

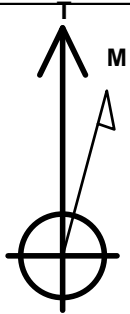
PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Tarin 32Y-314**

Surface Location: Tarin 32X-HZ Pad Sec.32-T4N-R66W
 North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
 Ground Elevation: 4776.0
 +N/-S +E/-W Northing Easting Latitude Longitude Slot
 0.0 0.0 1339555.14 3197254.28 40.263320 -104.793170
 RKB - 15' WELL @ 4791.0ft (RKB - 15')

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 883'FSL & 355'FEL, Sec.32	1.0	0.0	0.0	Point
BHL 225'FSL & 2142'FEL, Sec.31	7138.0	-699.1	-7083.3	Point



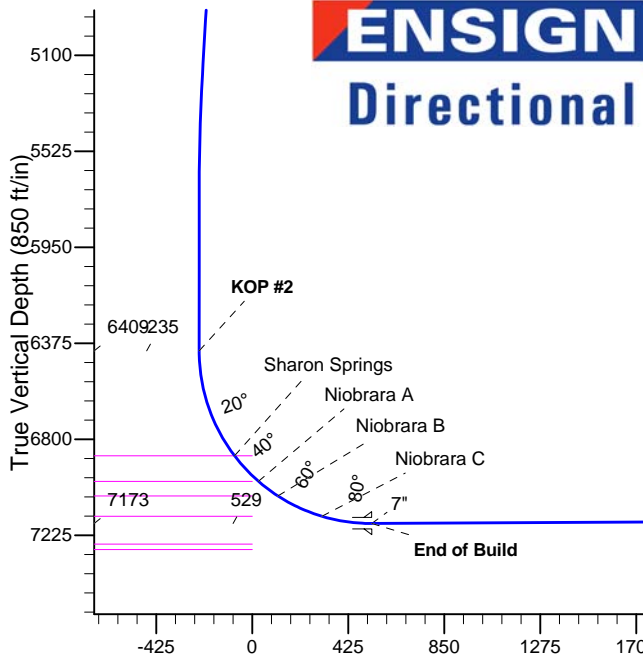
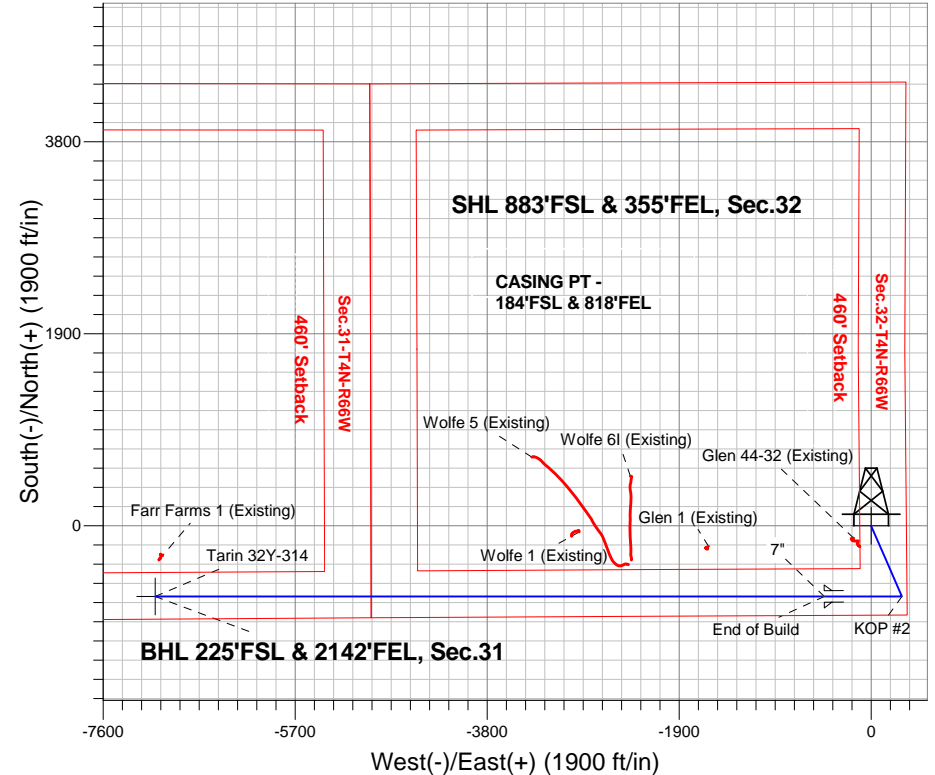
Azimuths to True North
 Magnetic North: 8.39°

Magnetic Field
 Strength: 52687.4nT
 Dip Angle: 66.81°
 Date: 12/18/2014
 Model: IGRF2010

Tarin 32X-HZ Pad Sec.32-T4N-R66W
 Tarin 32Y-314
 Plan #3 (12-18-14)
 16:31, December 18 2014

ANNOTATIONS

TVD	MD	Annotation
1000.0	1000.0	KOP #1
6408.7	6474.9	KOP #2
7172.7	7678.9	End of Build



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1000.0	0.00	0.00	1000.0	0.0	0.0	0.00	0.00	0.0	
3	1516.8	10.34	156.43	1514.0	-42.6	18.6	2.00	156.43	-14.3	
4	5249.3	10.34	156.43	5186.0	-656.5	286.4	0.00	0.00	-220.5	
5	5766.2	0.00	0.00	5700.0	-699.1	305.0	2.00	180.00	-234.9	
6	6474.9	0.00	0.00	6408.7	-699.1	305.0	0.00	0.00	-234.9	
7	7678.9	90.30	270.00	7172.7	-699.1	-462.9	7.50	270.00	529.4	
8	14299.4	90.30	270.00	7138.0	-699.1	-7083.3	0.00	0.00	7117.7	BHL 225'FSL & 2142'FEL, Sec.31

BHL 225'FSL & 2142'FEL, Sec.31



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.32-T4N-R66W

Tarin 32X-HZ Pad Sec.32-T4N-R66W

Tarin 32Y-314

Wellbore #1

Plan: Plan #3 (12-18-14)

Standard Planning Report

18 December, 2014

Database:	Landmark	Local Co-ordinate Reference:	Well Tarin 32Y-314
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4791.0ft (RKB - 15')
Project:	SEC.32-T4N-R66W	MD Reference:	WELL @ 4791.0ft (RKB - 15')
Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	North Reference:	True
Well:	Tarin 32Y-314	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3 (12-18-14)		

Project	SEC.32-T4N-R66W, 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	Tarin 32X-HZ Pad Sec.32-T4N-R66W		
Site Position:		Northing:	1,339,733.63 ft
From:	Lat/Long	Easting:	3,197,250.06 ft
Position Uncertainty:	0.0 ft	Slot Radius:	"
		Latitude:	40.263810
		Longitude:	-104.793180
		Grid Convergence:	0.46 °

Well	Tarin 32Y-314		
Well Position	+N/-S	-178.5 ft	Northing:
	+E/-W	2.8 ft	Easting:
Position Uncertainty		0.0 ft	Wellhead Elevation:
			Latitude:
			Longitude:
			Ground Level:

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/18/2014	8.40	66.81	52,687

Design	Plan #3 (12-18-14)			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	264.36

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,516.8	10.34	156.43	1,514.0	-42.6	18.6	2.00	2.00	0.00	156.43	
5,249.3	10.34	156.43	5,186.0	-656.5	286.4	0.00	0.00	0.00	0.00	
5,766.2	0.00	0.00	5,700.0	-699.1	305.0	2.00	-2.00	0.00	180.00	
6,474.9	0.00	0.00	6,408.7	-699.1	305.0	0.00	0.00	0.00	0.00	
7,678.9	90.30	270.00	7,172.7	-699.1	-462.9	7.50	7.50	0.00	270.00	
14,299.4	90.30	270.00	7,138.0	-699.1	-7,083.3	0.00	0.00	0.00	0.00	BHL 225'FSL & 214

Database:	Landmark	Local Co-ordinate Reference:	Well Tarin 32Y-314
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4791.0ft (RKB - 15')
Project:	SEC.32-T4N-R66W	MD Reference:	WELL @ 4791.0ft (RKB - 15')
Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	North Reference:	True
Well:	Tarin 32Y-314	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3 (12-18-14)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
1.0	0.00	0.00	1.0	0.0	0.0	0.0	0.00	0.00	0.00
SHL 883'FSL & 355'FEL, Sec.32									
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP #1									
1,100.0	2.00	156.43	1,100.0	-1.6	0.7	-0.5	2.00	2.00	0.00
1,200.0	4.00	156.43	1,199.8	-6.4	2.8	-2.1	2.00	2.00	0.00
1,300.0	6.00	156.43	1,299.5	-14.4	6.3	-4.8	2.00	2.00	0.00
1,400.0	8.00	156.43	1,398.7	-25.6	11.1	-8.6	2.00	2.00	0.00
1,500.0	10.00	156.43	1,497.5	-39.9	17.4	-13.4	2.00	2.00	0.00
1,516.8	10.34	156.43	1,514.0	-42.6	18.6	-14.3	2.00	2.00	0.00
1,600.0	10.34	156.43	1,595.9	-56.3	24.6	-18.9	0.00	0.00	0.00
1,700.0	10.34	156.43	1,694.2	-72.7	31.7	-24.4	0.00	0.00	0.00
1,800.0	10.34	156.43	1,792.6	-89.2	38.9	-30.0	0.00	0.00	0.00
1,900.0	10.34	156.43	1,891.0	-105.6	46.1	-35.5	0.00	0.00	0.00
2,000.0	10.34	156.43	1,989.4	-122.1	53.3	-41.0	0.00	0.00	0.00
2,100.0	10.34	156.43	2,087.7	-138.5	60.4	-46.5	0.00	0.00	0.00
2,200.0	10.34	156.43	2,186.1	-155.0	67.6	-52.1	0.00	0.00	0.00
2,300.0	10.34	156.43	2,284.5	-171.4	74.8	-57.6	0.00	0.00	0.00
2,400.0	10.34	156.43	2,382.9	-187.9	82.0	-63.1	0.00	0.00	0.00
2,500.0	10.34	156.43	2,481.2	-204.3	89.1	-68.6	0.00	0.00	0.00
2,600.0	10.34	156.43	2,579.6	-220.8	96.3	-74.2	0.00	0.00	0.00
2,700.0	10.34	156.43	2,678.0	-237.2	103.5	-79.7	0.00	0.00	0.00
2,800.0	10.34	156.43	2,776.4	-253.7	110.7	-85.2	0.00	0.00	0.00
2,900.0	10.34	156.43	2,874.8	-270.1	117.8	-90.7	0.00	0.00	0.00
3,000.0	10.34	156.43	2,973.1	-286.5	125.0	-96.3	0.00	0.00	0.00
3,100.0	10.34	156.43	3,071.5	-303.0	132.2	-101.8	0.00	0.00	0.00
3,200.0	10.34	156.43	3,169.9	-319.4	139.4	-107.3	0.00	0.00	0.00
3,300.0	10.34	156.43	3,268.3	-335.9	146.5	-112.8	0.00	0.00	0.00
3,400.0	10.34	156.43	3,366.6	-352.3	153.7	-118.4	0.00	0.00	0.00
3,500.0	10.34	156.43	3,465.0	-368.8	160.9	-123.9	0.00	0.00	0.00
3,600.0	10.34	156.43	3,563.4	-385.2	168.1	-129.4	0.00	0.00	0.00
3,700.0	10.34	156.43	3,661.8	-401.7	175.2	-134.9	0.00	0.00	0.00
3,749.0	10.34	156.43	3,710.0	-409.7	178.8	-137.6	0.00	0.00	0.00
Parkman									
3,800.0	10.34	156.43	3,760.1	-418.1	182.4	-140.5	0.00	0.00	0.00
3,900.0	10.34	156.43	3,858.5	-434.6	189.6	-146.0	0.00	0.00	0.00
4,000.0	10.34	156.43	3,956.9	-451.0	196.8	-151.5	0.00	0.00	0.00
4,100.0	10.34	156.43	4,055.3	-467.5	203.9	-157.0	0.00	0.00	0.00
4,200.0	10.34	156.43	4,153.7	-483.9	211.1	-162.6	0.00	0.00	0.00
4,300.0	10.34	156.43	4,252.0	-500.4	218.3	-168.1	0.00	0.00	0.00
4,400.0	10.34	156.43	4,350.4	-516.8	225.5	-173.6	0.00	0.00	0.00
4,440.2	10.34	156.43	4,390.0	-523.4	228.4	-175.8	0.00	0.00	0.00
Sussex									

