

PETROLEUM DEVELOPMENT CORP Weld County CO

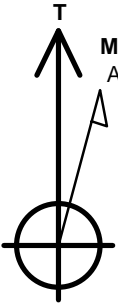
Well Name: Lajco 17R-243

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	1359694.86	3163455.97	40.319280	-104.913800	
RKB - 13' WELL @ 4807.0ft (RKB - 13')						

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
50'E/W Hardline (17R-243)	1.0	-2453.2	504.8	Rectangle (Sides: L3960.9 W100.0)
SHL 355'FNL & 2185'FEL	5.0	0.0	0.0	Point
BHL 500'FSL & 1756'FEL	6910.0	-4433.6	504.8	Point



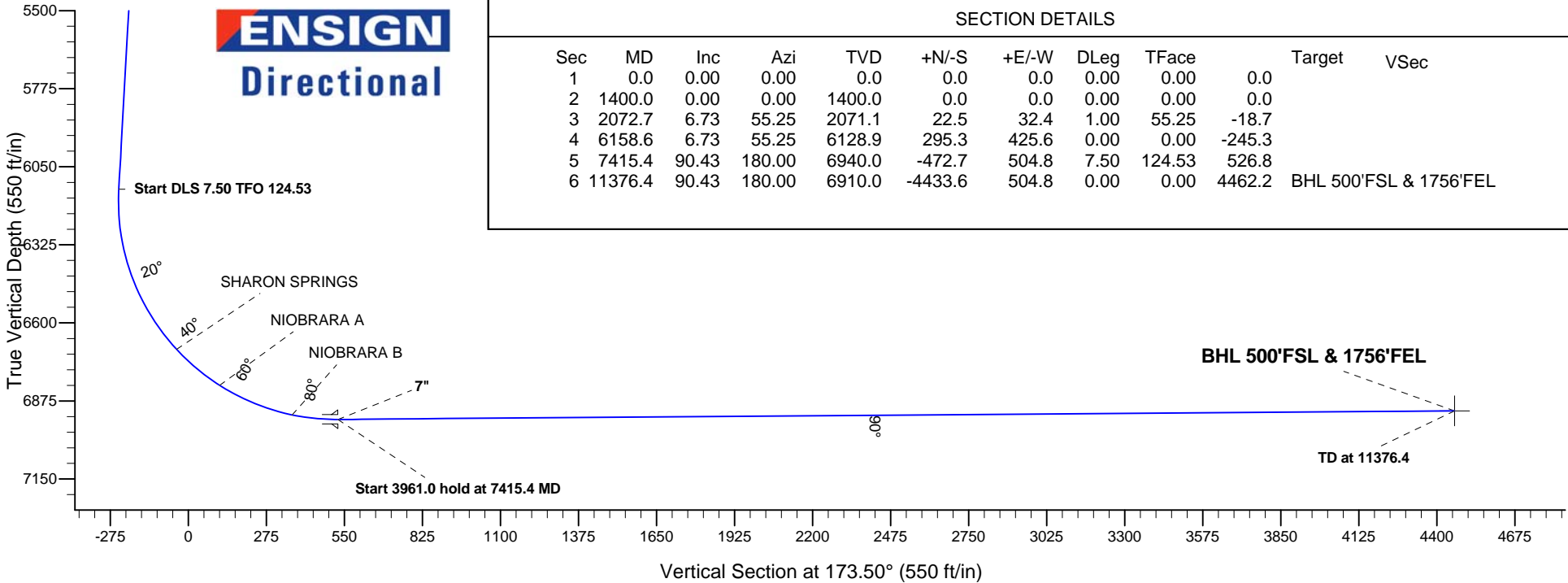
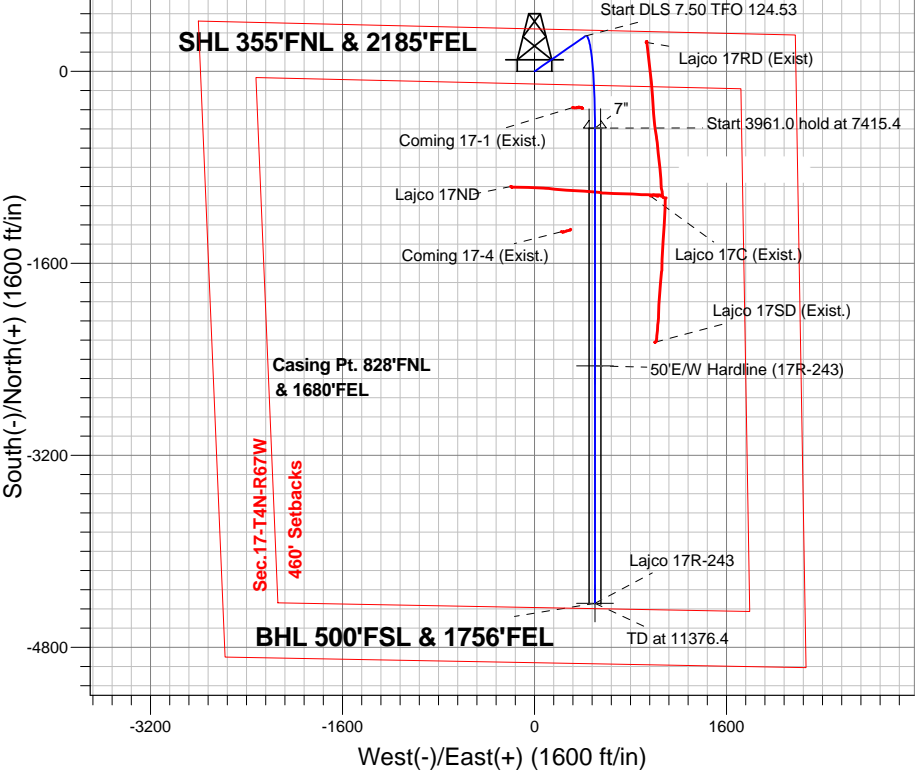
Azimuths to True North
Magnetic North: 8.39°

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

ANNOTATIONS

TVD	MD	Annotation
1400.0	1400.0	KOP - Start Build 1.00
6128.9	6158.6	Start DLS 7.50 TFO 124.53
6940.0	7415.4	Start 3961.0 hold at 7415.4 MD
6910.0	11376.4	TD at 11376.4

Lajco 4N67W17R Pad Sec.17-T4N-R67W
Lajco 17R-243
Plan #2 (7-2-15)



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	1400.0	0.00	0.00	1400.0	0.0	0.0	0.00	0.00	0.0	
3	2072.7	6.73	55.25	2071.1	22.5	32.4	1.00	55.25	-18.7	
4	6158.6	6.73	55.25	6128.9	295.3	425.6	0.00	0.00	-245.3	
5	7415.4	90.43	180.00	6940.0	-472.7	504.8	7.50	124.53	526.8	
6	11376.4	90.43	180.00	6910.0	-4433.6	504.8	0.00	0.00	4462.2	BHL 500'FSL & 1756'FEL



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.17-T4N-R67W

Lajco 4N67W17R Pad Sec.17-T4N-R67W

Lajco 17R-243

Wellbore #1

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

Standard Planning Report

08 July, 2015

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well Lajco 17R-243
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-243	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (7-2-15)		

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-243					
Well Position	+N-S	-7.3 ft	Northing:	1,359,694.86 ft	Latitude:	40.319280
	+E-W	-1,447.3 ft	Easting:	3,163,455.97 ft	Longitude:	-104.913800
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,794.0 ft

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

Design	Plan #2 (7-2-15)			
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	173.50

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,072.7	6.73	55.25	2,071.1	22.5	32.4	1.00	1.00	0.00	55.25	
6,158.6	6.73	55.25	6,128.9	295.3	425.6	0.00	0.00	0.00	0.00	
7,415.4	90.43	180.00	6,940.0	-472.7	504.8	7.50	6.66	9.93	124.53	
11,376.4	90.43	180.00	6,910.0	-4,433.6	504.8	0.00	0.00	0.00	0.00	BHL 500'FSL & 175

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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-243	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (7-2-15)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP - Start Build 1.00									
1,500.0	1.00	55.25	1,500.0	0.5	0.7	-0.4	1.00	1.00	0.00
1,600.0	2.00	55.25	1,600.0	2.0	2.9	-1.7	1.00	1.00	0.00
1,700.0	3.00	55.25	1,699.9	4.5	6.5	-3.7	1.00	1.00	0.00
1,800.0	4.00	55.25	1,799.7	8.0	11.5	-6.6	1.00	1.00	0.00
1,900.0	5.00	55.25	1,899.4	12.4	17.9	-10.3	1.00	1.00	0.00
2,000.0	6.00	55.25	1,998.9	17.9	25.8	-14.9	1.00	1.00	0.00
2,072.7	6.73	55.25	2,071.1	22.5	32.4	-18.7	1.00	1.00	0.00
2,100.0	6.73	55.25	2,098.3	24.3	35.0	-20.2	0.00	0.00	0.00
2,200.0	6.73	55.25	2,197.6	31.0	44.7	-25.7	0.00	0.00	0.00
2,300.0	6.73	55.25	2,296.9	37.7	54.3	-31.3	0.00	0.00	0.00
2,400.0	6.73	55.25	2,396.2	44.3	63.9	-36.8	0.00	0.00	0.00
2,500.0	6.73	55.25	2,495.5	51.0	73.5	-42.4	0.00	0.00	0.00
2,600.0	6.73	55.25	2,594.8	57.7	83.2	-47.9	0.00	0.00	0.00
2,700.0	6.73	55.25	2,694.1	64.4	92.8	-53.5	0.00	0.00	0.00
2,800.0	6.73	55.25	2,793.4	71.0	102.4	-59.0	0.00	0.00	0.00
2,900.0	6.73	55.25	2,892.8	77.7	112.0	-64.6	0.00	0.00	0.00
3,000.0	6.73	55.25	2,992.1	84.4	121.6	-70.1	0.00	0.00	0.00
3,100.0	6.73	55.25	3,091.4	91.1	131.3	-75.6	0.00	0.00	0.00
3,200.0	6.73	55.25	3,190.7	97.8	140.9	-81.2	0.00	0.00	0.00
3,300.0	6.73	55.25	3,290.0	104.4	150.5	-86.7	0.00	0.00	0.00
3,400.0	6.73	55.25	3,389.3	111.1	160.1	-92.3	0.00	0.00	0.00
3,476.2	6.73	55.25	3,465.0	116.2	167.5	-96.5	0.00	0.00	0.00
PARKMAN									
3,500.0	6.73	55.25	3,488.6	117.8	169.8	-97.8	0.00	0.00	0.00
3,600.0	6.73	55.25	3,587.9	124.5	179.4	-103.4	0.00	0.00	0.00
3,700.0	6.73	55.25	3,687.3	131.1	189.0	-108.9	0.00	0.00	0.00
3,800.0	6.73	55.25	3,786.6	137.8	198.6	-114.5	0.00	0.00	0.00
3,900.0	6.73	55.25	3,885.9	144.5	208.3	-120.0	0.00	0.00	0.00
4,000.0	6.73	55.25	3,985.2	151.2	217.9	-125.6	0.00	0.00	0.00
4,004.8	6.73	55.25	3,990.0	151.5	218.3	-125.8	0.00	0.00	0.00
SUSSEX									
4,100.0	6.73	55.25	4,084.5	157.8	227.5	-131.1	0.00	0.00	0.00
4,200.0	6.73	55.25	4,183.8	164.5	237.1	-136.6	0.00	0.00	0.00
4,300.0	6.73	55.25	4,283.1	171.2	246.8	-142.2	0.00	0.00	0.00
4,400.0	6.73	55.25	4,382.4	177.9	256.4	-147.7	0.00	0.00	0.00
4,500.0	6.73	55.25	4,481.7	184.6	266.0	-153.3	0.00	0.00	0.00
4,538.5	6.73	55.25	4,520.0	187.1	269.7	-155.4	0.00	0.00	0.00

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Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	North Reference:	True
Well:	Lajco 17R-243	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (7-2-15)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
SHANNON									
4,600.0	6.73	55.25	4,581.1	191.2	275.6	-158.8	0.00	0.00	0.00
4,700.0	6.73	55.25	4,680.4	197.9	285.2	-164.4	0.00	0.00	0.00
4,800.0	6.73	55.25	4,779.7	204.6	294.9	-169.9	0.00	0.00	0.00
4,900.0	6.73	55.25	4,879.0	211.3	304.5	-175.5	0.00	0.00	0.00
5,000.0	6.73	55.25	4,978.3	217.9	314.1	-181.0	0.00	0.00	0.00
5,100.0	6.73	55.25	5,077.6	224.6	323.7	-186.5	0.00	0.00	0.00
5,200.0	6.73	55.25	5,176.9	231.3	333.4	-192.1	0.00	0.00	0.00
5,300.0	6.73	55.25	5,276.2	238.0	343.0	-197.6	0.00	0.00	0.00
5,400.0	6.73	55.25	5,375.6	244.6	352.6	-203.2	0.00	0.00	0.00
5,500.0	6.73	55.25	5,474.9	251.3	362.2	-208.7	0.00	0.00	0.00
5,600.0	6.73	55.25	5,574.2	258.0	371.9	-214.3	0.00	0.00	0.00
5,700.0	6.73	55.25	5,673.5	264.7	381.5	-219.8	0.00	0.00	0.00
5,800.0	6.73	55.25	5,772.8	271.4	391.1	-225.4	0.00	0.00	0.00
5,900.0	6.73	55.25	5,872.1	278.0	400.7	-230.9	0.00	0.00	0.00
6,000.0	6.73	55.25	5,971.4	284.7	410.4	-236.5	0.00	0.00	0.00
6,100.0	6.73	55.25	6,070.7	291.4	420.0	-242.0	0.00	0.00	0.00
6,158.6	6.73	55.25	6,128.9	295.3	425.6	-245.3	0.00	0.00	0.00
Start DLS 7.50 TFO 124.53									
6,200.0	5.58	82.55	6,170.1	296.9	429.6	-246.4	7.50	-2.76	65.95
6,300.0	8.75	140.90	6,269.4	291.7	439.2	-240.1	7.50	3.16	58.35
6,400.0	15.30	159.20	6,367.2	273.4	448.7	-220.9	7.50	6.55	18.30
6,500.0	22.44	166.38	6,461.8	242.5	457.9	-189.1	7.50	7.14	7.19
6,600.0	29.75	170.19	6,551.5	199.4	466.7	-145.3	7.50	7.31	3.81
6,700.0	37.14	172.60	6,634.9	145.0	474.8	-90.3	7.50	7.38	2.41
6,775.8	42.76	173.94	6,693.0	96.7	480.5	-41.7	7.50	7.41	1.76
SHARON SPRINGS									
6,800.0	44.55	174.31	6,710.5	80.0	482.2	-25.0	7.50	7.43	1.52
6,900.0	51.99	175.61	6,777.0	5.7	488.7	49.6	7.50	7.44	1.31
6,974.5	57.54	176.42	6,820.0	-54.9	492.9	110.4	7.50	7.45	1.09
NIOBRARA A									
7,000.0	59.44	176.68	6,833.3	-76.6	494.2	132.1	7.50	7.45	1.00
7,100.0	66.90	177.59	6,878.4	-165.7	498.6	221.1	7.50	7.46	0.91
7,200.0	74.36	178.40	6,911.6	-259.9	501.9	315.0	7.50	7.46	0.81
7,252.5	78.27	178.80	6,924.0	-310.9	503.1	365.8	7.50	7.46	0.77
NIOBRARA B									
7,300.0	81.82	179.16	6,932.2	-357.7	504.0	412.4	7.50	7.46	0.75
7,400.0	89.28	179.89	6,940.0	-457.3	504.8	511.5	7.50	7.46	0.73
7,415.4	90.43	180.00	6,940.0	-472.7	504.8	526.8	7.50	7.46	0.72
Start 3961.0 hold at 7415.4 MD - 7"									
7,500.0	90.43	180.00	6,939.4	-557.3	504.8	610.8	0.00	0.00	0.00
7,600.0	90.43	180.00	6,938.6	-657.3	504.8	710.2	0.00	0.00	0.00
7,700.0	90.43	180.00	6,937.8	-757.3	504.8	809.5	0.00	0.00	0.00
7,800.0	90.43	180.00	6,937.1	-857.3	504.8	908.9	0.00	0.00	0.00
7,900.0	90.43	180.00	6,936.3	-957.3	504.8	1,008.2	0.00	0.00	0.00
8,000.0	90.43	180.00	6,935.6	-1,057.3	504.8	1,107.6	0.00	0.00	0.00
8,100.0	90.43	180.00	6,934.8	-1,157.3	504.8	1,207.0	0.00	0.00	0.00
8,200.0	90.43	180.00	6,934.1	-1,257.3	504.8	1,306.3	0.00	0.00	0.00
8,300.0	90.43	180.00	6,933.3	-1,357.3	504.8	1,405.7	0.00	0.00	0.00
8,400.0	90.43	180.00	6,932.5	-1,457.3	504.8	1,505.0	0.00	0.00	0.00
8,500.0	90.43	180.00	6,931.8	-1,557.3	504.8	1,604.4	0.00	0.00	0.00
8,600.0	90.43	180.00	6,931.0	-1,657.3	504.8	1,703.7	0.00	0.00	0.00

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Project:	SEC.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
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Well:	Lajco 17R-243	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (7-2-15)		

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	90.43	180.00	6,930.3	-1,757.3	504.8	1,803.1	0.00	0.00	0.00
8,800.0	90.43	180.00	6,929.5	-1,857.3	504.8	1,902.4	0.00	0.00	0.00
8,900.0	90.43	180.00	6,928.8	-1,957.3	504.8	2,001.8	0.00	0.00	0.00
9,000.0	90.43	180.00	6,928.0	-2,057.3	504.8	2,101.2	0.00	0.00	0.00
9,100.0	90.43	180.00	6,927.2	-2,157.2	504.8	2,200.5	0.00	0.00	0.00
9,200.0	90.43	180.00	6,926.5	-2,257.2	504.8	2,299.9	0.00	0.00	0.00
9,300.0	90.43	180.00	6,925.7	-2,357.2	504.8	2,399.2	0.00	0.00	0.00
9,400.0	90.43	180.00	6,925.0	-2,457.2	504.8	2,498.6	0.00	0.00	0.00
9,500.0	90.43	180.00	6,924.2	-2,557.2	504.8	2,597.9	0.00	0.00	0.00
9,600.0	90.43	180.00	6,923.5	-2,657.2	504.8	2,697.3	0.00	0.00	0.00
9,700.0	90.43	180.00	6,922.7	-2,757.2	504.8	2,796.6	0.00	0.00	0.00
9,800.0	90.43	180.00	6,921.9	-2,857.2	504.8	2,896.0	0.00	0.00	0.00
9,900.0	90.43	180.00	6,921.2	-2,957.2	504.8	2,995.4	0.00	0.00	0.00
10,000.0	90.43	180.00	6,920.4	-3,057.2	504.8	3,094.7	0.00	0.00	0.00
10,100.0	90.43	180.00	6,919.7	-3,157.2	504.8	3,194.1	0.00	0.00	0.00
10,200.0	90.43	180.00	6,918.9	-3,257.2	504.8	3,293.4	0.00	0.00	0.00
10,300.0	90.43	180.00	6,918.2	-3,357.2	504.8	3,392.8	0.00	0.00	0.00
10,400.0	90.43	180.00	6,917.4	-3,457.2	504.8	3,492.1	0.00	0.00	0.00
10,500.0	90.43	180.00	6,916.6	-3,557.2	504.8	3,591.5	0.00	0.00	0.00
10,600.0	90.43	180.00	6,915.9	-3,657.2	504.8	3,690.8	0.00	0.00	0.00
10,700.0	90.43	180.00	6,915.1	-3,757.2	504.8	3,790.2	0.00	0.00	0.00
10,800.0	90.43	180.00	6,914.4	-3,857.2	504.8	3,889.5	0.00	0.00	0.00
10,900.0	90.43	180.00	6,913.6	-3,957.2	504.8	3,988.9	0.00	0.00	0.00
11,000.0	90.43	180.00	6,912.9	-4,057.2	504.8	4,088.3	0.00	0.00	0.00
11,100.0	90.43	180.00	6,912.1	-4,157.2	504.8	4,187.6	0.00	0.00	0.00
11,200.0	90.43	180.00	6,911.3	-4,257.2	504.8	4,287.0	0.00	0.00	0.00
11,300.0	90.43	180.00	6,910.6	-4,357.2	504.8	4,386.3	0.00	0.00	0.00
11,376.4	90.43	180.00	6,910.0	-4,433.6	504.8	4,462.2	0.00	0.00	0.00
TD at 11376.4									

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N-S (ft)	+E-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
50'E/W Hardline (17R - plan misses target center by 2504.5ft at 1.0ft MD (1.0 TVD, 0.0 N, 0.0 E) - Rectangle (sides W3,960.9 H100.0 D0.0)	0.00	0.00	1.0	-2,453.2	504.8	1,357,245.21	3,163,976.96	40.312546	-104.911990
BHL 500'FSL & 1756'I - plan hits target center - Point	0.00	0.00	6,910.0	-4,433.6	504.8	1,355,264.90	3,163,990.06	40.307110	-104.911990
SHL 355'FNL & 2185' - plan hits target center - Point	0.00	0.00	5.0	0.0	0.0	1,359,694.88	3,163,455.97	40.319280	-104.913800
	7,415.4	6,940.0	7"					7	7-1/2

