9	767.0	585.1	531.8	53.33	10.973		
8,100.0	6,952.5	8,263.1	7,146.5	36.4	30.2	-109.36	-1,142.9	767.0	585.3	529.1	56.19	10.417		
8,200.0	6,951.9	8,363.1	7,146.5	37.6	31.6	-109.41	-1,242.9	767.0	585.5	526.4	59.13	9.901		
8,300.0	6,951.3	8,463.1	7,146.4	38.9	33.1	-109.46	-1,342.9	767.0	585.7	523.5	62.15	9.423		
8,400.0	6,950.6	8,563.1	7,146.3	40.2	34.7	-109.51	-1,442.9	767.0	585.9	520.6	65.24	8.981		
8,500.0	6,950.0	8,663.1	7,146.2	41.5	36.3	-109.56	-1,542.9	767.0	586.1	517.7	68.37	8.572		
8,600.0	6,949.4	8,763.1	7,146.2	42.9	37.9	-109.61	-1,642.9	767.0	586.2	514.7	71.55	8.193		
8,700.0	6,948.7	8,863.1	7,146.1	44.4	39.5	-109.66	-1,742.9	767.0	586.4	511.7	74.77	7.843		
8,800.0	6,948.1	8,963.1	7,146.0	45.8	41.2	-109.71	-1,842.9	767.0	586.6	508.6	78.03	7.518		
8,900.0	6,947.5	9,063.1	7,145.9	47.3	42.8	-109.77	-1,942.9	767.0	586.8	505.5	81.32	7.216		
9,000.0	6,946.8	9,163.1	7,145.8	48.9	44.5	-109.82	-2,042.9	767.0	587.0	502.4	84.63	6.936		
9,100.0	6,946.2	9,263.1	7,145.8	50.5	46.3	-109.87	-2,142.8	767.0	587.2	499.2	87.97	6.675		
9,200.0	6,945.6	9,363.1	7,145.7	52.1	48.0	-109.92	-2,242.8	767.0	587.4	496.0	91.33	6.432		
9,300.0	6,944.9	9,463.1	7,145.6	53.7	49.7	-109.97	-2,342.8	767.0	587.6	492.9	94.70	6.204		
9,400.0	6,944.3	9,563.1	7,145.5	55.3	51.5	-110.02	-2,442.8	767.0	587.8	489.7	98.09	5.992		
9,500.0	6,943.7	9,663.1	7,145.5	57.0	53.3	-110.07	-2,542.8	767.0	587.9	486.4	101.50	5.793		
9,600.0	6,943.1	9,763.1	7,145.4	58.6	55.0	-110.12	-2,642.8	767.0	588.1	483.2	104.92	5.606		
9,700.0	6,942.4	9,863.1	7,145.3	60.3	56.8	-110.17	-2,742.8	767.0	588.3	480.0	108.35	5.430		
9,800.0	6,941.8	9,963.1	7,145.2	62.0	58.6	-110.22	-2,842.8	767.0	588.5	476.7	111.79	5.265		
9,900.0	6,941.2	10,063.1	7,145.2	63.7	60.4	-110.28	-2,942.8	767.0	588.7	473.5	115.24	5.109		
10,000.0	6,940.5	10,163.1	7,145.1	65.5	62.2	-110.33	-3,042.8	767.0	588.9	470.2	118.69	4.962		

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-223
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-223	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-403 - 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							
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	6,939.9	10,263.1	7,145.0	67.2	64.1	110.38	-3,142.8	767.0	589.1	466.9	122.16	4.822	
10,200.0	6,939.3	10,363.1	7,144.9	68.9	65.9	110.43	-3,242.8	767.0	589.3	463.7	125.63	4.691	
10,300.0	6,938.6	10,463.1	7,144.9	70.7	67.7	110.48	-3,342.8	767.0	589.5	460.4	129.10	4.566	
10,400.0	6,938.0	10,563.1	7,144.8	72.5	69.6	110.53	-3,442.8	767.0	589.7	457.1	132.58	4.448	
10,500.0	6,937.4	10,663.1	7,144.7	74.2	71.4	110.58	-3,542.8	767.0	589.9	453.8	136.07	4.335	
10,600.0	6,936.7	10,763.1	7,144.6	76.0	73.2	110.63	-3,642.8	767.0	590.1	450.5	139.56	4.228	
10,700.0	6,936.1	10,863.1	7,144.6	77.8	75.1	110.68	-3,742.8	767.0	590.3	447.2	143.05	4.126	
10,800.0	6,935.5	10,963.1	7,144.5	79.6	76.9	110.73	-3,842.8	767.0	590.5	443.9	146.54	4.029	
10,900.0	6,934.8	11,063.1	7,144.4	81.4	78.8	110.78	-3,942.8	767.0	590.7	440.6	150.04	3.937	
11,000.0	6,934.2	11,163.1	7,144.3	83.2	80.6	110.83	-4,042.8	767.0	590.9	437.3	153.54	3.848	
11,100.0	6,933.6	11,263.1	7,144.3	85.0	82.5	110.88	-4,142.8	767.0	591.1	434.0	157.04	3.764	
11,200.0	6,932.9	11,363.1	7,144.2	86.8	84.4	110.93	-4,242.8	767.0	591.3	430.7	160.55	3.683	
11,300.0	6,932.3	11,463.1	7,144.1	88.6	86.2	110.98	-4,342.8	767.0	591.5	427.4	164.05	3.605	
11,400.0	6,931.7	11,563.1	7,144.0	90.4	88.1	111.03	-4,442.8	767.0	591.7	424.1	167.56	3.531	
11,420.1	6,931.6	11,583.2	7,144.0	90.8	88.5	111.04	-4,462.9	767.0	591.7	423.4	168.27	3.516	
11,452.8	6,931.4	11,604.8	7,144.0	91.4	88.9	111.05	-4,484.6	767.0	591.9	422.6	169.22	3.498 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17R-223
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-223	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)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	29.1	0.0	29.1				
100.0	100.0	100.0	100.0	0.1	0.1	0.00	0.00	29.1	0.0	29.1	28.9	0.22	129.685	
200.0	200.0	200.0	200.0	0.3	0.3	0.00	0.00	29.1	0.0	29.1	28.5	0.67	43.228 CC	
300.0	300.0	299.9	299.9	0.6	0.6	2.54	0.00	29.3	1.3	29.3	28.2	1.11	26.299 ES	
400.0	400.0	399.7	399.6	0.8	0.8	9.93	0.00	29.7	5.2	30.1	28.6	1.56	19.338	
500.0	500.0	499.2	498.9	1.0	1.0	21.04	0.00	30.3	11.7	32.5	30.5	2.01	16.166	
600.0	600.0	598.3	597.5	1.2	1.3	33.51	0.00	31.2	20.6	37.5	35.0	2.48	15.124	
700.0	700.0	696.8	695.4	1.5	1.5	44.82	0.00	32.3	32.1	45.8	42.8	2.98	15.381	
800.0	800.0	794.7	792.3	1.7	1.9	53.78	0.00	33.7	46.0	57.5	54.0	3.51	16.376	
900.0	900.0	892.0	888.2	1.9	2.2	-20.96	0.00	35.3	62.2	71.7	67.8	3.89	18.423	
1,000.0	1,000.0	988.7	983.1	2.1	2.6	-16.42	0.00	37.1	80.7	87.2	82.8	4.34	20.088	
1,100.0	1,099.9	1,084.9	1,077.0	2.3	3.0	-13.10	0.00	39.1	101.5	103.7	98.9	4.79	21.635	
1,200.0	1,199.7	1,180.5	1,169.7	2.5	3.5	-10.57	0.00	41.4	124.5	121.3	116.0	5.26	23.063	
1,300.0	1,299.4	1,275.5	1,261.3	2.8	4.0	-8.59	0.00	43.9	149.7	139.7	134.0	5.73	24.380	
1,400.0	1,398.9	1,369.9	1,351.7	3.0	4.5	-6.99	0.00	46.6	176.9	158.9	152.7	6.21	25.589	
1,500.0	1,498.3	1,463.7	1,440.8	3.3	5.1	-5.68	0.00	49.4	206.1	178.9	172.2	6.70	26.727	
1,600.0	1,597.4	1,560.7	1,532.3	3.6	5.7	-4.58	0.00	52.6	237.9	199.0	191.8	7.20	27.638	