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Project:	SEC.32-T4N-R66W	MD Reference:	WELL @ 4791.0ft (RKB - 15')
Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	North Reference:	True
Well:	Tarin 32Y-314	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3 (12-18-14)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,500.0	10.34	156.43	4,448.8	-533.2	232.6	-179.1	0.00	0.00	0.00
4,600.0	10.34	156.43	4,547.2	-549.7	239.8	-184.7	0.00	0.00	0.00
4,700.0	10.34	156.43	4,645.5	-566.1	247.0	-190.2	0.00	0.00	0.00
4,800.0	10.34	156.43	4,743.9	-582.6	254.2	-195.7	0.00	0.00	0.00
4,857.0	10.34	156.43	4,800.0	-592.0	258.3	-198.9	0.00	0.00	0.00
Shannon									
4,900.0	10.34	156.43	4,842.3	-599.0	261.3	-201.2	0.00	0.00	0.00
5,000.0	10.34	156.43	4,940.7	-615.5	268.5	-206.8	0.00	0.00	0.00
5,100.0	10.34	156.43	5,039.0	-631.9	275.7	-212.3	0.00	0.00	0.00
5,200.0	10.34	156.43	5,137.4	-648.4	282.9	-217.8	0.00	0.00	0.00
5,249.3	10.34	156.43	5,186.0	-656.5	286.4	-220.5	0.00	0.00	0.00
5,300.0	9.32	156.43	5,235.9	-664.4	289.9	-223.2	2.00	-2.00	0.00
5,400.0	7.32	156.43	5,334.8	-677.7	295.7	-227.7	2.00	-2.00	0.00
5,500.0	5.32	156.43	5,434.2	-687.8	300.1	-231.1	2.00	-2.00	0.00
5,600.0	3.32	156.43	5,533.9	-694.7	303.1	-233.4	2.00	-2.00	0.00
5,700.0	1.32	156.43	5,633.8	-698.4	304.7	-234.6	2.00	-2.00	0.00
5,766.2	0.00	0.00	5,700.0	-699.1	305.0	-234.9	2.00	-2.00	0.00
5,800.0	0.00	0.00	5,733.8	-699.1	305.0	-234.9	0.00	0.00	0.00
5,900.0	0.00	0.00	5,833.8	-699.1	305.0	-234.9	0.00	0.00	0.00
6,000.0	0.00	0.00	5,933.8	-699.1	305.0	-234.9	0.00	0.00	0.00
6,100.0	0.00	0.00	6,033.8	-699.1	305.0	-234.9	0.00	0.00	0.00
6,200.0	0.00	0.00	6,133.8	-699.1	305.0	-234.9	0.00	0.00	0.00
6,300.0	0.00	0.00	6,233.8	-699.1	305.0	-234.9	0.00	0.00	0.00
6,400.0	0.00	0.00	6,333.8	-699.1	305.0	-234.9	0.00	0.00	0.00
6,474.9	0.00	0.00	6,408.7	-699.1	305.0	-234.9	0.00	0.00	0.00
KOP #2									
6,500.0	1.88	270.00	6,433.8	-699.1	304.6	-234.5	7.50	7.50	0.00
6,600.0	9.38	270.00	6,533.3	-699.1	294.8	-224.7	7.50	7.50	0.00
6,700.0	16.88	270.00	6,630.6	-699.1	272.1	-202.1	7.50	7.50	0.00
6,800.0	24.38	270.00	6,724.1	-699.1	236.9	-167.1	7.50	7.50	0.00
6,900.0	31.88	270.00	6,812.2	-699.1	189.8	-120.2	7.50	7.50	0.00
6,973.9	37.43	270.00	6,873.0	-699.1	147.7	-78.4	7.50	7.50	0.00
Sharon Springs									
7,000.0	39.38	270.00	6,893.4	-699.1	131.5	-62.2	7.50	7.50	0.00
7,100.0	46.88	270.00	6,966.4	-699.1	63.2	5.8	7.50	7.50	0.00
7,129.3	49.08	270.00	6,986.0	-699.1	41.4	27.4	7.50	7.50	0.00
Niobrara A									
7,200.0	54.38	270.00	7,029.8	-699.1	-14.0	82.6	7.50	7.50	0.00
7,237.8	57.22	270.00	7,051.0	-699.1	-45.3	113.7	7.50	7.50	0.00
Niobrara B									
7,300.0	61.88	270.00	7,082.5	-699.1	-98.9	167.1	7.50	7.50	0.00
7,400.0	69.38	270.00	7,123.7	-699.1	-189.9	257.7	7.50	7.50	0.00
7,454.2	73.44	270.00	7,141.0	-699.1	-241.2	308.7	7.50	7.50	0.00
Niobrara C									
7,500.0	76.88	270.00	7,152.7	-699.1	-285.6	352.8	7.50	7.50	0.00
7,600.0	84.38	270.00	7,169.0	-699.1	-384.2	451.0	7.50	7.50	0.00
7,678.9	90.30	270.00	7,172.7	-699.1	-462.9	529.4	7.50	7.50	0.00
End of Build - 7"									
7,700.0	90.30	270.00	7,172.6	-699.1	-484.0	550.4	0.00	0.00	0.00
7,800.0	90.30	270.00	7,172.0	-699.1	-584.0	649.9	0.00	0.00	0.00
7,900.0	90.30	270.00	7,171.5	-699.1	-684.0	749.4	0.00	0.00	0.00
8,000.0	90.30	270.00	7,171.0	-699.1	-784.0	848.9	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Tarin 32Y-314
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4791.0ft (RKB - 15')
Project:	SEC.32-T4N-R66W	MD Reference:	WELL @ 4791.0ft (RKB - 15')
Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	North Reference:	True
Well:	Tarin 32Y-314	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3 (12-18-14)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,100.0	90.30	270.00	7,170.5	-699.1	-884.0	948.4	0.00	0.00	0.00
8,200.0	90.30	270.00	7,169.9	-699.1	-984.0	1,047.9	0.00	0.00	0.00
8,300.0	90.30	270.00	7,169.4	-699.1	-1,084.0	1,147.5	0.00	0.00	0.00
8,400.0	90.30	270.00	7,168.9	-699.1	-1,184.0	1,247.0	0.00	0.00	0.00
8,500.0	90.30	270.00	7,168.4	-699.1	-1,284.0	1,346.5	0.00	0.00	0.00
8,600.0	90.30	270.00	7,167.8	-699.1	-1,384.0	1,446.0	0.00	0.00	0.00
8,700.0	90.30	270.00	7,167.3	-699.1	-1,484.0	1,545.5	0.00	0.00	0.00
8,800.0	90.30	270.00	7,166.8	-699.1	-1,584.0	1,645.0	0.00	0.00	0.00
8,900.0	90.30	270.00	7,166.3	-699.1	-1,684.0	1,744.5	0.00	0.00	0.00
9,000.0	90.30	270.00	7,165.7	-699.1	-1,784.0	1,844.1	0.00	0.00	0.00
9,100.0	90.30	270.00	7,165.2	-699.1	-1,884.0	1,943.6	0.00	0.00	0.00
9,200.0	90.30	270.00	7,164.7	-699.1	-1,984.0	2,043.1	0.00	0.00	0.00
9,300.0	90.30	270.00	7,164.2	-699.1	-2,084.0	2,142.6	0.00	0.00	0.00
9,400.0	90.30	270.00	7,163.7	-699.1	-2,184.0	2,242.1	0.00	0.00	0.00
9,500.0	90.30	270.00	7,163.1	-699.1	-2,284.0	2,341.6	0.00	0.00	0.00
9,600.0	90.30	270.00	7,162.6	-699.1	-2,384.0	2,441.1	0.00	0.00	0.00
9,700.0	90.30	270.00	7,162.1	-699.1	-2,484.0	2,540.7	0.00	0.00	0.00
9,800.0	90.30	270.00	7,161.6	-699.1	-2,584.0	2,640.2	0.00	0.00	0.00
9,900.0	90.30	270.00	7,161.0	-699.1	-2,684.0	2,739.7	0.00	0.00	0.00
10,000.0	90.30	270.00	7,160.5	-699.1	-2,784.0	2,839.2	0.00	0.00	0.00
10,100.0	90.30	270.00	7,160.0	-699.1	-2,884.0	2,938.7	0.00	0.00	0.00
10,200.0	90.30	270.00	7,159.5	-699.1	-2,984.0	3,038.2	0.00	0.00	0.00
10,300.0	90.30	270.00	7,158.9	-699.1	-3,084.0	3,137.8	0.00	0.00	0.00
10,400.0	90.30	270.00	7,158.4	-699.1	-3,184.0	3,237.3	0.00	0.00	0.00
10,500.0	90.30	270.00	7,157.9	-699.1	-3,284.0	3,336.8	0.00	0.00	0.00
10,600.0	90.30	270.00	7,157.4	-699.1	-3,384.0	3,436.3	0.00	0.00	0.00
10,700.0	90.30	270.00	7,156.8	-699.1	-3,484.0	3,535.8	0.00	0.00	0.00
10,800.0	90.30	270.00	7,156.3	-699.1	-3,584.0	3,635.3	0.00	0.00	0.00
10,900.0	90.30	270.00	7,155.8	-699.1	-3,684.0	3,734.8	0.00	0.00	0.00
11,000.0	90.30	270.00	7,155.3	-699.1	-3,784.0	3,834.4	0.00	0.00	0.00
11,100.0	90.30	270.00	7,154.8	-699.1	-3,884.0	3,933.9	0.00	0.00	0.00
11,200.0	90.30	270.00	7,154.2	-699.1	-3,984.0	4,033.4	0.00	0.00	0.00
11,300.0	90.30	270.00	7,153.7	-699.1	-4,084.0	4,132.9	0.00	0.00	0.00
11,400.0	90.30	270.00	7,153.2	-699.1	-4,184.0	4,232.4	0.00	0.00	0.00
11,500.0	90.30	270.00	7,152.7	-699.1	-4,284.0	4,331.9	0.00	0.00	0.00
11,600.0	90.30	270.00	7,152.1	-699.1	-4,384.0	4,431.4	0.00	0.00	0.00
11,700.0	90.30	270.00	7,151.6	-699.1	-4,484.0	4,531.0	0.00	0.00	0.00
11,800.0	90.30	270.00	7,151.1	-699.1	-4,584.0	4,630.5	0.00	0.00	0.00
11,900.0	90.30	270.00	7,150.6	-699.1	-4,684.0	4,730.0	0.00	0.00	0.00
12,000.0	90.30	270.00	7,150.0	-699.1	-4,784.0	4,829.5	0.00	0.00	0.00
12,100.0	90.30	270.00	7,149.5	-699.1	-4,884.0	4,929.0	0.00	0.00	0.00
12,200.0	90.30	270.00	7,149.0	-699.1	-4,984.0	5,028.5	0.00	0.00	0.00
12,300.0	90.30	270.00	7,148.5	-699.1	-5,084.0	5,128.1	0.00	0.00	0.00
12,400.0	90.30	270.00	7,147.9	-699.1	-5,184.0	5,227.6	0.00	0.00	0.00
12,500.0	90.30	270.00	7,147.4	-699.1	-5,284.0	5,327.1	0.00	0.00	0.00
12,600.0	90.30	270.00	7,146.9	-699.1	-5,384.0	5,426.6	0.00	0.00	0.00
12,700.0	90.30	270.00	7,146.4	-699.1	-5,484.0	5,526.1	0.00	0.00	0.00
12,800.0	90.30	270.00	7,145.9	-699.1	-5,584.0	5,625.6	0.00	0.00	0.00
12,900.0	90.30	270.00	7,145.3	-699.1	-5,684.0	5,725.1	0.00	0.00	0.00
13,000.0	90.30	270.00	7,144.8	-699.1	-5,784.0	5,824.7	0.00	0.00	0.00
13,100.0	90.30	270.00	7,144.3	-699.1	-5,884.0	5,924.2	0.00	0.00	0.00
13,200.0	90.30	270.00	7,143.8	-699.1	-5,984.0	6,023.7	0.00	0.00	0.00
13,300.0	90.30	270.00	7,143.2	-699.1	-6,084.0	6,123.2	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Tarin 32Y-314
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4791.0ft (RKB - 15')
Project:	SEC.32-T4N-R66W	MD Reference:	WELL @ 4791.0ft (RKB - 15')
Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	North Reference:	True
Well:	Tarin 32Y-314	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3 (12-18-14)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
13,400.0	90.30	270.00	7,142.7	-699.1	-6,184.0	6,222.7	0.00	0.00	0.00
13,500.0	90.30	270.00	7,142.2	-699.1	-6,284.0	6,322.2	0.00	0.00	0.00
13,600.0	90.30	270.00	7,141.7	-699.1	-6,384.0	6,421.8	0.00	0.00	0.00
13,700.0	90.30	270.00	7,141.1	-699.1	-6,484.0	6,521.3	0.00	0.00	0.00
13,800.0	90.30	270.00	7,140.6	-699.1	-6,584.0	6,620.8	0.00	0.00	0.00
13,900.0	90.30	270.00	7,140.1	-699.1	-6,683.9	6,720.3	0.00	0.00	0.00
14,000.0	90.30	270.00	7,139.6	-699.1	-6,783.9	6,819.8	0.00	0.00	0.00
14,100.0	90.30	270.00	7,139.0	-699.1	-6,883.9	6,919.3	0.00	0.00	0.00
14,200.0	90.30	270.00	7,138.5	-699.1	-6,983.9	7,018.8	0.00	0.00	0.00
14,299.4	90.30	270.00	7,138.0	-699.1	-7,083.3	7,117.7	0.00	0.00	0.00
BHL 225'FSL & 2142'FEL, Sec.31									

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
BHL 225'FSL & 2142'FEL - hit/miss target - plan hits target center - Shape - Point	0.00	0.00	7,138.0	-699.1	-7,083.3	1,338,799.64	3,190,177.07	40.261398	-104.818550
SHL 883'FSL & 355'FEL - plan hits target center - Point	0.00	0.00	1.0	0.0	0.0	1,339,555.15	3,197,254.28	40.263320	-104.793170

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
7,678.9	7,172.7	7"	7	7-1/2	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,749.0	3,710.0	Parkman		0.00		
4,440.2	4,390.0	Sussex		0.00		
4,857.0	4,800.0	Shannon		0.00		
6,973.9	6,873.0	Sharon Springs		0.00		
7,129.3	6,986.0	Niobrara A		0.00		
7,237.8	7,051.0	Niobrara B		0.00		
7,454.2	7,141.0	Niobrara C		0.00		
	7,264.0	Ft Hays		0.00		
	7,288.0	Codell		0.00		

Database:	Landmark	Local Co-ordinate Reference:	Well Tarin 32Y-314
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4791.0ft (RKB - 15')
Project:	SEC.32-T4N-R66W	MD Reference:	WELL @ 4791.0ft (RKB - 15')
Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	North Reference:	True
Well:	Tarin 32Y-314	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3 (12-18-14)		

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,000.0	1,000.0	0.0	0.0	KOP #1
6,474.9	6,408.7	-699.1	305.0	KOP #2
7,678.9	7,172.7	-699.1	-462.9	End of Build



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.32-T4N-R66W

Tarin 32X-HZ Pad Sec.32-T4N-R66W

Tarin 32Y-314

Wellbore #1

Plan #3 (12-18-14)

Anticollision Report

18 December, 2014



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Tarin 32Y-314
Project:	SEC.32-T4N-R66W	TVD Reference:	WELL @ 4791.0ft (RKB - 15')
Reference Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	MD Reference:	WELL @ 4791.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Tarin 32Y-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #3 (12-18-14)	Offset TVD Reference:	Offset Datum