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well Lajco 17R-243
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-243	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (7-2-15)		

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,476.2	3,465.0	PARKMAN		0.00	
4,004.8	3,990.0	SUSSEX		0.00	
4,538.5	4,520.0	SHANNON		0.00	
6,775.8	6,693.0	SHARON SPRINGS		0.00	
6,974.5	6,820.0	NIOBRARA A		0.00	
7,252.5	6,924.0	NIOBRARA B		0.00	
	7,003.0	NIOBRARA C		0.00	
	7,131.0	FORT HAYS		0.00	
	7,152.0	CODELL		0.00	

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,400.0	1,400.0	0.0	0.0	KOP - Start Build 1.00
6,158.6	6,128.9	22.5	32.4	Start DLS 7.50 TFO 124.53
7,415.4	6,940.0	295.3	425.6	Start 3961.0 hold at 7415.4 MD
11,376.4	6,910.0	-472.7	504.8	TD at 11376.4



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.17-T4N-R67W

Lajco 4N67W17R Pad Sec.17-T4N-R67W

Lajco 17R-243

Wellbore #1

Plan #2 (7-2-15)

Anticollision Report

08 July, 2015



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17R-243
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-243	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 (7-2-15)	Offset TVD Reference:	Offset Datum

Reference	Plan #2 (7-2-15)
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria
Interpolation Method:	MD Interval 100.0ft
Depth Range:	Unlimited
Results Limited by:	Maximum center-center distance of 1,000.0ft
Warning Levels Evaluated at:	2.00 Sigma
Error Model:	ISCWSA
Scan Method:	Closest Approach 3D
Error Surface:	Elliptical Conic

Survey Tool Program		Date	7/8/2015		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	11,376.4	Plan #2 (7-2-15) (Wellbore #1)	MWD	MWD - Standard	

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Lajco 4N67W17R Pad Sec.17-T4N-R67W						
Lajco 17M-323 - Wellbore #1 - Plan #2 (7-2-15)	1,400.0	1,400.0	14.6	8.5	2.401	CC, ES
Lajco 17M-323 - Wellbore #1 - Plan #2 (7-2-15)	1,500.0	1,500.0	15.1	8.6	2.317	SF
Lajco 17M-423 - Wellbore #1 - Plan #2 (7-2-15)	1,960.2	1,957.1	81.7	73.2	9.551	CC, ES
Lajco 17M-423 - Wellbore #1 - Plan #2 (7-2-15)	11,376.4	11,558.2	693.4	525.4	4.128	SF
Lajco 17R-223 - Wellbore #1 - Plan #2 (7-7-15)	800.0	800.0	47.4	44.1	14.072	CC
Lajco 17R-223 - Wellbore #1 - Plan #2 (7-7-15)	1,000.0	999.8	47.9	43.7	11.298	ES
Lajco 17R-223 - Wellbore #1 - Plan #2 (7-7-15)	11,376.4	11,438.4	811.9	636.1	4.618	SF
Lajco 17R-303 - Wellbore #1 - Plan #2 (7-7-15)	1,000.0	1,000.0	32.9	28.6	7.705	CC
Lajco 17R-303 - Wellbore #1 - Plan #2 (7-7-15)	1,200.0	1,199.8	33.4	28.3	6.499	ES
Lajco 17R-303 - Wellbore #1 - Plan #2 (7-7-15)	11,376.4	11,465.2	596.1	424.0	3.464	SF
Lajco 17R-403 - Wellbore #1 - Plan #2 (7-7-15)	1,200.0	1,200.0	18.2	13.0	3.524	CC
Lajco 17R-403 - Wellbore #1 - Plan #2 (7-7-15)	1,300.0	1,299.9	18.6	13.0	3.310	ES
Lajco 17R-403 - Wellbore #1 - Plan #2 (7-7-15)	11,376.4	11,601.4	349.3	213.4	2.571	SF
Lajco 17U-203 - Wellbore #1 - Plan #2 (7-7-15)	200.0	200.0	76.6	75.9	113.539	CC
Lajco 17U-203 - Wellbore #1 - Plan #2 (7-7-15)	400.0	399.6	77.1	75.5	49.509	ES
Lajco 17U-203 - Wellbore #1 - Plan #2 (7-7-15)	1,000.0	987.7	116.2	111.5	24.708	SF
Lajco 17U-343 - Wellbore #1 - Plan #2 (7-7-15)	400.0	400.0	62.0	60.4	39.405	CC
Lajco 17U-343 - Wellbore #1 - Plan #2 (7-7-15)	500.0	499.8	62.1	60.1	30.880	ES
Lajco 17U-343 - Wellbore #1 - Plan #2 (7-7-15)	1,000.0	994.3	80.7	76.4	18.490	SF
Lajco Pad Sec.17-T4N-R67W						
Coming 17-1 (Exist.) - Wellbore #1 - Wellbore #1	7,239.3	6,914.1	183.4	149.2	5.372	CC, ES, SF
Coming 17-4 (Exist.) - Wellbore #1 - Wellbore #1	8,279.9	6,911.1	278.5	232.5	6.054	CC, ES
Coming 17-4 (Exist.) - Wellbore #1 - Wellbore #1	8,300.0	6,911.1	279.3	232.9	6.027	SF
Lajco 17C (Exist.) - Wellbore #1 - Wellbore #1	7,980.9	6,936.2	462.4	422.4	11.558	CC, ES
Lajco 17C (Exist.) - Wellbore #1 - Wellbore #1	8,100.0	6,935.3	477.5	435.6	11.403	SF
Lajco 17ND - Wellbore #1 - Wellbore #1	7,903.0	7,105.3	701.7	660.5	17.047	CC, ES
Lajco 17ND - Wellbore #1 - Wellbore #1	8,100.0	7,104.4	728.8	684.6	16.483	SF
Lajco 17RD (Exist.) - Wellbore #1 - Wellbore #1	6,655.5	6,807.4	467.0	425.6	11.292	CC, ES, SF
Lajco 17SD (Exist.) - Wellbore #1 - Wellbore #1	9,200.0	7,102.0	500.0	427.6	6.909	CC
Lajco 17SD (Exist.) - Wellbore #1 - Wellbore #1	9,200.0	7,102.0	500.0	427.6	6.909	ES
Lajco 17SD (Exist.) - Wellbore #1 - Wellbore #1	9,300.0	7,101.3	509.9	435.7	6.874	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17R-243
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-243	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 (7-2-15)	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: 0.0ft
Survey Program: 0-MWD													Offset Well Error: 0.0ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-180.00	-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	-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	-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	-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	-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	-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	-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	-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	-14.6	0.0	14.6	11.2	3.37	4.322	
900.0	900.0	900.0	900.0	1.9	1.9	-180.00	-14.6	0.0	14.6	10.8	3.82	3.814	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-180.00	-14.6	0.0	14.6	10.3	4.27	3.412	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	-180.00	-14.6	0.0	14.6	9.9	4.72	3.087	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	-180.00	-14.6	0.0	14.6	9.4	5.17	2.819	
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	-180.00	-14.6	0.0	14.6	9.0	5.62	2.593	
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	-180.00	-14.6	0.0	14.6	8.5	6.07	2.401 CC, ES	
1,500.0	1,500.0	1,500.0	1,500.0	3.3	3.3	127.47	-14.6	0.0	15.1	8.6	6.51	2.317 SF	
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	134.56	-14.6	0.0	16.8	9.9	6.95	2.418	
1,700.0	1,699.9	1,699.9	1,699.9	3.7	3.7	143.43	-14.6	0.0	20.1	12.7	7.39	2.722	
1,800.0	1,799.7	1,799.7	1,799.7	3.9	3.9	151.67	-14.6	0.0	25.3	17.5	7.83	3.230	
1,900.0	1,899.4	1,899.4	1,899.4	4.1	4.2	158.24	-14.6	0.0	32.4	24.1	8.26	3.922	
2,000.0	1,998.9	1,998.9	1,998.9	4.4	4.4	163.13	-14.6	0.0	41.5	32.8	8.70	4.768	
2,100.0	2,098.3	2,099.1	2,099.1	4.6	4.6	167.14	-13.7	0.2	51.6	42.4	9.13	5.649	
2,200.0	2,197.6	2,199.4	2,199.4	4.9	4.8	170.74	-11.2	0.9	60.8	51.2	9.57	6.352	
2,300.0	2,296.9	2,300.0	2,299.9	5.1	5.1	174.18	-7.0	2.1	68.8	58.7	10.02	6.864	
2,400.0	2,396.2	2,400.7	2,400.4	5.4	5.3	177.71	-1.1	3.7	75.5	65.0	10.46	7.216	
2,500.0	2,495.5	2,501.2	2,500.5	5.7	5.5	-178.59	6.5	5.8	81.2	70.3	10.91	7.442	
2,600.0	2,594.8	2,600.9	2,599.9	6.0	5.7	-175.22	14.4	8.0	86.9	75.5	11.36	7.646	
2,700.0	2,694.1	2,700.6	2,699.3	6.2	6.0	-172.27	22.3	10.2	92.8	81.0	11.82	7.853	
2,800.0	2,793.4	2,800.3	2,798.7	6.5	6.2	-169.67	30.2	12.4	99.0	86.7	12.29	8.058	
2,900.0	2,892.8	2,900.0	2,898.1	6.8	6.4	-167.39	38.1	14.6	105.3	92.6	12.76	8.259	
3,000.0	2,992.1	2,999.8	2,997.4	7.1	6.7	-165.36	46.0	16.8	111.8	98.6	13.23	8.453	
3,100.0	3,091.4	3,099.5	3,096.8	7.4	6.9	-163.56	53.9	19.0	118.4	104.7	13.71	8.640	
3,200.0	3,190.7	3,199.2	3,196.2	7.7	7.2	-161.96	61.7	21.1	125.2	111.0	14.19	8.818	
3,300.0	3,290.0	3,298.9	3,295.6	8.0	7.4	-160.51	69.6	23.3	132.0	117.3	14.68	8.989	
3,400.0	3,389.3	3,398.6	3,395.0	8.3	7.7	-159.21	77.5	25.5	138.9	123.7	15.17	9.151	
3,500.0	3,488.6	3,498.3	3,494.3	8.5	7.9	-158.03	85.4	27.7	145.8	130.1	15.67	9.305	
3,600.0	3,587.9	3,598.1	3,593.7	8.8	8.2	-156.96	93.3	29.9	152.8	136.6	16.17	9.451	
3,700.0	3,687.3	3,697.8	3,693.1	9.1	8.4	-155.99	101.2	32.1	159.9	143.2	16.67	9.590	
3,800.0	3,786.6	3,797.5	3,792.5	9.4	8.7	-155.09	109.1	34.3	167.0	149.8	17.17	9.722	
3,900.0	3,885.9	3,897.2	3,891.8	9.7	8.9	-154.27	117.0	36.5	174.1	156.4	17.68	9.847	
4,000.0	3,985.2	3,996.9	3,991.2	10.0	9.2	-153.52	124.9	38.7	181.2	163.1	18.19	9.966	
4,100.0	4,084.5	4,096.6	4,090.6	10.3	9.4	-152.82	132.8	40.8	188.4	169.7	18.70	10.078	
4,200.0	4,183.8	4,196.3	4,190.0	10.6	9.7	-152.17	140.7	43.0	195.7	176.4	19.21	10.185	
4,300.0	4,283.1	4,296.1	4,289.4	10.9	9.9	-151.57	148.6	45.2	202.9	183.2	19.72	10.287	
4,400.0	4,382.4	4,395.8	4,388.7	11.2	10.2	-151.01	156.5	47.4	210.2	189.9	20.24	10.384	
4,500.0	4,481.7	4,495.5	4,488.1	11.6	10.5	-150.49	164.4	49.6	217.4	196.7	20.76	10.476	
4,600.0	4,581.1	4,595.2	4,587.5	11.9	10.7	-150.00	172.3	51.8	224.7	203.5	21.27	10.564	
4,700.0	4,680.4	4,694.9	4,686.9	12.2	11.0	-149.54	180.2	54.0	232.0	210.3	21.79	10.648	
4,800.0	4,779.7	4,794.6	4,786.2	12.5	11.2	-149.11	188.1	56.2	239.4	217.1	22.31	10.728	
4,900.0	4,879.0	4,894.4	4,885.6	12.8	11.5	-148.71	196.0	58.3	246.7	223.9	22.83	10.804	
5,000.0	4,978.3	4,994.1	4,985.0	13.1	11.7	-148.33	203.9	60.5	254.1	230.7	23.36	10.877	

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-243
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-243	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 (7-2-15)	Offset TVD Reference:	Offset Datum

Offset Design Lajco 4N67W17R Pad Sec.17-T4N-R67W - Lajco 17M-323 - Wellbore #1 - Plan #2 (7-2-15)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,077.6	5,093.8	5,084.4	13.4	12.0	-147.97		211.8	62.7	261.4	237.5	23.88	10.947	
5,200.0	5,176.9	5,193.5	5,183.8	13.7	12.3	-147.63		219.7	64.9	268.8	244.4	24.40	11.014	
5,300.0	5,276.2	5,293.2	5,283.1	14.0	12.5	-147.31		227.6	67.1	276.2	251.2	24.93	11.078	
5,400.0	5,375.6	5,392.9	5,382.5	14.3	12.8	-147.01		235.5	69.3	283.6	258.1	25.45	11.140	
5,500.0	5,474.9	5,492.6	5,481.9	14.6	13.0	-146.72		243.4	71.5	291.0	265.0	25.98	11.199	
5,600.0	5,574.2	5,592.4	5,581.3	14.9	13.3	-146.44		251.3	73.7	298.4	271.9	26.51	11.255	
5,700.0	5,673.5	5,692.1	5,680.7	15.2	13.6	-146.18		259.2	75.8	305.8	278.7	27.04	11.310	
5,800.0	5,772.8	5,791.8	5,780.0	15.5	13.8	-145.93		267.1	78.0	313.2	285.6	27.56	11.362	
5,900.0	5,872.1	5,891.5	5,879.4	15.8	14.1	-145.69		275.0	80.2	320.6	292.5	28.09	11.412	
6,000.0	5,971.4	5,991.2	5,978.8	16.1	14.3	-145.47		282.9	82.4	328.0	299.4	28.62	11.461	
6,100.0	6,070.7	6,090.9	6,078.2	16.4	14.6	-145.25		290.8	84.6	335.5	306.3	29.15	11.508	
6,200.0	6,170.1	6,190.6	6,177.5	16.7	14.9	-172.24		298.7	86.8	342.9	313.2	29.66	11.560	
6,300.0	6,269.4	6,290.4	6,277.1	16.9	15.1	130.99		304.4	89.0	350.6	320.5	30.08	11.653	
6,400.0	6,367.2	6,391.9	6,378.3	17.1	15.2	114.38		297.9	91.2	358.5	328.2	30.33	11.822	
6,500.0	6,461.8	6,495.1	6,479.4	17.2	15.3	108.78		277.7	93.4	366.6	336.2	30.41	12.056	
6,600.0	6,551.5	6,600.1	6,578.4	17.2	15.3	106.45		243.3	95.6	374.6	344.2	30.37	12.334	
6,700.0	6,634.9	6,706.7	6,673.3	17.2	15.2	105.41		194.8	97.7	382.3	352.0	30.28	12.626	
6,800.0	6,710.5	6,815.1	6,761.8	17.2	15.2	104.96		132.6	99.7	389.5	359.2	30.22	12.885	
6,900.0	6,777.0	6,925.0	6,841.7	17.3	15.2	104.78		57.2	101.5	395.9	365.6	30.33	13.054	
7,000.0	6,833.3	7,036.3	6,910.8	17.4	15.4	104.73		-29.9	103.0	401.5	370.8	30.71	13.074	
7,100.0	6,878.4	7,148.7	6,966.9	17.7	15.8	104.71		-127.2	104.3	406.0	374.5	31.47	12.902	
7,200.0	6,911.6	7,262.1	7,008.5	18.2	16.5	104.68		-232.5	105.2	409.3	376.6	32.68	12.525	
7,300.0	6,932.2	7,376.0	7,034.1	18.9	17.3	104.61		-343.4	105.8	411.3	377.0	34.34	11.977	
7,400.0	6,940.0	7,490.1	7,043.0	19.8	18.4	104.49		-457.1	106.0	411.9	375.5	36.41	11.314	
7,467.5	6,940.3	7,558.6	7,042.5	20.5	19.2	104.37		-525.6	106.0	411.8	373.9	37.88	10.870	
7,500.0	6,939.4	7,591.1	7,042.3	20.9	19.5	104.47		-558.1	106.0	411.9	373.3	38.58	10.677	
7,600.0	6,938.6	7,691.1	7,041.5	22.0	20.7	104.47		-658.1	106.0	411.9	371.0	40.95	10.059	
7,700.0	6,937.8	7,791.1	7,040.8	23.3	22.1	104.47		-758.1	106.0	411.9	368.4	43.51	9.467	
7,800.0	6,937.1	7,891.1	7,040.0	24.6	23.4	104.47		-858.1	106.0	411.9	365.7	46.23	8.909	
7,900.0	6,936.3	7,991.1	7,039.3	26.0	24.9	104.47		-958.1	106.0	411.9	362.8	49.09	8.391	
8,000.0	6,935.6	8,091.1	7,038.5	27.5	26.4	104.47		-1,058.1	106.0	411.9	359.8	52.06	7.912	
8,100.0	6,934.8	8,191.1	7,037.8	29.0	28.0	104.47		-1,158.1	106.0	411.9	356.8	55.12	7.473	
8,200.0	6,934.1	8,291.1	7,037.0	30.6	29.6	104.47		-1,258.1	106.0	411.9	353.6	58.26	7.070	
8,300.0	6,933.3	8,391.1	7,036.2	32.2	31.3	104.47		-1,358.1	106.0	411.9	350.4	61.47	6.701	
8,400.0	6,932.5	8,491.1	7,035.5	33.9	32.9	104.47		-1,458.0	106.0	411.9	347.2	64.73	6.363	
8,500.0	6,931.8	8,591.1	7,034.7	35.5	34.6	104.47		-1,558.0	106.0	411.9	343.9	68.04	6.054	
8,600.0	6,931.0	8,691.1	7,034.0	37.2	36.4	104.47		-1,658.0	106.0	411.9	340.5	71.40	5.769	
8,700.0	6,930.3	8,791.1	7,033.2	38.9	38.1	104.47		-1,758.0	106.0	411.9	337.1	74.79	5.508	
8,800.0	6,929.5	8,891.1	7,032.5	40.7	39.9	104.47		-1,858.0	106.0	411.9	333.7	78.21	5.267	
8,900.0	6,928.8	8,991.1	7,031.7	42.4	41.6	104.47		-1,958.0	106.0	411.9	330.2	81.66	5.044	
9,000.0	6,928.0	9,091.1	7,030.9	44.2	43.4	104.47		-2,058.0	106.0	411.9	326.8	85.13	4.838	
9,100.0	6,927.2	9,191.1	7,030.2	45.9	45.2	104.47		-2,158.0	106.0	411.9	323.3	88.63	4.648	
9,200.0	6,926.5	9,291.1	7,029.4	47.7	47.0	104.47		-2,258.0	106.0	411.9	319.8	92.14	4.470	
9,300.0	6,925.7	9,391.1	7,028.7	49.5	48.8	104.47		-2,358.0	106.0	411.9	316.2	95.67	4.305	
9,400.0	6,925.0	9,491.1	7,027.9	51.3	50.7	104.47		-2,458.0	106.0	411.9	312.7	99.21	4.152	
9,500.0	6,924.2	9,591.1	7,027.2	53.1	52.5	104.47		-2,558.0	106.0	411.9	309.1	102.77	4.008	
9,600.0	6,923.5	9,691.1	7,026.4	55.0	54.3	104.47		-2,658.0	106.0	411.9	305.6	106.34	3.873	
9,700.0	6,922.7	9,791.1	7,025.6	56.8	56.2	104.47		-2,758.0	106.0	411.9	302.0	109.93	3.747	
9,800.0	6,921.9	9,891.1	7,024.9	58.6	58.0	104.47		-2,858.0	106.0	411.9	298.4	113.52	3.629	
9,900.0	6,921.2	9,991.1	7,024.1	60.4	59.9	104.47		-2,958.0	106.0	411.9	294.8	117.12	3.517	
10,000.0	6,920.4	10,091.1	7,023.4	62.3	61.7	104.47		-3,058.0	106.0	411.9	291.2	120.73	3.412	