1,700.0	1,696.3	1,658.9	1,625.1	3.9	6.4	-3.70	0.00	55.7	270.2	217.4	209.7	7.71	28.198	
1,800.0	1,794.9	1,757.5	1,718.1	4.2	7.0	-2.97	0.00	58.9	302.5	234.2	226.0	8.23	28.457	
1,900.0	1,893.3	1,856.3	1,811.4	4.5	7.7	-2.37	0.00	62.1	334.9	249.3	240.5	8.76	28.468	
2,000.0	1,991.2	1,955.3	1,904.9	4.9	8.4	-1.84	0.00	65.3	367.5	262.6	253.4	9.29	28.274	
2,100.0	2,088.9	2,054.6	1,998.7	5.3	9.1	-1.38	0.00	68.5	400.0	274.3	264.5	9.83	27.909	
2,200.0	2,186.1	2,154.1	2,092.6	5.7	9.8	-0.96	0.00	71.7	432.7	284.3	273.9	10.38	27.397	
2,300.0	2,283.3	2,253.6	2,186.5	6.2	10.4	-0.58	0.00	74.9	465.4	293.9	283.0	10.94	26.862	
2,400.0	2,380.4	2,353.2	2,280.5	6.6	11.1	-0.21	0.00	78.2	498.0	303.5	292.0	11.51	26.373	
2,500.0	2,477.6	2,452.7	2,374.4	7.1	11.8	0.13	0.00	81.4	530.7	313.1	301.1	12.08	25.925	
2,600.0	2,574.7	2,552.2	2,468.4	7.6	12.5	0.45	0.00	84.6	563.3	322.8	310.1	12.65	25.512	
2,700.0	2,671.9	2,651.7	2,562.3	8.0	13.2	0.75	0.00	87.8	596.0	332.4	319.2	13.23	25.132	
2,800.0	2,769.0	2,751.2	2,656.3	8.5	13.9	1.03	0.00	91.0	628.7	342.1	328.3	13.80	24.780	
2,900.0	2,866.2	2,850.8	2,750.2	9.0	14.6	1.30	0.00	94.2	661.3	351.7	337.3	14.38	24.454	
3,000.0	2,963.3	2,950.3	2,844.2	9.5	15.3	1.55	0.00	97.4	694.0	361.4	346.4	14.96	24.150	
3,100.0	3,060.5	3,049.8	2,938.1	10.0	16.0	1.80	0.00	100.7	726.7	371.0	355.5	15.55	23.867	
3,200.0	3,157.6	3,149.3	3,032.1	10.5	16.7	2.02	0.00	103.9	759.3	380.7	364.6	16.13	23.602	
3,300.0	3,254.8	3,248.8	3,126.1	11.0	17.4	2.24	0.00	107.1	792.0	390.4	373.7	16.72	23.355	
3,400.0	3,351.9	3,348.4	3,220.0	11.5	18.1	2.45	0.00	110.3	824.7	400.1	382.8	17.30	23.122	
3,500.0	3,449.1	3,447.9	3,314.0	12.0	18.8	2.65	0.00	113.5	857.3	409.8	391.9	17.89	22.903	
3,600.0	3,546.2	3,547.4	3,407.9	12.5	19.5	2.83	0.00	116.7	890.0	419.5	401.0	18.48	22.697	
3,700.0	3,643.4	3,646.9	3,501.9	13.0	20.1	3.01	0.00	119.9	922.6	429.2	410.1	19.07	22.503	
3,800.0	3,740.5	3,746.4	3,595.8	13.5	20.8	3.19	0.00	123.2	955.3	438.9	419.2	19.66	22.319	
3,900.0	3,837.7	3,846.0	3,689.8	14.0	21.5	3.35	0.00	126.4	988.0	448.6	428.3	20.26	22.146	
4,000.0	3,934.9	3,945.5	3,783.7	14.5	22.2	3.51	0.00	129.6	1,020.6	458.3	437.4	20.85	21.981	
4,100.0	4,032.0	4,045.0	3,877.7	15.0	22.9	3.66	0.00	132.8	1,053.3	468.0	446.6	21.44	21.824	
4,200.0	4,129.2	4,144.5	3,971.6	15.5	23.6	3.80	0.00	136.0	1,086.0	477.7	455.7	22.04	21.676	
4,300.0	4,226.3	4,244.0	4,065.6	16.0	24.3	3.94	0.00	139.2	1,118.6	487.4	464.8	22.64	21.534	
4,400.0	4,323.5	4,343.6	4,159.5	16.5	25.0	4.08	0.00	142.4	1,151.3	497.2	473.9	23.23	21.399	
4,500.0	4,420.6	4,443.1	4,253.5	17.0	25.7	4.20	0.00	145.7	1,184.0	506.9	483.1	23.83	21.270	
4,600.0	4,517.8	4,542.6	4,347.4	17.5	26.4	4.33	0.00	148.9	1,216.6	516.6	492.2	24.43	21.148	
4,700.0	4,614.9	4,642.1	4,441.4	18.0	27.1	4.45	0.00	152.1	1,249.3	526.3	501.3	25.03	21.030	
4,800.0	4,712.1	4,741.6	4,535.3	18.5	27.8	4.56	0.00	155.3	1,281.9	536.1	510.4	25.63	20.918	
4,900.0	4,809.2	4,841.2	4,629.3	19.0	28.5	4.67	0.00	158.5	1,314.6	545.8	519.6	26.23	20.810	
5,000.0	4,906.4	4,940.7	4,723.2	19.5	29.2	4.78	0.00	161.7	1,347.3	555.5	528.7	26.83	20.707	

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-223
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-223	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)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,003.5	5,040.2	4,817.2	20.0	29.9	4.88		164.9	1,379.9	565.3	537.9	27.43	20.608	
5,200.0	5,100.7	5,139.7	4,911.1	20.5	30.6	4.98		168.2	1,412.6	575.0	547.0	28.03	20.513	
5,300.0	5,197.8	5,239.2	5,005.1	21.0	31.3	5.08		171.4	1,445.3	584.8	556.1	28.64	20.421	
5,400.0	5,295.0	5,338.7	5,099.0	21.5	32.0	5.17		174.6	1,477.9	594.5	565.3	29.24	20.333	
5,500.0	5,392.1	5,438.3	5,193.0	22.0	32.7	5.26		177.8	1,510.6	604.3	574.4	29.84	20.249	
5,600.0	5,489.3	5,537.8	5,286.9	22.5	33.4	5.35		181.0	1,543.2	614.0	583.6	30.45	20.167	
5,700.0	5,586.4	5,637.3	5,380.9	23.1	34.1	5.43		184.2	1,575.9	623.7	592.7	31.05	20.088	
5,800.0	5,683.6	5,736.8	5,474.8	23.6	34.8	5.51		187.4	1,608.6	633.5	601.8	31.65	20.012	
5,900.0	5,780.7	5,836.3	5,568.8	24.1	35.5	5.59		190.7	1,641.2	643.2	611.0	32.26	19.939	
6,000.0	5,877.9	5,935.9	5,662.8	24.6	36.2	5.67		193.9	1,673.9	653.0	620.1	32.87	19.869	
6,100.0	5,975.0	6,035.4	5,756.7	25.1	36.9	5.74		197.1	1,706.6	662.7	629.3	33.47	19.800	
6,200.0	6,072.2	6,134.9	5,850.7	25.6	37.6	5.82		200.3	1,739.2	672.5	638.4	34.08	19.734	
6,300.0	6,169.3	6,234.4	5,944.6	26.1	38.3	5.89		203.5	1,771.9	682.3	647.6	34.68	19.670	
6,400.0	6,266.5	6,333.8	6,038.4	26.6	39.0	-18.77		206.7	1,804.5	692.2	656.9	35.28	19.621	
6,500.0	6,362.7	6,431.8	6,131.0	27.0	39.6	-42.60		209.9	1,836.7	702.8	667.1	35.77	19.648	
6,600.0	6,456.4	6,527.9	6,221.7	27.4	40.3	-57.72		212.9	1,868.2	714.9	678.7	36.22	19.737	
6,700.0	6,545.9	6,634.8	6,322.4	27.7	41.0	-67.60		207.4	1,903.3	728.3	691.6	36.73	19.829	
6,800.0	6,629.7	6,747.9	6,427.1	28.1	41.6	-74.35		185.5	1,939.7	742.4	705.0	37.34	19.882	
6,900.0	6,706.4	6,867.9	6,533.5	28.4	42.3	-79.27		144.6	1,976.8	756.6	718.5	38.06	19.879	
7,000.0	6,774.7	6,995.4	6,638.4	28.7	42.9	-82.99		82.4	2,013.4	770.2	731.3	38.88	19.812	
7,100.0	6,833.4	7,130.5	6,737.3	29.1	43.6	-85.82		-2.6	2,048.0	782.6	742.8	39.80	19.665	