Reference	Plan #3 (12-18-14)
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria
Interpolation Method:	MD Interval 100.0ft
Depth Range:	Unlimited
Results Limited by:	Maximum center-center distance of 1,000.0ft
Warning Levels Evaluated at:	2.00 Sigma
Error Model:	ISCWSA
Scan Method:	Closest Approach 3D
Error Surface:	Elliptical Conic

Survey Tool Program		Date	12/18/2014		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	14,299.4	Plan #3 (12-18-14) (Wellbore #1)	MWD	MWD - Standard	

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Existing Wells Sec.32-T4N-R66W						
Farr Farms 1 (Existing) - Wellbore #1 - Wellbore #1	14,264.2	7,127.6	361.5	145.9	1.677	CC, ES, SF
Glen 1 (Existing) - Wellbore #1 - Wellbore #1	8,831.6	7,141.5	495.1	430.4	7.658	CC, ES
Glen 1 (Existing) - Wellbore #1 - Wellbore #1	8,900.0	7,140.0	499.8	433.3	7.520	SF
Glen 44-32 (Existing) - Wellbore #1 - Wellbore #1	1,874.8	1,850.6	196.2	187.2	21.898	CC
Glen 44-32 (Existing) - Wellbore #1 - Wellbore #1	1,900.0	1,875.4	196.3	187.1	21.535	ES
Glen 44-32 (Existing) - Wellbore #1 - Wellbore #1	7,600.0	7,150.0	614.6	578.9	17.225	SF
Wolfe 1 (Existing) - Wellbore #1 - Wellbore #1	10,109.1	7,146.2	641.2	541.6	6.439	CC, ES
Wolfe 1 (Existing) - Wellbore #1 - Wellbore #1	10,200.0	7,145.7	647.6	545.5	6.344	SF
Wolfe 5 (Existing) - Wellbore #1 - Wellbore #1						Out of range
Wolfe 6I (Existing) - Wellbore #1 - Wellbore #1						Out of range
Tarin 32X-HZ Pad Sec.32-T4N-R66W						
Tarin 32W-234 - Wellbore #1 - Plan #1 (4-14-14)	200.0	198.0	178.5	177.9	266.530	CC, ES
Tarin 32W-234 - Wellbore #1 - Plan #1 (4-14-14)	1,100.0	1,036.1	304.7	299.9	63.950	SF
Tarin 32W-434 - Wellbore #1 - Plan #1 (12-18-14)	400.0	398.0	149.4	147.8	95.205	CC, ES
Tarin 32W-434 - Wellbore #1 - Plan #1 (12-18-14)	1,100.0	1,064.6	224.2	219.5	47.580	SF
Tarin 32X-204 - Wellbore #1 - Plan #2 (12-18-14)	1,000.0	999.0	91.1	86.8	21.338	CC, ES
Tarin 32X-204 - Wellbore #1 - Plan #2 (12-18-14)	1,100.0	1,096.7	93.9	89.2	20.048	SF
Tarin 32X-304 - Wellbore #1 - Plan #3 (12-18-14)	1,000.0	999.0	58.3	54.0	13.655	CC, ES
Tarin 32X-304 - Wellbore #1 - Plan #3 (12-18-14)	1,200.0	1,198.8	64.7	59.7	12.720	SF
Tarin 32X-314 - Wellbore #1 - Plan #1 (4-14-14)	600.0	599.0	120.2	117.8	48.670	CC, ES
Tarin 32X-314 - Wellbore #1 - Plan #1 (4-14-14)	1,100.0	1,079.9	159.6	154.9	34.020	SF
Tarin 32Y-214 - Wellbore #1 - Plan #3 (12-18-14)	1,000.0	999.0	29.1	24.9	6.826	CC
Tarin 32Y-214 - Wellbore #1 - Plan #3 (12-18-14)	14,299.4	14,163.2	272.8	-113.9	0.705	Level 1, ES, SF
Tarin 32Y-404 - Wellbore #1 - Plan #2 (7-15-14)	500.0	500.0	29.1	27.1	14.409	CC
Tarin 32Y-404 - Wellbore #1 - Plan #2 (7-15-14)	14,299.4	14,399.1	208.4	-88.5	0.702	Level 1, ES, SF

Offset Design		Existing Wells Sec.32-T4N-R66W - Farr Farms 1 (Existing) - 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	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)				
13,400.0	7,142.7	7,127.6	7,126.5	177.3	14.3	90.21	-337.6	-7,048.2	936.8	745.4	191.41	4.894			

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 Tarin 32Y-314
Project:	SEC.32-T4N-R66W	TVD Reference:	WELL @ 4791.0ft (RKB - 15')
Reference Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	MD Reference:	WELL @ 4791.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Tarin 32Y-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #3 (12-18-14)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.32-T4N-R66W - Farr Farms 1 (Existing) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
13,500.0	7,142.2	7,127.6	7,126.5	180.1	14.3	90.21	-337.6	-7,048.2	845.4	651.2	194.21	4.353	
13,600.0	7,141.7	7,127.6	7,126.5	182.9	14.3	90.22	-337.6	-7,048.2	756.2	559.2	197.00	3.839	
13,700.0	7,141.1	7,127.6	7,126.6	185.6	14.3	90.22	-337.6	-7,048.2	670.1	470.3	199.80	3.354	
13,800.0	7,140.6	7,127.6	7,126.6	188.4	14.3	90.22	-337.6	-7,048.2	588.4	385.8	202.59	2.904	
13,900.0	7,140.1	7,127.6	7,126.6	191.2	14.3	90.22	-337.6	-7,048.2	513.2	307.8	205.39	2.498	
14,000.0	7,139.6	7,127.6	7,126.6	194.0	14.3	90.22	-337.6	-7,048.2	447.8	239.6	208.19	2.151	
14,100.0	7,139.0	7,127.6	7,126.6	196.8	14.3	90.22	-337.6	-7,048.2	397.1	186.1	210.99	1.882	
14,200.0	7,138.5	7,127.6	7,126.6	199.6	14.3	90.23	-337.6	-7,048.2	367.2	153.4	213.78	1.717	
14,264.2	7,138.2	7,127.6	7,126.6	201.4	14.3	90.23	-337.6	-7,048.2	361.5	145.9	215.58	1.677	CC, ES, SF
14,299.4	7,138.0	7,127.7	7,126.6	202.4	14.3	90.23	-337.6	-7,048.2	363.2	146.6	216.56	1.677	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Tarin 32Y-314
Project:	SEC.32-T4N-R66W	TVD Reference:	WELL @ 4791.0ft (RKB - 15')
Reference Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	MD Reference:	WELL @ 4791.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Tarin 32Y-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #3 (12-18-14)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.32-T4N-R66W - Glen 1 (Existing) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS												Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,000.0	7,171.0	7,160.8	7,160.5	30.3	13.8	91.49	-203.8	-1,615.2	967.6	923.9	43.68	22.154	
8,100.0	7,170.5	7,158.3	7,158.0	32.7	13.8	91.20	-203.9	-1,615.3	883.2	837.1	46.03	19.185	
8,200.0	7,169.9	7,155.9	7,155.6	35.1	13.8	90.93	-203.9	-1,615.3	802.3	753.9	48.46	16.558	
8,300.0	7,169.4	7,153.5	7,153.3	37.5	13.8	90.65	-203.9	-1,615.3	726.3	675.4	50.93	14.260	
8,400.0	7,168.9	7,151.2	7,150.9	40.1	13.8	90.38	-204.0	-1,615.4	656.7	603.2	53.45	12.286	
8,500.0	7,168.4	7,148.9	7,148.6	42.6	13.8	90.11	-204.0	-1,615.4	595.8	539.8	56.00	10.638	
8,600.0	7,167.8	7,146.6	7,146.3	45.2	13.8	89.85	-204.0	-1,615.5	546.5	487.9	58.58	9.329	
8,700.0	7,167.3	7,144.4	7,144.1	47.8	13.8	89.59	-204.0	-1,615.5	512.2	451.0	61.19	8.371	
8,800.0	7,166.8	7,142.2	7,141.9	50.4	13.8	89.34	-204.1	-1,615.5	496.1	432.2	63.81	7.774	
8,831.6	7,166.6	7,141.5	7,141.2	51.2	13.8	89.26	-204.1	-1,615.5	495.1	430.4	64.65	7.658 CC, ES	
8,900.0	7,166.3	7,140.0	7,139.7	53.1	13.8	89.08	-204.1	-1,615.6	499.8	433.3	66.45	7.520 SF	
9,000.0	7,165.7	7,137.8	7,137.6	55.7	13.8	88.84	-204.1	-1,615.6	522.9	453.8	69.11	7.566	
9,100.0	7,165.2	7,135.7	7,135.4	58.4	13.7	88.59	-204.2	-1,615.6	563.1	491.3	71.78	7.846	
9,200.0	7,164.7	7,133.6	7,133.3	61.1	13.7	88.35	-204.2	-1,615.7	617.1	542.6	74.45	8.288	
9,300.0	7,164.2	7,131.6	7,131.3	63.8	13.7	88.11	-204.2	-1,615.7	681.5	604.3	77.14	8.835	
9,400.0	7,163.7	7,129.5	7,129.2	66.5	13.7	87.87	-204.2	-1,615.7	753.7	673.9	79.83	9.441	
9,500.0	7,163.1	7,127.5	7,127.2	69.2	13.7	87.64	-204.3	-1,615.8	831.7	749.2	82.53	10.078	
9,600.0	7,162.6	7,125.5	7,125.2	71.9	13.7	87.41	-204.3	-1,615.8	914.0	828.7	85.23	10.724	
9,700.0	7,162.1	7,123.6	7,123.3	74.6	13.7	87.18	-204.3	-1,615.8	999.5	911.5	87.93	11.366	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Tarin 32Y-314
Project:	SEC.32-T4N-R66W	TVD Reference:	WELL @ 4791.0ft (RKB - 15')
Reference Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	MD Reference:	WELL @ 4791.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Tarin 32Y-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #3 (12-18-14)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.32-T4N-R66W - Glen 44-32 (Existing) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-151.31	-151.31	-204.0	-111.6	233.0				
100.0	100.0	84.8	84.8	0.1	0.1	-151.21	-151.21	-204.0	-112.1	232.8	232.6	0.23	1,033.931	
200.0	200.0	183.9	183.9	0.3	0.4	-150.94	-150.94	-204.1	-113.4	233.5	232.8	0.69	337.564	
300.0	300.0	286.1	286.1	0.6	0.6	-150.67	-150.67	-204.0	-114.7	234.0	232.9	1.17	199.884	
400.0	400.0	386.5	386.5	0.8	0.9	-150.35	-150.35	-203.2	-115.7	233.8	232.2	1.64	142.396	
436.0	436.0	422.0	422.0	0.9	0.9	-150.22	-150.22	-202.9	-116.1	233.8	232.0	1.81	128.963	
500.0	500.0	484.8	484.7	1.0	1.1	-150.02	-150.02	-202.7	-116.9	234.0	231.9	2.12	110.487	
600.0	600.0	585.9	585.9	1.2	1.4	-149.70	-149.70	-202.4	-118.2	234.4	231.8	2.60	90.014	
700.0	700.0	688.2	688.1	1.5	1.6	-149.35	-149.35	-201.3	-119.3	234.0	230.9	3.06	76.455	
800.0	800.0	786.3	786.3	1.7	1.8	-149.13	-149.13	-200.3	-119.7	233.4	229.8	3.51	66.497	
900.0	900.0	887.1	887.1	1.9	2.1	-148.80	-148.80	-199.4	-120.8	233.2	229.2	3.99	58.411	
1,000.0	1,000.0	986.6	986.5	2.1	2.3	-148.45	-148.45	-198.4	-121.8	232.8	228.3	4.47	52.038	
1,100.0	1,100.0	1,087.3	1,087.2	2.3	2.6	55.70	55.70	-197.7	-122.3	231.5	226.5	4.92	47.020	
1,200.0	1,199.8	1,186.8	1,186.7	2.5	2.8	57.07	57.07	-196.7	-122.8	228.1	222.7	5.35	42.645	
1,300.0	1,299.5	1,286.0	1,285.9	2.7	3.1	59.32	59.32	-195.9	-123.6	223.2	217.4	5.80	38.504	
1,400.0	1,398.7	1,385.7	1,385.6	2.9	3.4	62.59	62.59	-194.7	-124.7	217.0	210.7	6.27	34.602	
1,500.0	1,497.5	1,483.7	1,483.6	3.2	3.6	66.96	66.96	-193.3	-126.0	209.9	203.2	6.77	30.991	
1,600.0	1,595.9	1,581.9	1,581.8	3.5	3.9	72.03	72.03	-192.0	-127.2	203.6	196.3	7.32	27.797	
1,700.0	1,694.2	1,679.2	1,679.1	3.8	4.1	77.31	77.31	-190.9	-128.5	199.0	191.1	7.90	25.190	
1,800.0	1,792.6	1,777.1	1,776.9	4.1	4.4	82.86	82.86	-189.7	-130.2	196.7	188.2	8.50	23.137	
1,874.8	1,866.2	1,850.6	1,850.4	4.4	4.6	87.09	87.09	-188.8	-131.4	196.2	187.2	8.96	21.898 CC	
1,900.0	1,891.0	1,875.4	1,875.2	4.5	4.7	88.54	88.54	-188.5	-131.8	196.3	187.1	9.11	21.535 ES	
2,000.0	1,989.4	1,973.0	1,972.8	4.8	4.9	94.22	94.22	-186.9	-133.6	197.8	188.0	9.72	20.339	
2,100.0	2,087.7	2,071.3	2,071.0	5.2	5.2	99.88	99.88	-185.2	-135.5	201.4	191.1	10.33	19.503	
2,200.0	2,186.1	2,170.9	2,170.6	5.6	5.4	105.49	105.49	-182.9	-137.0	206.6	195.6	10.91	18.935	
2,300.0	2,284.5	2,272.0	2,271.6	5.9	5.7	110.87	110.87	-180.4	-137.4	212.4	200.9	11.44	18.561	
2,400.0	2,382.9	2,368.5	2,368.1	6.3	5.9	115.90	115.90	-177.4	-137.0	219.2	207.3	11.93	18.368	
2,500.0	2,481.2	2,467.5	2,467.1	6.7	6.1	120.84	120.84	-173.8	-137.2	228.4	216.0	12.41	18.404	
2,600.0	2,579.6	2,565.8	2,565.3	7.1	6.3	125.37	125.37	-170.2	-136.4	238.2	225.3	12.86	18.524	
2,700.0	2,678.0	2,663.6	2,663.0	7.5	6.5	129.44	129.44	-166.9	-135.9	249.5	236.2	13.30	18.767	
2,800.0	2,776.4	2,760.7	2,760.1	7.9	6.7	133.07	133.07	-163.9	-135.5	262.0	248.3	13.73	19.081	
2,900.0	2,874.8	2,859.8	2,859.1	8.3	6.9	136.48	136.48	-160.5	-135.1	275.7	261.5	14.16	19.474	
3,000.0	2,973.1	2,959.0	2,958.3	8.7	7.1	139.55	139.55	-157.6	-134.1	289.5	274.9	14.57	19.868	
3,100.0	3,071.5	3,060.0	3,059.2	9.1	7.3	142.46	142.46	-154.4	-132.5	303.6	288.6	14.95	20.302	
3,200.0	3,169.9	3,161.5	3,160.6	9.5	7.4	145.06	145.06	-152.2	-129.9	317.0	301.7	15.30	20.721	
3,300.0	3,268.3	3,258.1	3,257.3	9.9	7.6	147.17	147.17	-151.2	-127.6	330.5	314.9	15.63	21.144	
3,400.0	3,366.6	3,352.6	3,351.7	10.3	7.7	148.91	148.91	-150.4	-126.7	345.6	329.5	16.02	21.574	
3,500.0	3,465.0	3,446.8	3,445.9	10.7	7.9	150.32	150.32	-149.8	-127.3	361.9	345.5	16.45	21.997	
3,600.0	3,563.4	3,541.0	3,540.1	11.1	8.1	151.46	151.46	-149.5	-129.3	379.6	362.7	16.90	22.466	
3,700.0	3,661.8	3,637.4	3,636.4	11.5	8.3	152.34	152.34	-149.6	-132.9	398.3	380.9	17.33	22.975	
3,800.0	3,760.1	3,733.9	3,732.8	11.9	8.5	153.08	153.08	-150.0	-136.7	417.1	399.3	17.77	23.471	
3,900.0	3,858.5	3,827.1	3,825.9	12.3	8.7	153.67	153.67	-150.1	-141.5	437.0	418.8	18.21	23.995	
4,000.0	3,956.9	3,925.4	3,924.0	12.7	8.9	154.18	154.18	-150.2	-147.3	457.4	438.7	18.67	24.502	
4,100.0	4,055.3	4,025.7	4,024.2	13.1	9.1	154.65	154.65	-150.9	-152.7	477.2	458.1	19.13	24.948	
4,200.0	4,153.7	4,118.0	4,116.3	13.5	9.3	155.03	155.03	-151.1	-158.2	497.6	478.1	19.58	25.416	
4,300.0	4,252.0	4,215.4	4,213.5	14.0	9.5	155.44	155.44	-150.9	-164.1	518.6	498.6	20.05	25.863	
4,400.0	4,350.4	4,313.2	4,311.1	14.4	9.8	155.86	155.86	-150.3	-169.9	539.7	519.1	20.53	26.284	
4,500.0	4,448.8	4,410.6	4,408.4	14.8	10.0	156.29	156.29	-149.4	-175.3	560.7	539.7	21.01	26.682	
4,600.0	4,547.2	4,506.7	4,504.3	15.2	10.2	156.74	156.74	-148.0	-180.3	582.0	560.5	21.50	27.069	
4,700.0	4,645.5	4,603.3	4,600.8	15.6	10.5	157.27	157.27	-145.7	-184.8	603.5	581.5	21.99	27.444	
4,800.0	4,743.9	4,706.5	4,703.9	16.0	10.7	157.89	157.89	-142.8	-188.6	624.6	602.1	22.49	27.768	