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-243
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-243	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 (7-2-15)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:		0.0 ft
Survey Program: 0-MWD												Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis		Distance							Warning	
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
10,100.0	6,919.7	10,191.1	7,022.6	64.1	63.6	104.47	-3,158.0	106.0	411.9	287.6	124.35	3.313		
10,200.0	6,918.9	10,291.1	7,021.8	66.0	65.4	104.47	-3,258.0	106.0	411.9	283.9	127.97	3.219		
10,300.0	6,918.2	10,391.1	7,021.1	67.8	67.3	104.47	-3,358.0	106.0	411.9	280.3	131.60	3.130		
10,400.0	6,917.4	10,491.1	7,020.3	69.7	69.2	104.47	-3,458.0	106.0	411.9	276.7	135.23	3.046		
10,500.0	6,916.6	10,591.1	7,019.6	71.6	71.0	104.47	-3,558.0	106.0	411.9	273.0	138.87	2.966		
10,600.0	6,915.9	10,691.1	7,018.8	73.4	72.9	104.47	-3,658.0	106.0	411.9	269.4	142.52	2.890		
10,700.0	6,915.1	10,791.1	7,018.1	75.3	74.8	104.47	-3,758.0	106.0	411.9	265.7	146.17	2.818		
10,800.0	6,914.4	10,891.1	7,017.3	77.2	76.7	104.47	-3,858.0	106.0	411.9	262.1	149.82	2.749		
10,900.0	6,913.6	10,991.1	7,016.5	79.0	78.6	104.47	-3,958.0	106.0	411.9	258.4	153.48	2.684		
11,000.0	6,912.9	11,091.1	7,015.8	80.9	80.4	104.47	-4,058.0	106.0	411.9	254.8	157.14	2.621		
11,100.0	6,912.1	11,191.1	7,015.0	82.8	82.3	104.47	-4,158.0	106.0	411.9	251.1	160.81	2.561		
11,200.0	6,911.3	11,291.1	7,014.3	84.6	84.2	104.47	-4,258.0	106.0	411.9	247.4	164.48	2.504		
11,300.0	6,910.6	11,391.1	7,013.5	86.5	86.1	104.47	-4,358.0	106.0	411.9	243.8	168.15	2.450		
11,342.7	6,910.3	11,433.8	7,013.2	87.3	86.9	104.47	-4,400.6	106.0	411.9	242.2	169.72	2.427		
11,376.4	6,910.0	11,460.2	7,013.0	88.0	87.4	104.47	-4,427.0	106.0	412.0	241.2	170.82	2.412		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17R-243
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-243	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 (7-2-15)	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	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-1.75	-1.75	91.1	-2.8	91.1				
100.0	100.0	100.0	100.0	0.1	0.1	-1.75	-1.75	91.1	-2.8	91.1	90.9	0.22	405.415	
200.0	200.0	200.0	200.0	0.3	0.3	-1.75	-1.75	91.1	-2.8	91.1	90.4	0.67	135.138	
300.0	300.0	300.0	300.0	0.6	0.6	-1.75	-1.75	91.1	-2.8	91.1	90.0	1.12	81.083	
400.0	400.0	400.0	400.0	0.8	0.8	-1.75	-1.75	91.1	-2.8	91.1	89.6	1.57	57.916	
500.0	500.0	500.0	500.0	1.0	1.0	-1.75	-1.75	91.1	-2.8	91.1	89.1	2.02	45.046	
600.0	600.0	600.0	600.0	1.2	1.2	-1.75	-1.75	91.1	-2.8	91.1	88.7	2.47	36.856	
700.0	700.0	700.0	700.0	1.5	1.5	-1.75	-1.75	91.1	-2.8	91.1	88.2	2.92	31.186	
800.0	800.0	800.0	800.0	1.7	1.7	-1.75	-1.75	91.1	-2.8	91.1	87.8	3.37	27.028	
900.0	900.0	900.0	900.0	1.9	1.9	-1.75	-1.75	91.1	-2.8	91.1	87.3	3.82	23.848	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-1.75	-1.75	91.1	-2.8	91.1	86.9	4.27	21.338	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	-1.75	-1.75	91.1	-2.8	91.1	86.4	4.72	19.305	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	-1.75	-1.75	91.1	-2.8	91.1	86.0	5.17	17.627	
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	-1.75	-1.75	91.1	-2.8	91.1	85.5	5.62	16.217	
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	-1.75	-1.75	91.1	-2.8	91.1	85.1	6.07	15.015	
1,500.0	1,500.0	1,500.0	1,500.0	3.3	3.3	-57.47	-57.47	91.1	-2.8	90.7	84.1	6.51	13.920	
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	-58.89	-58.89	91.1	-2.8	89.3	82.3	6.95	12.842	
1,700.0	1,699.9	1,699.9	1,699.9	3.7	3.7	-61.37	-61.37	91.1	-2.8	87.1	79.7	7.39	11.781	
1,800.0	1,799.7	1,799.7	1,799.7	3.9	3.9	-65.03	-65.03	91.1	-2.8	84.3	76.5	7.84	10.759	
1,900.0	1,899.4	1,898.0	1,898.0	4.1	4.2	-70.13	-70.13	91.8	-3.2	82.2	73.9	8.29	9.915	
1,960.2	1,959.3	1,957.1	1,957.1	4.3	4.3	-73.96	-73.96	93.0	-3.8	81.7	73.2	8.56	9.551 CC, ES	
2,000.0	1,998.9	1,996.2	1,996.1	4.4	4.4	-76.77	-76.77	94.0	-4.4	81.9	73.2	8.74	9.375	
2,100.0	2,098.3	2,094.1	2,093.9	4.6	4.6	-84.44	-84.44	97.7	-6.5	84.4	75.2	9.21	9.168	
2,200.0	2,197.6	2,192.8	2,192.5	4.9	4.8	-91.81	-91.81	102.5	-9.2	89.7	80.0	9.68	9.266	
2,300.0	2,296.9	2,292.0	2,291.5	5.1	5.0	-98.30	-98.30	107.5	-11.9	96.4	86.2	10.15	9.496	
2,400.0	2,396.2	2,391.2	2,390.6	5.4	5.3	-103.90	-103.90	112.5	-14.7	104.2	93.6	10.62	9.807	
2,500.0	2,495.5	2,490.4	2,489.6	5.7	5.5	-108.68	-108.68	117.4	-17.5	112.8	101.7	11.10	10.168	
2,600.0	2,594.8	2,589.6	2,588.7	6.0	5.7	-112.76	-112.76	122.4	-20.3	122.1	110.6	11.57	10.558	
2,700.0	2,694.1	2,688.8	2,687.7	6.2	5.9	-116.25	-116.25	127.4	-23.0	132.0	120.0	12.04	10.960	
2,800.0	2,793.4	2,788.1	2,786.8	6.5	6.2	-119.26	-119.26	132.3	-25.8	142.3	129.7	12.52	11.365	
2,900.0	2,892.8	2,887.3	2,885.8	6.8	6.4	-121.85	-121.85	137.3	-28.6	152.9	139.9	12.99	11.766	
3,000.0	2,992.1	2,986.5	2,984.9	7.1	6.6	-124.10	-124.10	142.3	-31.4	163.7	150.3	13.47	12.158	
3,100.0	3,091.4	3,085.7	3,083.9	7.4	6.9	-126.07	-126.07	147.2	-34.1	174.8	160.9	13.94	12.538	
3,200.0	3,190.7	3,184.9	3,183.0	7.7	7.1	-127.81	-127.81	152.2	-36.9	186.1	171.7	14.42	12.905	
3,300.0	3,290.0	3,284.1	3,282.0	8.0	7.4	-129.34	-129.34	157.2	-39.7	197.5	182.6	14.90	13.257	
3,400.0	3,389.3	3,383.3	3,381.1	8.3	7.6	-130.71	-130.71	162.1	-42.5	209.1	193.7	15.38	13.595	
3,500.0	3,488.6	3,482.5	3,480.1	8.5	7.8	-131.94	-131.94	167.1	-45.2	220.7	204.9	15.86	13.918	
3,600.0	3,587.9	3,581.8	3,579.2	8.8	8.1	-133.04	-133.04	172.1	-48.0	232.5	216.1	16.34	14.227	
3,700.0	3,687.3	3,681.0	3,678.2	9.1	8.3	-134.03	-134.03	177.0	-50.8	244.3	227.5	16.82	14.523	
3,800.0	3,786.6	3,780.2	3,777.3	9.4	8.5	-134.94	-134.94	182.0	-53.5	256.2	238.9	17.31	14.805	
3,900.0	3,885.9	3,879.4	3,876.3	9.7	8.8	-135.76	-135.76	187.0	-56.3	268.1	250.4	17.79	15.074	
4,000.0	3,985.2	3,978.6	3,975.4	10.0	9.0	-136.51	-136.51	192.0	-59.1	280.1	261.9	18.27	15.332	
4,100.0	4,084.5	4,077.8	4,074.4	10.3	9.3	-137.20	-137.20	196.9	-61.9	292.2	273.4	18.76	15.578	
4,200.0	4,183.8	4,177.0	4,173.5	10.6	9.5	-137.84	-137.84	201.9	-64.6	304.3	285.0	19.24	15.813	
4,300.0	4,283.1	4,276.3	4,272.5	10.9	9.7	-138.43	-138.43	206.9	-67.4	316.4	296.6	19.73	16.038	
4,400.0	4,382.4	4,375.5	4,371.6	11.2	10.0	-138.97	-138.97	211.8	-70.2	328.5	308.3	20.21	16.254	
4,500.0	4,481.7	4,474.7	4,470.6	11.6	10.2	-139.48	-139.48	216.8	-73.0	340.7	320.0	20.70	16.460	
4,600.0	4,581.1	4,573.9	4,569.7	11.9	10.5	-139.95	-139.95	221.8	-75.7	352.9	331.7	21.18	16.658	
4,700.0	4,680.4	4,673.1	4,668.7	12.2	10.7	-140.39	-140.39	226.7	-78.5	365.1	343.4	21.67	16.847	
4,800.0	4,779.7	4,772.3	4,767.8	12.5	10.9	-140.80	-140.80	231.7	-81.3	377.3	355.2	22.16	17.029	
4,900.0	4,879.0	4,871.5	4,866.8	12.8	11.2	-141.18	-141.18	236.7	-84.1	389.6	366.9	22.65	17.203	

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-243
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-243	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 (7-2-15)	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	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,978.3	4,970.7	4,965.9	13.1	11.4	-141.54		241.6	-86.8	401.8	378.7	23.13	17.371	
5,100.0	5,077.6	5,070.0	5,064.9	13.4	11.7	-141.88		246.6	-89.6	414.1	390.5	23.62	17.532	
5,200.0	5,176.9	5,169.2	5,164.0	13.7	11.9	-142.20		251.6	-92.4	426.4	402.3	24.11	17.687	
5,300.0	5,276.2	5,268.4	5,263.0	14.0	12.1	-142.51		256.5	-95.2	438.7	414.1	24.60	17.836	
5,400.0	5,375.6	5,367.6	5,362.1	14.3	12.4	-142.79		261.5	-97.9	451.1	426.0	25.09	17.980	
5,500.0	5,474.9	5,466.8	5,461.1	14.6	12.6	-143.06		266.5	-100.7	463.4	437.8	25.58	18.118	
5,600.0	5,574.2	5,566.0	5,560.2	14.9	12.9	-143.32		271.4	-103.5	475.7	449.7	26.07	18.251	
5,700.0	5,673.5	5,665.2	5,659.2	15.2	13.1	-143.56		276.4	-106.2	488.1	461.5	26.56	18.380	
5,800.0	5,772.8	5,764.5	5,758.3	15.5	13.4	-143.79		281.4	-109.0	500.4	473.4	27.05	18.504	
5,900.0	5,872.1	5,863.7	5,857.3	15.8	13.6	-144.01		286.4	-111.8	512.8	485.3	27.54	18.624	
6,000.0	5,971.4	5,962.9	5,956.4	16.1	13.8	-144.23		291.3	-114.6	525.2	497.2	28.03	18.739	
6,100.0	6,070.7	6,062.1	6,055.4	16.4	14.1	-144.43		296.3	-117.3	537.6	509.0	28.52	18.851	
6,200.0	6,170.1	6,161.3	6,154.5	16.7	14.3	-172.04		301.3	-120.1	550.0	521.0	28.98	18.977	
6,300.0	6,269.4	6,259.9	6,253.0	16.9	14.6	130.06		306.2	-122.9	562.5	533.2	29.36	19.158	
6,400.0	6,367.2	6,356.8	6,349.6	17.1	14.8	113.35		311.0	-125.6	575.8	546.1	29.69	19.394	
6,500.0	6,461.8	6,458.8	6,451.5	17.2	15.0	108.25		308.3	-128.4	590.1	560.2	29.89	19.746	
6,600.0	6,551.5	6,565.3	6,556.5	17.2	15.1	106.44		291.0	-131.4	605.0	575.1	29.95	20.202	
6,700.0	6,634.9	6,676.8	6,662.7	17.2	15.2	105.93		257.5	-134.3	620.1	590.1	29.93	20.715	
6,800.0	6,710.5	6,793.6	6,767.4	17.2	15.2	106.00		206.2	-137.3	634.7	604.8	29.92	21.215	
6,900.0	6,777.0	6,915.9	6,867.4	17.3	15.3	106.34		136.1	-140.1	648.4	618.4	30.02	21.600	
7,000.0	6,833.3	7,043.7	6,958.5	17.4	15.4	106.75		46.7	-142.6	660.6	630.3	30.37	21.750	
7,100.0	6,878.4	7,176.6	7,036.1	17.7	15.9	107.13		-60.9	-144.8	670.7	639.6	31.14	21.539	
7,200.0	6,911.6	7,313.6	7,095.4	18.2	16.7	107.39		-184.2	-146.5	678.2	645.7	32.42	20.915	
7,300.0	6,932.2	7,453.5	7,132.3	18.9	17.8	107.48		-319.0	-147.5	682.6	648.3	34.28	19.914	
7,400.0	6,940.0	7,592.5	7,144.0	19.8	19.3	107.36		-457.3	-147.8	683.8	647.1	36.63	18.667	
7,419.3	6,940.2	7,611.8	7,144.0	20.0	19.5	107.34		-476.6	-147.8	683.7	646.7	37.05	18.454	
7,500.0	6,939.4	7,692.5	7,144.0	20.9	20.4	107.41		-557.3	-147.8	684.0	645.1	38.83	17.616	
7,600.0	6,938.6	7,792.5	7,144.0	22.0	21.7	107.47		-657.3	-147.8	684.2	643.0	41.22	16.598	
7,700.0	6,937.8	7,892.5	7,144.0	23.3	23.1	107.53		-757.3	-147.8	684.4	640.6	43.79	15.628	
7,800.0	6,937.1	7,992.5	7,144.0	24.6	24.5	107.59		-857.3	-147.8	684.7	638.1	46.52	14.719	
7,900.0	6,936.3	8,092.5	7,144.0	26.0	26.0	107.65		-957.3	-147.8	684.9	635.5	49.36	13.876	
8,000.0	6,935.6	8,192.5	7,144.0	27.5	27.6	107.71		-1,057.3	-147.8	685.1	632.8	52.30	13.099	
8,100.0	6,934.8	8,292.5	7,144.0	29.0	29.2	107.77		-1,157.3	-147.8	685.3	630.0	55.34	12.385	
8,200.0	6,934.1	8,392.5	7,144.0	30.6	30.8	107.83		-1,257.3	-147.8	685.6	627.1	58.44	11.731	
8,300.0	6,933.3	8,492.5	7,144.0	32.2	32.5	107.89		-1,357.3	-147.8	685.8	624.2	61.60	11.133	
8,400.0	6,932.5	8,592.5	7,144.0	33.9	34.2	107.95		-1,457.3	-147.8	686.0	621.2	64.82	10.584	
8,500.0	6,931.8	8,692.5	7,144.0	35.5	35.9	108.01		-1,557.3	-147.8	686.3	618.2	68.08	10.081	
8,600.0	6,931.0	8,792.5	7,144.0	37.2	37.6	108.07		-1,657.3	-147.8	686.5	615.1	71.37	9.619	
8,700.0	6,930.3	8,892.5	7,144.0	38.9	39.4	108.13		-1,757.3	-147.8	686.7	612.0	74.70	9.193	
8,800.0	6,929.5	8,992.5	7,144.0	40.7	41.1	108.19		-1,857.3	-147.8	687.0	608.9	78.06	8.801	
8,900.0	6,928.8	9,092.5	7,144.0	42.4	42.9	108.25		-1,957.3	-147.8	687.2	605.8	81.44	8.439	
9,000.0	6,928.0	9,192.4	7,144.0	44.2	44.7	108.31		-2,057.3	-147.8	687.5	602.6	84.84	8.103	
9,100.0	6,927.2	9,292.4	7,144.0	45.9	46.5	108.37		-2,157.2	-147.8	687.7	599.4	88.26	7.792	
9,200.0	6,926.5	9,392.4	7,144.0	47.7	48.3	108.43		-2,257.2	-147.8	687.9	596.2	91.69	7.503	
9,300.0	6,925.7	9,492.4	7,144.0	49.5	50.1	108.49		-2,357.2	-147.8	688.2	593.0	95.14	7.233	
9,400.0	6,925.0	9,592.4	7,144.0	51.3	52.0	108.55		-2,457.2	-147.8	688.4	589.8	98.60	6.982	
9,500.0	6,924.2	9,692.4	7,144.0	53.1	53.8	108.61		-2,557.2	-147.8	688.7	586.6	102.07	6.747	
9,600.0	6,923.5	9,792.4	7,144.0	55.0	55.6	108.67		-2,657.2	-147.8	688.9	583.3	105.56	6.526	
9,700.0	6,922.7	9,892.4	7,144.0	56.8	57.5	108.73		-2,757.2	-147.8	689.1	580.1	109.04	6.320	
9,800.0	6,921.9	9,992.4	7,144.0	58.6	59.3	108.79		-2,857.2	-147.8	689.4	576.8	112.54	6.126	
9,900.0	6,921.2	10,092.4	7,144.0	60.4	61.2	108.85		-2,957.2	-147.8	689.6	573.6	116.04	5.943	

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-243
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-243	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 (7-2-15)	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						Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre +N/-S	+E/-W	Between Centres	Between Ellipses	Minimum Separation	Separation Factor	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
10,000.0	6,920.4	10,192.4	7,144.0	62.3	63.0	108.91	-3,057.2	-147.8	689.9	570.3	119.55	5.770	
10,100.0	6,919.7	10,292.4	7,144.0	64.1	64.9	108.97	-3,157.2	-147.8	690.1	567.0	123.07	5.608	
10,200.0	6,918.9	10,392.4	7,144.0	66.0	66.8	109.03	-3,257.2	-147.8	690.4	563.8	126.58	5.454	
10,300.0	6,918.2	10,492.4	7,144.0	67.8	68.6	109.09	-3,357.2	-147.8	690.6	560.5	130.11	5.308	
10,400.0	6,917.4	10,592.4	7,144.0	69.7	70.5	109.15	-3,457.2	-147.8	690.9	557.2	133.63	5.170	
10,500.0	6,916.6	10,692.4	7,144.0	71.6	72.4	109.21	-3,557.2	-147.8	691.1	553.9	137.16	5.039	
10,600.0	6,915.9	10,792.4	7,144.0	73.4	74.2	109.27	-3,657.2	-147.8	691.4	550.7	140.69	4.914	
10,700.0	6,915.1	10,892.4	7,144.0	75.3	76.1	109.33	-3,757.2	-147.8	691.6	547.4	144.22	4.795	
10,800.0	6,914.4	10,992.4	7,144.0	77.2	78.0	109.38	-3,857.2	-147.8	691.9	544.1	147.76	4.682	
10,900.0	6,913.6	11,092.4	7,144.0	79.0	79.9	109.44	-3,957.2	-147.8	692.1	540.8	151.29	4.575	
11,000.0	6,912.9	11,192.4	7,144.0	80.9	81.8	109.50	-4,057.2	-147.8	692.4	537.5	154.83	4.472	
11,100.0	6,912.1	11,292.4	7,144.0	82.8	83.6	109.56	-4,157.2	-147.8	692.6	534.2	158.37	4.374	
11,200.0	6,911.3	11,392.4	7,144.0	84.6	85.5	109.62	-4,257.2	-147.8	692.9	531.0	161.90	4.280	
11,300.0	6,910.6	11,492.4	7,144.0	86.5	87.4	109.68	-4,357.2	-147.8	693.1	527.7	165.44	4.190	
11,330.9	6,910.3	11,523.3	7,144.0	87.1	88.0	109.70	-4,388.1	-147.8	693.2	526.7	166.54	4.162	
11,376.4	6,910.0	11,558.2	7,144.0	88.0	88.7	109.72	-4,423.0	-147.8	693.4	525.4	167.96	4.128 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17R-243
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-243	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 (7-2-15)	Offset TVD Reference:	Offset Datum