7,200.0	6,881.4	7,272.8	6,824.4	29.5	44.2	-87.91		-110.6	2,078.5	793.0	752.2	40.85	19.413	
7,300.0	6,918.1	7,421.1	6,893.5	30.0	44.8	-89.30		-239.4	2,102.8	800.8	758.7	42.06	19.040	
7,400.0	6,942.6	7,573.5	6,938.6	30.5	45.4	-90.01		-383.7	2,118.8	805.3	761.9	43.46	18.530	
7,500.0	6,954.7	7,727.1	6,955.9	31.1	46.0	-90.06		-536.0	2,125.2	806.4	761.3	45.09	17.882	
7,600.0	6,955.7	7,833.8	6,955.4	31.7	46.5	-89.98		-642.7	2,125.3	806.0	759.2	46.85	17.206	
7,700.0	6,955.1	7,933.8	6,954.8	32.5	47.0	-89.98		-742.7	2,125.3	806.0	756.9	49.13	16.406	
7,800.0	6,954.4	8,033.8	6,954.2	33.3	47.6	-89.98		-842.7	2,125.3	806.0	754.4	51.60	15.621	
7,900.0	6,953.8	8,133.8	6,953.6	34.3	48.2	-89.98		-942.7	2,125.3	806.0	751.8	54.23	14.864	
8,000.0	6,953.2	8,233.8	6,952.9	35.3	48.9	-89.98		-1,042.7	2,125.3	806.0	749.0	56.99	14.143	
8,100.0	6,952.5	8,333.8	6,952.3	36.4	49.7	-89.98		-1,142.7	2,125.3	806.0	746.2	59.88	13.462	
8,200.0	6,951.9	8,433.8	6,951.7	37.6	50.5	-89.98		-1,242.7	2,125.3	806.0	743.2	62.86	12.822	
8,300.0	6,951.3	8,533.8	6,951.0	38.9	51.4	-89.98		-1,342.7	2,125.3	806.0	740.1	65.94	12.224	
8,400.0	6,950.6	8,633.8	6,950.4	40.2	52.3	-89.98		-1,442.7	2,125.3	806.0	736.9	69.09	11.667	
8,500.0	6,950.0	8,733.8	6,949.8	41.5	53.3	-89.98		-1,542.7	2,125.3	806.0	733.7	72.30	11.148	
8,600.0	6,949.4	8,833.8	6,949.1	42.9	54.4	-89.98		-1,642.7	2,125.3	806.0	730.5	75.58	10.665	
8,700.0	6,948.7	8,933.8	6,948.5	44.4	55.5	-89.98		-1,742.7	2,125.3	806.0	727.1	78.90	10.215	
8,800.0	6,948.1	9,033.8	6,947.9	45.8	56.7	-89.98		-1,842.7	2,125.3	806.0	723.8	82.27	9.797	
8,900.0	6,947.5	9,133.8	6,947.2	47.3	57.9	-89.98		-1,942.7	2,125.3	806.0	720.4	85.68	9.407	
9,000.0	6,946.8	9,233.8	6,946.6	48.9	59.1	-89.98		-2,042.7	2,125.3	806.0	716.9	89.13	9.044	
9,100.0	6,946.2	9,333.8	6,946.0	50.5	60.4	-89.98		-2,142.7	2,125.3	806.0	713.4	92.60	8.704	
9,200.0	6,945.6	9,433.8	6,945.3	52.1	61.7	-89.98		-2,242.7	2,125.3	806.0	709.9	96.10	8.387	
9,300.0	6,944.9	9,533.8	6,944.7	53.7	63.1	-89.98		-2,342.7	2,125.3	806.0	706.4	99.63	8.090	
9,400.0	6,944.3	9,633.8	6,944.1	55.3	64.4	-89.98		-2,442.7	2,125.3	806.0	702.9	103.18	7.812	
9,500.0	6,943.7	9,733.8	6,943.4	57.0	65.9	-89.98		-2,542.7	2,125.3	806.0	699.3	106.75	7.551	
9,600.0	6,943.1	9,833.8	6,942.8	58.6	67.3	-89.98		-2,642.7	2,125.3	806.0	695.7	110.34	7.305	
9,700.0	6,942.4	9,933.8	6,942.2	60.3	68.8	-89.98		-2,742.7	2,125.3	806.0	692.1	113.94	7.074	
9,800.0	6,941.8	10,033.8	6,941.5	62.0	70.2	-89.98		-2,842.7	2,125.3	806.0	688.5	117.56	6.856	
9,900.0	6,941.2	10,133.8	6,940.9	63.7	71.8	-89.98		-2,942.7	2,125.3	806.0	684.8	121.19	6.651	
10,000.0	6,940.5	10,233.8	6,940.3	65.5	73.3	-89.98		-3,042.7	2,125.3	806.0	681.2	124.84	6.457	
10,100.0	6,939.9	10,333.8	6,939.6	67.2	74.8	-89.98		-3,142.7	2,125.3	806.0	677.5	128.49	6.273	

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-223
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-223	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	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)		
10,200.0	6,939.3	10,433.8	6,939.0	68.9	76.4	-89.98	-3,242.7	2,125.3	806.0	673.9	132.16	6.099	
10,300.0	6,938.6	10,533.8	6,938.4	70.7	78.0	-89.98	-3,342.7	2,125.3	806.0	670.2	135.84	5.934	
10,400.0	6,938.0	10,633.8	6,937.7	72.5	79.6	-89.98	-3,442.7	2,125.3	806.0	666.5	139.52	5.777	
10,500.0	6,937.4	10,733.8	6,937.1	74.2	81.2	-89.98	-3,542.7	2,125.3	806.0	662.8	143.21	5.628	
10,600.0	6,936.7	10,833.8	6,936.5	76.0	82.8	-89.98	-3,642.7	2,125.3	806.0	659.1	146.91	5.486	
10,700.0	6,936.1	10,933.8	6,935.9	77.8	84.5	-89.98	-3,742.7	2,125.3	806.0	655.4	150.62	5.351	
10,800.0	6,935.5	11,033.8	6,935.2	79.6	86.1	-89.98	-3,842.7	2,125.3	806.0	651.7	154.33	5.223	
10,900.0	6,934.8	11,133.8	6,934.6	81.4	87.8	-89.98	-3,942.7	2,125.3	806.0	648.0	158.05	5.100	
11,000.0	6,934.2	11,233.8	6,934.0	83.2	89.5	-89.98	-4,042.7	2,125.3	806.0	644.3	161.78	4.982	
11,100.0	6,933.6	11,333.8	6,933.3	85.0	91.2	-89.98	-4,142.7	2,125.3	806.0	640.5	165.51	4.870	
11,200.0	6,932.9	11,433.8	6,932.7	86.8	92.9	-89.98	-4,242.7	2,125.3	806.0	636.8	169.24	4.763	
11,300.0	6,932.3	11,533.8	6,932.1	88.6	94.6	-89.98	-4,342.7	2,125.3	806.0	633.1	172.98	4.660	
11,400.0	6,931.7	11,633.8	6,931.4	90.4	96.3	-89.98	-4,442.7	2,125.3	806.0	629.3	176.73	4.561	
11,452.8	6,931.4	11,686.7	6,931.1	91.4	97.2	-89.98	-4,495.5	2,125.3	806.0	627.3	178.71	4.510 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17R-223
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-223	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)	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	0.00	14.6	0.0	14.6	14.6	0.00	N/A		
100.0	100.0	100.0	100.0	0.1	0.1	0.00	14.6	0.0	14.6	14.4	0.22	64.851		
200.0	200.0	200.0	200.0	0.3	0.3	0.00	14.6	0.0	14.6	13.9	0.67	21.617		
300.0	300.0	300.0	300.0	0.6	0.6	0.00	14.6	0.0	14.6	13.5	1.12	12.970		
400.0	400.0	400.0	400.0	0.8	0.8	0.00	14.6	0.0	14.6	13.0	1.57	9.264 CC		
500.0	500.0	499.9	499.9	1.0	1.0	5.02	14.7	1.3	14.8	12.8	2.01	7.357 ES		
600.0	600.0	599.7	599.6	1.2	1.2	18.76	15.2	5.2	16.1	13.7	2.45	6.579		
700.0	700.0	699.2	698.9	1.5	1.4	35.85	16.1	11.6	19.9	17.0	2.89	6.862		
800.0	800.0	798.4	797.6	1.7	1.7	50.06	17.2	20.6	27.0	23.6	3.36	8.017		
900.0	900.0	897.0	895.6	1.9	2.0	-21.97	18.7	32.0	36.5	32.8	3.79	9.633		