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 Tarin 32Y-314
Project:	SEC.32-T4N-R66W	TVD Reference:	WELL @ 4791.0ft (RKB - 15')
Reference Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	MD Reference:	WELL @ 4791.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Tarin 32Y-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #3 (12-18-14)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.32-T4N-R66W - Glen 44-32 (Existing) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
4,900.0	4,842.3	4,800.0	4,797.3	16.4	11.0	158.48		-139.7	-191.5	645.8	622.8	22.97	28.107	
5,000.0	4,940.7	4,900.7	4,898.0	16.8	11.3	159.12		-135.9	-194.2	667.1	643.6	23.47	28.424	
5,100.0	5,039.0	5,010.3	5,007.4	17.2	11.5	159.78		-132.7	-196.4	687.3	663.3	23.98	28.660	
5,200.0	5,137.4	5,119.7	5,116.8	17.6	11.8	160.39		-131.0	-197.2	705.8	681.4	24.48	28.836	
5,300.0	5,235.9	5,220.9	5,218.1	18.0	12.0	161.03		-129.6	-196.5	722.9	698.0	24.93	28.996	
5,400.0	5,334.8	5,312.7	5,309.8	18.3	12.2	161.55		-128.2	-196.5	737.7	712.4	25.36	29.097	
5,500.0	5,434.2	5,417.2	5,414.3	18.5	12.4	162.02		-126.3	-196.1	749.3	723.5	25.78	29.062	
5,600.0	5,533.9	5,521.1	5,518.2	18.7	12.6	162.39		-124.6	-195.1	757.0	730.9	26.14	28.962	
5,700.0	5,633.8	5,626.7	5,623.7	18.9	12.7	162.69		-123.2	-193.2	760.8	734.4	26.42	28.793	
5,800.0	5,733.8	5,735.2	5,732.2	19.0	12.8	-40.75		-123.0	-191.3	760.5	729.1	31.35	24.255	
5,900.0	5,833.8	5,840.0	5,837.0	19.1	12.8	-40.62		-123.7	-188.6	758.3	726.8	31.53	24.053	
6,000.0	5,933.8	5,936.0	5,933.0	19.2	12.9	-40.58		-124.8	-186.9	756.3	724.6	31.68	23.871	
6,100.0	6,033.8	6,031.6	6,028.6	19.4	12.9	-40.59		-125.9	-186.1	754.8	723.0	31.84	23.708	
6,200.0	6,133.8	6,129.9	6,126.8	19.5	12.9	-40.55		-126.3	-185.1	753.9	721.9	32.02	23.544	
6,300.0	6,233.8	6,232.6	6,229.6	19.6	13.0	-40.58		-127.5	-184.7	752.7	720.5	32.21	23.371	
6,400.0	6,333.8	6,333.0	6,330.0	19.8	13.1	-40.66		-129.2	-184.6	751.4	719.1	32.39	23.200	
6,500.0	6,433.8	6,434.8	6,431.7	19.9	13.1	49.34		-130.8	-184.3	749.7	721.6	28.12	26.661	
6,600.0	6,533.3	6,532.8	6,529.7	20.0	13.2	50.38		-131.8	-183.0	741.7	713.7	28.07	26.423	
6,700.0	6,630.6	6,623.8	6,620.6	20.0	13.3	52.68		-131.6	-181.3	726.4	698.5	27.87	26.067	
6,800.0	6,724.1	6,711.9	6,708.8	20.0	13.4	56.30		-130.2	-179.1	704.8	677.1	27.66	25.480	
6,900.0	6,812.2	6,790.7	6,787.5	20.0	13.5	60.95		-128.0	-177.1	678.9	651.3	27.64	24.566	
7,000.0	6,893.4	6,870.1	6,866.8	20.0	13.7	66.84		-125.4	-175.7	650.9	622.9	28.00	23.243	
7,100.0	6,966.4	6,946.5	6,943.2	19.9	13.9	73.59		-123.5	-175.0	623.0	594.2	28.83	21.611	
7,200.0	7,029.8	7,014.6	7,011.3	19.9	14.0	80.44		-122.6	-174.6	598.4	568.5	29.96	19.972	
7,300.0	7,082.5	7,068.8	7,065.5	19.9	14.1	86.21		-122.2	-174.3	581.8	550.6	31.19	18.651	
7,381.7	7,117.1	7,103.7	7,100.4	19.9	14.2	89.71		-122.0	-174.0	577.1	544.8	32.28	17.877	
7,400.0	7,123.7	7,110.3	7,107.0	20.0	14.2	90.30		-122.0	-173.9	577.3	544.8	32.51	17.761	
7,500.0	7,152.7	7,138.8	7,135.4	20.5	14.2	92.20		-121.9	-173.6	588.0	554.0	33.98	17.303	
7,600.0	7,169.0	7,150.0	7,146.7	22.0	14.2	91.23		-121.8	-173.5	614.6	578.9	35.68	17.225 SF	
7,700.0	7,172.6	7,150.0	7,146.7	23.8	14.2	88.66		-121.8	-173.5	655.6	618.1	37.49	17.486	
7,800.0	7,172.0	7,150.0	7,146.7	25.9	14.2	88.66		-121.8	-173.5	708.4	668.9	39.54	17.918	
7,900.0	7,171.5	7,150.0	7,146.7	28.0	14.2	88.66		-121.8	-173.5	770.7	729.0	41.72	18.474	
8,000.0	7,171.0	7,150.0	7,146.7	30.3	14.2	88.66		-121.8	-173.5	840.3	796.3	44.00	19.095	
8,100.0	7,170.5	7,150.0	7,146.7	32.7	14.2	88.66		-121.8	-173.5	915.5	869.1	46.37	19.743	
8,200.0	7,169.9	7,150.1	7,146.8	35.1	14.2	88.67		-121.8	-173.5	995.1	946.3	48.81	20.389	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Tarin 32Y-314
Project:	SEC.32-T4N-R66W	TVD Reference:	WELL @ 4791.0ft (RKB - 15')
Reference Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	MD Reference:	WELL @ 4791.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Tarin 32Y-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #3 (12-18-14)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.32-T4N-R66W - Wolfe 1 (Existing) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
9,400.0	7,163.7	7,150.6	7,149.4	66.5	14.0	90.84	-58.0	-2,893.1	956.0	875.8	80.17	11.924	
9,500.0	7,163.1	7,150.0	7,148.7	69.2	14.0	90.79	-58.0	-2,893.1	884.3	801.5	82.89	10.669	
9,600.0	7,162.6	7,149.4	7,148.1	71.9	14.0	90.73	-58.0	-2,893.1	818.7	733.1	85.62	9.562	
9,700.0	7,162.1	7,148.7	7,147.5	74.6	14.0	90.67	-58.0	-2,893.1	760.6	672.2	88.35	8.609	
9,800.0	7,161.6	7,148.1	7,146.9	77.4	14.0	90.62	-58.0	-2,893.1	711.8	620.7	91.09	7.814	
9,900.0	7,161.0	7,147.5	7,146.2	80.1	14.0	90.56	-58.0	-2,893.1	674.4	580.6	93.83	7.188	
10,000.0	7,160.5	7,146.9	7,145.6	82.8	14.0	90.51	-57.9	-2,893.1	650.4	553.8	96.57	6.735	
10,100.0	7,160.0	7,146.3	7,145.0	85.6	14.0	90.46	-57.9	-2,893.1	641.2	541.9	99.32	6.456	
10,109.1	7,159.9	7,146.2	7,145.0	85.8	14.0	90.45	-57.9	-2,893.1	641.2	541.6	99.57	6.439 CC, ES	
10,200.0	7,159.5	7,145.7	7,144.4	88.3	14.0	90.40	-57.9	-2,893.1	647.6	545.5	102.08	6.344 SF	
10,300.0	7,158.9	7,145.1	7,143.9	91.1	14.0	90.35	-57.9	-2,893.1	669.0	564.2	104.83	6.381	
10,400.0	7,158.4	7,144.5	7,143.3	93.8	14.0	90.30	-57.9	-2,893.1	704.1	596.5	107.59	6.544	
10,500.0	7,157.9	7,144.0	7,142.7	96.6	14.0	90.25	-57.9	-2,893.1	750.9	640.6	110.36	6.805	
10,600.0	7,157.4	7,143.4	7,142.1	99.4	14.0	90.20	-57.9	-2,893.1	807.5	694.4	113.12	7.139	
10,700.0	7,156.8	7,142.8	7,141.6	102.1	14.0	90.15	-57.9	-2,893.1	871.9	756.1	115.89	7.524	
10,800.0	7,156.3	7,142.3	7,141.0	104.9	14.0	90.10	-57.9	-2,893.1	942.6	823.9	118.66	7.944	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Tarin 32Y-314
Project:	SEC.32-T4N-R66W	TVD Reference:	WELL @ 4791.0ft (RKB - 15')
Reference Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	MD Reference:	WELL @ 4791.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Tarin 32Y-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #3 (12-18-14)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Tarin 32X-HZ Pad Sec.32-T4N-R66W - Tarin 32W-234 - Wellbore #1 - Plan #1 (4-14-14)													Offset Well Error:	0.0 ft
Survey Program: 0-MWD														
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	
0.0	0.0	0.0	0.0	0.0	0.0	-0.90	178.5	-2.8	178.5					
100.0	100.0	98.0	98.0	0.1	0.1	-0.90	178.5	-2.8	178.5	178.3	0.22	802.267		
200.0	200.0	198.0	198.0	0.3	0.3	-0.90	178.5	-2.8	178.5	177.9	0.67	266.530 CC, ES		
300.0	300.0	292.4	292.4	0.6	0.5	-0.78	179.9	-2.4	180.1	178.9	1.11	162.368		
400.0	400.0	386.5	386.3	0.8	0.8	-0.43	184.4	-1.4	184.8	183.2	1.56	118.805		
500.0	500.0	480.1	479.7	1.0	1.0	0.11	191.8	0.4	192.7	190.7	2.00	96.118		
600.0	600.0	573.2	572.2	1.2	1.2	0.80	202.1	2.8	203.8	201.3	2.46	82.926		
700.0	700.0	665.5	663.5	1.5	1.5	1.58	215.2	5.9	218.1	215.1	2.91	74.837		
800.0	800.0	756.8	753.3	1.7	1.9	2.40	231.0	9.7	235.5	232.1	3.38	69.763		
900.0	900.0	847.0	841.5	1.9	2.2	3.22	249.3	14.0	256.0	252.1	3.84	66.611		
1,000.0	1,000.0	939.5	931.4	2.1	2.6	4.04	270.6	19.1	279.3	275.0	4.32	64.611		
1,100.0	1,100.0	1,036.1	1,025.2	2.3	3.1	-151.57	293.3	24.5	304.7	299.9	4.76	63.950 SF		
1,200.0	1,199.8	1,132.0	1,118.2	2.5	3.5	-151.09	315.8	29.8	333.0	327.8	5.19	64.195		
1,300.0	1,299.5	1,227.0	1,210.4	2.7	4.0	-150.90	338.2	35.2	364.3	358.7	5.61	64.906		
1,400.0	1,398.7	1,321.0	1,301.5	2.9	4.4	-150.90	360.3	40.4	398.4	392.4	6.04	65.950		
1,500.0	1,497.5	1,413.8	1,391.6	3.2	4.9	-151.05	382.1	45.6	435.5	429.0	6.47	67.288		
1,600.0	1,595.9	1,505.8	1,480.9	3.5	5.3	-151.58	403.7	50.7	474.4	467.5	6.93	68.426		
1,700.0	1,694.2	1,597.8	1,570.2	3.8	5.8	-152.09	425.3	55.9	513.4	506.0	7.41	69.278		
1,800.0	1,792.6	1,689.8	1,659.4	4.1	6.2	-152.52	447.0	61.0	552.4	544.5	7.90	69.946		
1,900.0	1,891.0	1,781.8	1,748.7	4.5	6.7	-152.90	468.6	66.1	591.4	583.1	8.39	70.476		
2,000.0	1,989.4	1,873.8	1,838.0	4.8	7.2	-153.23	490.2	71.3	630.5	621.6	8.89	70.900		
2,100.0	2,087.7	1,965.8	1,927.3	5.2	7.6	-153.53	511.8	76.4	669.6	660.2	9.40	71.242		
2,200.0	2,186.1	2,057.8	2,016.5	5.6	8.1	-153.79	533.5	81.6	708.7	698.8	9.91	71.520		
2,300.0	2,284.5	2,149.8	2,105.8	5.9	8.5	-154.02	555.1	86.7	747.8	737.4	10.42	71.747		
2,400.0	2,382.9	2,241.8	2,195.1	6.3	9.0	-154.23	576.7	91.8	786.9	776.0	10.94	71.933		
2,500.0	2,481.2	2,333.8	2,284.3	6.7	9.4	-154.42	598.4	97.0	826.0	814.6	11.46	72.087		
2,600.0	2,579.6	2,425.8	2,373.6	7.1	9.9	-154.60	620.0	102.1	865.2	853.2	11.98	72.215		
2,700.0	2,678.0	2,517.8	2,462.9	7.5	10.3	-154.76	641.6	107.3	904.3	891.8	12.50	72.321		
2,800.0	2,776.4	2,609.8	2,552.1	7.9	10.8	-154.90	663.2	112.4	943.4	930.4	13.03	72.409		
2,900.0	2,874.8	2,701.7	2,641.4	8.3	11.3	-155.04	684.9	117.5	982.6	969.0	13.56	72.483		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Tarin 32Y-314
Project:	SEC.32-T4N-R66W	TVD Reference:	WELL @ 4791.0ft (RKB - 15')
Reference Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	MD Reference:	WELL @ 4791.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Tarin 32Y-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #3 (12-18-14)	Offset TVD Reference:	Offset Datum