Offset Design Lajco 4N67W17R Pad Sec.17-T4N-R67W - Lajco 17R-223 - Wellbore #1 - Plan #2 (7-7-15)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	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	-3.37	47.4	-2.8	47.4					
100.0	100.0	100.0	100.0	0.1	0.1	-3.37	47.4	-2.8	47.4	47.2	0.22	211.073		
200.0	200.0	200.0	200.0	0.3	0.3	-3.37	47.4	-2.8	47.4	46.8	0.67	70.358		
300.0	300.0	300.0	300.0	0.6	0.6	-3.37	47.4	-2.8	47.4	46.3	1.12	42.215		
400.0	400.0	400.0	400.0	0.8	0.8	-3.37	47.4	-2.8	47.4	45.9	1.57	30.153		
500.0	500.0	500.0	500.0	1.0	1.0	-3.37	47.4	-2.8	47.4	45.4	2.02	23.453		
600.0	600.0	600.0	600.0	1.2	1.2	-3.37	47.4	-2.8	47.4	45.0	2.47	19.188		
700.0	700.0	700.0	700.0	1.5	1.5	-3.37	47.4	-2.8	47.4	44.5	2.92	16.236		
800.0	800.0	800.0	800.0	1.7	1.7	-3.37	47.4	-2.8	47.4	44.1	3.37	14.072 CC		
900.0	900.0	899.9	899.9	1.9	1.9	-2.32	47.5	-1.9	47.5	43.7	3.81	12.478		
1,000.0	1,000.0	999.8	999.7	2.1	2.1	0.78	47.9	0.7	47.9	43.7	4.24	11.298 ES		
1,100.0	1,100.0	1,099.5	1,099.4	2.4	2.3	5.82	48.6	4.9	48.8	44.1	4.68	10.441		
1,200.0	1,200.0	1,199.0	1,198.7	2.6	2.5	12.47	49.5	10.9	50.7	45.6	5.12	9.906		
1,300.0	1,300.0	1,298.3	1,297.7	2.8	2.8	20.17	50.7	18.6	54.0	48.5	5.57	9.700		
1,400.0	1,400.0	1,397.4	1,396.3	3.0	3.0	28.21	52.1	28.0	59.3	53.2	6.04	9.816		
1,500.0	1,500.0	1,496.1	1,494.4	3.3	3.3	-19.58	53.8	38.9	65.8	59.4	6.49	10.152		
1,600.0	1,600.0	1,594.6	1,592.1	3.5	3.5	-13.03	55.8	51.6	73.0	66.1	6.93	10.527		
1,700.0	1,699.9	1,693.0	1,689.4	3.7	3.8	-7.22	58.0	65.8	80.6	73.2	7.38	10.926		
1,800.0	1,799.7	1,791.1	1,786.1	3.9	4.1	-1.99	60.4	81.7	88.7	80.9	7.82	11.341		
1,900.0	1,899.4	1,889.0	1,882.4	4.1	4.5	2.76	63.1	99.2	97.3	89.0	8.26	11.771		
2,000.0	1,998.9	1,986.6	1,978.2	4.4	4.8	7.11	66.1	118.2	106.3	97.6	8.70	12.214		
2,100.0	2,098.3	2,084.0	2,073.3	4.6	5.2	11.12	69.3	138.8	115.8	106.7	9.14	12.666		
2,200.0	2,197.6	2,181.3	2,168.0	4.9	5.6	14.72	72.7	161.0	127.0	117.4	9.60	13.237		
2,300.0	2,296.9	2,280.3	2,264.1	5.1	6.1	17.82	76.3	184.1	139.4	129.3	10.06	13.851		
2,400.0	2,396.2	2,379.3	2,360.3	5.4	6.5	20.41	79.9	207.3	152.0	141.5	10.53	14.434		
2,500.0	2,495.5	2,478.3	2,456.5	5.7	7.0	22.60	83.4	230.5	165.0	154.0	11.01	14.980		
2,600.0	2,594.8	2,577.2	2,552.6	6.0	7.5	24.47	87.0	253.7	178.1	166.6	11.50	15.487		
2,700.0	2,694.1	2,676.2	2,648.8	6.2	7.9	26.08	90.6	276.9	191.4	179.4	11.99	15.957		
2,800.0	2,793.4	2,775.2	2,744.9	6.5	8.4	27.48	94.2	300.0	204.8	192.3	12.50	16.390		
2,900.0	2,892.8	2,874.2	2,841.1	6.8	8.9	28.71	97.8	323.2	218.4	205.3	13.00	16.790		
3,000.0	2,992.1	2,973.2	2,937.3	7.1	9.4	29.80	101.4	346.4	232.0	218.5	13.52	17.159		
3,100.0	3,091.4	3,072.1	3,033.4	7.4	9.8	30.76	104.9	369.6	245.7	231.6	14.04	17.499		
3,200.0	3,190.7	3,171.1	3,129.6	7.7	10.3	31.63	108.5	392.8	259.4	244.8	14.56	17.813		
3,300.0	3,290.0	3,270.1	3,225.7	8.0	10.8	32.40	112.1	416.0	273.2	258.1	15.09	18.103		
3,400.0	3,389.3	3,369.1	3,321.9	8.3	11.3	33.10	115.7	439.1	287.1	271.4	15.63	18.371		
3,500.0	3,488.6	3,468.0	3,418.0	8.5	11.8	33.74	119.3	462.3	300.9	284.8	16.16	18.620		
3,600.0	3,587.9	3,567.0	3,514.2	8.8	12.3	34.32	122.9	485.5	314.9	298.2	16.70	18.851		
3,700.0	3,687.3	3,666.0	3,610.4	9.1	12.8	34.85	126.5	508.7	328.8	311.6	17.25	19.066		
3,800.0	3,786.6	3,765.0	3,706.5	9.4	13.3	35.34	130.0	531.9	342.8	325.0	17.79	19.266		
3,900.0	3,885.9	3,864.0	3,802.7	9.7	13.8	35.79	133.6	555.0	356.8	338.4	18.34	19.453		
4,000.0	3,985.2	3,962.9	3,898.8	10.0	14.3	36.21	137.2	578.2	370.8	351.9	18.89	19.627		
4,100.0	4,084.5	4,061.9	3,995.0	10.3	14.8	36.60	140.8	601.4	384.8	365.4	19.45	19.790		
4,200.0	4,183.8	4,160.9	4,091.2	10.6	15.3	36.95	144.4	624.6	398.9	378.9	20.00	19.943		
4,300.0	4,283.1	4,259.9	4,187.3	10.9	15.8	37.29	148.0	647.8	413.0	392.4	20.56	20.087		
4,400.0	4,382.4	4,358.8	4,283.5	11.2	16.3	37.60	151.5	670.9	427.0	405.9	21.12	20.222		
4,500.0	4,481.7	4,457.8	4,379.6	11.6	16.8	37.89	155.1	694.1	441.1	419.4	21.68	20.349		
4,600.0	4,581.1	4,556.8	4,475.8	11.9	17.3	38.17	158.7	717.3	455.2	433.0	22.24	20.469		
4,700.0	4,680.4	4,655.8	4,572.0	12.2	17.8	38.43	162.3	740.5	469.3	446.5	22.80	20.582		
4,800.0	4,779.7	4,754.8	4,668.1	12.5	18.3	38.67	165.9	763.7	483.4	460.1	23.37	20.689		
4,900.0	4,879.0	4,853.7	4,764.3	12.8	18.8	38.90	169.5	786.9	497.6	473.6	23.93	20.790		
5,000.0	4,978.3	4,952.7	4,860.4	13.1	19.3	39.11	173.1	810.0	511.7	487.2	24.50	20.886		

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-243
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-243	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 (7-2-15)	Offset TVD Reference:	Offset Datum

Offset Design Lajco 4N67W17R Pad Sec.17-T4N-R67W - Lajco 17R-223 - Wellbore #1 - Plan #2 (7-7-15)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,077.6	5,051.7	4,956.6	13.4	19.8	39.32	39.32	176.6	833.2	525.8	500.8	25.07	20.977	
5,200.0	5,176.9	5,150.7	5,052.7	13.7	20.3	39.51	39.51	180.2	856.4	540.0	514.4	25.64	21.064	
5,300.0	5,276.2	5,249.7	5,148.9	14.0	20.8	39.70	39.70	183.8	879.6	554.1	527.9	26.21	21.146	
5,400.0	5,375.6	5,348.6	5,245.1	14.3	21.3	39.87	39.87	187.4	902.8	568.3	541.5	26.78	21.224	
5,500.0	5,474.9	5,447.6	5,341.2	14.6	21.8	40.04	40.04	191.0	925.9	582.5	555.1	27.35	21.299	
5,600.0	5,574.2	5,546.6	5,437.4	14.9	22.3	40.20	40.20	194.6	949.1	596.6	568.7	27.92	21.370	
5,700.0	5,673.5	5,645.6	5,533.5	15.2	22.8	40.35	40.35	198.1	972.3	610.8	582.3	28.49	21.438	
5,800.0	5,772.8	5,744.5	5,629.7	15.5	23.3	40.49	40.49	201.7	995.5	625.0	595.9	29.06	21.503	
5,900.0	5,872.1	5,843.5	5,725.9	15.8	23.8	40.63	40.63	205.3	1,018.7	639.2	609.5	29.64	21.565	
6,000.0	5,971.4	5,942.5	5,822.0	16.1	24.3	40.76	40.76	208.9	1,041.8	653.3	623.1	30.21	21.624	
6,100.0	6,070.7	6,041.5	5,918.2	16.4	24.8	40.89	40.89	212.5	1,065.0	667.5	636.7	30.79	21.681	
6,200.0	6,170.1	6,140.5	6,014.3	16.7	25.3	41.02	41.02	216.1	1,088.2	681.6	650.2	31.40	21.705	
6,300.0	6,269.4	6,239.0	6,110.1	16.9	25.8	41.15	41.15	219.6	1,111.3	694.4	662.6	31.85	21.800	
6,400.0	6,367.2	6,334.5	6,202.8	17.1	26.3	41.28	41.28	222.9	1,133.6	706.2	674.1	32.05	22.035	
6,500.0	6,461.8	6,425.4	6,291.1	17.2	26.7	41.41	41.41	226.1	1,155.9	718.0	685.9	32.08	22.380	
6,600.0	6,551.5	6,519.3	6,381.0	17.2	27.0	41.54	41.54	229.3	1,178.6	730.2	698.1	32.07	22.771	
6,700.0	6,634.9	6,616.6	6,471.6	17.2	27.4	41.67	41.67	232.5	1,198.5	742.6	710.5	32.07	23.155	
6,800.0	6,710.5	6,717.9	6,561.4	17.2	27.8	41.80	41.80	235.7	1,220.2	754.9	722.8	32.17	23.465	
6,900.0	6,777.0	6,823.7	6,648.6	17.3	28.1	41.93	41.93	238.9	1,241.4	767.0	734.5	32.46	23.628	
7,000.0	6,833.3	6,934.3	6,730.9	17.4	28.5	42.06	42.06	242.1	1,261.3	778.5	745.4	33.01	23.585	
7,100.0	6,878.4	7,050.3	6,805.5	17.7	28.9	42.19	42.19	245.3	1,279.4	788.9	755.0	33.87	23.295	
7,200.0	6,911.6	7,171.7	6,869.0	18.2	29.4	42.32	42.32	248.5	1,294.9	798.0	762.9	35.08	22.746	
7,300.0	6,932.2	7,298.6	6,917.6	18.9	30.0	42.45	42.45	251.7	1,306.8	805.2	768.5	36.64	21.973	
7,400.0	6,940.0	7,430.4	6,947.6	19.8	30.7	42.58	42.58	254.9	1,314.2	810.1	771.5	38.53	21.023	
7,500.0	6,939.4	7,562.0	6,955.9	20.9	31.5	42.71	42.71	258.1	1,316.4	811.8	770.9	40.89	19.853	
7,600.0	6,938.6	7,662.0	6,955.3	22.0	32.2	42.84	42.84	261.3	1,316.4	811.8	768.5	43.26	18.764	
7,700.0	6,937.8	7,762.0	6,954.7	23.3	33.0	42.97	42.97	264.5	1,316.4	811.8	766.0	45.82	17.716	
7,800.0	6,937.1	7,862.0	6,954.0	24.6	33.9	43.10	43.10	267.7	1,316.4	811.8	763.2	48.55	16.721	
7,900.0	6,936.3	7,962.0	6,953.4	26.0	34.9	43.23	43.23	270.9	1,316.4	811.8	760.4	51.42	15.788	
8,000.0	6,935.6	8,062.0	6,952.8	27.5	36.0	43.36	43.36	274.1	1,316.4	811.8	757.4	54.41	14.921	
8,100.0	6,934.8	8,162.0	6,952.1	29.0	37.1	43.49	43.49	277.3	1,316.4	811.8	754.3	57.50	14.119	
8,200.0	6,934.1	8,262.0	6,951.5	30.6	38.4	43.62	43.62	280.5	1,316.4	811.8	751.1	60.67	13.380	
8,300.0	6,933.3	8,362.0	6,950.9	32.2	39.7	43.75	43.75	283.7	1,316.4	811.8	747.9	63.92	12.700	
8,400.0	6,932.5	8,462.0	6,950.2	33.9	41.0	43.88	43.88	286.9	1,316.4	811.8	744.6	67.23	12.075	
8,500.0	6,931.8	8,562.0	6,949.6	35.5	42.4	44.01	44.01	290.1	1,316.4	811.8	741.2	70.59	11.500	
8,600.0	6,931.0	8,662.0	6,949.0	37.2	43.8	44.14	44.14	293.3	1,316.4	811.8	737.8	74.00	10.970	
8,700.0	6,930.3	8,762.0	6,948.3	38.9	45.3	44.27	44.27	296.5	1,316.4	811.8	734.4	77.45	10.482	
8,800.0	6,929.5	8,862.0	6,947.7	40.7	46.8	44.40	44.40	299.7	1,316.4	811.8	730.9	80.93	10.031	
8,900.0	6,928.8	8,962.0	6,947.1	42.4	48.3	44.53	44.53	302.9	1,316.4	811.8	727.4	84.45	9.613	
9,000.0	6,928.0	9,062.0	6,946.5	44.2	49.9	44.66	44.66	306.1	1,316.4	811.8	723.8	87.99	9.226	
9,100.0	6,927.2	9,162.0	6,945.8	45.9	51.4	44.79	44.79	309.3	1,316.4	811.8	720.3	91.55	8.867	
9,200.0	6,926.5	9,262.0	6,945.2	47.7	53.1	44.92	44.92	312.5	1,316.4	811.8	716.7	95.14	8.533	
9,300.0	6,925.7	9,362.0	6,944.6	49.5	54.7	45.05	45.05	315.7	1,316.4	811.8	713.1	98.75	8.221	
9,400.0	6,925.0	9,462.0	6,943.9	51.3	56.3	45.18	45.18	318.9	1,316.4	811.8	709.5	102.37	7.931	
9,500.0	6,924.2	9,562.0	6,943.3	53.1	58.0	45.31	45.31	322.1	1,316.4	811.8	705.8	106.00	7.659	
9,600.0	6,923.5	9,662.0	6,942.7	55.0	59.7	45.44	45.44	325.3	1,316.4	811.8	702.2	109.65	7.404	
9,700.0	6,922.7	9,762.0	6,942.0	56.8	61.4	45.57	45.57	328.5	1,316.4	811.8	698.5	113.32	7.164	
9,800.0	6,921.9	9,862.0	6,941.4	58.6	63.1	45.70	45.70	331.7	1,316.4	811.8	694.9	116.99	6.939	
9,900.0	6,921.2	9,962.0	6,940.8	60.4	64.8	45.83	45.83	334.9	1,316.4	811.8	691.2	120.68	6.728	
10,000.0	6,920.4	10,062.0	6,940.1	62.3	66.5	45.96	45.96	338.1	1,316.4	811.9	687.5	124.37	6.528	
10,100.0	6,919.7	10,162.0	6,939.5	64.1	68.3	46.09	46.09	341.3	1,316.4	811.9	683.8	128.07	6.339	

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-243
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-243	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 (7-2-15)	Offset TVD Reference:	Offset Datum

Offset Design Lajco 4N67W17R Pad Sec.17-T4N-R67W - Lajco 17R-223 - Wellbore #1 - Plan #2 (7-7-15)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
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
10,200.0	6,918.9	10,262.0	6,938.9	66.0	70.0	-91.41	-3,257.3	1,316.4	811.9	680.1	131.78	6.161	
10,300.0	6,918.2	10,362.0	6,938.2	67.8	71.8	-91.42	-3,357.3	1,316.4	811.9	676.4	135.50	5.992	
10,400.0	6,917.4	10,462.0	6,937.6	69.7	73.6	-91.43	-3,457.3	1,316.4	811.9	672.6	139.22	5.832	
10,500.0	6,916.6	10,562.0	6,937.0	71.6	75.3	-91.44	-3,557.3	1,316.4	811.9	668.9	142.95	5.680	
10,600.0	6,915.9	10,662.0	6,936.3	73.4	77.1	-91.44	-3,657.3	1,316.4	811.9	665.2	146.68	5.535	
10,700.0	6,915.1	10,762.0	6,935.7	75.3	78.9	-91.45	-3,757.3	1,316.4	811.9	661.5	150.42	5.397	
10,800.0	6,914.4	10,862.0	6,935.1	77.2	80.7	-91.46	-3,857.3	1,316.4	811.9	657.7	154.16	5.266	
10,900.0	6,913.6	10,962.0	6,934.5	79.0	82.5	-91.47	-3,957.3	1,316.4	811.9	654.0	157.91	5.141	
11,000.0	6,912.9	11,062.0	6,933.8	80.9	84.3	-91.48	-4,057.3	1,316.4	811.9	650.2	161.67	5.022	
11,100.0	6,912.1	11,162.0	6,933.2	82.8	86.1	-91.49	-4,157.3	1,316.4	811.9	646.5	165.42	4.908	
11,200.0	6,911.3	11,262.0	6,932.6	84.6	87.9	-91.50	-4,257.3	1,316.4	811.9	642.7	169.18	4.799	
11,300.0	6,910.6	11,362.0	6,931.9	86.5	89.7	-91.51	-4,357.3	1,316.4	811.9	638.9	172.95	4.695	
11,376.4	6,910.0	11,438.4	6,931.4	88.0	91.1	-91.51	-4,433.7	1,316.4	811.9	636.1	175.82	4.618 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17R-243
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-243	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 (7-2-15)	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)	Distance Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-4.86	-4.86	32.8	-2.8	32.9				
100.0	100.0	100.0	100.0	0.1	0.1	-4.86	-4.86	32.8	-2.8	32.9	32.7	0.22	146.401	
200.0	200.0	200.0	200.0	0.3	0.3	-4.86	-4.86	32.8	-2.8	32.9	32.2	0.67	48.800	
300.0	300.0	300.0	300.0	0.6	0.6	-4.86	-4.86	32.8	-2.8	32.9	31.8	1.12	29.280	
400.0	400.0	400.0	400.0	0.8	0.8	-4.86	-4.86	32.8	-2.8	32.9	31.3	1.57	20.914	
500.0	500.0	500.0	500.0	1.0	1.0	-4.86	-4.86	32.8	-2.8	32.9	30.9	2.02	16.267	
600.0	600.0	600.0	600.0	1.2	1.2	-4.86	-4.86	32.8	-2.8	32.9	30.4	2.47	13.309	
700.0	700.0	700.0	700.0	1.5	1.5	-4.86	-4.86	32.8	-2.8	32.9	30.0	2.92	11.262	
800.0	800.0	800.0	800.0	1.7	1.7	-4.86	-4.86	32.8	-2.8	32.9	29.5	3.37	9.760	
900.0	900.0	900.0	900.0	1.9	1.9	-4.86	-4.86	32.8	-2.8	32.9	29.1	3.82	8.612	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-4.86	-4.86	32.8	-2.8	32.9	28.6	4.27	7.705 CC	
1,100.0	1,100.0	1,099.9	1,099.9	2.4	2.3	-3.35	-3.35	32.9	-1.9	33.0	28.3	4.71	7.007	
1,200.0	1,200.0	1,199.8	1,199.8	2.6	2.6	1.10	1.10	33.4	0.6	33.4	28.3	5.14	6.499 ES	
1,300.0	1,300.0	1,299.6	1,299.4	2.8	2.8	8.21	8.21	34.1	4.9	34.5	28.9	5.57	6.189	
1,400.0	1,400.0	1,399.2	1,398.8	3.0	3.0	17.22	17.22	35.2	10.9	36.8	30.8	6.01	6.125	
1,500.0	1,500.0	1,498.6	1,497.9	3.3	3.2	-28.85	-28.85	36.5	18.6	40.2	33.8	6.46	6.230	
1,600.0	1,600.0	1,597.8	1,596.7	3.5	3.5	-20.49	-20.49	38.1	27.9	44.1	37.2	6.90	6.392	
1,700.0	1,699.9	1,696.9	1,695.2	3.7	3.7	-12.81	-12.81	40.0	38.9	48.4	41.0	7.33	6.596	
1,800.0	1,799.7	1,795.9	1,793.3	3.9	4.0	-5.74	-5.74	42.2	51.6	53.2	45.4	7.77	6.841	
1,900.0	1,899.4	1,894.7	1,891.1	4.1	4.3	0.79	0.79	44.7	65.9	58.4	50.2	8.20	7.124	
2,000.0	1,998.9	1,993.3	1,988.3	4.4	4.6	6.82	6.82	47.5	81.8	64.3	55.6	8.63	7.444	
2,100.0	2,098.3	2,091.8	2,085.2	4.6	4.9	12.37	12.37	50.6	99.4	70.7	61.7	9.07	7.801	
2,200.0	2,197.6	2,190.6	2,182.1	4.9	5.2	17.23	17.23	53.9	118.5	78.8	69.3	9.52	8.281	
2,300.0	2,296.9	2,290.0	2,279.6	5.1	5.6	21.20	21.20	57.3	137.9	87.6	77.6	9.98	8.780	
2,400.0	2,396.2	2,389.5	2,377.0	5.4	6.0	24.44	24.44	60.6	157.3	96.7	86.3	10.45	9.259	
2,500.0	2,495.5	2,488.9	2,474.5	5.7	6.4	27.11	27.11	64.0	176.7	106.1	95.2	10.93	9.710	
2,600.0	2,594.8	2,588.4	2,572.0	6.0	6.8	29.35	29.35	67.4	196.1	115.7	104.2	11.42	10.132	
2,700.0	2,694.1	2,687.8	2,669.5	6.2	7.2	31.24	31.24	70.8	215.5	125.4	113.5	11.91	10.524	
2,800.0	2,793.4	2,787.3	2,766.9	6.5	7.6	32.86	32.86	74.1	235.0	135.2	122.8	12.42	10.887	
2,900.0	2,892.8	2,886.7	2,864.4	6.8	8.0	34.26	34.26	77.5	254.4	145.1	132.2	12.93	11.222	
3,000.0	2,992.1	2,986.2	2,961.9	7.1	8.4	35.48	35.48	80.9	273.8	155.1	141.7	13.45	11.532	
3,100.0	3,091.4	3,085.6	3,059.4	7.4	8.8	36.55	36.55	84.3	293.2	165.2	151.2	13.98	11.818	
3,200.0	3,190.7	3,185.1	3,156.8	7.7	9.2	37.50	37.50	87.7	312.6	175.3	160.8	14.51	12.083	
3,300.0	3,290.0	3,284.5	3,254.3	8.0	9.6	38.35	38.35	91.0	332.0	185.5	170.4	15.04	12.328	
3,400.0	3,389.3	3,384.0	3,351.8	8.3	10.1	39.10	39.10	94.4	351.5	195.7	180.1	15.58	12.556	
3,500.0	3,488.6	3,483.4	3,449.3	8.5	10.5	39.79	39.79	97.8	370.9	205.9	189.8	16.13	12.767	
3,600.0	3,587.9	3,582.9	3,546.7	8.8	10.9	40.40	40.40	101.2	390.3	216.1	199.5	16.67	12.963	
3,700.0	3,687.3	3,682.3	3,644.2	9.1	11.3	40.96	40.96	104.6	409.7	226.4	209.2	17.22	13.146	
3,800.0	3,786.6	3,781.8	3,741.7	9.4	11.7	41.48	41.48	107.9	429.1	236.7	218.9	17.78	13.317	
3,900.0	3,885.9	3,881.2	3,839.2	9.7	12.2	41.95	41.95	111.3	448.5	247.0	228.7	18.33	13.476	
4,000.0	3,985.2	3,980.7	3,936.6	10.0	12.6	42.38	42.38	114.7	468.0	257.3	238.4	18.89	13.625	
4,100.0	4,084.5	4,080.1	4,034.1	10.3	13.0	42.78	42.78	118.1	487.4	267.7	248.2	19.45	13.765	
4,200.0	4,183.8	4,179.6	4,131.6	10.6	13.5	43.15	43.15	121.4	506.8	278.0	258.0	20.01	13.897	
4,300.0	4,283.1	4,279.0	4,229.1	10.9	13.9	43.49	43.49	124.8	526.2	288.4	267.8	20.57	14.020	
4,400.0	4,382.4	4,378.4	4,326.5	11.2	14.3	43.81	43.81	128.2	545.6	298.8	277.6	21.13	14.136	
4,500.0	4,481.7	4,477.9	4,424.0	11.6	14.7	44.11	44.11	131.6	565.0	309.1	287.4	21.70	14.246	
4,600.0	4,581.1	4,577.3	4,521.5	11.9	15.2	44.39	44.39	135.0	584.5	319.5	297.2	22.27	14.350	
4,700.0	4,680.4	4,676.8	4,619.0	12.2	15.6	44.65	44.65	138.3	603.9	329.9	307.1	22.83	14.448	
4,800.0	4,779.7	4,776.2	4,716.4	12.5	16.0	44.89	44.89	141.7	623.3	340.3	316.9	23.40	14.541	
4,900.0	4,879.0	4,875.7	4,813.9	12.8	16.5	45.12	45.12	145.1	642.7	350.7	326.7	23.97	14.629	
5,000.0	4,978.3	4,975.1	4,911.4	13.1	16.9	45.34	45.34	148.5	662.1	361.1	336.6	24.55	14.712	