1,000.0	1,000.0	995.3	992.9	2.1	2.2	-16.33	20.5	45.9	47.5	43.2	4.23	11.224		
1,100.0	1,099.9	1,093.2	1,089.4	2.3	2.6	-12.58	22.6	62.2	59.4	54.8	4.67	12.729		
1,200.0	1,199.7	1,190.7	1,185.1	2.5	2.9	-9.94	25.0	80.9	72.4	67.3	5.12	14.140		
1,300.0	1,299.4	1,287.7	1,279.8	2.8	3.4	-7.98	27.7	101.9	86.2	80.6	5.57	15.461		
1,400.0	1,398.9	1,384.3	1,373.4	3.0	3.8	-6.49	30.7	125.1	100.8	94.8	6.04	16.700		
1,500.0	1,498.3	1,480.4	1,466.0	3.3	4.3	-5.31	34.0	150.5	116.3	109.8	6.51	17.862		
1,600.0	1,597.4	1,578.1	1,559.6	3.6	4.8	-4.36	37.6	178.2	132.0	125.0	6.99	18.877		
1,700.0	1,696.3	1,677.0	1,654.4	3.9	5.4	-3.65	41.3	206.4	146.2	138.7	7.49	19.528		
1,800.0	1,794.9	1,776.3	1,749.5	4.2	6.0	-3.10	44.9	234.7	158.7	150.7	7.99	19.866		
1,900.0	1,893.3	1,875.7	1,844.7	4.5	6.5	-2.65	48.6	263.1	169.4	160.9	8.49	19.946		
2,000.0	1,991.2	1,975.3	1,940.1	4.9	7.1	-2.28	52.2	291.4	178.4	169.4	9.01	19.810		
2,100.0	2,088.9	2,075.0	2,035.6	5.3	7.7	-1.97	55.9	319.9	185.7	176.2	9.53	19.495		
2,200.0	2,186.1	2,174.8	2,131.2	5.7	8.3	-1.70	59.6	348.3	191.4	181.3	10.06	19.028		
2,300.0	2,283.3	2,274.7	2,226.9	6.2	8.9	-1.44	63.3	376.8	196.5	185.9	10.60	18.537		
2,400.0	2,380.4	2,374.5	2,322.5	6.6	9.5	-1.20	66.9	405.2	201.7	190.6	11.15	18.088		
2,500.0	2,477.6	2,474.4	2,418.2	7.1	10.1	-0.98	70.6	433.7	206.9	195.2	11.71	17.678		
2,600.0	2,574.7	2,574.3	2,513.8	7.6	10.7	-0.76	74.3	462.2	212.1	199.9	12.26	17.302		
2,700.0	2,671.9	2,674.1	2,609.5	8.0	11.3	-0.55	78.0	490.6	217.3	204.5	12.82	16.955		
2,800.0	2,769.0	2,774.0	2,705.1	8.5	11.9	-0.35	81.7	519.1	222.6	209.2	13.38	16.635		
2,900.0	2,866.2	2,873.8	2,800.8	9.0	12.5	-0.17	85.3	547.6	227.8	213.8	13.94	16.339		
3,000.0	2,963.3	2,973.7	2,896.4	9.5	13.1	0.01	89.0	576.0	233.0	218.5	14.50	16.064		
3,100.0	3,060.5	3,073.6	2,992.0	10.0	13.7	0.19	92.7	604.5	238.2	223.1	15.07	15.809		
3,200.0	3,157.6	3,173.4	3,087.7	10.5	14.3	0.35	96.4	633.0	243.4	227.8	15.63	15.570		
3,300.0	3,254.8	3,273.3	3,183.3	11.0	14.9	0.51	100.1	661.4	248.6	232.4	16.20	15.348		
3,400.0	3,351.9	3,373.2	3,279.0	11.5	15.5	0.66	103.7	689.9	253.9	237.1	16.77	15.139		
3,500.0	3,449.1	3,473.0	3,374.6	12.0	16.1	0.80	107.4	718.3	259.1	241.7	17.34	14.944		
3,600.0	3,546.2	3,572.9	3,470.3	12.5	16.7	0.94	111.1	746.8	264.3	246.4	17.91	14.760		
3,700.0	3,643.4	3,672.7	3,565.9	13.0	17.3	1.08	114.8	775.3	269.5	251.0	18.48	14.587		
3,800.0	3,740.5	3,772.6	3,661.6	13.5	17.9	1.21	118.4	803.7	274.7	255.7	19.05	14.423		
3,900.0	3,837.7	3,872.5	3,757.2	14.0	18.6	1.33	122.1	832.2	280.0	260.4	19.62	14.269		
4,000.0	3,934.9	3,972.3	3,852.9	14.5	19.2	1.45	125.8	860.7	285.2	265.0	20.19	14.123		
4,100.0	4,032.0	4,072.2	3,948.5	15.0	19.8	1.56	129.5	889.1	290.4	269.7	20.77	13.985		
4,200.0	4,129.2	4,172.0	4,044.2	15.5	20.4	1.67	133.2	917.6	295.7	274.3	21.34	13.853		
4,300.0	4,226.3	4,271.9	4,139.8	16.0	21.0	1.78	136.8	946.1	300.9	279.0	21.92	13.729		
4,400.0	4,323.5	4,371.8	4,235.5	16.5	21.6	1.89	140.5	974.5	306.1	283.6	22.49	13.610		
4,500.0	4,420.6	4,471.6	4,331.1	17.0	22.2	1.99	144.2	1,003.0	311.4	288.3	23.07	13.497		
4,600.0	4,517.8	4,571.5	4,426.8	17.5	22.8	2.08	147.9	1,031.4	316.6	293.0	23.65	13.390		
4,700.0	4,614.9	4,671.4	4,522.4	18.0	23.4	2.18	151.6	1,059.9	321.8	297.6	24.22	13.287		
4,800.0	4,712.1	4,771.2	4,618.1	18.5	24.0	2.27	155.2	1,088.4	327.1	302.3	24.80	13.189		
4,900.0	4,809.2	4,871.1	4,713.7	19.0	24.6	2.35	158.9	1,116.8	332.3	306.9	25.38	13.095		
5,000.0	4,906.4	4,970.9	4,809.4	19.5	25.2	2.44	162.6	1,145.3	337.6	311.6	25.96	13.005		

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-223
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-223	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
5,100.0	5,003.5	5,070.8	4,905.0	20.0	25.9	2.52		166.3	1,173.8	342.8	316.3	26.54	12.919	
5,200.0	5,100.7	5,170.7	5,000.7	20.5	26.5	2.60		169.9	1,202.2	348.0	320.9	27.11	12.836	
5,300.0	5,197.8	5,270.5	5,096.3	21.0	27.1	2.68		173.6	1,230.7	353.3	325.6	27.69	12.757	
5,400.0	5,295.0	5,370.4	5,192.0	21.5	27.7	2.75		177.3	1,259.2	358.5	330.2	28.27	12.681	
5,500.0	5,392.1	5,470.2	5,287.6	22.0	28.3	2.83		181.0	1,287.6	363.8	334.9	28.85	12.607	
5,600.0	5,489.3	5,570.1	5,383.3	22.5	28.9	2.90		184.7	1,316.1	369.0	339.6	29.43	12.537	
5,700.0	5,586.4	5,670.0	5,478.9	23.1	29.5	2.97		188.3	1,344.5	374.3	344.2	30.01	12.469	
5,800.0	5,683.6	5,769.8	5,574.6	23.6	30.1	3.03		192.0	1,373.0	379.5	348.9	30.60	12.404	
5,900.0	5,780.7	5,869.7	5,670.2	24.1	30.7	3.10		195.7	1,401.5	384.7	353.6	31.18	12.341	
6,000.0	5,877.9	5,969.6	5,765.8	24.6	31.3	3.16		199.4	1,429.9	390.0	358.2	31.76	12.280	
6,100.0	5,975.0	6,069.4	5,861.5	25.1	31.9	3.23		203.1	1,458.4	395.2	362.9	32.34	12.221	
6,200.0	6,072.2	6,169.3	5,957.1	25.6	32.6	3.29		206.7	1,486.9	400.5	367.6	32.92	12.164	
6,300.0	6,169.3	6,269.1	6,052.8	26.1	33.2	3.34		210.4	1,515.3	405.7	372.2	33.50	12.109	
6,400.0	6,266.5	6,368.8	6,148.3	26.6	33.8	-21.84		214.1	1,543.7	411.4	377.3	34.06	12.079	
6,500.0	6,362.7	6,467.1	6,242.4	27.0	34.4	-46.86		217.7	1,571.8	418.6	384.0	34.58	12.105	
6,600.0	6,456.4	6,567.2	6,338.3	27.4	35.0	-63.69		220.1	1,600.3	428.4	393.2	35.22	12.164	
6,700.0	6,545.9	6,676.9	6,442.9	27.7	35.5	-75.05		210.0	1,631.5	440.2	404.1	36.03	12.216	