Offset Design Tarin 32X-HZ Pad Sec.32-T4N-R66W - Tarin 32W-434 - Wellbore #1 - Plan #1 (12-18-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	149.4	0.0	149.4				
100.0	100.0	98.0	98.0	0.1	0.1	0.00	0.00	149.4	0.0	149.4	149.1	0.22	671.233	
200.0	200.0	198.0	198.0	0.3	0.3	0.00	0.00	149.4	0.0	149.4	148.7	0.67	222.998	
300.0	300.0	298.0	298.0	0.6	0.6	0.00	0.00	149.4	0.0	149.4	148.2	1.12	133.440	
400.0	400.0	398.0	398.0	0.8	0.8	0.00	0.00	149.4	0.0	149.4	147.8	1.57	95.205 CC, ES	
500.0	500.0	493.3	493.3	1.0	1.0	0.18	0.18	150.8	0.5	150.9	148.9	2.01	75.116	
600.0	600.0	588.4	588.2	1.2	1.2	0.71	0.71	155.2	1.9	155.6	153.1	2.45	63.419	
700.0	700.0	683.0	682.5	1.5	1.4	1.53	1.53	162.6	4.3	163.4	160.5	2.90	56.355	
800.0	800.0	777.0	775.9	1.7	1.7	2.55	2.55	172.9	7.7	174.5	171.1	3.35	52.088	
900.0	900.0	870.2	868.1	1.9	2.0	3.69	3.69	186.0	12.0	188.7	184.9	3.80	49.637	
1,000.0	1,000.0	966.4	962.8	2.1	2.3	4.86	4.86	201.8	17.2	205.6	201.3	4.26	48.225	
1,100.0	1,100.0	1,064.6	1,059.5	2.3	2.6	-150.57	-150.57	218.2	22.5	224.2	219.5	4.71	47.580 SF	
1,200.0	1,199.8	1,162.2	1,155.6	2.5	3.0	-150.08	-150.08	234.5	27.9	245.9	240.7	5.13	47.949	
1,300.0	1,299.5	1,259.1	1,251.0	2.7	3.3	-149.98	-149.98	250.7	33.2	270.4	264.9	5.55	48.759	
1,400.0	1,398.7	1,355.2	1,345.6	2.9	3.7	-150.16	-150.16	266.7	38.4	298.0	292.0	5.97	49.915	
1,500.0	1,497.5	1,450.4	1,439.3	3.2	4.0	-150.56	-150.56	282.6	43.6	328.4	322.0	6.40	51.310	
1,600.0	1,595.9	1,544.9	1,532.3	3.5	4.4	-151.27	-151.27	298.4	48.8	360.8	353.9	6.86	52.624	
1,700.0	1,694.2	1,639.4	1,625.4	3.8	4.7	-151.92	-151.92	314.2	54.0	393.3	386.0	7.33	53.675	
1,800.0	1,792.6	1,733.9	1,718.4	4.1	5.1	-152.47	-152.47	330.0	59.1	425.8	418.0	7.81	54.540	
1,900.0	1,891.0	1,828.4	1,811.4	4.5	5.5	-152.94	-152.94	345.7	64.3	458.3	450.0	8.29	55.262	
2,000.0	1,989.4	1,922.9	1,904.4	4.8	5.8	-153.34	-153.34	361.5	69.5	490.9	482.1	8.79	55.869	
2,100.0	2,087.7	2,017.4	1,997.5	5.2	6.2	-153.70	-153.70	377.3	74.6	523.5	514.2	9.28	56.385	
2,200.0	2,186.1	2,111.9	2,090.5	5.6	6.6	-154.02	-154.02	393.1	79.8	556.1	546.3	9.79	56.826	
2,300.0	2,284.5	2,206.4	2,183.5	5.9	6.9	-154.30	-154.30	408.8	85.0	588.7	578.4	10.29	57.208	
2,400.0	2,382.9	2,300.9	2,276.5	6.3	7.3	-154.55	-154.55	424.6	90.1	621.4	610.6	10.80	57.539	
2,500.0	2,481.2	2,395.3	2,369.6	6.7	7.7	-154.78	-154.78	440.4	95.3	654.0	642.7	11.31	57.829	
2,600.0	2,579.6	2,489.8	2,462.6	7.1	8.0	-154.98	-154.98	456.2	100.4	686.6	674.8	11.82	58.084	
2,700.0	2,678.0	2,584.3	2,555.6	7.5	8.4	-155.17	-155.17	472.0	105.6	719.3	707.0	12.34	58.310	
2,800.0	2,776.4	2,678.8	2,648.6	7.9	8.8	-155.34	-155.34	487.7	110.8	752.0	739.1	12.85	58.511	
2,900.0	2,874.8	2,773.3	2,741.6	8.3	9.1	-155.49	-155.49	503.5	115.9	784.6	771.3	13.37	58.691	
3,000.0	2,973.1	2,867.8	2,834.7	8.7	9.5	-155.64	-155.64	519.3	121.1	817.3	803.4	13.89	58.852	
3,100.0	3,071.5	2,962.3	2,927.7	9.1	9.9	-155.77	-155.77	535.1	126.3	850.0	835.6	14.41	58.998	
3,200.0	3,169.9	3,056.8	3,020.7	9.5	10.2	-155.89	-155.89	550.8	131.4	882.7	867.7	14.93	59.129	
3,300.0	3,268.3	3,151.3	3,113.7	9.9	10.6	-156.01	-156.01	566.6	136.6	915.3	899.9	15.45	59.249	
3,400.0	3,366.6	3,245.8	3,206.8	10.3	11.0	-156.11	-156.11	582.4	141.8	948.0	932.1	15.97	59.357	
3,500.0	3,465.0	3,340.3	3,299.8	10.7	11.3	-156.21	-156.21	598.2	146.9	980.7	964.2	16.49	59.457	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Tarin 32Y-314
Project:	SEC.32-T4N-R66W	TVD Reference:	WELL @ 4791.0ft (RKB - 15')
Reference Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	MD Reference:	WELL @ 4791.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Tarin 32Y-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #3 (12-18-14)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference														
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	0.00	91.1	0.0	91.1					
100.0	100.0	99.0	99.0	0.1	0.1	0.00	91.1	0.0	91.1	90.9	0.22	407.236		
200.0	200.0	199.0	199.0	0.3	0.3	0.00	91.1	0.0	91.1	90.4	0.67	135.519		
300.0	300.0	299.0	299.0	0.6	0.6	0.00	91.1	0.0	91.1	90.0	1.12	81.203		
400.0	400.0	399.0	399.0	0.8	0.8	0.00	91.1	0.0	91.1	89.5	1.57	57.969		
500.0	500.0	499.0	499.0	1.0	1.0	0.00	91.1	0.0	91.1	89.1	2.02	45.073		
600.0	600.0	599.0	599.0	1.2	1.2	0.00	91.1	0.0	91.1	88.6	2.47	36.870		
700.0	700.0	699.0	699.0	1.5	1.5	0.00	91.1	0.0	91.1	88.2	2.92	31.193		
800.0	800.0	799.0	799.0	1.7	1.7	0.00	91.1	0.0	91.1	87.7	3.37	27.032		
900.0	900.0	899.0	899.0	1.9	1.9	0.00	91.1	0.0	91.1	87.3	3.82	23.850		
1,000.0	1,000.0	999.0	999.0	2.1	2.1	0.00	91.1	0.0	91.1	86.8	4.27	21.338 CC, ES		
1,100.0	1,100.0	1,096.7	1,096.7	2.3	2.3	-156.13	92.3	1.1	93.9	89.2	4.68	20.048 SF		
1,200.0	1,199.8	1,193.9	1,193.7	2.5	2.6	-155.32	95.8	4.5	102.4	97.3	5.08	20.158		
1,300.0	1,299.5	1,290.2	1,289.7	2.7	2.8	-154.20	101.7	10.1	116.5	111.0	5.48	21.240		
1,400.0	1,398.7	1,386.5	1,385.4	2.9	3.0	-153.07	109.7	17.8	135.9	130.0	5.90	23.023		
1,500.0	1,497.5	1,483.8	1,482.0	3.2	3.3	-152.60	118.1	25.8	158.9	152.5	6.33	25.089		
1,600.0	1,595.9	1,580.7	1,578.1	3.5	3.5	-152.70	126.5	33.9	183.8	177.0	6.79	27.085		
1,700.0	1,694.2	1,677.5	1,674.3	3.8	3.8	-152.82	134.9	41.9	208.7	201.5	7.25	28.771		
1,800.0	1,792.6	1,774.3	1,770.4	4.1	4.1	-152.92	143.3	49.9	233.7	225.9	7.74	30.205		
1,900.0	1,891.0	1,871.2	1,866.5	4.5	4.3	-152.99	151.6	57.9	258.6	250.4	8.23	31.435		
2,000.0	1,889.4	1,868.0	1,862.7	4.8	4.6	-153.05	160.0	65.9	283.6	274.8	8.73	32.499		
2,100.0	2,087.7	2,064.9	2,058.8	5.2	4.9	-153.10	168.4	74.0	308.5	299.3	9.23	33.424		
2,200.0	2,186.1	2,161.7	2,155.0	5.6	5.2	-153.15	176.8	82.0	333.5	323.7	9.74	34.234		
2,300.0	2,284.5	2,258.5	2,251.1	5.9	5.5	-153.19	185.2	90.0	358.4	348.1	10.26	34.946		
2,400.0	2,382.9	2,355.4	2,347.2	6.3	5.7	-153.22	193.6	98.0	383.4	372.6	10.77	35.578		
2,500.0	2,481.2	2,452.2	2,443.4	6.7	6.0	-153.25	202.0	106.1	408.3	397.0	11.30	36.140		
2,600.0	2,579.6	2,549.0	2,539.5	7.1	6.3	-153.27	210.4	114.1	433.2	421.4	11.82	36.643		
2,700.0	2,678.0	2,645.9	2,635.7	7.5	6.6	-153.30	218.7	122.1	458.2	445.8	12.35	37.096		
2,800.0	2,776.4	2,742.7	2,731.8	7.9	6.9	-153.32	227.1	130.1	483.1	470.3	12.88	37.505		
2,900.0	2,874.8	2,839.6	2,827.9	8.3	7.2	-153.34	235.5	138.1	508.1	494.7	13.41	37.875		
3,000.0	2,973.1	2,936.4	2,924.1	8.7	7.5	-153.35	243.9	146.2	533.0	519.1	13.95	38.213		
3,100.0	3,071.5	3,033.2	3,020.2	9.1	7.8	-153.37	252.3	154.2	558.0	543.5	14.49	38.521		
3,200.0	3,169.9	3,130.1	3,116.4	9.5	8.1	-153.38	260.7	162.2	582.9	567.9	15.02	38.804		