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-243
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-243	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 (7-2-15)	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	5,077.6	5,074.6	5,008.9	13.4	17.3	45.54		151.8	681.5	371.5	346.4	25.12	14.792	
5,200.0	5,176.9	5,174.0	5,106.3	13.7	17.8	45.74		155.2	701.0	382.0	356.3	25.69	14.867	
5,300.0	5,276.2	5,273.5	5,203.8	14.0	18.2	45.92		158.6	720.4	392.4	366.1	26.26	14.939	
5,400.0	5,375.6	5,372.9	5,301.3	14.3	18.6	46.09		162.0	739.8	402.8	376.0	26.84	15.008	
5,500.0	5,474.9	5,472.4	5,398.8	14.6	19.1	46.26		165.4	759.2	413.2	385.8	27.41	15.073	
5,600.0	5,574.2	5,571.8	5,496.2	14.9	19.5	46.42		168.7	778.6	423.7	395.7	27.99	15.136	
5,700.0	5,673.5	5,671.3	5,593.7	15.2	19.9	46.57		172.1	798.0	434.1	405.5	28.57	15.195	
5,800.0	5,772.8	5,770.7	5,691.2	15.5	20.4	46.71		175.5	817.4	444.5	415.4	29.15	15.253	
5,900.0	5,872.1	5,870.2	5,788.7	15.8	20.8	46.84		178.9	836.9	455.0	425.3	29.72	15.307	
6,000.0	5,971.4	5,969.6	5,886.1	16.1	21.2	46.97		182.2	856.3	465.4	435.1	30.30	15.360	
6,100.0	6,070.7	6,069.1	5,983.6	16.4	21.7	47.10		185.6	875.7	475.9	445.0	30.88	15.410	
6,200.0	6,170.1	6,168.5	6,081.1	16.7	22.1	20.24		189.0	895.1	486.1	454.6	31.47	15.445	
6,300.0	6,269.4	6,267.6	6,178.2	16.9	22.5	-38.40		192.4	914.5	494.0	462.2	31.79	15.538	
6,400.0	6,367.2	6,364.7	6,273.4	17.1	23.0	-58.48		195.7	933.4	499.8	468.0	31.79	15.721	
6,500.0	6,461.8	6,453.1	6,360.0	17.2	23.3	-67.96		194.4	950.7	505.4	473.8	31.63	15.982	
6,600.0	6,551.5	6,543.7	6,448.1	17.2	23.6	-74.10		182.5	968.3	512.4	481.0	31.46	16.288	
6,700.0	6,634.9	6,637.8	6,537.4	17.2	23.9	-78.86		159.0	986.1	520.7	489.3	31.38	16.594	
6,800.0	6,710.5	6,736.0	6,626.8	17.2	24.2	-82.89		122.8	1,004.0	530.2	498.8	31.45	16.859	
6,900.0	6,777.0	6,838.8	6,714.7	17.3	24.5	-86.47		72.7	1,021.6	540.7	509.0	31.72	17.046	
7,000.0	6,833.3	6,946.8	6,799.1	17.4	24.8	-89.71		7.6	1,038.5	551.9	519.6	32.21	17.131	
7,100.0	6,878.4	7,060.8	6,877.4	17.7	25.2	-92.67		-73.5	1,054.3	563.2	530.3	32.95	17.093	
7,200.0	6,911.6	7,181.1	6,946.3	18.2	25.7	-95.34		-171.1	1,068.2	574.2	540.3	33.92	16.928	
7,300.0	6,932.2	7,308.2	7,001.9	18.9	26.2	-97.72		-284.7	1,079.4	584.2	549.1	35.12	16.633	
7,400.0	6,940.0	7,441.9	7,039.5	19.8	27.0	-99.75		-412.5	1,087.1	592.5	555.9	36.55	16.209	
7,500.0	6,939.4	7,582.0	7,054.9	20.9	27.9	-101.15		-551.6	1,090.5	596.9	558.3	38.69	15.431	
7,600.0	6,938.6	7,688.8	7,054.3	22.0	28.8	-101.17		-658.3	1,090.5	597.0	555.9	41.07	14.537	
7,700.0	6,937.8	7,788.8	7,053.4	23.3	29.7	-101.16		-758.3	1,090.5	597.0	553.4	43.59	13.697	
7,800.0	6,937.1	7,888.8	7,052.5	24.6	30.7	-101.15		-858.3	1,090.5	597.0	550.7	46.27	12.900	
7,900.0	6,936.3	7,988.8	7,051.6	26.0	31.8	-101.13		-958.3	1,090.5	596.9	547.8	49.11	12.156	
8,000.0	6,935.6	8,088.8	7,050.7	27.5	33.0	-101.12		-1,058.3	1,090.5	596.9	544.9	52.06	11.466	
8,100.0	6,934.8	8,188.8	7,049.8	29.0	34.3	-101.11		-1,158.3	1,090.5	596.9	541.8	55.11	10.830	
8,200.0	6,934.1	8,288.8	7,048.9	30.6	35.6	-101.10		-1,258.3	1,090.5	596.9	538.6	58.25	10.246	
8,300.0	6,933.3	8,388.8	7,048.1	32.2	37.0	-101.09		-1,358.3	1,090.5	596.8	535.4	61.46	9.710	
8,400.0	6,932.5	8,488.8	7,047.2	33.9	38.4	-101.07		-1,458.3	1,090.5	596.8	532.1	64.74	9.219	
8,500.0	6,931.8	8,588.8	7,046.3	35.5	39.9	-101.06		-1,558.3	1,090.5	596.8	528.7	68.06	8.768	
8,600.0	6,931.0	8,688.8	7,045.4	37.2	41.4	-101.05		-1,658.3	1,090.5	596.8	525.3	71.43	8.354	
8,700.0	6,930.3	8,788.8	7,044.5	38.9	42.9	-101.04		-1,758.3	1,090.5	596.7	521.9	74.84	7.973	
8,800.0	6,929.5	8,888.8	7,043.6	40.7	44.5	-101.03		-1,858.3	1,090.5	596.7	518.4	78.29	7.622	
8,900.0	6,928.8	8,988.8	7,042.8	42.4	46.1	-101.01		-1,958.3	1,090.5	596.7	514.9	81.76	7.298	
9,000.0	6,928.0	9,088.8	7,041.9	44.2	47.7	-101.00		-2,058.3	1,090.5	596.7	511.4	85.26	6.998	
9,100.0	6,927.2	9,188.8	7,041.0	45.9	49.4	-100.99		-2,158.3	1,090.5	596.6	507.9	88.79	6.720	
9,200.0	6,926.5	9,288.8	7,040.1	47.7	51.0	-100.98		-2,258.3	1,090.5	596.6	504.3	92.33	6.462	
9,300.0	6,925.7	9,388.8	7,039.2	49.5	52.7	-100.97		-2,358.2	1,090.5	596.6	500.7	95.90	6.221	
9,400.0	6,925.0	9,488.8	7,038.3	51.3	54.4	-100.95		-2,458.2	1,090.5	596.6	497.1	99.48	5.997	
9,500.0	6,924.2	9,588.8	7,037.4	53.1	56.1	-100.94		-2,558.2	1,090.5	596.5	493.5	103.07	5.788	
9,600.0	6,923.5	9,688.8	7,036.6	55.0	57.9	-100.93		-2,658.2	1,090.5	596.5	489.8	106.68	5.592	
9,700.0	6,922.7	9,788.8	7,035.7	56.8	59.6	-100.92		-2,758.2	1,090.5	596.5	486.2	110.30	5.408	
9,800.0	6,921.9	9,888.8	7,034.8	58.6	61.3	-100.91		-2,858.2	1,090.5	596.5	482.5	113.93	5.235	
9,900.0	6,921.2	9,988.8	7,033.9	60.4	63.1	-100.89		-2,958.2	1,090.5	596.5	478.9	117.57	5.073	
10,000.0	6,920.4	10,088.8	7,033.0	62.3	64.9	-100.88		-3,058.2	1,090.5	596.4	475.2	121.22	4.920	
10,100.0	6,919.7	10,188.8	7,032.1	64.1	66.6	-100.87		-3,158.2	1,090.5	596.4	471.5	124.88	4.776	

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-243
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-243	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 (7-2-15)	Offset TVD Reference:	Offset Datum

Offset Design Lajco 4N67W17R Pad Sec.17-T4N-R67W - Lajco 17R-303 - Wellbore #1 - Plan #2 (7-7-15)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,200.0	6,918.9	10,288.8	7,031.3	66.0	68.4	-100.86	-3,258.2	1,090.5	596.4	467.8	128.54	4.640	
10,300.0	6,918.2	10,388.8	7,030.4	67.8	70.2	-100.85	-3,358.2	1,090.5	596.4	464.1	132.22	4.510	
10,400.0	6,917.4	10,488.8	7,029.5	69.7	72.0	-100.83	-3,458.2	1,090.5	596.3	460.4	135.89	4.388	
10,500.0	6,916.6	10,588.8	7,028.6	71.6	73.8	-100.82	-3,558.2	1,090.5	596.3	456.7	139.58	4.272	
10,600.0	6,915.9	10,688.8	7,027.7	73.4	75.6	-100.81	-3,658.2	1,090.5	596.3	453.0	143.27	4.162	
10,700.0	6,915.1	10,788.8	7,026.8	75.3	77.5	-100.80	-3,758.2	1,090.5	596.3	449.3	146.96	4.057	
10,800.0	6,914.4	10,888.8	7,025.9	77.2	79.3	-100.79	-3,858.2	1,090.5	596.2	445.6	150.66	3.957	
10,900.0	6,913.6	10,988.8	7,025.1	79.0	81.1	-100.77	-3,958.2	1,090.5	596.2	441.8	154.37	3.862	
11,000.0	6,912.9	11,088.8	7,024.2	80.9	82.9	-100.76	-4,058.2	1,090.5	596.2	438.1	158.08	3.771	
11,100.0	6,912.1	11,188.8	7,023.3	82.8	84.8	-100.75	-4,158.2	1,090.5	596.2	434.4	161.79	3.685	
11,200.0	6,911.3	11,288.8	7,022.4	84.6	86.6	-100.74	-4,258.2	1,090.5	596.1	430.6	165.51	3.602	
11,300.0	6,910.6	11,388.8	7,021.5	86.5	88.4	-100.73	-4,358.2	1,090.5	596.1	426.9	169.23	3.523	
11,376.4	6,910.0	11,465.2	7,020.8	88.0	89.8	-100.72	-4,434.6	1,090.5	596.1	424.0	172.07	3.464 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17R-243
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-243	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 (7-2-15)	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)	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	0.00	18.2	0.0	18.2	18.2	0.00	N/A	
100.0	100.0	100.0	100.0	0.1	0.1	0.00	0.00	18.2	0.0	18.2	18.0	0.22	81.060	
200.0	200.0	200.0	200.0	0.3	0.3	0.00	0.00	18.2	0.0	18.2	17.5	0.67	27.020	
300.0	300.0	300.0	300.0	0.6	0.6	0.00	0.00	18.2	0.0	18.2	17.1	1.12	16.212	
400.0	400.0	400.0	400.0	0.8	0.8	0.00	0.00	18.2	0.0	18.2	16.6	1.57	11.580	
500.0	500.0	500.0	500.0	1.0	1.0	0.00	0.00	18.2	0.0	18.2	16.2	2.02	9.007	
600.0	600.0	600.0	600.0	1.2	1.2	0.00	0.00	18.2	0.0	18.2	15.7	2.47	7.369	
700.0	700.0	700.0	700.0	1.5	1.5	0.00	0.00	18.2	0.0	18.2	15.3	2.92	6.235	
800.0	800.0	800.0	800.0	1.7	1.7	0.00	0.00	18.2	0.0	18.2	14.8	3.37	5.404	
900.0	900.0	900.0	900.0	1.9	1.9	0.00	0.00	18.2	0.0	18.2	14.4	3.82	4.768	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	0.00	0.00	18.2	0.0	18.2	13.9	4.27	4.266	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	0.00	0.00	18.2	0.0	18.2	13.5	4.72	3.860	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	0.00	0.00	18.2	0.0	18.2	13.0	5.17	3.524 CC	
1,300.0	1,300.0	1,299.9	1,299.9	2.8	2.8	2.48	0.00	18.6	0.8	18.6	13.0	5.61	3.310 ES	
1,400.0	1,400.0	1,399.7	1,399.6	3.0	3.0	9.34	0.00	19.5	3.2	19.8	13.8	6.04	3.278	
1,500.0	1,500.0	1,499.4	1,499.3	3.3	3.2	-37.78	0.00	21.2	7.2	21.7	15.2	6.48	3.353	
1,600.0	1,600.0	1,599.1	1,598.7	3.5	3.4	-30.37	0.00	23.5	12.8	23.8	16.9	6.91	3.440	
1,700.0	1,699.9	1,698.7	1,698.0	3.7	3.7	-23.53	0.00	26.5	20.0	26.0	18.6	7.34	3.535	
1,800.0	1,799.7	1,798.2	1,797.1	3.9	3.9	-17.14	0.00	30.1	28.8	28.3	20.5	7.77	3.640	
1,900.0	1,899.4	1,897.7	1,895.9	4.1	4.2	-11.13	0.00	34.4	39.2	30.8	22.6	8.20	3.755	
2,000.0	1,998.9	1,997.0	1,994.5	4.4	4.4	-5.47	0.00	39.4	51.1	33.5	24.9	8.63	3.884	
2,100.0	2,098.3	2,096.6	2,093.0	4.6	4.7	-0.18	0.00	44.9	64.5	36.4	27.3	9.07	4.012	
2,200.0	2,197.6	2,196.5	2,191.8	4.9	5.0	4.43	0.00	50.6	78.2	39.3	29.8	9.51	4.131	
2,300.0	2,296.9	2,296.5	2,290.6	5.1	5.3	8.39	0.00	56.2	91.9	42.4	32.5	9.96	4.259	
2,400.0	2,396.2	2,396.4	2,389.4	5.4	5.6	11.79	0.00	61.9	105.6	45.7	35.3	10.41	4.390	
2,500.0	2,495.5	2,496.3	2,488.2	5.7	5.9	14.72	0.00	67.5	119.2	49.2	38.3	10.87	4.520	
2,600.0	2,594.8	2,596.2	2,587.0	6.0	6.2	17.26	0.00	73.2	132.9	52.7	41.4	11.34	4.647	
2,700.0	2,694.1	2,696.1	2,685.9	6.2	6.6	19.48	0.00	78.9	146.6	56.4	44.5	11.82	4.768	
2,800.0	2,793.4	2,796.0	2,784.7	6.5	6.9	21.42	0.00	84.5	160.3	60.1	47.8	12.30	4.884	
2,900.0	2,892.8	2,895.9	2,883.5	6.8	7.2	23.14	0.00	90.2	174.0	63.8	51.1	12.79	4.993	
3,000.0	2,992.1	2,995.8	2,982.3	7.1	7.5	24.66	0.00	95.8	187.6	67.7	54.4	13.28	5.095	
3,100.0	3,091.4	3,095.7	3,081.1	7.4	7.9	26.02	0.00	101.5	201.3	71.6	57.8	13.78	5.192	
3,200.0	3,190.7	3,195.7	3,179.9	7.7	8.2	27.24	0.00	107.1	215.0	75.5	61.2	14.29	5.282	
3,300.0	3,290.0	3,295.6	3,278.7	8.0	8.5	28.34	0.00	112.8	228.7	79.4	64.6	14.80	5.367	
3,400.0	3,389.3	3,395.5	3,377.5	8.3	8.9	29.34	0.00	118.5	242.3	83.4	68.1	15.31	5.446	
3,500.0	3,488.6	3,495.4	3,476.3	8.5	9.2	30.24	0.00	124.1	256.0	87.4	71.5	15.83	5.520	
3,600.0	3,587.9	3,595.3	3,575.1	8.8	9.6	31.07	0.00	129.8	269.7	91.4	75.0	16.35	5.590	
3,700.0	3,687.3	3,695.2	3,673.9	9.1	9.9	31.82	0.00	135.4	283.4	95.4	78.5	16.87	5.655	
3,800.0	3,786.6	3,795.1	3,772.8	9.4	10.2	32.52	0.00	141.1	297.1	99.4	82.0	17.40	5.716	
3,900.0	3,885.9	3,895.0	3,871.6	9.7	10.6	33.16	0.00	146.8	310.7	103.5	85.6	17.92	5.774	
4,000.0	3,985.2	3,994.9	3,970.4	10.0	10.9	33.75	0.00	152.4	324.4	107.6	89.1	18.45	5.828	
4,100.0	4,084.5	4,094.9	4,069.2	10.3	11.3	34.30	0.00	158.1	338.1	111.6	92.6	18.99	5.879	
4,200.0	4,183.8	4,194.8	4,168.0	10.6	11.6	34.81	0.00	163.7	351.8	115.7	96.2	19.52	5.927	
4,300.0	4,283.1	4,294.7	4,266.8	10.9	12.0	35.28	0.00	169.4	365.4	119.8	99.8	20.06	5.973	
4,400.0	4,382.4	4,394.6	4,365.6	11.2	12.3	35.73	0.00	175.0	379.1	123.9	103.3	20.60	6.016	
4,500.0	4,481.7	4,494.5	4,464.4	11.6	12.7	36.14	0.00	180.7	392.8	128.0	106.9	21.14	6.056	
4,600.0	4,581.1	4,594.4	4,563.2	11.9	13.0	36.53	0.00	186.4	406.5	132.1	110.5	21.68	6.095	
4,700.0	4,680.4	4,694.3	4,662.0	12.2	13.4	36.90	0.00	192.0	420.1	136.3	114.0	22.22	6.131	
4,800.0	4,779.7	4,794.2	4,760.8	12.5	13.7	37.24	0.00	197.7	433.8	140.4	117.6	22.77	6.166	
4,900.0	4,879.0	4,894.2	4,859.7	12.8	14.1	37.57	0.00	203.3	447.5	144.5	121.2	23.31	6.199	
5,000.0	4,978.3	4,994.1	4,958.5	13.1	14.4	37.87	0.00	209.0	461.2	148.7	124.8	23.86	6.230	