6,800.0	6,629.7	6,792.3	6,550.2	28.1	36.1	-83.07		182.7	1,663.5	452.9	416.0	36.90	12.274	
6,900.0	6,706.4	6,913.7	6,657.5	28.4	36.6	-89.04		136.1	1,695.5	465.9	428.2	37.72	12.352	
7,000.0	6,774.7	7,041.5	6,761.2	28.7	37.1	-93.57		68.6	1,726.6	478.4	440.0	38.42	12.451	
7,100.0	6,833.4	7,175.2	6,856.7	29.1	37.7	-96.96		-20.4	1,755.2	489.5	450.5	38.98	12.558	
7,200.0	6,881.4	7,314.4	6,938.6	29.5	38.2	-99.38		-129.9	1,779.9	498.4	458.9	39.47	12.626	
7,300.0	6,918.1	7,457.6	7,001.7	30.0	38.7	-100.89		-256.8	1,799.0	504.5	464.5	39.98	12.618	
7,400.0	6,942.6	7,603.1	7,041.3	30.5	39.3	-101.54		-396.0	1,811.2	507.4	466.8	40.65	12.484	
7,500.0	6,954.7	7,748.7	7,055.0	31.1	40.0	-101.36		-540.7	1,815.7	506.9	465.3	41.57	12.191	
7,600.0	6,955.7	7,851.6	7,054.2	31.7	40.5	-101.22		-643.6	1,815.7	506.1	463.2	42.95	11.784	
7,700.0	6,955.1	7,951.6	7,053.3	32.5	41.0	-101.19		-743.6	1,815.7	506.1	460.9	45.21	11.195	
7,800.0	6,954.4	8,051.6	7,052.4	33.3	41.7	-101.16		-843.6	1,815.7	506.0	458.4	47.66	10.618	
7,900.0	6,953.8	8,151.6	7,051.5	34.3	42.4	-101.14		-943.6	1,815.7	506.0	455.7	50.27	10.065	
8,000.0	6,953.2	8,251.6	7,050.6	35.3	43.3	-101.11		-1,043.6	1,815.7	505.9	452.9	53.03	9.540	
8,100.0	6,952.5	8,351.6	7,049.7	36.4	44.1	-101.08		-1,143.6	1,815.7	505.9	450.0	55.91	9.048	
8,200.0	6,951.9	8,451.6	7,048.9	37.6	45.1	-101.05		-1,243.6	1,815.7	505.8	446.9	58.89	8.590	
8,300.0	6,951.3	8,551.6	7,048.0	38.9	46.1	-101.02		-1,343.6	1,815.7	505.8	443.8	61.96	8.163	
8,400.0	6,950.6	8,651.6	7,047.1	40.2	47.2	-101.00		-1,443.6	1,815.7	505.7	440.6	65.10	7.768	
8,500.0	6,950.0	8,751.6	7,046.2	41.5	48.3	-100.97		-1,543.6	1,815.7	505.7	437.4	68.32	7.402	
8,600.0	6,949.4	8,851.6	7,045.3	42.9	49.5	-100.94		-1,643.6	1,815.7	505.6	434.1	71.58	7.064	
8,700.0	6,948.7	8,951.6	7,044.4	44.4	50.8	-100.91		-1,743.6	1,815.7	505.6	430.7	74.90	6.750	
8,800.0	6,948.1	9,051.6	7,043.6	45.8	52.0	-100.88		-1,843.5	1,815.7	505.5	427.3	78.26	6.460	
8,900.0	6,947.5	9,151.6	7,042.7	47.3	53.4	-100.86		-1,943.5	1,815.7	505.5	423.8	81.66	6.190	
9,000.0	6,946.8	9,251.6	7,041.8	48.9	54.7	-100.83		-2,043.5	1,815.7	505.4	420.4	85.09	5.940	
9,100.0	6,946.2	9,351.6	7,040.9	50.5	56.1	-100.80		-2,143.5	1,815.7	505.4	416.8	88.55	5.707	
9,200.0	6,945.6	9,451.6	7,040.0	52.1	57.6	-100.77		-2,243.5	1,815.7	505.4	413.3	92.04	5.491	
9,300.0	6,944.9	9,551.6	7,039.1	53.7	59.0	-100.74		-2,343.5	1,815.7	505.3	409.8	95.55	5.288	
9,400.0	6,944.3	9,651.6	7,038.2	55.3	60.5	-100.71		-2,443.5	1,815.7	505.3	406.2	99.09	5.099	
9,500.0	6,943.7	9,751.6	7,037.4	57.0	62.0	-100.69		-2,543.5	1,815.7	505.2	402.6	102.64	4.922	
9,600.0	6,943.1	9,851.6	7,036.5	58.6	63.6	-100.66		-2,643.5	1,815.7	505.2	399.0	106.21	4.756	
9,700.0	6,942.4	9,951.6	7,035.6	60.3	65.1	-100.63		-2,743.5	1,815.7	505.1	395.3	109.79	4.601	
9,800.0	6,941.8	10,051.6	7,034.7	62.0	66.7	-100.60		-2,843.5	1,815.7	505.1	391.7	113.39	4.454	
9,900.0	6,941.2	10,151.6	7,033.8	63.7	68.3	-100.57		-2,943.5	1,815.7	505.0	388.0	117.00	4.316	
10,000.0	6,940.5	10,251.6	7,032.9	65.5	69.9	-100.55		-3,043.5	1,815.7	505.0	384.4	120.63	4.186	
10,100.0	6,939.9	10,351.6	7,032.1	67.2	71.5	-100.52		-3,143.5	1,815.7	504.9	380.7	124.26	4.064	

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-223
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-223	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)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
10,200.0	6,939.3	10,451.6	7,031.2	68.9	73.2	-100.49	-3,243.5	1,815.7	504.9	377.0	127.90	3.947		
10,300.0	6,938.6	10,551.6	7,030.3	70.7	74.8	-100.46	-3,343.5	1,815.7	504.8	373.3	131.56	3.837		
10,400.0	6,938.0	10,651.6	7,029.4	72.5	76.5	-100.43	-3,443.5	1,815.7	504.8	369.6	135.22	3.733		
10,500.0	6,937.4	10,751.6	7,028.5	74.2	78.2	-100.40	-3,543.5	1,815.7	504.7	365.9	138.89	3.634		
10,600.0	6,936.7	10,851.6	7,027.6	76.0	79.9	-100.38	-3,643.5	1,815.7	504.7	362.1	142.57	3.540		
10,700.0	6,936.1	10,951.6	7,026.7	77.8	81.6	-100.35	-3,743.5	1,815.7	504.7	358.4	146.25	3.451		
10,800.0	6,935.5	11,051.6	7,025.9	79.6	83.3	-100.32	-3,843.5	1,815.7	504.6	354.7	149.94	3.365		
10,900.0	6,934.8	11,151.6	7,025.0	81.4	85.0	-100.29	-3,943.5	1,815.7	504.6	350.9	153.64	3.284		
11,000.0	6,934.2	11,251.6	7,024.1	83.2	86.8	-100.26	-4,043.5	1,815.7	504.5	347.2	157.34	3.207		
11,100.0	6,933.6	11,351.6	7,023.2	85.0	88.5	-100.23	-4,143.5	1,815.7	504.5	343.4	161.04	3.133		
11,200.0	6,932.9	11,451.6	7,022.3	86.8	90.3	-100.21	-4,243.4	1,815.7	504.4	339.7	164.76	3.062		
11,300.0	6,932.3	11,551.6	7,021.4	88.6	92.0	-100.18	-4,343.4	1,815.7	504.4	335.9	168.47	2.994		
11,400.0	6,931.7	11,651.6	7,020.6	90.4	93.8	-100.15	-4,443.4	1,815.7	504.3	332.2	172.19	2.929		
11,452.8	6,931.4	11,704.4	7,020.1	91.4	94.7	-100.13	-4,496.3	1,815.7	504.3	330.2	174.16	2.896 SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17R-223
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-223	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 17-2 (Exist) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
4,500.0	4,420.6	4,409.3	4,408.5	17.0	11.4	40.97	40.97	-400.5	1,546.5	982.4	957.6	24.86	39.512	
4,600.0	4,517.8	4,512.8	4,511.9	17.5	11.7	42.02	42.02	-400.7	1,544.6	963.0	937.4	25.64	37.566	