3,300.0	3,268.3	3,226.9	3,212.5	9.9	8.4	-153.40	269.1	170.2	607.9	592.3	15.56	39.064		
3,400.0	3,366.6	3,323.7	3,308.6	10.3	8.7	-153.41	277.5	178.3	632.8	616.7	16.10	39.304		
3,500.0	3,465.0	3,420.6	3,404.8	10.7	9.0	-153.42	285.8	186.3	657.8	641.1	16.64	39.525		
3,600.0	3,563.4	3,517.4	3,500.9	11.1	9.3	-153.43	294.2	194.3	682.7	665.5	17.18	39.731		
3,700.0	3,661.8	3,614.3	3,597.1	11.5	9.6	-153.44	302.6	202.3	707.7	690.0	17.73	39.922		
3,800.0	3,760.1	3,711.1	3,693.2	11.9	9.9	-153.45	311.0	210.3	732.6	714.4	18.27	40.100		
3,900.0	3,858.5	3,807.9	3,789.3	12.3	10.2	-153.45	319.4	218.4	757.6	738.8	18.81	40.266		
4,000.0	3,956.9	3,904.8	3,885.5	12.7	10.5	-153.46	327.8	226.4	782.5	763.2	19.36	40.421		
4,100.0	4,055.3	4,001.6	3,981.6	13.1	10.8	-153.47	336.2	234.4	807.5	787.6	19.90	40.566		
4,200.0	4,153.7	4,098.4	4,077.8	13.5	11.1	-153.48	344.6	242.4	832.4	812.0	20.45	40.703		
4,300.0	4,252.0	4,195.3	4,173.9	14.0	11.4	-153.48	352.9	250.4	857.4	836.4	21.00	40.832		
4,400.0	4,350.4	4,292.1	4,270.0	14.4	11.7	-153.49	361.3	258.5	882.3	860.8	21.54	40.953		
4,500.0	4,448.8	4,389.0	4,366.2	14.8	12.0	-153.49	369.7	266.5	907.3	885.2	22.09	41.067		
4,600.0	4,547.2	4,485.8	4,462.3	15.2	12.3	-153.50	378.1	274.5	932.2	909.6	22.64	41.174		
4,700.0	4,645.5	4,582.6	4,558.5	15.6	12.6	-153.50	386.5	282.5	957.2	934.0	23.19	41.276		
4,800.0	4,743.9	4,679.5	4,654.6	16.0	12.9	-153.51	394.9	290.6	982.1	958.4	23.74	41.373		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Tarin 32Y-314
Project:	SEC.32-T4N-R66W	TVD Reference:	WELL @ 4791.0ft (RKB - 15')
Reference Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	MD Reference:	WELL @ 4791.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Tarin 32Y-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #3 (12-18-14)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference														
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	0.00	0.00	58.3	0.0	58.3				
100.0	100.0	99.0	99.0	0.1	0.1	0.00	0.00	58.3	0.0	58.3	58.1	0.22	260.612	
200.0	200.0	199.0	199.0	0.3	0.3	0.00	0.00	58.3	0.0	58.3	57.6	0.67	86.726	
300.0	300.0	299.0	299.0	0.6	0.6	0.00	0.00	58.3	0.0	58.3	57.2	1.12	51.966	
400.0	400.0	399.0	399.0	0.8	0.8	0.00	0.00	58.3	0.0	58.3	56.7	1.57	37.098	
500.0	500.0	499.0	499.0	1.0	1.0	0.00	0.00	58.3	0.0	58.3	56.3	2.02	28.844	
600.0	600.0	599.0	599.0	1.2	1.2	0.00	0.00	58.3	0.0	58.3	55.8	2.47	23.595	
700.0	700.0	699.0	699.0	1.5	1.5	0.00	0.00	58.3	0.0	58.3	55.4	2.92	19.962	
800.0	800.0	799.0	799.0	1.7	1.7	0.00	0.00	58.3	0.0	58.3	54.9	3.37	17.299	
900.0	900.0	899.0	899.0	1.9	1.9	0.00	0.00	58.3	0.0	58.3	54.5	3.82	15.263	
1,000.0	1,000.0	999.0	999.0	2.1	2.1	0.00	0.00	58.3	0.0	58.3	54.0	4.27	13.655 CC, ES	
1,100.0	1,100.0	1,099.0	1,099.0	2.3	2.4	-157.08	58.3	58.3	0.0	59.9	55.2	4.69	12.768	
1,200.0	1,199.8	1,198.8	1,198.8	2.5	2.6	-158.85	58.3	58.3	0.0	64.7	59.7	5.09	12.720 SF	
1,300.0	1,299.5	1,298.5	1,298.5	2.7	2.8	-161.27	58.3	58.3	0.0	72.9	67.4	5.49	13.280	
1,400.0	1,398.7	1,397.7	1,397.7	2.9	3.0	-163.86	58.3	58.3	0.0	84.6	78.7	5.90	14.344	
1,500.0	1,497.5	1,496.5	1,496.5	3.2	3.3	-166.28	58.3	58.3	0.0	99.7	93.4	6.30	15.826	
1,600.0	1,595.9	1,593.1	1,593.1	3.5	3.5	-167.65	59.2	59.2	1.2	117.9	111.2	6.72	17.547	
1,700.0	1,694.2	1,689.1	1,688.9	3.8	3.7	-167.44	62.2	62.2	4.8	137.7	130.6	7.15	19.263	
1,800.0	1,792.6	1,784.3	1,783.9	4.1	3.9	-166.25	67.2	67.2	10.9	159.1	151.5	7.59	20.955	
1,900.0	1,891.0	1,881.1	1,880.1	4.5	4.1	-164.70	73.7	73.7	18.8	181.7	173.6	8.05	22.558	
2,000.0	1,889.4	1,978.4	1,976.8	4.8	4.3	-163.47	80.3	80.3	26.8	204.4	195.9	8.53	23.975	
2,100.0	2,087.7	2,075.7	2,073.6	5.2	4.6	-162.48	86.9	86.9	34.7	227.2	218.2	9.01	25.225	
2,200.0	2,186.1	2,173.0	2,170.3	5.6	4.8	-161.68	93.4	93.4	42.7	250.1	240.6	9.50	26.330	
2,300.0	2,284.5	2,270.3	2,267.1	5.9	5.1	-161.01	100.0	100.0	50.7	273.0	263.0	9.99	27.313	
2,400.0	2,382.9	2,367.6	2,363.8	6.3	5.3	-160.44	106.6	106.6	58.7	295.9	285.4	10.50	28.190	
2,500.0	2,481.2	2,464.9	2,460.5	6.7	5.6	-159.96	113.1	113.1	66.7	318.8	307.8	11.00	28.976	
2,600.0	2,579.6	2,562.2	2,557.3	7.1	5.9	-159.53	119.7	119.7	74.7	341.8	330.3	11.52	29.682	
2,700.0	2,678.0	2,659.5	2,654.0	7.5	6.1	-159.17	126.3	126.3	82.7	364.8	352.8	12.03	30.320	
2,800.0	2,776.4	2,756.8	2,750.8	7.9	6.4	-158.84	132.8	132.8	90.7	387.8	375.2	12.55	30.898	
2,900.0	2,874.8	2,854.1	2,847.5	8.3	6.7	-158.56	139.4	139.4	98.6	410.8	397.7	13.07	31.424	
3,000.0	2,973.1	2,951.4	2,944.3	8.7	6.9	-158.30	146.0	146.0	106.6	433.8	420.2	13.60	31.904	
3,100.0	3,071.5	3,048.7	3,041.0	9.1	7.2	-158.07	152.5	152.5	114.6	456.8	442.7	14.12	32.344	
3,200.0	3,169.9	3,146.0	3,137.8	9.5	7.5	-157.86	159.1	159.1	122.6	479.8	465.2	14.65	32.747	
3,300.0	3,268.3	3,243.3	3,234.5	9.9	7.7	-157.67	165.7	165.7	130.6	502.9	487.7	15.18	33.119	
3,400.0	3,366.6	3,340.5	3,331.3	10.3	8.0	-157.50	172.2	172.2	138.6	525.9	510.2	15.72	33.462	
3,500.0	3,465.0	3,437.8	3,428.0	10.7	8.3	-157.34	178.8	178.8	146.6	548.9	532.7	16.25	33.780	
3,600.0	3,563.4	3,535.1	3,524.8	11.1	8.6	-157.19	185.4	185.4	154.5	572.0	555.2	16.79	34.076	
3,700.0	3,661.8	3,632.4	3,621.5	11.5	8.8	-157.06	191.9	191.9	162.5	595.0	577.7	17.32	34.350	
3,800.0	3,760.1	3,729.7	3,718.3	11.9	9.1	-156.93	198.5	198.5	170.5	618.1	600.2	17.86	34.606	
3,900.0	3,858.5	3,827.0	3,815.0	12.3	9.4	-156.82	205.1	205.1	178.5	641.1	622.7	18.40	34.845	
4,000.0	3,956.9	3,924.3	3,911.8	12.7	9.7	-156.71	211.6	211.6	186.5	664.2	645.3	18.94	35.069	
4,100.0	4,055.3	4,021.6	4,008.5	13.1	10.0	-156.61	218.2	218.2	194.5	687.3	667.8	19.48	35.279	
4,200.0	4,153.7	4,118.9	4,105.3	13.5	10.2	-156.51	224.8	224.8	202.5	710.3	690.3	20.02	35.477	
4,300.0	4,252.0	4,216.2	4,202.0	14.0	10.5	-156.43	231.3	231.3	210.5	733.4	712.8	20.56	35.662	
4,400.0	4,350.4	4,313.5	4,298.8	14.4	10.8	-156.34	237.9	237.9	218.4	756.4	735.3	21.11	35.837	
4,500.0	4,448.8	4,410.8	4,395.5	14.8	11.1	-156.27	244.5	244.5	226.4	779.5	757.8	21.65	36.003	
4,600.0	4,547.2	4,508.1	4,492.3	15.2	11.4	-156.19	251.0	251.0	234.4	802.6	780.4	22.20	36.159	
4,700.0	4,645.5	4,605.4	4,589.0	15.6	11.7	-156.12	257.6	257.6	242.4	825.6	802.9	22.74	36.307	
4,800.0	4,743.9	4,702.7	4,685.7	16.0	11.9	-156.06	264.2	264.2	250.4	848.7	825.4	23.29	36.447	
4,900.0	4,842.3	4,800.0	4,782.5	16.4	12.2	-156.00	270.7	270.7	258.4	871.8	847.9	23.83	36.580	
5,000.0	4,940.7	4,897.3	4,879.2	16.8	12.5	-155.94	277.3	277.3	266.4	894.8	870.5	24.38	36.706	