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-243
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-243	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 (7-2-15)	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						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	5,077.6	5,094.0	5,057.3	13.4	14.8	38.16	214.6	474.9	152.8	128.4	24.41	6.260	
5,200.0	5,176.9	5,193.9	5,156.1	13.7	15.1	38.44	220.3	488.5	156.9	132.0	24.96	6.289	
5,300.0	5,276.2	5,293.8	5,254.9	14.0	15.5	38.70	226.0	502.2	161.1	135.6	25.51	6.316	
5,400.0	5,375.6	5,393.7	5,353.7	14.3	15.8	38.95	231.6	515.9	165.2	139.2	26.06	6.342	
5,500.0	5,474.9	5,493.6	5,452.5	14.6	16.2	39.18	237.3	529.6	169.4	142.8	26.61	6.367	
5,600.0	5,574.2	5,593.5	5,551.3	14.9	16.5	39.41	242.9	543.2	173.6	146.4	27.16	6.390	
5,700.0	5,673.5	5,693.4	5,650.1	15.2	16.9	39.62	248.6	556.9	177.7	150.0	27.71	6.413	
5,800.0	5,772.8	5,793.4	5,748.9	15.5	17.2	39.82	254.2	570.6	181.9	153.6	28.26	6.435	
5,900.0	5,872.1	5,893.3	5,847.7	15.8	17.6	40.02	259.9	584.3	186.0	157.2	28.82	6.456	
6,000.0	5,971.4	5,993.2	5,946.6	16.1	17.9	40.20	265.6	597.9	190.2	160.8	29.37	6.476	
6,100.0	6,070.7	6,093.1	6,045.4	16.4	18.3	40.38	271.2	611.6	194.4	164.4	29.93	6.495	
6,200.0	6,170.1	6,193.0	6,144.2	16.7	18.7	40.56	276.9	625.3	198.4	168.0	30.44	6.518	
6,300.0	6,269.4	6,292.2	6,242.3	16.9	19.0	-47.72	282.5	638.9	201.7	171.1	30.54	6.604	
6,400.0	6,367.2	6,389.2	6,338.2	17.1	19.3	-71.81	288.0	652.2	206.0	175.7	30.31	6.797	
6,500.0	6,461.8	6,487.8	6,435.8	17.2	19.6	-86.26	288.4	665.7	214.3	184.3	30.01	7.143	
6,600.0	6,551.5	6,591.1	6,537.2	17.2	19.9	-96.71	275.2	679.7	226.6	196.8	29.80	7.603	
6,700.0	6,634.9	6,699.3	6,640.6	17.2	20.1	-104.91	246.7	694.0	241.8	212.2	29.60	8.167	
6,800.0	6,710.5	6,813.2	6,743.9	17.2	20.2	-111.49	201.2	708.3	258.7	229.4	29.33	8.821	
6,900.0	6,777.0	6,933.1	6,844.1	17.3	20.3	-116.76	137.1	722.2	276.2	247.3	28.97	9.535	
7,000.0	6,833.3	7,059.3	6,937.5	17.4	20.5	-120.92	53.5	735.1	293.0	264.4	28.57	10.254	
7,100.0	6,878.4	7,191.6	7,019.4	17.7	20.7	-124.11	-49.6	746.5	307.9	279.6	28.24	10.901	
7,200.0	6,911.6	7,329.6	7,084.7	18.2	21.1	-126.41	-170.6	755.5	319.8	291.6	28.15	11.360	
7,300.0	6,932.2	7,471.9	7,128.4	18.9	21.8	-127.88	-305.7	761.6	327.9	299.5	28.43	11.535	
7,400.0	6,940.0	7,617.1	7,146.6	19.8	22.7	-128.56	-449.5	764.1	331.7	302.5	29.18	11.366	
7,500.0	6,939.4	7,725.1	7,146.9	20.9	23.7	-128.67	-557.5	764.2	332.2	301.4	30.78	10.794	
7,600.0	6,938.6	7,825.1	7,146.9	22.0	24.7	-128.76	-657.4	764.2	332.6	300.0	32.64	10.190	
7,700.0	6,937.8	7,925.1	7,146.8	23.3	25.8	-128.85	-757.4	764.2	333.1	298.4	34.68	9.603	
7,800.0	6,937.1	8,025.0	7,146.7	24.6	27.0	-128.94	-857.4	764.2	333.5	296.6	36.87	9.046	
7,900.0	6,936.3	8,125.0	7,146.6	26.0	28.3	-129.03	-957.4	764.2	333.9	294.8	39.17	8.525	
8,000.0	6,935.6	8,225.0	7,146.6	27.5	29.7	-129.13	-1,057.4	764.2	334.4	292.8	41.57	8.043	
8,100.0	6,934.8	8,325.0	7,146.5	29.0	31.1	-129.22	-1,157.4	764.2	334.8	290.7	44.05	7.600	
8,200.0	6,934.1	8,425.0	7,146.4	30.6	32.6	-129.31	-1,257.4	764.2	335.2	288.6	46.60	7.194	
8,300.0	6,933.3	8,525.0	7,146.3	32.2	34.1	-129.40	-1,357.4	764.2	335.7	286.5	49.20	6.822	
8,400.0	6,932.5	8,625.0	7,146.3	33.9	35.7	-129.49	-1,457.4	764.2	336.1	284.2	51.84	6.483	
8,500.0	6,931.8	8,725.0	7,146.2	35.5	37.3	-129.58	-1,557.4	764.2	336.5	282.0	54.53	6.171	
8,600.0	6,931.0	8,825.0	7,146.1	37.2	38.9	-129.66	-1,657.4	764.2	337.0	279.7	57.24	5.886	
8,700.0	6,930.3	8,925.0	7,146.0	38.9	40.5	-129.75	-1,757.4	764.2	337.4	277.4	59.99	5.624	
8,800.0	6,929.5	9,025.0	7,146.0	40.7	42.2	-129.84	-1,857.4	764.2	337.8	275.1	62.75	5.384	
8,900.0	6,928.8	9,125.0	7,145.9	42.4	43.9	-129.93	-1,957.4	764.2	338.3	272.7	65.53	5.162	
9,000.0	6,928.0	9,225.0	7,145.8	44.2	45.6	-130.02	-2,057.4	764.2	338.7	270.4	68.33	4.957	
9,100.0	6,927.2	9,325.0	7,145.7	45.9	47.3	-130.11	-2,157.4	764.2	339.1	268.0	71.14	4.767	
9,200.0	6,926.5	9,425.0	7,145.7	47.7	49.1	-130.20	-2,257.4	764.2	339.6	265.6	73.96	4.591	
9,300.0	6,925.7	9,525.0	7,145.6	49.5	50.8	-130.28	-2,357.4	764.2	340.0	263.2	76.79	4.428	
9,400.0	6,925.0	9,625.0	7,145.5	51.3	52.6	-130.37	-2,457.4	764.2	340.5	260.8	79.63	4.276	
9,500.0	6,924.2	9,725.0	7,145.4	53.1	54.4	-130.46	-2,557.4	764.2	340.9	258.4	82.47	4.134	
9,600.0	6,923.5	9,825.0	7,145.3	55.0	56.2	-130.55	-2,657.4	764.2	341.3	256.0	85.31	4.001	
9,700.0	6,922.7	9,925.0	7,145.3	56.8	57.9	-130.63	-2,757.4	764.2	341.8	253.6	88.16	3.877	
9,800.0	6,921.9	10,025.0	7,145.2	58.6	59.8	-130.72	-2,857.4	764.2	342.2	251.2	91.02	3.760	
9,900.0	6,921.2	10,125.0	7,145.1	60.4	61.6	-130.81	-2,957.4	764.2	342.7	248.8	93.87	3.651	
10,000.0	6,920.4	10,225.0	7,145.0	62.3	63.4	-130.89	-3,057.4	764.2	343.1	246.4	96.73	3.547	
10,100.0	6,919.7	10,325.0	7,145.0	64.1	65.2	-130.98	-3,157.4	764.2	343.6	244.0	99.58	3.450	

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-243
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-243	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 (7-2-15)	Offset TVD Reference:	Offset Datum

Offset Design												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	6,918.9	10,425.0	7,144.9	66.0	67.0	-131.06	-3,257.4	764.2	344.0	241.6	102.44	3.358		
10,300.0	6,918.2	10,525.0	7,144.8	67.8	68.9	-131.15	-3,357.4	764.2	344.5	239.2	105.29	3.272		
10,400.0	6,917.4	10,625.0	7,144.7	69.7	70.7	-131.23	-3,457.4	764.2	344.9	236.8	108.14	3.189		
10,500.0	6,916.6	10,725.0	7,144.7	71.6	72.5	-131.32	-3,557.4	764.2	345.4	234.4	111.00	3.111		
10,600.0	6,915.9	10,825.0	7,144.6	73.4	74.4	-131.40	-3,657.4	764.2	345.8	232.0	113.85	3.037		
10,700.0	6,915.1	10,925.0	7,144.5	75.3	76.2	-131.49	-3,757.4	764.2	346.3	229.6	116.70	2.967		
10,800.0	6,914.4	11,025.0	7,144.4	77.2	78.1	-131.57	-3,857.4	764.2	346.7	227.2	119.54	2.900		
10,900.0	6,913.6	11,125.0	7,144.4	79.0	79.9	-131.66	-3,957.4	764.2	347.2	224.8	122.39	2.837		
11,000.0	6,912.9	11,225.0	7,144.3	80.9	81.8	-131.74	-4,057.4	764.2	347.6	222.4	125.23	2.776		
11,100.0	6,912.1	11,325.0	7,144.2	82.8	83.6	-131.82	-4,157.4	764.2	348.1	220.0	128.07	2.718		
11,200.0	6,911.3	11,425.0	7,144.1	84.6	85.5	-131.91	-4,257.4	764.2	348.5	217.6	130.90	2.663		
11,300.0	6,910.6	11,525.0	7,144.1	86.5	87.4	-131.99	-4,357.4	764.2	349.0	215.3	133.73	2.610		
11,376.4	6,910.0	11,601.4	7,144.0	88.0	88.8	-132.05	-4,433.8	764.2	349.3	213.4	135.89	2.571 SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17R-243
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-243	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 (7-2-15)	Offset TVD Reference:	Offset Datum

Offset Design Lajco 4N67W17R Pad Sec.17-T4N-R67W - Lajco 17U-203 - Wellbore #1 - Plan #2 (7-7-15)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-2.09	-2.09	76.5	-2.8	76.6				
100.0	100.0	100.0	100.0	0.1	0.1	-2.09	-2.09	76.5	-2.8	76.6	76.3	0.22	340.618	
200.0	200.0	200.0	200.0	0.3	0.3	-2.09	-2.09	76.5	-2.8	76.6	75.9	0.67	113.539 CC	
300.0	300.0	299.9	299.8	0.6	0.6	-1.11	-1.11	76.6	-1.5	76.7	75.5	1.11	68.808	
400.0	400.0	399.6	399.5	0.8	0.8	1.78	1.78	77.0	2.4	77.1	75.5	1.56	49.509 ES	
500.0	500.0	499.0	498.7	1.0	1.0	6.50	6.50	77.7	8.9	78.2	76.2	2.01	38.882	
600.0	600.0	598.1	597.3	1.2	1.3	12.79	12.79	78.5	17.8	80.6	78.1	2.48	32.484	
700.0	700.0	696.6	695.2	1.5	1.5	20.19	20.19	79.7	29.3	85.0	82.0	2.98	28.551	
800.0	800.0	794.4	792.0	1.7	1.9	28.03	28.03	81.0	43.1	92.1	88.6	3.51	26.243	
900.0	900.0	891.5	887.7	1.9	2.2	35.68	35.68	82.6	59.3	102.5	98.4	4.09	25.070	
1,000.0	1,000.0	987.7	982.1	2.1	2.6	42.64	42.64	84.4	77.7	116.2	111.5	4.70	24.708 SF	
1,100.0	1,100.0	1,082.8	1,075.0	2.4	3.0	48.67	48.67	86.5	98.3	133.3	127.9	5.35	24.910	
1,200.0	1,200.0	1,176.9	1,166.3	2.6	3.4	53.73	53.73	88.7	120.9	153.6	147.6	6.03	25.491	
1,300.0	1,300.0	1,269.8	1,255.8	2.8	3.9	57.92	57.92	91.1	145.3	177.1	170.4	6.73	26.315	
1,400.0	1,400.0	1,361.4	1,343.5	3.0	4.5	61.37	61.37	93.7	171.6	203.5	196.0	7.46	27.287	
1,500.0	1,500.0	1,451.8	1,429.5	3.3	5.0	8.95	8.95	96.4	199.5	231.7	224.8	6.95	33.361	
1,600.0	1,600.0	1,545.1	1,517.7	3.5	5.6	11.41	11.41	99.4	230.0	260.5	253.1	7.42	35.091	
1,700.0	1,699.9	1,640.7	1,607.9	3.7	6.3	13.50	13.50	102.5	261.4	288.2	280.3	7.90	36.468	
1,800.0	1,799.7	1,736.7	1,698.5	3.9	6.9	15.30	15.30	105.6	292.9	314.6	306.2	8.38	37.520	
1,900.0	1,899.4	1,833.0	1,789.5	4.1	7.6	16.88	16.88	108.7	324.5	339.6	330.8	8.87	38.294	
2,000.0	1,998.9	1,929.8	1,880.8	4.4	8.2	18.33	18.33	111.8	356.3	363.3	354.0	9.36	38.827	
2,100.0	2,098.3	2,026.8	1,972.4	4.6	8.9	19.70	19.70	115.0	388.1	385.7	375.8	9.85	39.158	
2,200.0	2,197.6	2,124.0	2,064.1	4.9	9.6	20.98	20.98	118.1	420.0	407.8	397.4	10.35	39.415	
2,300.0	2,296.9	2,221.1	2,155.8	5.1	10.2	22.14	22.14	121.3	451.9	430.1	419.2	10.85	39.645	
2,400.0	2,396.2	2,318.2	2,247.5	5.4	10.9	23.18	23.18	124.4	483.8	452.6	441.2	11.36	39.849	
2,500.0	2,495.5	2,415.3	2,339.2	5.7	11.6	24.13	24.13	127.5	515.6	475.1	463.3	11.87	40.028	
2,600.0	2,594.8	2,512.5	2,430.9	6.0	12.2	24.98	24.98	130.7	547.5	497.8	485.4	12.39	40.184	
2,700.0	2,694.1	2,609.6	2,522.6	6.2	12.9	25.77	25.77	133.8	579.4	520.6	507.7	12.91	40.319	
2,800.0	2,793.4	2,706.7	2,614.3	6.5	13.6	26.49	26.49	136.9	611.3	543.5	530.1	13.44	40.436	
2,900.0	2,892.8	2,803.9	2,706.0	6.8	14.3	27.15	27.15	140.1	643.2	566.5	552.5	13.97	40.536	
3,000.0	2,992.1	2,901.0	2,797.7	7.1	14.9	27.76	27.76	143.2	675.0	589.5	575.0	14.51	40.621	
3,100.0	3,091.4	2,998.1	2,889.4	7.4	15.6	28.32	28.32	146.3	706.9	612.6	597.5	15.05	40.694	
3,200.0	3,190.7	3,095.3	2,981.1	7.7	16.3	28.84	28.84	149.5	738.8	635.7	620.1	15.60	40.755	
3,300.0	3,290.0	3,192.4	3,072.8	8.0	17.0	29.33	29.33	152.6	770.7	658.9	642.7	16.15	40.806	
3,400.0	3,389.3	3,289.5	3,164.5	8.3	17.7	29.78	29.78	155.8	802.6	682.1	665.4	16.70	40.848	
3,500.0	3,488.6	3,386.6	3,256.1	8.5	18.3	30.20	30.20	158.9	834.4	705.4	688.1	17.25	40.883	
3,600.0	3,587.9	3,483.8	3,347.8	8.8	19.0	30.60	30.60	162.0	866.3	728.6	710.8	17.81	40.911	
3,700.0	3,687.3	3,580.9	3,439.5	9.1	19.7	30.97	30.97	165.2	898.2	752.0	733.6	18.37	40.934	
3,800.0	3,786.6	3,678.0	3,531.2	9.4	20.4	31.32	31.32	168.3	930.1	775.3	756.4	18.93	40.951	
3,900.0	3,885.9	3,775.2	3,622.9	9.7	21.0	31.65	31.65	171.4	961.9	798.7	779.2	19.50	40.964	
4,000.0	3,985.2	3,872.3	3,714.6	10.0	21.7	31.96	31.96	174.6	993.8	822.1	802.0	20.06	40.973	
4,100.0	4,084.5	3,969.4	3,806.3	10.3	22.4	32.26	32.26	177.7	1,025.7	845.5	824.9	20.63	40.978	
4,200.0	4,183.8	4,066.5	3,898.0	10.6	23.1	32.53	32.53	180.9	1,057.6	869.0	847.8	21.20	40.981	
4,300.0	4,283.1	4,163.7	3,989.7	10.9	23.8	32.80	32.80	184.0	1,089.5	892.4	870.6	21.78	40.981	
4,400.0	4,382.4	4,260.8	4,081.4	11.2	24.4	33.04	33.04	187.1	1,121.3	915.9	893.5	22.35	40.979	
4,500.0	4,481.7	4,357.9	4,173.1	11.6	25.1	33.28	33.28	190.3	1,153.2	939.4	916.5	22.93	40.975	
4,600.0	4,581.1	4,455.1	4,264.8	11.9	25.8	33.51	33.51	193.4	1,185.1	962.9	939.4	23.50	40.969	
4,700.0	4,680.4	4,552.2	4,356.5	12.2	26.5	33.72	33.72	196.5	1,217.0	986.4	962.3	24.08	40.962	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17R-243
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-243	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 (7-2-15)	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)	Semi Major Axis (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	0.0	-2.58	61.9	-2.8	62.0				
100.0	100.0	100.0	100.0	0.1	0.1	0.1	-2.58	61.9	-2.8	62.0	61.8	0.22	275.838	
200.0	200.0	200.0	200.0	0.3	0.3	0.3	-2.58	61.9	-2.8	62.0	61.3	0.67	91.946	
300.0	300.0	300.0	300.0	0.6	0.6	0.6	-2.58	61.9	-2.8	62.0	60.9	1.12	55.168	
400.0	400.0	400.0	400.0	0.8	0.8	0.8	-2.58	61.9	-2.8	62.0	60.4	1.57	39.405 CC	
500.0	500.0	499.8	499.8	1.0	1.0	1.0	-1.38	62.1	-1.5	62.1	60.1	2.01	30.880 ES	
600.0	600.0	599.5	599.5	1.2	1.2	1.2	2.18	62.6	2.4	62.7	60.2	2.45	25.596	
700.0	700.0	699.0	698.7	1.5	1.4	1.4	7.91	63.4	8.8	64.1	61.2	2.89	22.134	
800.0	800.0	798.0	797.3	1.7	1.7	1.7	15.37	64.6	17.8	67.0	63.7	3.36	19.976	
900.0	900.0	896.5	895.1	1.9	2.0	2.0	23.82	66.1	29.2	72.4	68.5	3.84	18.831	
1,000.0	1,000.0	994.3	991.9	2.1	2.2	2.2	32.35	67.9	43.0	80.7	76.4	4.37	18.490 SF	
1,100.0	1,100.0	1,091.4	1,087.6	2.4	2.6	2.6	40.20	69.9	59.1	92.4	87.5	4.92	18.764	
1,200.0	1,200.0	1,187.6	1,182.0	2.6	2.9	2.9	46.97	72.3	77.4	107.5	102.0	5.52	19.483	
1,300.0	1,300.0	1,282.7	1,274.9	2.8	3.3	3.3	52.57	75.0	97.9	125.8	119.7	6.14	20.499	
1,400.0	1,400.0	1,376.8	1,366.2	3.0	3.8	3.8	57.11	77.9	120.4	147.3	140.5	6.79	21.699	
1,500.0	1,500.0	1,469.8	1,455.9	3.3	4.2	4.2	5.54	81.0	144.8	170.9	164.1	6.73	25.393	
1,600.0	1,600.0	1,564.4	1,546.6	3.5	4.7	4.7	8.62	84.5	171.6	195.2	188.0	7.19	27.135	
1,700.0	1,699.9	1,661.2	1,639.3	3.7	5.3	5.3	11.16	88.0	199.1	218.6	210.9	7.66	28.534	
1,800.0	1,799.7	1,758.4	1,732.4	3.9	5.9	5.9	13.29	91.6	226.8	240.7	232.5	8.13	29.604	
1,900.0	1,899.4	1,855.9	1,825.7	4.1	6.4	6.4	15.15	95.2	254.6	261.4	252.8	8.60	30.389	
2,000.0	1,998.9	1,953.7	1,919.4	4.4	7.0	7.0	16.83	98.8	282.5	280.7	271.6	9.07	30.930	
2,100.0	2,098.3	2,051.7	2,013.3	4.6	7.6	7.6	18.41	102.4	310.4	298.6	289.1	9.55	31.260	
2,200.0	2,197.6	2,149.8	2,107.3	4.9	8.1	8.1	19.87	106.0	338.4	316.3	306.3	10.04	31.510	
2,300.0	2,296.9	2,247.9	2,201.2	5.1	8.7	8.7	21.17	109.6	366.4	334.3	323.7	10.53	31.738	
2,400.0	2,396.2	2,346.0	2,295.2	5.4	9.3	9.3	22.35	113.3	394.3	352.3	341.3	11.03	31.944	
2,500.0	2,495.5	2,444.2	2,389.2	5.7	9.9	9.9	23.40	116.9	422.3	370.5	359.0	11.53	32.127	
2,600.0	2,594.8	2,542.3	2,483.2	6.0	10.5	10.5	24.36	120.5	450.3	388.8	376.8	12.04	32.291	
2,700.0	2,694.1	2,640.4	2,577.1	6.2	11.1	11.1	25.24	124.1	478.2	407.2	394.7	12.55	32.435	
2,800.0	2,793.4	2,738.5	2,671.1	6.5	11.7	11.7	26.04	127.7	506.2	425.7	412.6	13.07	32.563	
2,900.0	2,892.8	2,836.6	2,765.1	6.8	12.3	12.3	26.77	131.3	534.2	444.3	430.7	13.60	32.675	
3,000.0	2,992.1	2,934.7	2,859.0	7.1	12.9	12.9	27.44	134.9	562.1	462.9	448.8	14.12	32.774	
3,100.0	3,091.4	3,032.8	2,953.0	7.4	13.5	13.5	28.06	138.6	590.1	481.6	466.9	14.66	32.861	
3,200.0	3,190.7	3,130.9	3,047.0	7.7	14.1	14.1	28.64	142.2	618.1	500.3	485.1	15.19	32.936	
3,300.0	3,290.0	3,229.0	3,141.0	8.0	14.6	14.6	29.17	145.8	646.0	519.1	503.4	15.73	33.003	
3,400.0	3,389.3	3,327.2	3,234.9	8.3	15.2	15.2	29.66	149.4	674.0	537.9	521.6	16.27	33.060	
3,500.0	3,488.6	3,425.3	3,328.9	8.5	15.8	15.8	30.13	153.0	701.9	556.7	539.9	16.81	33.111	
3,600.0	3,587.9	3,523.4	3,422.9	8.8	16.4	16.4	30.56	156.6	729.9	575.6	558.3	17.36	33.155	
3,700.0	3,687.3	3,621.5	3,516.8	9.1	17.0	17.0	30.96	160.2	757.9	594.6	576.6	17.91	33.193	
3,800.0	3,786.6	3,719.6	3,610.8	9.4	17.6	17.6	31.34	163.9	785.8	613.5	595.0	18.46	33.225	
3,900.0	3,885.9	3,817.7	3,704.8	9.7	18.2	18.2	31.70	167.5	813.8	632.5	613.4	19.02	33.254	
4,000.0	3,985.2	3,915.8	3,798.8	10.0	18.8	18.8	32.04	171.1	841.8	651.4	631.9	19.58	33.278	
4,100.0	4,084.5	4,013.9	3,892.7	10.3	19.4	19.4	32.36	174.7	869.7	670.5	650.3	20.13	33.299	
4,200.0	4,183.8	4,112.0	3,986.7	10.6	20.0	20.0	32.65	178.3	897.7	689.5	668.8	20.70	33.316	
4,300.0	4,283.1	4,210.2	4,080.7	10.9	20.6	20.6	32.94	181.9	925.7	708.5	687.3	21.26	33.331	
4,400.0	4,382.4	4,308.3	4,174.7	11.2	21.2	21.2	33.21	185.5	953.6	727.6	705.8	21.82	33.344	
4,500.0	4,481.7	4,406.4	4,268.6	11.6	21.8	21.8	33.46	189.2	981.6	746.7	724.3	22.39	33.354	
4,600.0	4,581.1	4,504.5	4,362.6	11.9	22.4	22.4	33.71	192.8	1,009.6	765.8	742.8	22.95	33.362	
4,700.0	4,680.4	4,602.6	4,456.6	12.2	23.0	23.0	33.94	196.4	1,037.5	784.9	761.3	23.52	33.369	
4,800.0	4,779.7	4,700.7	4,550.5	12.5	23.6	23.6	34.16	200.0	1,065.5	804.0	779.9	24.09	33.374	
4,900.0	4,879.0	4,798.8	4,644.5	12.8	24.2	24.2	34.37	203.6	1,093.5	823.1	798.4	24.66	33.377	
5,000.0	4,978.3	4,896.9	4,738.5	13.1	24.8	24.8	34.57	207.2	1,121.4	842.2	817.0	25.23	33.380	