4,700.0	4,614.9	4,613.0	4,612.1	18.0	11.9	43.03	43.03	-400.0	1,542.7	943.3	916.9	26.38	35.751	
4,800.0	4,712.1	4,700.9	4,700.0	18.5	12.1	43.93	43.93	-399.2	1,541.4	924.2	897.1	27.09	34.119	
4,900.0	4,809.2	4,800.0	4,799.1	19.0	12.3	44.99	44.99	-398.7	1,540.2	905.7	877.9	27.85	32.518	
5,000.0	4,906.4	4,894.6	4,893.6	19.5	12.5	46.03	46.03	-397.9	1,539.3	887.6	859.0	28.58	31.055	
5,100.0	5,003.5	4,991.4	4,990.4	20.0	12.7	47.12	47.12	-397.1	1,538.5	869.9	840.6	29.33	29.659	
5,200.0	5,100.7	5,092.1	5,091.2	20.5	13.0	48.32	48.32	-396.4	1,537.3	852.4	822.2	30.13	28.287	
5,300.0	5,197.8	5,183.2	5,182.2	21.0	13.2	49.45	49.45	-395.8	1,536.3	835.3	804.3	30.92	27.016	
5,400.0	5,295.0	5,283.2	5,282.2	21.5	13.4	50.75	50.75	-395.4	1,535.4	818.8	787.1	31.76	25.783	
5,500.0	5,392.1	5,374.9	5,373.9	22.0	13.6	51.97	51.97	-394.8	1,534.6	802.7	770.2	32.57	24.643	
5,600.0	5,489.3	5,472.4	5,471.4	22.5	13.9	53.31	53.31	-394.5	1,534.2	787.6	754.2	33.42	23.564	
5,700.0	5,586.4	5,568.8	5,567.8	23.1	14.0	54.68	54.68	-394.0	1,533.9	772.7	738.5	34.22	22.579	
5,800.0	5,683.6	5,662.9	5,661.9	23.6	14.1	56.03	56.03	-393.4	1,533.9	758.6	723.6	34.94	21.710	
5,900.0	5,780.7	5,757.4	5,756.4	24.1	14.1	57.46	57.46	-393.3	1,534.0	745.3	709.7	35.62	20.927	
6,000.0	5,877.9	5,854.9	5,853.9	24.6	14.2	58.97	58.97	-393.3	1,534.4	732.8	696.5	36.35	20.163	
6,100.0	5,975.0	5,951.3	5,950.3	25.1	14.3	60.55	60.55	-393.5	1,534.4	720.7	683.6	37.14	19.404	
6,200.0	6,072.2	6,051.0	6,050.0	25.6	14.5	62.23	62.23	-393.7	1,534.5	709.4	671.4	37.98	18.679	
6,300.0	6,169.3	6,148.7	6,147.7	26.1	14.6	63.94	63.94	-393.5	1,534.0	698.0	659.2	38.85	17.968	
6,400.0	6,266.5	6,243.3	6,242.3	26.6	14.8	39.98	39.98	-393.8	1,533.9	684.1	644.9	39.22	17.443	
6,500.0	6,362.7	6,342.4	6,341.4	27.0	14.9	16.69	16.69	-393.7	1,534.0	660.0	621.2	38.80	17.008	
6,600.0	6,456.4	6,437.9	6,436.9	27.4	15.1	1.85	1.85	-393.6	1,533.3	625.1	587.3	37.73	16.567	
6,700.0	6,545.9	6,526.0	6,525.0	27.7	15.3	-8.68	-8.68	-393.3	1,532.8	580.2	544.2	36.03	16.105	
6,800.0	6,629.7	6,606.7	6,605.7	28.1	15.5	-17.91	-17.91	-393.5	1,532.6	526.9	493.0	33.83	15.575	
6,900.0	6,706.4	6,683.5	6,682.5	28.4	15.6	-27.97	-27.97	-393.8	1,532.3	466.1	434.5	31.62	14.742	
7,000.0	6,774.7	6,751.7	6,750.7	28.7	15.8	-40.34	-40.34	-394.2	1,532.1	400.0	369.6	30.41	13.154	
7,100.0	6,833.4	6,810.5	6,809.5	29.1	15.9	-55.54	-55.54	-394.5	1,532.0	332.5	301.1	31.38	10.595	
7,200.0	6,881.4	6,859.6	6,858.6	29.5	16.0	-71.78	-71.78	-394.8	1,531.8	270.4	236.5	33.86	7.985	
7,300.0	6,918.1	6,897.4	6,896.4	30.0	16.1	-85.05	-85.05	-395.1	1,531.6	227.1	191.4	35.61	6.376	
7,363.8	6,935.2	6,914.8	6,913.8	30.3	16.1	-90.45	-90.45	-395.2	1,531.4	217.9	181.8	36.09	6.038 CC, ES, SF	
7,400.0	6,942.6	6,922.4	6,921.3	30.5	16.1	-92.30	-92.30	-395.3	1,531.4	221.0	184.7	36.25	6.097	
7,500.0	6,954.7	6,934.6	6,933.6	31.1	16.1	-92.71	-92.71	-395.3	1,531.3	258.6	221.8	36.88	7.013	
7,600.0	6,955.7	6,935.9	6,934.9	31.7	16.1	-90.17	-90.17	-395.3	1,531.3	325.9	287.9	37.98	8.580	
7,700.0	6,955.1	6,935.7	6,934.7	32.5	16.1	-90.11	-90.11	-395.3	1,531.3	407.0	367.9	39.18	10.390	
7,800.0	6,954.4	6,935.4	6,934.4	33.3	16.1	-90.05	-90.05	-395.3	1,531.3	495.1	454.7	40.46	12.237	
7,900.0	6,953.8	6,935.2	6,934.2	34.3	16.1	-89.99	-89.99	-395.3	1,531.3	587.1	545.2	41.83	14.035	
8,000.0	6,953.2	6,935.0	6,934.0	35.3	16.1	-89.93	-89.93	-395.3	1,531.3	681.3	638.0	43.26	15.748	
8,100.0	6,952.5	6,934.8	6,933.8	36.4	16.1	-89.87	-89.87	-395.3	1,531.3	776.9	732.2	44.75	17.360	
8,200.0	6,951.9	6,934.6	6,933.5	37.6	16.1	-89.81	-89.81	-395.3	1,531.3	873.5	827.3	46.29	18.871	
8,300.0	6,951.3	6,934.3	6,933.3	38.9	16.1	-89.75	-89.75	-395.3	1,531.3	970.9	923.0	47.87	20.280	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17R-223
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-223	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 17-3 (Exist.) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft	
Survey Program: 100-NS-GYRO-MS												Offset Well Error:	0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
7,600.0	6,955.7	6,959.2	6,958.4	31.7	15.1	-96.86	-1,629.4	1,426.9	992.5	956.3	36.27	27.362	2.097 CC, ES, SF	
7,700.0	6,955.1	6,958.1	6,957.3	32.5	15.1	-96.28	-1,629.4	1,426.9	893.2	855.7	37.52	23.803		
7,800.0	6,954.4	6,957.0	6,956.2	33.3	15.1	-95.70	-1,629.4	1,426.9	794.0	755.2	38.87	20.427		
7,900.0	6,953.8	6,955.9	6,955.1	34.3	15.1	-95.12	-1,629.4	1,426.9	695.1	654.8	40.30	17.248		
8,000.0	6,953.2	6,954.8	6,954.0	35.3	15.1	-94.54	-1,629.4	1,426.9	596.5	554.7	41.79	14.272		
8,100.0	6,952.5	6,953.7	6,952.9	36.4	15.1	-93.96	-1,629.4	1,427.0	498.5	455.1	43.35	11.500		
8,200.0	6,951.9	6,952.6	6,951.8	37.6	15.1	-93.38	-1,629.4	1,427.0	401.5	356.5	44.95	8.932		
8,300.0	6,951.3	6,951.5	6,950.7	38.9	15.1	-92.80	-1,629.4	1,427.0	306.3	259.7	46.59	6.575		
8,400.0	6,950.6	6,950.4	6,949.6	40.2	15.1	-92.22	-1,629.4	1,427.0	215.6	167.4	48.26	4.468		
8,500.0	6,950.0	6,949.3	6,948.5	41.5	15.1	-91.63	-1,629.4	1,427.1	138.4	88.4	49.96	2.770		
8,586.7	6,949.5	6,948.4	6,947.6	42.7	15.1	-91.13	-1,629.4	1,427.1	107.9	56.4	51.45			
8,600.0	6,949.4	6,948.2	6,947.4	42.9	15.1	-91.05	-1,629.4	1,427.1	108.7	57.0	51.68	2.103		