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 Tarin 32Y-314
Project:	SEC.32-T4N-R66W	TVD Reference:	WELL @ 4791.0ft (RKB - 15')
Reference Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	MD Reference:	WELL @ 4791.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Tarin 32Y-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #3 (12-18-14)	Offset TVD Reference:	Offset Datum

Offset Design Tarin 32X-HZ Pad Sec.32-T4N-R66W - Tarin 32X-304 - Wellbore #1 - Plan #3 (12-18-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning	
Reference	Offset	Reference	Offset	(ft)	(ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
5,100.0	5,039.0	4,994.6	4,976.0	17.2	12.8	-155.88	283.9	274.3	917.9	893.0	24.93	36.826		
5,200.0	5,137.4	5,091.9	5,072.7	17.6	13.1	-155.83	290.4	282.3	941.0	915.5	25.47	36.941		
5,300.0	5,235.9	5,189.3	5,169.6	18.0	13.4	-155.86	297.0	290.3	963.6	937.6	26.04	37.004		
5,400.0	5,334.8	5,307.5	5,287.2	18.3	13.7	-155.92	304.1	298.9	982.8	956.2	26.60	36.947		
5,500.0	5,434.2	5,434.6	5,414.1	18.5	13.9	-156.07	308.3	304.0	996.2	969.2	27.07	36.801		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Tarin 32Y-314
Project:	SEC.32-T4N-R66W	TVD Reference:	WELL @ 4791.0ft (RKB - 15')
Reference Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	MD Reference:	WELL @ 4791.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Tarin 32Y-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #3 (12-18-14)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference														
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Semi Major Axis Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	0.00	120.2	0.0	120.2					
100.0	100.0	99.0	99.0	0.1	0.1	0.00	120.2	0.0	120.2	120.0	0.22	537.569		
200.0	200.0	199.0	199.0	0.3	0.3	0.00	120.2	0.0	120.2	119.6	0.67	178.892		
300.0	300.0	299.0	299.0	0.6	0.6	0.00	120.2	0.0	120.2	119.1	1.12	107.192		
400.0	400.0	399.0	399.0	0.8	0.8	0.00	120.2	0.0	120.2	118.7	1.57	76.522		
500.0	500.0	499.0	499.0	1.0	1.0	0.00	120.2	0.0	120.2	118.2	2.02	59.498		
600.0	600.0	599.0	599.0	1.2	1.2	0.00	120.2	0.0	120.2	117.8	2.47	48.670 CC, ES		
700.0	700.0	695.3	695.3	1.5	1.5	0.30	121.7	0.6	121.7	118.8	2.91	41.814		
800.0	800.0	791.4	791.2	1.7	1.7	1.19	126.1	2.6	126.3	123.0	3.36	37.649		
900.0	900.0	887.0	886.5	1.9	1.9	2.52	133.3	5.9	134.0	130.2	3.80	35.262		
1,000.0	1,000.0	982.0	980.9	2.1	2.1	4.14	143.4	10.4	145.0	140.7	4.25	34.109		
1,100.0	1,100.0	1,079.9	1,077.8	2.3	2.4	-150.76	155.9	15.9	159.6	154.9	4.69	34.020 SF		
1,200.0	1,199.8	1,178.3	1,175.2	2.5	2.7	-149.98	168.4	21.5	177.4	172.3	5.10	34.759		
1,300.0	1,299.5	1,276.1	1,272.1	2.7	3.0	-149.80	180.9	27.1	198.1	192.6	5.52	35.900		
1,400.0	1,398.7	1,373.2	1,368.3	2.9	3.3	-150.04	193.3	32.7	221.8	215.9	5.94	37.342		
1,500.0	1,497.5	1,469.6	1,463.7	3.2	3.6	-150.57	205.6	38.1	248.5	242.1	6.37	39.025		
1,600.0	1,595.9	1,565.3	1,558.5	3.5	3.9	-151.41	217.8	43.6	277.1	270.3	6.82	40.613		
1,700.0	1,694.2	1,661.0	1,653.2	3.8	4.2	-152.13	230.0	49.1	305.8	298.5	7.29	41.952		
1,800.0	1,792.6	1,756.7	1,748.0	4.1	4.5	-152.73	242.2	54.5	334.6	326.8	7.77	43.082		
1,900.0	1,891.0	1,852.5	1,842.8	4.5	4.8	-153.24	254.4	60.0	363.4	355.1	8.25	44.047		
2,000.0	1,989.4	1,948.2	1,937.6	4.8	5.1	-153.67	266.6	65.4	392.2	383.4	8.74	44.878		
2,100.0	2,087.7	2,043.9	2,032.4	5.2	5.4	-154.04	278.8	70.9	421.0	411.7	9.23	45.599		
2,200.0	2,186.1	2,139.6	2,127.2	5.6	5.8	-154.36	291.0	76.3	449.8	440.1	9.73	46.230		
2,300.0	2,284.5	2,235.4	2,222.0	5.9	6.1	-154.65	303.2	81.8	478.7	468.4	10.23	46.784		
2,400.0	2,382.9	2,331.1	2,316.7	6.3	6.4	-154.90	315.4	87.3	507.5	496.8	10.74	47.276		
2,500.0	2,481.2	2,426.8	2,411.5	6.7	6.7	-155.13	327.6	92.7	536.4	525.1	11.24	47.713		
2,600.0	2,579.6	2,522.5	2,506.3	7.1	7.0	-155.33	339.8	98.2	565.2	553.5	11.75	48.105		
2,700.0	2,678.0	2,618.3	2,601.1	7.5	7.4	-155.51	352.0	103.6	594.1	581.8	12.26	48.457		
2,800.0	2,776.4	2,714.0	2,695.9	7.9	7.7	-155.68	364.2	109.1	623.0	610.2	12.77	48.775		
2,900.0	2,874.8	2,809.7	2,790.7	8.3	8.0	-155.83	376.5	114.5	651.9	638.6	13.29	49.064		
3,000.0	2,973.1	2,905.4	2,885.5	8.7	8.3	-155.97	388.7	120.0	680.8	667.0	13.80	49.327		
3,100.0	3,071.5	3,001.2	2,980.2	9.1	8.6	-156.10	400.9	125.5	709.7	695.3	14.32	49.568		
3,200.0	3,169.9	3,096.9	3,075.0	9.5	9.0	-156.21	413.1	130.9	738.5	723.7	14.83	49.788		
3,300.0	3,268.3	3,192.6	3,169.8	9.9	9.3	-156.32	425.3	136.4	767.4	752.1	15.35	49.991		
3,400.0	3,366.6	3,288.3	3,264.6	10.3	9.6	-156.42	437.5	141.8	796.3	780.5	15.87	50.178		
3,500.0	3,465.0	3,384.1	3,359.4	10.7	9.9	-156.52	449.7	147.3	825.2	808.9	16.39	50.351		
3,600.0	3,563.4	3,479.8	3,454.2	11.1	10.3	-156.60	461.9	152.7	854.1	837.2	16.91	50.511		
3,700.0	3,661.8	3,575.5	3,549.0	11.5	10.6	-156.68	474.1	158.2	883.0	865.6	17.43	50.660		
3,800.0	3,760.1	3,671.2	3,643.7	11.9	10.9	-156.76	486.3	163.7	912.0	894.0	17.95	50.799		
3,900.0	3,858.5	3,767.0	3,738.5	12.3	11.2	-156.83	498.5	169.1	940.9	922.4	18.47	50.928		
4,000.0	3,956.9	3,862.7	3,833.3	12.7	11.5	-156.90	510.7	174.6	969.8	950.8	19.00	51.049		
4,100.0	4,055.3	3,958.4	3,928.1	13.1	11.9	-156.96	522.9	180.0	998.7	979.2	19.52	51.163		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Tarin 32Y-314
Project:	SEC.32-T4N-R66W	TVD Reference:	WELL @ 4791.0ft (RKB - 15')
Reference Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	MD Reference:	WELL @ 4791.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Tarin 32Y-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #3 (12-18-14)	Offset TVD Reference:	Offset Datum

Offset Design Tarin 32X-HZ Pad Sec.32-T4N-R66W - Tarin 32Y-214 - Wellbore #1 - Plan #3 (12-18-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	29.1	0.0	29.2				
100.0	100.0	99.0	99.0	0.1	0.1	0.00	0.00	29.1	0.0	29.1	28.9	0.22	130.278	
200.0	200.0	199.0	199.0	0.3	0.3	0.00	0.00	29.1	0.0	29.1	28.5	0.67	43.354	
300.0	300.0	299.0	299.0	0.6	0.6	0.00	0.00	29.1	0.0	29.1	28.0	1.12	25.978	
400.0	400.0	399.0	399.0	0.8	0.8	0.00	0.00	29.1	0.0	29.1	27.6	1.57	18.545	
500.0	500.0	499.0	499.0	1.0	1.0	0.00	0.00	29.1	0.0	29.1	27.1	2.02	14.419	
600.0	600.0	599.0	599.0	1.2	1.2	0.00	0.00	29.1	0.0	29.1	26.7	2.47	11.795	
700.0	700.0	699.0	699.0	1.5	1.5	0.00	0.00	29.1	0.0	29.1	26.2	2.92	9.979	
800.0	800.0	799.0	799.0	1.7	1.7	0.00	0.00	29.1	0.0	29.1	25.8	3.37	8.648	
900.0	900.0	899.0	899.0	1.9	1.9	0.00	0.00	29.1	0.0	29.1	25.3	3.82	7.630	
1,000.0	1,000.0	999.0	999.0	2.1	2.1	0.00	0.00	29.1	0.0	29.1	24.9	4.27	6.826 CC	
1,100.0	1,100.0	1,099.0	1,099.0	2.3	2.4	-157.72		29.1	0.0	30.7	26.1	4.69	6.555	
1,200.0	1,199.8	1,198.8	1,198.8	2.5	2.6	-160.88		29.1	0.0	35.6	30.6	5.09	7.003	
1,300.0	1,299.5	1,298.5	1,298.5	2.7	2.8	-163.61		27.7	0.9	42.4	37.0	5.47	7.760	
1,400.0	1,398.7	1,401.0	1,400.9	2.9	3.0	-164.93		23.2	3.8	49.4	43.6	5.82	8.485	
1,500.0	1,497.5	1,502.5	1,501.9	3.2	3.2	-165.34		15.8	8.7	56.6	50.4	6.20	9.135	
1,600.0	1,595.9	1,603.3	1,602.0	3.5	3.4	-165.01		5.7	15.3	63.1	56.5	6.60	9.553	
1,700.0	1,694.2	1,703.1	1,701.1	3.8	3.6	-164.58		-4.8	22.1	69.1	62.1	7.03	9.827	
1,800.0	1,792.6	1,802.9	1,800.1	4.1	3.9	-164.22		-15.2	28.9	75.1	67.7	7.48	10.052	
1,900.0	1,891.0	1,902.8	1,899.1	4.5	4.1	-163.91		-25.6	35.7	81.2	73.3	7.93	10.237	
2,000.0	1,889.4	2,002.6	1,998.2	4.8	4.4	-163.64		-36.1	42.5	87.2	78.8	8.40	10.390	
2,100.0	2,087.7	2,102.4	2,097.2	5.2	4.7	-163.41		-46.5	49.3	93.3	84.4	8.87	10.517	
2,200.0	2,186.1	2,202.2	2,196.2	5.6	5.0	-163.21		-57.0	56.1	99.3	90.0	9.35	10.623	
2,300.0	2,284.5	2,302.0	2,295.3	5.9	5.2	-163.03		-67.4	62.9	105.4	95.5	9.84	10.712	
2,400.0	2,382.9	2,401.8	2,394.3	6.3	5.5	-162.87		-77.8	69.7	111.4	101.1	10.33	10.787	
2,500.0	2,481.2	2,501.7	2,493.3	6.7	5.8	-162.72		-88.3	76.5	117.5	106.6	10.82	10.851	
2,600.0	2,579.6	2,601.5	2,592.4	7.1	6.1	-162.59		-98.7	83.3	123.5	112.2	11.33	10.906	
2,700.0	2,678.0	2,701.3	2,691.4	7.5	6.4	-162.48		-109.1	90.1	129.6	117.7	11.83	10.952	
2,800.0	2,776.4	2,801.1	2,790.5	7.9	6.7	-162.37		-119.6	96.9	135.6	123.3	12.34	10.992	
2,900.0	2,874.8	2,900.9	2,889.5	8.3	7.1	-162.27		-130.0	103.7	141.7	128.8	12.85	11.027	
3,000.0	2,973.1	3,000.7	2,988.5	8.7	7.4	-162.18		-140.5	110.5	147.7	134.4	13.36	11.056	
3,100.0	3,071.5	3,100.6	3,087.6	9.1	7.7	-162.10		-150.9	117.3	153.8	139.9	13.87	11.082	
3,200.0	3,169.9	3,200.4	3,186.6	9.5	8.0	-162.02		-161.3	124.1	159.8	145.4	14.39	11.105	
3,300.0	3,268.3	3,300.2	3,285.6	9.9	8.3	-161.95		-171.8	130.9	165.9	151.0	14.91	11.124	
3,400.0	3,366.6	3,400.0	3,384.7	10.3	8.6	-161.88		-182.2	137.7	171.9	156.5	15.43	11.142	
3,500.0	3,465.0	3,499.8	3,483.7	10.7	8.9	-161.82		-192.7	144.5	178.0	162.0	15.95	11.157	
3,600.0	3,563.4	3,599.6	3,582.7	11.1	9.3	-161.77		-203.1	151.3	184.0	167.6	16.48	11.170	
3,700.0	3,661.8	3,699.5	3,681.8	11.5	9.6	-161.71		-213.5	158.1	190.1	173.1	17.00	11.182	
3,800.0	3,760.1	3,799.3	3,780.8	11.9	9.9	-161.66		-224.0	164.9	196.1	178.6	17.52	11.192	
3,900.0	3,858.5	3,899.1	3,879.8	12.3	10.2	-161.61		-234.4	171.7	202.2	184.1	18.05	11.201	
4,000.0	3,956.9	3,998.9	3,978.9	12.7	10.5	-161.57		-244.8	178.5	208.2	189.7	18.58	11.209	
4,100.0	4,055.3	4,098.7	4,077.9	13.1	10.9	-161.53		-255.3	185.3	214.3	195.2	19.11	11.216	
4,200.0	4,153.7	4,198.5	4,177.0	13.5	11.2	-161.49		-265.7	192.1	220.3	200.7	19.63	11.222	
4,300.0	4,252.0	4,298.4	4,276.0	14.0	11.5	-161.45		-276.2	198.9	226.4	206.2	20.16	11.228	
4,400.0	4,350.4	4,398.2	4,375.0	14.4	11.8	-161.41		-286.6	205.7	232.5	211.8	20.69	11.232	
4,500.0	4,448.8	4,498.0	4,474.1	14.8	12.2	-161.38		-297.0	212.5	238.5	217.3	21.23	11.237	
4,600.0	4,547.2	4,597.8	4,573.1	15.2	12.5	-161.35		-307.5	219.3	244.6	222.8	21.76	11.241	
4,700.0	4,645.5	4,697.6	4,672.1	15.6	12.8	-161.32		-317.9	226.1	250.6	228.3	22.29	11.244	
4,800.0	4,743.9	4,797.4	4,771.2	16.0	13.1	-161.29		-328.4	232.9	256.7	233.8	22.82	11.247	
4,900.0	4,842.3	4,897.3	4,870.2	16.4	13.5	-161.26		-338.8	239.7	262.7	239.4	23.35	11.250	
5,000.0	4,940.7	4,997.1	4,969.2	16.8	13.8	-161.23		-349.2	246.5	268.8	244.9	23.89	11.252	

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 Tarin 32Y-314
Project:	SEC.32-T4N-R66W	TVD Reference:	WELL @ 4791.0ft (RKB - 15')
Reference Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	MD Reference:	WELL @ 4791.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Tarin 32Y-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #3 (12-18-14)	Offset TVD Reference:	Offset Datum