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-243
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-243	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 (7-2-15)	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	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	5,077.6	4,995.0	4,832.5	13.4	25.4	34.76	210.8	1,149.4	861.4	835.6	25.80	33.381	
5,200.0	5,176.9	5,093.1	4,926.4	13.7	26.0	34.94	214.5	1,177.3	880.5	854.2	26.38	33.382	
5,300.0	5,276.2	5,191.3	5,020.4	14.0	26.6	35.11	218.1	1,205.3	899.7	872.7	26.95	33.381	
5,400.0	5,375.6	5,289.4	5,114.4	14.3	27.2	35.28	221.7	1,233.3	918.9	891.3	27.53	33.380	
5,500.0	5,474.9	5,387.5	5,208.3	14.6	27.8	35.44	225.3	1,261.2	938.0	909.9	28.10	33.378	
5,600.0	5,574.2	5,485.6	5,302.3	14.9	28.4	35.60	228.9	1,289.2	957.2	928.5	28.68	33.376	
5,700.0	5,673.5	5,583.7	5,396.3	15.2	29.0	35.75	232.5	1,317.2	976.4	947.2	29.26	33.373	
5,800.0	5,772.8	5,681.8	5,490.3	15.5	29.6	35.89	236.1	1,345.1	995.6	965.8	29.84	33.370	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17R-243
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-243	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 (7-2-15)	Offset TVD Reference:	Offset Datum

Offset Design Lajco Pad Sec.17-T4N-R67W - Coming 17-1 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error: 0.0 ft	
Survey Program: 100-NS-GYRO-MS													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
0.0	0.0	0.0	0.0	0.0	0.0	127.31	-306.0	401.6	504.9					
100.0	100.0	91.1	91.1	0.1	0.1	127.31	-306.1	401.7	505.0	504.8	0.23	2,164.783		
200.0	200.0	193.3	193.3	0.3	0.3	127.33	-306.4	401.7	505.2	504.6	0.66	766.112		
300.0	300.0	295.0	295.0	0.6	0.5	127.33	-306.2	401.6	505.0	504.0	1.02	494.663		
400.0	400.0	394.4	394.4	0.8	0.6	127.31	-305.9	401.4	504.7	503.3	1.40	360.077		
500.0	500.0	494.6	494.6	1.0	0.8	127.34	-305.9	401.0	504.4	502.5	1.85	273.257		
600.0	600.0	593.9	593.9	1.2	1.0	127.35	-305.8	400.7	504.1	501.8	2.29	220.610		
700.0	700.0	694.6	694.6	1.5	1.3	127.36	-305.8	400.5	503.9	501.1	2.74	184.085		
800.0	800.0	797.1	797.1	1.7	1.5	127.41	-305.8	399.8	503.3	500.1	3.22	156.457		
900.0	900.0	899.0	899.0	1.9	1.8	127.48	-305.6	398.6	502.3	498.6	3.70	135.734		
1,000.0	1,000.0	999.6	999.6	2.1	2.0	127.53	-305.2	397.3	501.1	496.9	4.18	119.765		
1,100.0	1,100.0	1,097.0	1,096.9	2.4	2.3	127.60	-305.1	396.1	500.0	495.4	4.66	107.321		
1,200.0	1,200.0	1,197.2	1,197.1	2.6	2.6	127.67	-305.1	395.1	499.2	494.1	5.14	97.054		
1,300.0	1,300.0	1,297.3	1,297.2	2.8	2.8	127.73	-304.9	394.2	498.4	492.8	5.63	88.523		
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.1	127.74	-304.3	393.2	497.2	491.1	6.11	81.390		
1,500.0	1,500.0	1,496.5	1,496.4	3.3	3.3	72.58	-303.5	392.4	495.9	489.3	6.56	75.594		
1,600.0	1,600.0	1,599.3	1,599.2	3.5	3.6	72.93	-303.2	391.5	494.1	487.1	7.03	70.245		
1,700.0	1,699.9	1,698.9	1,698.9	3.7	3.8	73.48	-302.7	390.3	491.6	484.1	7.51	65.508		
1,800.0	1,799.7	1,797.6	1,797.6	3.9	4.1	74.18	-302.0	389.4	488.8	480.9	7.97	61.306		
1,900.0	1,899.4	1,899.3	1,899.2	4.1	4.3	75.13	-301.3	388.4	485.5	477.1	8.46	57.389		
2,000.0	1,998.9	1,996.9	1,996.8	4.4	4.6	76.27	-300.7	387.4	481.9	473.0	8.95	53.860		
2,100.0	2,098.3	2,097.9	2,097.8	4.6	4.9	77.64	-300.1	386.3	478.2	468.7	9.46	50.573		
2,200.0	2,197.6	2,195.8	2,195.7	4.9	5.1	79.06	-299.6	385.1	474.6	464.6	9.97	47.623		
2,300.0	2,296.9	2,292.7	2,292.6	5.1	5.4	80.50	-299.6	384.0	471.6	461.2	10.48	45.025		
2,400.0	2,396.2	2,391.3	2,391.2	5.4	5.6	81.96	-299.6	383.3	469.4	458.4	10.99	42.695		
2,500.0	2,495.5	2,491.8	2,491.7	5.7	5.9	83.44	-299.5	382.6	467.3	455.8	11.53	40.549		
2,600.0	2,594.8	2,593.8	2,593.7	6.0	6.1	84.96	-299.1	381.6	465.2	453.1	12.07	38.540		
2,700.0	2,694.1	2,692.2	2,692.1	6.2	6.4	86.45	-298.5	380.4	463.1	450.5	12.61	36.723		
2,800.0	2,793.4	2,790.9	2,790.7	6.5	6.7	87.94	-298.1	379.4	461.5	448.4	13.15	35.084		
2,900.0	2,892.8	2,888.5	2,888.4	6.8	6.9	89.42	-297.8	378.6	460.5	446.8	13.70	33.614		
3,000.0	2,992.1	2,986.1	2,986.0	7.1	7.1	90.94	-297.9	377.7	460.1	445.9	14.23	32.336		
3,100.0	3,091.4	3,088.0	3,087.8	7.4	7.4	92.60	-298.3	376.4	460.1	445.3	14.77	31.156		
3,200.0	3,190.7	3,188.8	3,188.6	7.7	7.7	94.23	-298.2	374.7	459.9	444.5	15.32	30.019		
3,292.4	3,282.5	3,281.0	3,280.8	7.9	7.9	95.68	-297.7	373.5	459.8	443.9	15.83	29.039		
3,300.0	3,290.0	3,288.5	3,288.4	8.0	7.9	95.80	-297.7	373.4	459.8	443.9	15.87	28.962		
3,400.0	3,389.3	3,388.0	3,387.8	8.3	8.2	97.34	-297.0	372.1	459.9	443.5	16.42	28.006		
3,500.0	3,488.6	3,483.4	3,483.2	8.5	8.4	98.79	-296.6	371.2	460.8	443.8	16.95	27.181		
3,600.0	3,587.9	3,581.9	3,581.7	8.8	8.7	100.32	-296.8	370.2	462.5	445.0	17.48	26.454		
3,700.0	3,687.3	3,680.6	3,680.4	9.1	8.9	101.89	-297.3	369.0	464.7	446.7	18.01	25.799		
3,800.0	3,786.6	3,780.7	3,780.5	9.4	9.1	103.47	-297.7	367.7	467.2	448.6	18.55	25.191		
3,900.0	3,885.9	3,878.8	3,878.6	9.7	9.4	105.02	-298.2	366.1	470.0	450.9	19.08	24.637		
4,000.0	3,985.2	3,978.2	3,977.9	10.0	9.6	106.66	-299.0	364.0	473.3	453.7	19.60	24.145		
4,100.0	4,084.5	4,078.5	4,078.2	10.3	9.9	108.25	-299.6	362.1	476.8	456.7	20.13	23.681		
4,200.0	4,183.8	4,174.8	4,174.5	10.6	10.1	109.80	-300.2	359.9	480.7	460.1	20.65	23.280		
4,300.0	4,283.1	4,276.6	4,276.2	10.9	10.4	111.41	-301.2	357.7	485.3	464.1	21.18	22.917		
4,400.0	4,382.4	4,373.4	4,373.0	11.2	10.6	112.86	-301.7	355.9	489.8	468.1	21.69	22.583		
4,500.0	4,481.7	4,475.9	4,475.5	11.6	10.8	114.38	-302.5	353.9	494.9	472.7	22.21	22.279		
4,600.0	4,581.1	4,576.5	4,576.1	11.9	11.1	115.84	-302.4	351.9	499.5	476.7	22.74	21.962		
4,700.0	4,680.4	4,673.2	4,672.7	12.2	11.4	117.25	-302.5	349.7	504.6	481.3	23.26	21.691		
4,800.0	4,779.7	4,770.6	4,770.1	12.5	11.6	118.66	-303.1	347.3	510.4	486.7	23.77	21.473		
4,900.0	4,879.0	4,872.1	4,871.7	12.8	11.9	120.03	-303.7	345.4	516.6	492.3	24.29	21.268		

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-243
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-243	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 (7-2-15)	Offset TVD Reference:	Offset Datum

Offset Design Lajco Pad Sec.17-T4N-R67W - Coming 17-1 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error: 0.0 ft	
Survey Program: 100-NS-GYRO-MS													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			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)			
5,000.0	4,978.3	4,971.5	4,971.0	13.1	12.1	121.29	-303.8	344.1	522.6	497.8	24.81	21.065		
5,100.0	5,077.6	5,072.8	5,072.3	13.4	12.4	122.53	-303.8	342.8	528.7	503.4	25.33	20.875		
5,200.0	5,176.9	5,171.0	5,170.5	13.7	12.7	123.76	-303.5	340.9	534.8	509.0	25.84	20.698		
5,300.0	5,276.2	5,268.4	5,267.9	14.0	12.9	124.98	-303.6	338.9	541.6	515.2	26.35	20.557		
5,400.0	5,375.6	5,367.5	5,366.9	14.3	13.2	126.18	-303.9	337.0	548.7	521.9	26.85	20.435		
5,500.0	5,474.9	5,466.7	5,466.1	14.6	13.4	127.33	-304.1	335.2	556.1	528.7	27.36	20.327		
5,600.0	5,574.2	5,568.2	5,567.6	14.9	13.7	128.43	-304.2	333.8	563.5	535.6	27.87	20.221		
5,700.0	5,673.5	5,669.7	5,669.1	15.2	14.0	129.55	-303.8	332.1	570.6	542.2	28.37	20.111		
5,800.0	5,772.8	5,769.2	5,768.6	15.5	14.2	130.59	-303.1	330.6	577.7	548.8	28.87	20.008		
5,900.0	5,872.1	5,866.4	5,865.8	15.8	14.5	131.59	-302.6	329.2	585.0	555.7	29.36	19.923		
6,000.0	5,971.4	5,966.2	5,965.5	16.1	14.7	132.55	-302.4	328.0	592.9	563.0	29.86	19.854		
6,100.0	6,070.7	6,067.3	6,066.7	16.4	15.0	133.46	-301.9	327.3	600.5	570.2	30.35	19.786		
6,200.0	6,170.1	6,165.2	6,164.6	16.7	15.2	107.18	-301.3	326.4	607.1	576.3	30.86	19.674		
6,300.0	6,269.4	6,260.5	6,259.9	16.9	15.5	50.28	-301.2	325.3	603.7	572.7	31.03	19.453		
6,400.0	6,367.2	6,356.6	6,355.9	17.1	15.7	33.91	-301.6	324.2	588.4	557.6	30.75	19.136		
6,500.0	6,461.8	6,451.8	6,451.2	17.2	15.9	29.36	-302.0	322.9	561.0	531.0	30.05	18.672		
6,600.0	6,551.5	6,543.2	6,542.5	17.2	16.2	29.17	-302.2	321.8	522.1	493.1	29.04	17.981		
6,700.0	6,634.9	6,627.5	6,626.8	17.2	16.4	31.80	-302.3	321.2	472.8	444.9	27.94	16.924		
6,800.0	6,710.5	6,702.4	6,701.7	17.2	16.6	37.23	-302.4	320.9	415.0	387.9	27.19	15.266		
6,900.0	6,777.0	6,769.4	6,768.7	17.3	16.7	46.35	-302.5	320.5	351.1	323.6	27.55	12.745		
7,000.0	6,833.3	6,825.9	6,825.2	17.4	16.9	59.43	-302.4	320.0	285.2	255.7	29.51	9.663		
7,100.0	6,878.4	6,871.4	6,870.7	17.7	17.0	74.47	-302.4	319.7	225.1	193.1	32.08	7.018		
7,200.0	6,911.6	6,904.7	6,904.0	18.2	17.1	86.69	-302.3	319.6	187.2	153.5	33.73	5.551		
7,239.3	6,921.2	6,914.1	6,913.4	18.5	17.1	89.76	-302.3	319.5	183.4	149.2	34.14	5.372 CC, ES, SF		
7,300.0	6,932.2	6,925.0	6,924.3	18.9	17.1	92.31	-302.3	319.5	192.6	158.0	34.66	5.557		
7,400.0	6,940.0	6,932.9	6,932.2	19.8	17.1	90.36	-302.3	319.4	241.6	206.0	35.60	6.786		
7,500.0	6,939.4	6,932.4	6,931.7	20.9	17.1	89.21	-302.3	319.4	315.2	278.6	36.66	8.599		
7,600.0	6,938.6	6,931.8	6,931.1	22.0	17.1	89.03	-302.3	319.5	400.4	362.6	37.86	10.576		
7,700.0	6,937.8	6,931.2	6,930.5	23.3	17.1	88.84	-302.3	319.5	491.3	452.1	39.17	12.542		
7,800.0	6,937.1	6,930.6	6,929.9	24.6	17.1	88.65	-302.3	319.5	585.1	544.5	40.56	14.425		
7,900.0	6,936.3	6,929.9	6,929.3	26.0	17.1	88.45	-302.3	319.5	680.7	638.7	42.02	16.200		
8,000.0	6,935.6	6,929.3	6,928.6	27.5	17.1	88.25	-302.3	319.5	777.4	733.8	43.53	17.857		
8,100.0	6,934.8	6,928.6	6,928.0	29.0	17.1	88.04	-302.3	319.5	874.8	829.7	45.09	19.400		
8,200.0	6,934.1	6,928.0	6,927.3	30.6	17.1	87.84	-302.3	319.5	972.8	926.1	46.70	20.832		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17R-243
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-243	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 (7-2-15)	Offset TVD Reference:	Offset Datum