8,700.0	6,948.7	6,947.1	6,946.3	44.4	15.1	-90.47	-1,629.4	1,427.1	156.4	103.0	53.42	2.928		
8,800.0	6,948.1	6,946.0	6,945.2	45.8	15.1	-89.89	-1,629.4	1,427.1	239.0	183.8	55.18	4.331		
8,900.0	6,947.5	6,944.9	6,944.1	47.3	15.1	-89.30	-1,629.4	1,427.1	331.3	274.4	56.95	5.818		
9,000.0	6,946.8	6,943.8	6,943.0	48.9	15.1	-88.72	-1,629.5	1,427.2	427.1	368.4	58.73	7.273		
9,100.0	6,946.2	6,942.8	6,941.9	50.5	15.1	-88.14	-1,629.5	1,427.2	524.5	464.0	60.52	8.667		
9,200.0	6,945.6	6,941.7	6,940.9	52.1	15.1	-87.56	-1,629.5	1,427.2	622.7	560.4	62.31	9.993		
9,300.0	6,944.9	6,940.6	6,939.8	53.7	15.1	-86.98	-1,629.5	1,427.2	721.4	657.3	64.11	11.253		
9,400.0	6,944.3	6,939.5	6,938.7	55.3	15.1	-86.40	-1,629.5	1,427.2	820.4	754.5	65.90	12.448		
9,500.0	6,943.7	6,938.4	6,937.6	57.0	15.1	-85.82	-1,629.5	1,427.3	919.6	851.9	67.70	13.582		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17R-223
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-223	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		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)					
7,100.0	6,833.4	6,828.7	6,827.7	29.1	13.7	44.71	-1,085.6	970.9	971.6	941.3	30.32	32.049	
7,200.0	6,881.4	6,876.6	6,875.6	29.5	13.8	51.54	-1,085.6	970.5	894.4	864.6	29.84	29.974	
7,300.0	6,918.1	6,913.0	6,912.0	30.0	13.9	61.05	-1,085.6	970.2	812.9	782.3	30.62	26.544	
7,400.0	6,942.6	6,937.5	6,936.5	30.5	13.9	72.69	-1,085.5	970.0	729.1	696.7	32.44	22.478	
7,500.0	6,954.7	6,949.5	6,948.5	31.1	13.9	84.70	-1,085.5	969.9	645.3	610.9	34.39	18.764	
7,600.0	6,955.7	6,950.4	6,949.4	31.7	13.9	90.09	-1,085.5	969.9	564.0	528.3	35.75	15.777	
7,700.0	6,955.1	6,949.7	6,948.7	32.5	13.9	89.97	-1,085.5	969.9	489.4	452.5	36.93	13.254	
7,800.0	6,954.4	6,949.0	6,948.0	33.3	13.9	89.85	-1,085.5	969.9	425.4	387.2	38.20	11.137	
7,900.0	6,953.8	6,948.3	6,947.3	34.3	13.9	89.74	-1,085.5	969.9	377.4	337.8	39.55	9.542	
8,000.0	6,953.2	6,947.6	6,946.6	35.3	13.9	89.62	-1,085.5	969.9	351.9	311.0	40.97	8.590	
8,042.8	6,952.9	6,947.3	6,946.3	35.8	13.9	89.57	-1,085.5	969.9	349.3	307.7	41.60	8.397 CC, ES	
8,100.0	6,952.5	6,946.9	6,945.9	36.4	13.9	89.51	-1,085.5	969.9	354.0	311.5	42.44	8.340 SF	
8,200.0	6,951.9	6,946.2	6,945.2	37.6	13.9	89.39	-1,085.5	969.9	383.1	339.1	43.97	8.712	
8,300.0	6,951.3	6,945.5	6,944.5	38.9	13.9	89.27	-1,085.5	969.9	433.8	388.2	45.54	9.526	
8,400.0	6,950.6	6,944.7	6,943.7	40.2	13.9	89.16	-1,085.5	969.9	499.6	452.5	47.14	10.599	
8,500.0	6,950.0	6,944.0	6,943.0	41.5	13.9	89.04	-1,085.5	969.9	575.4	526.6	48.77	11.797	
8,600.0	6,949.4	6,943.3	6,942.3	42.9	13.9	88.92	-1,085.5	969.9	657.6	607.2	50.43	13.041	
8,700.0	6,948.7	6,942.6	6,941.6	44.4	13.9	88.80	-1,085.5	969.9	744.2	692.1	52.11	14.282	
8,800.0	6,948.1	6,941.9	6,940.9	45.8	13.9	88.69	-1,085.5	969.9	833.9	780.0	53.81	15.496	
8,900.0	6,947.5	6,941.2	6,940.2	47.3	13.9	88.57	-1,085.5	969.9	925.6	870.1	55.53	16.668	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17R-223
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-223	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
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
2,700.0	2,671.9	3,022.2	2,937.5	8.0	11.1	52.36	-559.8	1,013.9	984.0	968.3	15.72	62.592		
2,800.0	2,769.0	3,110.8	3,020.4	8.5	11.6	52.13	-528.7	1,008.9	942.2	925.7	16.52	57.039		
2,900.0	2,866.2	3,189.9	3,094.4	9.0	12.1	51.87	-501.1	1,005.2	901.2	883.9	17.29	52.139		
3,000.0	2,963.3	3,265.4	3,165.3	9.5	12.6	51.56	-475.1	1,003.1	861.9	843.8	18.04	47.773		
3,100.0	3,060.5	3,365.4	3,259.3	10.0	13.2	51.15	-441.1	1,000.3	822.8	803.9	18.92	43.497		
3,200.0	3,157.6	3,454.6	3,343.3	10.5	13.8	50.82	-411.4	996.9	783.5	763.7	19.73	39.708		
3,300.0	3,254.8	3,541.0	3,425.0	11.0	14.3	50.48	-383.3	994.1	745.1	724.5	20.53	36.292		
3,400.0	3,351.9	3,627.4	3,506.6	11.5	14.8	50.06	-355.1	992.3	707.4	686.0	21.35	33.131		
3,500.0	3,449.1	3,725.1	3,598.5	12.0	15.4	49.40	-322.0	990.9	669.5	647.2	22.27	30.067		
3,600.0	3,546.2	3,823.1	3,690.3	12.5	16.1	48.57	-287.7	989.2	630.9	607.7	23.20	27.188		
3,700.0	3,643.4	3,915.0	3,776.3	13.0	16.7	47.70	-255.4	987.3	591.9	567.8	24.12	24.543		
3,800.0	3,740.5	4,005.0	3,860.8	13.5	17.2	46.83	-224.4	984.9	553.1	528.1	25.00	22.125		
3,900.0	3,837.7	4,094.7	3,945.5	14.0	17.8	46.05	-195.1	981.8	514.9	489.0	25.85	19.919		
4,000.0	3,934.9	4,184.6	4,030.5	14.5	18.3	45.14	-165.9	979.1	477.1	450.4	26.71	17.861		
4,100.0	4,032.0	4,283.5	4,123.6	15.0	18.9	43.81	-132.8	976.4	439.2	411.5	27.66	15.878		
4,200.0	4,129.2	4,379.8	4,213.9	15.5	19.5	42.23	-99.6	972.7	400.1	371.5	28.62	13.982		
4,300.0	4,226.3	4,471.9	4,300.0	16.0	20.2	40.24	-67.0	969.0	360.7	331.1	29.58	12.195		
4,400.0	4,323.5	4,566.6	4,379.3	16.5	20.7	38.06	-37.6	966.1	322.5	292.1	30.48	10.581		
4,500.0	4,420.6	4,649.5	4,466.9	17.0	21.3	35.33	-6.7	963.2	285.9	254.5	31.42	9.100		
4,600.0	4,517.8	4,740.4	4,552.8	17.5	21.8	32.04	23.0	960.0	249.8	217.4	32.33	7.726		
4,700.0	4,614.9	4,832.7	4,640.3	18.0	22.4	27.85	52.5	956.7	214.9	181.7	33.22	6.470		
4,800.0	4,712.1	4,923.0	4,726.2	18.5	22.9	22.86	79.6	953.4	181.8	147.8	34.05	5.340		
4,900.0	4,809.2	5,014.6	4,814.6	19.0	23.3	17.06	103.8	950.6	151.7	116.9	34.80	4.360		
5,000.0	4,906.4	5,108.5	4,906.0	19.5	23.7	10.08	125.4	948.1	124.3	88.8	35.47	3.503		