Offset Design Lajco Pad Sec.17-T4N-R67W - Coming 17-4 (Exist.) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		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)					
7,400.0	6,940.0	6,915.2	6,914.3	19.8	15.1	86.81	-1,337.2	226.3	922.9	889.5	33.39	27.640	
7,500.0	6,939.4	6,914.9	6,914.0	20.9	15.1	90.31	-1,337.2	226.3	828.1	793.5	34.60	23.931	
7,600.0	6,938.6	6,914.4	6,913.5	22.0	15.0	90.21	-1,337.2	226.3	734.7	698.9	35.82	20.513	
7,700.0	6,937.8	6,913.9	6,913.0	23.3	15.0	90.11	-1,337.1	226.3	643.3	606.2	37.13	17.326	
7,800.0	6,937.1	6,913.4	6,912.5	24.6	15.0	90.01	-1,337.1	226.3	554.9	516.3	38.52	14.403	
7,900.0	6,936.3	6,912.9	6,912.0	26.0	15.0	89.92	-1,337.1	226.3	471.0	431.1	39.99	11.780	
8,000.0	6,935.6	6,912.5	6,911.6	27.5	15.0	89.82	-1,337.1	226.3	394.9	353.3	41.51	9.512	
8,100.0	6,934.8	6,912.0	6,911.1	29.0	15.0	89.72	-1,337.1	226.3	331.6	288.5	43.08	7.696	
8,200.0	6,934.1	6,911.5	6,910.6	30.6	15.0	89.62	-1,337.1	226.3	289.8	245.1	44.69	6.484	
8,279.9	6,933.5	6,911.1	6,910.3	31.9	15.0	89.55	-1,337.1	226.3	278.5	232.5	46.00	6.054 CC, ES	
8,300.0	6,933.3	6,911.1	6,910.2	32.2	15.0	89.53	-1,337.1	226.3	279.3	232.9	46.34	6.027 SF	
8,400.0	6,932.5	6,910.6	6,909.7	33.9	15.0	89.43	-1,337.1	226.3	303.3	255.3	48.01	6.318	
8,500.0	6,931.8	6,910.1	6,909.2	35.5	15.0	89.34	-1,337.1	226.3	355.0	305.3	49.71	7.142	
8,600.0	6,931.0	6,909.7	6,908.8	37.2	15.0	89.25	-1,337.1	226.3	424.3	372.9	51.43	8.251	
8,700.0	6,930.3	6,909.2	6,908.3	38.9	15.0	89.15	-1,337.1	226.3	504.1	450.9	53.17	9.480	
8,800.0	6,929.5	6,908.8	6,907.9	40.7	15.0	89.06	-1,337.1	226.3	590.0	535.1	54.92	10.742	
8,900.0	6,928.8	6,908.3	6,907.4	42.4	15.0	88.97	-1,337.1	226.3	679.8	623.1	56.69	11.991	
9,000.0	6,928.0	6,907.9	6,907.0	44.2	15.0	88.88	-1,337.1	226.3	772.1	713.6	58.47	13.204	
9,100.0	6,927.2	6,907.5	6,906.6	45.9	15.0	88.79	-1,337.1	226.3	866.1	805.8	60.26	14.372	
9,200.0	6,926.5	6,907.0	6,906.1	47.7	15.0	88.70	-1,337.1	226.3	961.3	899.3	62.07	15.489	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17R-243
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-243	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 (7-2-15)	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	6,878.4	6,880.3	6,879.3	17.7	13.8	-51.35	-1,038.2	967.6	990.6	964.3	26.32	37.642	
7,200.0	6,911.6	6,913.0	6,912.0	18.2	13.9	-64.77	-1,038.2	967.4	906.9	878.0	28.86	31.425	
7,300.0	6,932.2	6,933.3	6,932.3	18.9	13.9	-78.32	-1,038.2	967.2	823.2	792.1	31.09	26.476	
7,400.0	6,940.0	6,940.9	6,939.9	19.8	13.9	-89.59	-1,038.2	967.2	742.4	710.1	32.32	22.972	
7,500.0	6,939.4	6,940.2	6,939.2	20.9	13.9	-90.93	-1,038.2	967.2	667.1	633.7	33.37	19.992	
7,600.0	6,938.6	6,939.4	6,938.4	22.0	13.9	-90.83	-1,038.2	967.2	599.0	564.5	34.58	17.321	
7,700.0	6,937.8	6,938.6	6,937.6	23.3	13.9	-90.73	-1,038.2	967.2	541.0	505.1	35.90	15.069	
7,800.0	6,937.1	6,937.8	6,936.7	24.6	13.9	-90.62	-1,038.2	967.2	496.5	459.2	37.30	13.311	
7,900.0	6,936.3	6,936.9	6,935.9	26.0	13.9	-90.52	-1,038.2	967.2	469.4	430.6	38.77	12.107	
7,980.9	6,935.7	6,936.2	6,935.2	27.2	13.9	-90.44	-1,038.2	967.2	462.4	422.4	40.01	11.558 CC, ES	
8,000.0	6,935.6	6,936.1	6,935.1	27.5	13.9	-90.42	-1,038.2	967.2	462.8	422.5	40.30	11.484	
8,100.0	6,934.8	6,935.3	6,934.2	29.0	13.9	-90.31	-1,038.2	967.2	477.5	435.6	41.87	11.403 SF	
8,200.0	6,934.1	6,934.4	6,933.4	30.6	13.9	-90.21	-1,038.2	967.2	511.7	468.2	43.49	11.765	
8,300.0	6,933.3	6,933.6	6,932.6	32.2	13.9	-90.11	-1,038.2	967.2	561.8	516.7	45.14	12.446	
8,400.0	6,932.5	6,932.7	6,931.7	33.9	13.9	-90.00	-1,038.2	967.2	624.1	577.3	46.82	13.329	
8,500.0	6,931.8	6,931.9	6,930.9	35.5	13.9	-89.90	-1,038.2	967.2	695.2	646.7	48.53	14.326	
8,600.0	6,931.0	6,931.1	6,930.1	37.2	13.9	-89.80	-1,038.2	967.2	772.7	722.5	50.25	15.377	
8,700.0	6,930.3	6,930.2	6,929.2	38.9	13.9	-89.69	-1,038.2	967.2	854.9	802.9	52.00	16.442	
8,800.0	6,929.5	6,929.4	6,928.4	40.7	13.9	-89.59	-1,038.2	967.3	940.6	886.9	53.76	17.497	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17R-243
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-243	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 (7-2-15)	Offset TVD Reference:	Offset Datum

Offset Design Lajco Pad Sec.17-T4N-R67W - Lajco 17ND - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 703-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)			
7,200.0	6,911.6	7,078.0	6,900.8	18.2	27.0	75.17	-960.2	-196.7	989.2	956.3	32.86	30.106	
7,300.0	6,932.2	7,099.2	6,922.0	18.9	27.0	82.74	-960.3	-196.8	924.2	890.5	33.77	27.370	
7,400.0	6,940.0	7,107.3	6,930.1	19.8	27.0	89.01	-960.3	-196.8	863.3	828.7	34.65	24.918	
7,500.0	6,939.4	7,107.0	6,929.8	20.9	27.0	89.80	-960.3	-196.8	809.2	773.5	35.72	22.656	
7,600.0	6,938.6	7,106.6	6,929.4	22.0	27.0	89.76	-960.3	-196.8	764.3	727.4	36.93	20.695	
7,700.0	6,937.8	7,106.2	6,929.0	23.3	27.0	89.73	-960.3	-196.8	730.4	692.2	38.25	19.098	
7,800.0	6,937.1	7,105.7	6,928.5	24.6	27.0	89.69	-960.3	-196.8	709.2	669.5	39.65	17.888	
7,900.0	6,936.3	7,105.3	6,928.1	26.0	27.0	89.66	-960.3	-196.8	701.7	660.6	41.11	17.067	
7,903.0	6,936.3	7,105.3	6,928.1	26.1	27.0	89.66	-960.3	-196.8	701.7	660.5	41.16	17.047 CC, ES	
8,000.0	6,935.6	7,104.9	6,927.7	27.5	27.0	89.62	-960.3	-196.8	708.3	665.7	42.64	16.612	
8,100.0	6,934.8	7,104.4	6,927.3	29.0	27.0	89.59	-960.3	-196.8	728.8	684.6	44.21	16.483 SF	
8,200.0	6,934.1	7,104.0	6,926.9	30.6	27.0	89.55	-960.3	-196.8	761.9	716.1	45.83	16.626	
8,300.0	6,933.3	7,103.6	6,926.4	32.2	27.0	89.52	-960.3	-196.8	806.2	758.7	47.48	16.980	
8,400.0	6,932.5	7,103.2	6,926.0	33.9	27.0	89.49	-960.3	-196.8	859.8	810.7	49.16	17.492	
8,500.0	6,931.8	7,102.8	6,925.6	35.5	27.0	89.45	-960.3	-196.8	921.2	870.4	50.86	18.114	
8,600.0	6,931.0	7,102.4	6,925.2	37.2	27.0	89.42	-960.3	-196.8	989.0	936.4	52.58	18.808	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17R-243
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-243	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 (7-2-15)	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		
3,200.0	3,190.7	3,486.3	3,373.3	7.7	13.9	64.00	-353.6	993.0	982.1	962.5	19.64	50.010		
3,300.0	3,290.0	3,571.7	3,454.0	8.0	14.5	63.12	-326.0	990.6	958.8	938.3	20.43	46.934		
3,400.0	3,389.3	3,666.9	3,543.8	8.3	15.0	62.03	-294.6	988.9	936.2	914.9	21.31	43.925		
3,500.0	3,488.6	3,768.9	3,639.5	8.5	15.7	60.70	-259.4	987.5	913.7	891.4	22.29	40.992		
3,600.0	3,587.9	3,869.1	3,733.4	8.8	16.4	59.30	-224.2	985.4	890.8	867.6	23.27	38.278		
3,700.0	3,687.3	3,965.1	3,823.2	9.1	17.0	57.92	-190.6	983.3	868.3	844.1	24.22	35.846		
3,800.0	3,786.6	4,061.0	3,913.7	9.4	17.6	56.59	-158.6	980.3	846.2	821.0	25.14	33.658		
3,900.0	3,885.9	4,152.0	3,999.7	9.7	18.1	55.34	-129.3	977.1	824.6	798.6	26.01	31.700		
4,000.0	3,985.2	4,251.8	4,093.8	10.0	18.7	53.81	-96.1	974.6	804.0	777.1	26.98	29.804		
4,100.0	4,084.5	4,357.2	4,192.8	10.3	19.4	52.06	-60.2	970.8	782.7	754.7	28.01	27.941		
4,200.0	4,183.8	4,453.9	4,283.3	10.6	20.0	50.29	-26.0	966.9	761.3	732.3	29.01	26.241		
4,300.0	4,283.1	4,539.7	4,363.5	10.9	20.6	48.65	4.1	963.8	741.1	711.2	29.92	24.771		
4,400.0	4,382.4	4,635.5	4,453.7	11.2	21.2	46.85	36.0	960.9	722.6	691.7	30.86	23.415		
4,500.0	4,481.7	4,730.2	4,543.2	11.6	21.8	45.03	67.1	957.5	704.5	672.7	31.78	22.170		
4,600.0	4,581.1	4,827.2	4,635.0	11.9	22.3	43.16	98.1	954.1	687.3	654.6	32.68	21.030		
4,700.0	4,680.4	4,918.1	4,721.5	12.2	22.8	41.45	125.6	950.8	670.9	637.4	33.51	20.023		
4,800.0	4,779.7	5,008.8	4,808.9	12.5	23.3	39.97	149.8	947.9	656.2	621.9	34.27	19.149		
4,900.0	4,879.0	5,102.7	4,900.3	12.8	23.7	38.67	171.5	945.5	642.7	607.7	34.98	18.371		
5,000.0	4,978.3	5,199.1	4,994.5	13.1	24.1	37.47	191.7	943.2	629.9	594.2	35.67	17.661		
5,100.0	5,077.6	5,293.9	5,087.6	13.4	24.5	36.46	209.3	941.2	617.8	581.5	36.30	17.020		
5,200.0	5,176.9	5,389.8	5,182.4	13.7	24.8	35.76	223.3	939.6	606.4	569.5	36.87	16.449		
5,300.0	5,276.2	5,488.1	5,280.1	14.0	25.1	35.31	234.6	938.4	595.4	558.1	37.39	15.924		
5,400.0	5,375.6	5,587.0	5,378.6	14.3	25.3	35.11	243.4	937.2	584.6	546.7	37.88	15.434		
5,500.0	5,474.9	5,681.9	5,473.3	14.6	25.5	35.18	249.1	936.4	574.1	535.8	38.31	14.987		
5,600.0	5,574.2	5,776.4	5,567.7	14.9	25.6	35.65	250.9	936.4	564.6	525.9	38.68	14.596		
5,700.0	5,673.5	5,878.2	5,669.6	15.2	25.7	36.43	250.2	936.6	555.3	516.3	39.02	14.231		
5,800.0	5,772.8	5,977.3	5,768.7	15.5	25.7	37.26	249.3	936.6	545.9	506.6	39.36	13.872		
5,900.0	5,872.1	6,077.5	5,868.9	15.8	25.8	38.11	248.5	936.5	536.6	496.9	39.69	13.519		
6,000.0	5,971.4	6,177.3	5,968.7	16.1	25.9	38.96	247.9	936.3	527.2	487.2	40.03	13.170		
6,100.0	6,070.7	6,277.2	6,068.5	16.4	26.0	39.84	247.4	936.0	517.9	477.5	40.37	12.828		
6,200.0	6,170.1	6,378.0	6,169.4	16.7	26.1	13.16	247.0	935.4	508.3	467.6	40.69	12.491		
6,300.0	6,269.4	6,477.6	6,269.0	16.9	26.2	-46.10	246.8	934.7	497.5	456.6	40.92	12.158		
6,400.0	6,367.2	6,575.3	6,366.6	17.1	26.3	-66.86	246.3	933.9	486.0	444.8	41.12	11.819		
6,500.0	6,461.8	6,669.6	6,460.9	17.2	26.3	-77.88	245.7	933.3	475.4	434.1	41.28	11.517		
6,600.0	6,551.5	6,760.1	6,551.4	17.2	26.4	-86.55	244.8	932.7	468.2	426.9	41.36	11.320		
6,655.5	6,598.7	6,807.4	6,598.8	17.2	26.5	-90.90	244.4	932.3	467.0	425.6	41.35	11.292 CC, ES, SF		
6,700.0	6,634.9	6,843.2	6,634.5	17.2	26.5	-94.12	244.0	932.1	467.9	426.6	41.30	11.331		
6,800.0	6,710.5	6,917.4	6,708.8	17.2	26.6	-100.47	243.5	931.8	478.4	437.3	41.07	11.647		
6,900.0	6,777.0	6,983.3	6,774.7	17.3	26.6	-105.35	243.2	931.6	502.6	461.8	40.79	12.323		
7,000.0	6,833.3	7,040.0	6,831.4	17.4	26.7	-108.37	243.0	931.5	541.7	501.1	40.63	13.331		
7,100.0	6,878.4	7,085.8	6,877.2	17.7	26.7	-109.09	242.9	931.4	595.2	554.3	40.89	14.554		
7,200.0	6,911.6	7,118.7	6,910.0	18.2	26.8	-106.90	242.8	931.2	661.1	619.3	41.82	15.810		
7,300.0	6,932.2	7,138.9	6,930.2	18.9	26.8	-101.23	242.8	931.1	736.9	693.5	43.40	16.978		
7,400.0	6,940.0	7,146.5	6,937.8	19.8	26.8	-91.42	242.8	931.1	819.7	774.6	45.13	18.163		
7,500.0	6,939.4	7,145.9	6,937.2	20.9	26.8	-89.44	242.8	931.1	906.6	860.3	46.27	19.593		
7,600.0	6,938.6	7,145.2	6,936.5	22.0	26.8	-89.34	242.8	931.1	995.9	948.5	47.49	20.973		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17R-243
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-243	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 (7-2-15)	Offset TVD Reference:	Offset Datum

Offset Design Lajco Pad Sec.17-T4N-R67W - Lajco 17SD (Exist.) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 735-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						
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
8,400.0	6,932.5	7,107.5	6,930.5	33.9	25.3	-90.92	-2,257.3	1,004.7	943.4	885.1	58.25	16.196	
8,500.0	6,931.8	7,106.8	6,929.8	35.5	25.3	-90.84	-2,257.3	1,004.7	860.2	800.2	59.95	14.348	
8,600.0	6,931.0	7,106.2	6,929.1	37.2	25.3	-90.76	-2,257.3	1,004.7	781.0	719.3	61.68	12.662	
8,700.0	6,930.3	7,105.5	6,928.4	38.9	25.3	-90.68	-2,257.3	1,004.8	707.1	643.6	63.42	11.148	
8,800.0	6,929.5	7,104.8	6,927.7	40.7	25.3	-90.60	-2,257.3	1,004.8	640.3	575.1	65.19	9.822	
8,900.0	6,928.8	7,104.1	6,927.0	42.4	25.3	-90.52	-2,257.3	1,004.8	583.1	516.1	66.96	8.707	
9,000.0	6,928.0	7,103.4	6,926.4	44.2	25.3	-90.44	-2,257.3	1,004.8	538.5	469.7	68.75	7.832	
9,100.0	6,927.2	7,102.7	6,925.7	45.9	25.3	-90.36	-2,257.3	1,004.8	509.9	439.3	70.55	7.227	
9,200.0	6,926.5	7,102.0	6,925.0	47.7	25.3	-90.28	-2,257.3	1,004.8	500.0	427.6	72.36	6.909 CC	
9,200.0	6,926.5	7,102.0	6,925.0	47.7	25.3	-90.28	-2,257.3	1,004.8	500.0	427.6	72.36	6.909 ES	
9,300.0	6,925.7	7,101.3	6,924.3	49.5	25.3	-90.20	-2,257.3	1,004.8	509.9	435.7	74.18	6.874 SF	
9,400.0	6,925.0	7,100.6	6,923.6	51.3	25.3	-90.12	-2,257.3	1,004.8	538.5	462.5	76.00	7.085	
9,500.0	6,924.2	7,099.9	6,922.9	53.1	25.3	-90.04	-2,257.3	1,004.8	583.1	505.2	77.83	7.491	
9,600.0	6,923.5	7,099.2	6,922.2	55.0	25.3	-89.96	-2,257.3	1,004.8	640.3	560.6	79.67	8.037	
9,700.0	6,922.7	7,098.5	6,921.5	56.8	25.3	-89.88	-2,257.3	1,004.8	707.1	625.6	81.51	8.674	
9,800.0	6,921.9	7,097.8	6,920.8	58.6	25.3	-89.80	-2,257.3	1,004.8	781.0	697.6	83.36	9.369	
9,900.0	6,921.2	7,097.1	6,920.1	60.4	25.3	-89.72	-2,257.3	1,004.8	860.2	775.0	85.21	10.095	
10,000.0	6,920.4	7,096.0	6,919.0	62.3	25.3	-89.60	-2,257.3	1,004.8	943.4	856.3	87.07	10.835	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17R-243
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-243	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 (7-2-15)	Offset TVD Reference:	Offset Datum

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

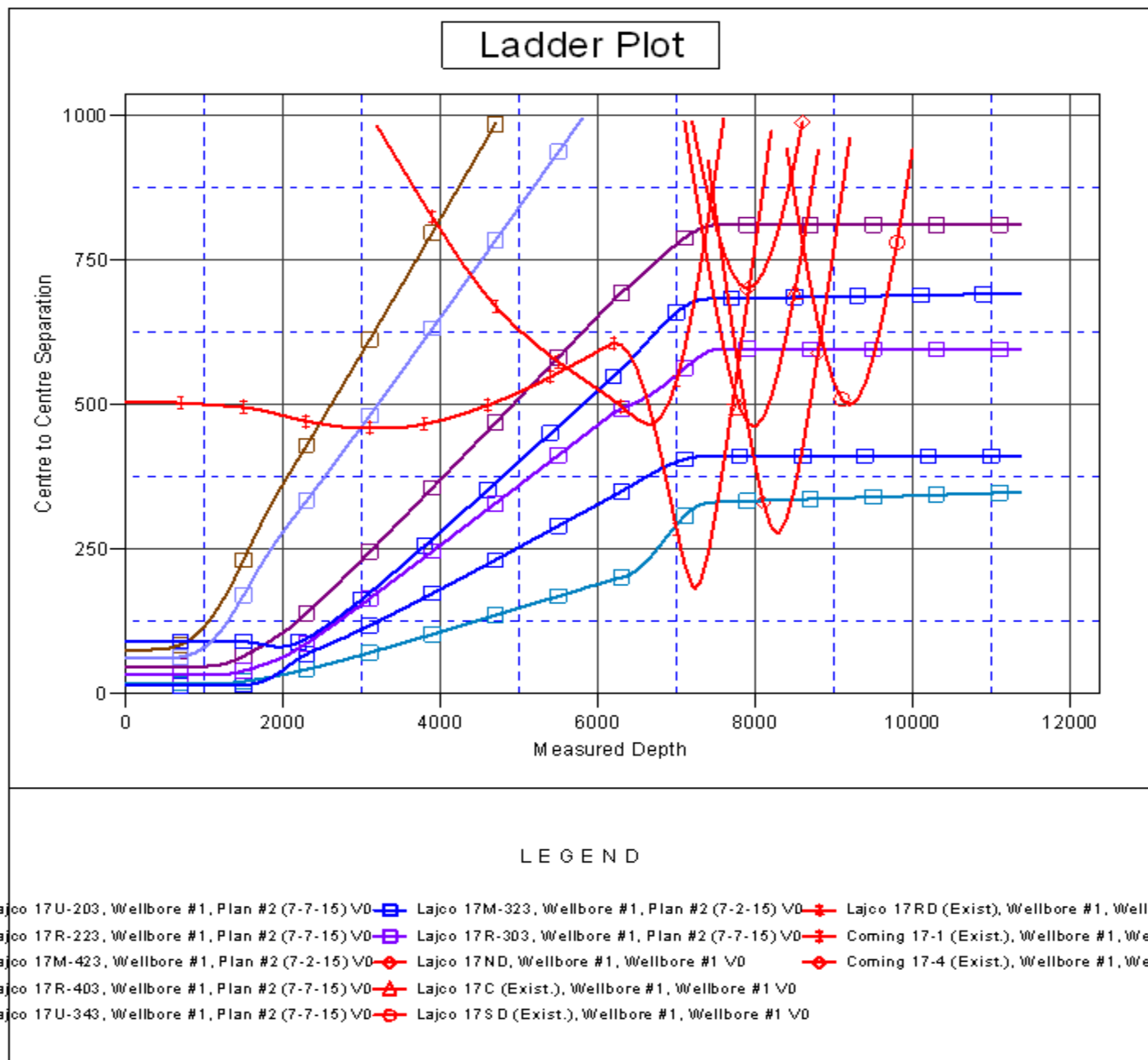
Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Lajco 17R-243

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-243
Project:	SEC.17-T4N-R67W	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
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