5,100.0	5,003.5	5,203.6	4,998.9	20.0	24.1	0.60	145.2	945.8	99.6	63.4	36.13	2.755		
5,200.0	5,100.7	5,299.7	5,093.4	20.5	24.5	-12.54	162.9	943.8	78.4	41.6	36.85	2.128		
5,300.0	5,197.8	5,396.9	5,189.5	21.0	24.8	-30.14	176.9	942.3	61.9	24.4	37.50	1.650		
5,400.0	5,295.0	5,494.8	5,286.7	21.5	25.1	-54.03	187.9	941.1	51.9	14.7	37.14	1.396 Level 3		
5,456.9	5,350.3	5,550.4	5,342.1	21.8	25.2	-69.74	193.0	940.4	50.1	13.8	36.30	1.381 Level 3, CC, ES, SF		
5,500.0	5,392.1	5,592.6	5,384.2	22.0	25.3	-81.63	196.5	939.9	51.1	15.2	35.90	1.424 Level 3		
5,600.0	5,489.3	5,691.9	5,483.3	22.5	25.5	-105.87	202.1	939.1	58.7	21.7	37.07	1.584		
5,700.0	5,586.4	5,791.5	5,582.9	23.1	25.6	-124.29	203.5	939.2	70.2	31.3	38.92	1.805		
5,800.0	5,683.6	5,888.6	5,679.9	23.6	25.7	-137.56	202.8	939.4	85.5	45.6	39.95	2.141		
5,900.0	5,780.7	5,985.7	5,777.1	24.1	25.7	-146.77	201.8	939.4	104.1	63.6	40.44	2.573		
6,000.0	5,877.9	6,082.5	5,873.9	24.6	25.8	-153.06	201.1	939.3	124.6	83.8	40.76	3.057		
6,100.0	5,975.0	6,179.4	5,970.8	25.1	25.9	-157.46	200.6	939.1	146.3	105.3	41.04	3.565		
6,200.0	6,072.2	6,276.3	6,067.7	25.6	26.0	-160.74	200.0	938.8	168.7	127.4	41.34	4.082		
6,300.0	6,169.3	6,372.7	6,164.1	26.1	26.1	-163.18	199.7	938.2	191.8	150.2	41.64	4.606		
6,400.0	6,266.5	6,469.6	6,261.0	26.6	26.2	-169.61	199.5	937.6	215.8	173.9	41.83	5.158		
6,500.0	6,362.7	6,565.7	6,357.1	27.0	26.3	-146.82	199.0	936.8	241.4	199.4	42.00	5.747		
6,600.0	6,456.4	6,659.9	6,451.2	27.4	26.3	-135.59	198.4	936.2	269.4	227.3	42.02	6.411		
6,700.0	6,545.9	6,749.4	6,540.8	27.7	26.4	-130.98	197.6	935.5	301.8	260.0	41.77	7.225		
6,800.0	6,629.7	6,833.8	6,625.2	28.1	26.5	-129.52	196.8	934.9	340.6	299.4	41.21	8.265		
6,900.0	6,706.4	6,911.5	6,702.9	28.4	26.6	-129.18	196.2	934.6	387.4	347.0	40.44	9.580		
7,000.0	6,774.7	6,979.9	6,771.3	28.7	26.6	-128.61	195.8	934.4	443.1	403.3	39.76	11.145		
7,100.0	6,833.4	7,038.0	6,829.4	29.1	26.7	-126.93	195.6	934.3	507.7	468.1	39.60	12.819		
7,200.0	6,881.4	7,085.2	6,876.6	29.5	26.7	-123.49	195.5	934.1	580.4	539.9	40.45	14.346		
7,300.0	6,918.1	7,121.5	6,912.8	30.0	26.8	-117.67	195.5	934.0	659.8	617.3	42.56	15.505		
7,400.0	6,942.6	7,145.8	6,937.2	30.5	26.8	-108.72	195.5	933.9	744.5	699.0	45.53	16.353		
7,500.0	6,954.7	7,157.7	6,949.1	31.1	26.8	-96.30	195.5	933.8	832.6	784.8	47.81	17.413		
7,600.0	6,955.7	7,158.7	6,950.0	31.7	26.8	-88.97	195.5	933.8	922.5	874.0	48.51	19.017		

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-223
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-223	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-223
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-223	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
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
8,400.0	6,950.6	7,121.8	6,944.8	40.2	25.3	90.66	90.66	-2,304.6	1,007.5	916.6	857.9	58.70	15.614	
8,500.0	6,950.0	7,121.3	6,944.2	41.5	25.3	90.56	90.56	-2,304.6	1,007.5	823.2	762.9	60.34	13.644	
8,600.0	6,949.4	7,120.7	6,943.7	42.9	25.3	90.45	90.45	-2,304.6	1,007.5	731.7	669.7	62.00	11.801	
8,700.0	6,948.7	7,120.1	6,943.1	44.4	25.3	90.35	90.35	-2,304.6	1,007.5	642.6	578.9	63.69	10.090	
8,800.0	6,948.1	7,119.5	6,942.5	45.8	25.3	90.24	90.24	-2,304.6	1,007.5	557.3	491.9	65.39	8.522	
8,900.0	6,947.5	7,119.0	6,941.9	47.3	25.3	90.14	90.14	-2,304.6	1,007.5	477.7	410.6	67.12	7.117	
9,000.0	6,946.8	7,118.4	6,941.4	48.9	25.3	90.03	90.03	-2,304.6	1,007.5	407.2	338.3	68.86	5.913	
9,100.0	6,946.2	7,117.8	6,940.8	50.5	25.3	89.92	89.92	-2,304.6	1,007.5	351.3	280.7	70.61	4.975	
9,200.0	6,945.6	7,117.2	6,940.2	52.1	25.3	89.82	89.82	-2,304.6	1,007.5	317.8	245.5	72.38	4.391	
9,261.9	6,945.2	7,116.9	6,939.8	53.1	25.3	89.75	89.75	-2,304.6	1,007.5	311.7	238.3	73.48	4.243 CC, ES	
9,300.0	6,944.9	7,116.7	6,939.6	53.7	25.3	89.71	89.71	-2,304.6	1,007.5	314.0	239.9	74.15	4.235 SF	
9,400.0	6,944.3	7,116.1	6,939.0	55.3	25.3	89.61	89.61	-2,304.6	1,007.5	340.9	265.0	75.94	4.490	
9,500.0	6,943.7	7,115.5	6,938.5	57.0	25.3	89.50	89.50	-2,304.6	1,007.5	392.2	314.5	77.73	5.046	
9,600.0	6,943.1	7,114.9	6,937.9	58.6	25.3	89.39	89.39	-2,304.6	1,007.5	459.8	380.3	79.53	5.782	
9,700.0	6,942.4	7,114.3	6,937.3	60.3	25.3	89.28	89.28	-2,304.6	1,007.5	537.6	456.3	81.34	6.610	
9,800.0	6,941.8	7,113.8	6,936.7	62.0	25.3	89.18	89.18	-2,304.6	1,007.5	621.8	538.7	83.16	7.478	
9,900.0	6,941.2	7,113.2	6,936.1	63.7	25.3	89.07	89.07	-2,304.6	1,007.5	710.1	625.1	84.98	8.357	
10,000.0	6,940.5	7,112.6	6,935.5	65.5	25.3	88.96	88.96	-2,304.6	1,007.5	801.2	714.4	86.80	9.230	
10,100.0	6,939.9	7,112.0	6,935.0	67.2	25.3	88.85	88.85	-2,304.6	1,007.5	894.1	805.5	88.63	10.088	
10,200.0	6,939.3	7,111.4	6,934.4	68.9	25.3	88.75	88.75	-2,304.6	1,007.5	988.5	898.0	90.47	10.926	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17R-223
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-223	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')

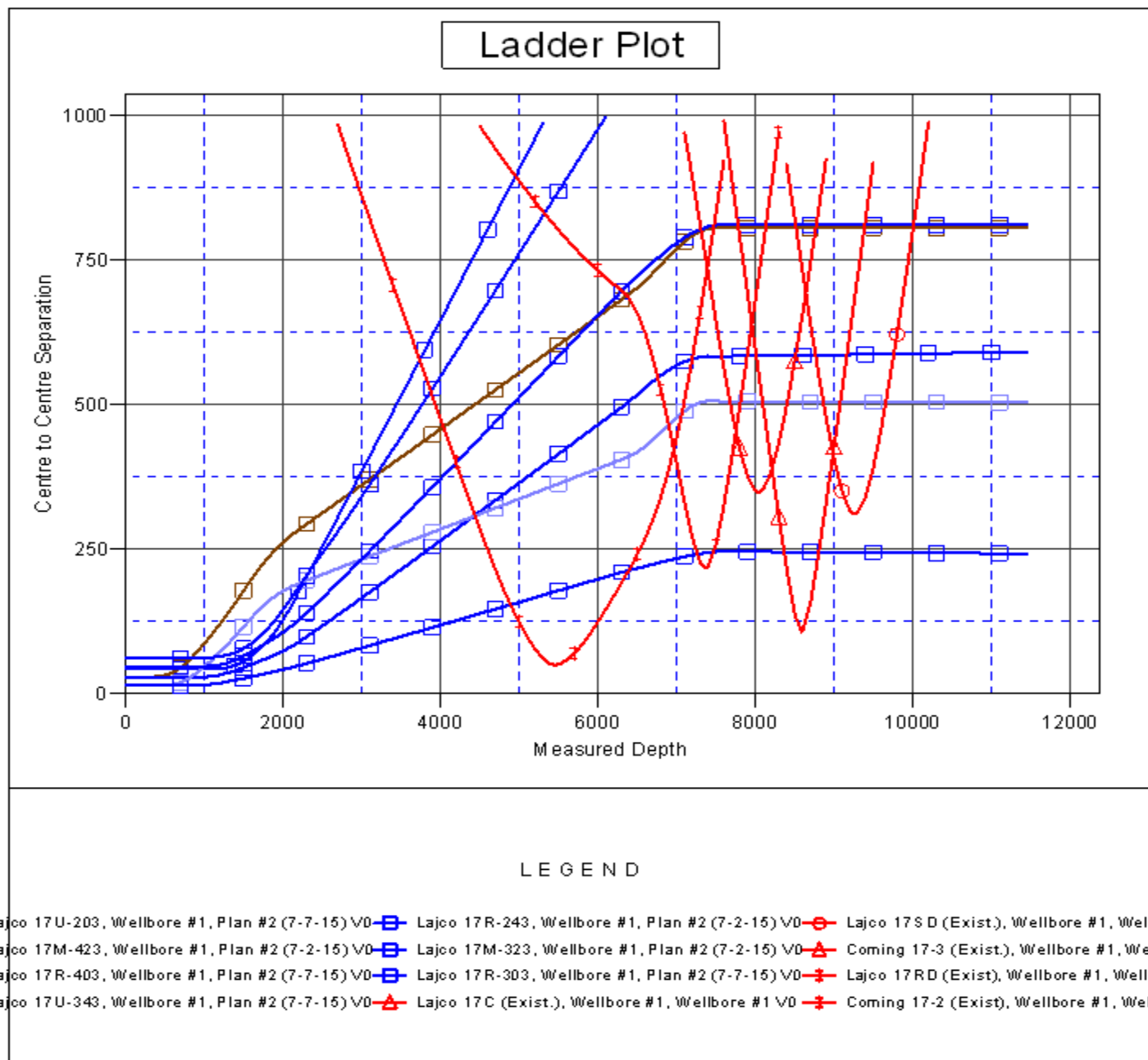
Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Lajco 17R-223

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-223
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-223	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-223
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.38°