Offset Design		Tarin 32X-HZ Pad Sec.32-T4N-R66W - Tarin 32Y-214 - Wellbore #1 - Plan #3 (12-18-14)											Offset Site Error:		0.0 ft
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance								
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)				
5,100.0	5,039.0	5,096.9	5,068.3	17.2	14.1	-161.21	-359.7	253.3	274.8	250.4	24.42	11.254			
5,200.0	5,137.4	5,196.7	5,167.3	17.6	14.4	-161.18	-370.1	260.1	280.9	255.9	24.96	11.256			
5,300.0	5,235.9	5,296.5	5,266.4	18.0	14.8	-161.15	-380.6	266.9	286.5	261.0	25.50	11.238			
5,400.0	5,334.8	5,396.5	5,365.5	18.3	15.1	-160.92	-391.0	273.8	289.3	263.2	26.02	11.117			
5,500.0	5,434.2	5,496.5	5,464.7	18.5	15.4	-160.44	-401.5	280.6	288.7	262.2	26.54	10.878			
5,600.0	5,533.9	5,596.3	5,563.8	18.7	15.7	-159.70	-411.9	287.4	284.9	257.8	27.06	10.529			
5,700.0	5,633.8	5,694.4	5,661.1	18.9	16.1	-158.69	-422.1	294.0	277.9	250.4	27.57	10.080			
5,800.0	5,733.8	5,786.4	5,752.6	19.0	16.3	-1.24	-430.0	299.2	269.9	236.1	33.75	7.996			
5,900.0	5,833.8	5,878.9	5,844.9	19.1	16.5	-0.50	-435.4	302.7	263.9	230.0	33.97	7.769			
6,000.0	5,933.8	5,971.6	5,937.6	19.2	16.6	-0.08	-438.4	304.6	260.7	226.5	34.21	7.622			
6,100.0	6,033.8	6,066.9	6,032.8	19.4	16.8	0.00	-439.0	305.0	260.1	225.6	34.49	7.543			
6,200.0	6,133.8	6,166.9	6,132.8	19.5	16.9	0.00	-439.0	305.0	260.1	225.4	34.78	7.481			
6,300.0	6,233.8	6,266.9	6,232.8	19.6	17.1	0.00	-439.0	305.0	260.1	225.1	35.06	7.419			
6,361.3	6,295.1	6,328.1	6,294.1	19.7	17.2	0.00	-439.0	305.0	260.1	224.9	35.24	7.382			
6,400.0	6,333.8	6,366.9	6,332.8	19.8	17.2	-0.11	-439.0	304.5	260.1	224.8	35.36	7.356			
6,500.0	6,433.8	6,465.8	6,431.1	19.9	17.3	87.77	-439.0	294.5	260.3	230.1	30.26	8.604			
6,600.0	6,533.3	6,562.8	6,525.5	20.0	17.4	84.92	-439.0	272.5	261.2	231.1	30.10	8.678			
6,700.0	6,630.6	6,658.3	6,615.0	20.0	17.4	82.20	-439.0	239.2	262.6	232.7	29.91	8.780			
6,800.0	6,724.1	6,752.4	6,698.4	20.0	17.4	79.64	-439.0	195.8	264.5	234.7	29.76	8.888			
6,900.0	6,812.2	6,845.3	6,775.0	20.0	17.3	77.30	-439.0	143.3	266.7	237.0	29.72	8.974			
7,000.0	6,893.4	6,937.1	6,843.8	20.0	17.3	75.20	-439.0	82.6	269.1	239.3	29.88	9.006			
7,100.0	6,966.4	7,027.9	6,904.2	19.9	17.3	73.37	-439.0	14.9	271.6	241.2	30.33	8.953			
7,200.0	7,029.8	7,118.0	6,955.8	19.9	17.2	71.81	-439.0	-58.9	273.9	242.7	31.17	8.788			
7,300.0	7,082.5	7,207.4	6,998.0	19.9	17.2	70.54	-439.0	-137.6	275.9	243.5	32.45	8.503			
7,400.0	7,123.7	7,296.2	7,030.6	20.0	18.4	69.57	-439.0	-220.2	277.6	243.4	34.24	8.108			
7,500.0	7,152.7	7,384.7	7,053.3	20.5	19.8	68.90	-439.0	-305.7	278.9	242.3	36.53	7.633			
7,600.0	7,169.0	7,473.0	7,066.0	22.0	21.4	68.52	-439.0	-393.0	279.6	240.3	39.27	7.118			
7,700.0	7,172.6	7,563.9	7,068.8	23.8	23.1	68.45	-439.0	-483.8	279.7	237.2	42.48	6.584			
7,800.0	7,172.0	7,663.9	7,068.6	25.9	25.2	68.51	-439.0	-583.8	279.6	233.2	46.34	6.033			
7,900.0	7,171.5	7,763.9	7,068.4	28.0	27.4	68.57	-439.0	-683.8	279.5	229.0	50.46	5.539			
8,000.0	7,171.0	7,863.9	7,068.2	30.3	29.7	68.63	-439.0	-783.8	279.3	224.6	54.77	5.100			
8,100.0	7,170.5	7,963.9	7,068.0	32.7	32.1	68.69	-439.0	-883.8	279.2	220.0	59.25	4.713			
8,200.0	7,169.9	8,063.9	7,067.8	35.1	34.6	68.75	-439.0	-983.8	279.1	215.3	63.85	4.372			
8,300.0	7,169.4	8,163.9	7,067.6	37.5	37.1	68.81	-439.0	-1,083.8	279.0	210.4	68.55	4.070			
8,400.0	7,168.9	8,263.9	7,067.4	40.1	39.6	68.87	-439.0	-1,183.8	278.9	205.5	73.34	3.803			
8,500.0	7,168.4	8,363.9	7,067.1	42.6	42.2	68.93	-439.0	-1,283.8	278.8	200.6	78.20	3.565			
8,600.0	7,167.8	8,463.9	7,066.9	45.2	44.8	68.99	-439.0	-1,383.8	278.7	195.6	83.11	3.353			
8,700.0	7,167.3	8,563.9	7,066.7	47.8	47.4	69.05	-439.0	-1,483.8	278.5	190.5	88.07	3.163			
8,800.0	7,166.8	8,663.9	7,066.5	50.4	50.0	69.11	-439.0	-1,583.8	278.4	185.4	93.07	2.992			
8,900.0	7,166.3	8,763.9	7,066.3	53.1	52.7	69.17	-439.0	-1,683.8	278.3	180.2	98.11	2.837			
9,000.0	7,165.7	8,863.9	7,066.1	55.7	55.4	69.23	-439.0	-1,783.8	278.2	175.0	103.18	2.696			
9,100.0	7,165.2	8,963.9	7,065.9	58.4	58.0	69.29	-439.0	-1,883.8	278.1	169.8	108.28	2.568			
9,200.0	7,164.7	9,063.9	7,065.7	61.1	60.7	69.35	-439.0	-1,983.8	278.0	164.6	113.40	2.451			
9,300.0	7,164.2	9,163.9	7,065.5	63.8	63.4	69.41	-439.0	-2,083.8	277.9	159.3	118.55	2.344			
9,400.0	7,163.7	9,263.9	7,065.3	66.5	66.2	69.47	-439.0	-2,183.8	277.8	154.1	123.71	2.245			
9,500.0	7,163.1	9,363.9	7,065.1	69.2	68.9	69.54	-439.0	-2,283.8	277.7	148.8	128.89	2.154			
9,600.0	7,162.6	9,463.9	7,064.8	71.9	71.6	69.60	-439.0	-2,383.8	277.6	143.5	134.08	2.070			
9,700.0	7,162.1	9,563.9	7,064.6	74.6	74.3	69.66	-439.0	-2,483.8	277.4	138.1	139.29	1.992			
9,800.0	7,161.6	9,663.9	7,064.4	77.4	77.1	69.72	-439.0	-2,583.8	277.3	132.8	144.52	1.919			
9,900.0	7,161.0	9,763.9	7,064.2	80.1	79.8	69.78	-439.0	-2,683.8	277.2	127.5	149.75	1.851			
10,000.0	7,160.5	9,863.9	7,064.0	82.8	82.6	69.84	-439.0	-2,783.8	277.1	122.1	155.00	1.788			

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 Tarin 32Y-314
Project:	SEC.32-T4N-R66W	TVD Reference:	WELL @ 4791.0ft (RKB - 15')
Reference Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	MD Reference:	WELL @ 4791.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Tarin 32Y-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #3 (12-18-14)	Offset TVD Reference:	Offset Datum

Offset Design Tarin 32X-HZ Pad Sec.32-T4N-R66W - Tarin 32Y-214 - Wellbore #1 - Plan #3 (12-18-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,100.0	7,160.0	9,963.9	7,063.8	85.6	85.3	69.90		-439.0	-2,883.8	277.0	116.8	160.25	1.729	
10,200.0	7,159.5	10,063.9	7,063.6	88.3	88.1	69.96		-439.0	-2,983.8	276.9	111.4	165.52	1.673	
10,300.0	7,158.9	10,163.9	7,063.4	91.1	90.8	70.02		-439.0	-3,083.8	276.8	106.0	170.80	1.621	
10,400.0	7,158.4	10,263.9	7,063.2	93.8	93.6	70.08		-439.0	-3,183.8	276.7	100.6	176.08	1.571	
10,500.0	7,157.9	10,363.9	7,063.0	96.6	96.4	70.15		-439.0	-3,283.8	276.6	95.2	181.38	1.525	
10,600.0	7,157.4	10,463.9	7,062.7	99.4	99.1	70.21		-439.0	-3,383.8	276.5	89.8	186.68	1.481	Level 3
10,700.0	7,156.8	10,563.9	7,062.5	102.1	101.9	70.27		-439.0	-3,483.8	276.4	84.4	191.99	1.439	Level 3
10,800.0	7,156.3	10,663.9	7,062.3	104.9	104.7	70.33		-439.0	-3,583.8	276.3	79.0	197.31	1.400	Level 3
10,900.0	7,155.8	10,763.9	7,062.1	107.7	107.4	70.39		-439.0	-3,683.8	276.2	73.5	202.63	1.363	Level 3
11,000.0	7,155.3	10,863.9	7,061.9	110.4	110.2	70.45		-439.0	-3,783.8	276.0	68.1	207.96	1.327	Level 3
11,100.0	7,154.8	10,963.9	7,061.7	113.2	113.0	70.51		-439.0	-3,883.8	275.9	62.6	213.30	1.294	Level 3
11,200.0	7,154.2	11,063.9	7,061.5	116.0	115.8	70.58		-439.0	-3,983.8	275.8	57.2	218.64	1.262	Level 3
11,300.0	7,153.7	11,163.9	7,061.3	118.8	118.5	70.64		-439.0	-4,083.8	275.7	51.7	223.99	1.231	Level 2
11,400.0	7,153.2	11,263.9	7,061.1	121.5	121.3	70.70		-439.0	-4,183.8	275.6	46.3	229.35	1.202	Level 2
11,500.0	7,152.7	11,363.9	7,060.9	124.3	124.1	70.76		-439.0	-4,283.8	275.5	40.8	234.71	1.174	Level 2
11,600.0	7,152.1	11,463.9	7,060.7	127.1	126.9	70.82		-439.0	-4,383.8	275.4	35.4	240.07	1.147	Level 2
11,700.0	7,151.6	11,563.9	7,060.4	129.9	129.7	70.88		-439.0	-4,483.8	275.3	29.9	245.45	1.122	Level 2
11,800.0	7,151.1	11,663.9	7,060.2	132.7	132.4	70.95		-439.0	-4,583.8	275.2	24.4	250.82	1.097	Level 2
11,900.0	7,150.6	11,763.9	7,060.0	135.4	135.2	71.01		-439.0	-4,683.8	275.1	18.9	256.21	1.074	Level 2
12,000.0	7,150.0	11,863.9	7,059.8	138.2	138.0	71.07		-439.0	-4,783.8	275.0	13.4	261.59	1.051	Level 2
12,100.0	7,149.5	11,963.8	7,059.6	141.0	140.8	71.13		-439.0	-4,883.8	274.9	7.9	266.98	1.030	Level 2
12,200.0	7,149.0	12,063.8	7,059.4	143.8	143.6	71.19		-439.0	-4,983.8	274.8	2.4	272.38	1.009	Level 2
12,300.0	7,148.5	12,163.8	7,059.2	146.6	146.4	71.25		-439.0	-5,083.8	274.7	-3.1	277.78	0.989	Level 1
12,400.0	7,147.9	12,263.8	7,059.0	149.4	149.2	71.32		-439.0	-5,183.8	274.6	-8.6	283.19	0.970	Level 1
12,500.0	7,147.4	12,363.8	7,058.8	152.1	152.0	71.38		-439.0	-5,283.8	274.5	-14.1	288.60	0.951	Level 1
12,600.0	7,146.9	12,463.8	7,058.6	154.9	154.7	71.44		-439.0	-5,383.8	274.4	-19.6	294.02	0.933	Level 1
12,700.0	7,146.4	12,563.8	7,058.3	157.7	157.5	71.50		-439.0	-5,483.8	274.3	-25.1	299.43	0.916	Level 1
12,800.0	7,145.9	12,663.8	7,058.1	160.5	160.3	71.57		-439.0	-5,583.8	274.2	-30.6	304.86	0.899	Level 1
12,900.0	7,145.3	12,763.8	7,057.9	163.3	163.1	71.63		-439.0	-5,683.8	274.1	-36.2	310.29	0.883	Level 1
13,000.0	7,144.8	12,863.8	7,057.7	166.1	165.9	71.69		-439.0	-5,783.8	274.0	-41.7	315.72	0.868	Level 1
13,100.0	7,144.3	12,963.8	7,057.5	168.9	168.7	71.75		-439.0	-5,883.8	273.9	-47.2	321.16	0.853	Level 1
13,200.0	7,143.8	13,063.8	7,057.3	171.7	171.5	71.82		-439.0	-5,983.8	273.8	-52.8	326.60	0.838	Level 1
13,300.0	7,143.2	13,163.8	7,057.1	174.5	174.3	71.88		-439.0	-6,083.8	273.7	-58.3	332.04	0.824	Level 1
13,400.0	7,142.7	13,263.8	7,056.9	177.3	177.1	71.94		-439.0	-6,183.8	273.6	-63.9	337.49	0.811	Level 1
13,500.0	7,142.2	13,363.8	7,056.7	180.1	179.9	72.00		-439.0	-6,283.8	273.5	-69.4	342.94	0.798	Level 1
13,600.0	7,141.7	13,463.8	7,056.5	182.9	182.7	72.07		-439.0	-6,383.8	273.4	-75.0	348.40	0.785	Level 1
13,700.0	7,141.1	13,563.8	7,056.3	185.6	185.5	72.13		-439.0	-6,483.8	273.3	-80.5	353.86	0.772	Level 1
13,800.0	7,140.6	13,663.8	7,056.0	188.4	188.3	72.19		-439.0	-6,583.8	273.2	-86.1	359.32	0.760	Level 1
13,900.0	7,140.1	13,763.8	7,055.8	191.2	191.1	72.25		-439.0	-6,683.8	273.1	-91.7	364.79	0.749	Level 1
14,000.0	7,139.6	13,863.8	7,055.6	194.0	193.9	72.32		-439.0	-6,783.8	273.0	-97.2	370.26	0.737	Level 1
14,100.0	7,139.0	13,963.8	7,055.4	196.8	196.7	72.38		-439.0	-6,883.8	272.9	-102.8	375.74	0.726	Level 1
14,200.0	7,138.5	14,063.8	7,055.2	199.6	199.5	72.44		-439.0	-6,983.8	272.9	-108.4	381.22	0.716	Level 1
14,299.4	7,138.0	14,163.2	7,055.0	202.4	202.2	72.50		-439.0	-7,083.1	272.8	-113.9	386.66	0.705	Level 1, ES, SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Tarin 32Y-314
Project:	SEC.32-T4N-R66W	TVD Reference:	WELL @ 4791.0ft (RKB - 15')
Reference Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	MD Reference:	WELL @ 4791.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Tarin 32Y-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #3 (12-18-14)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference														
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	180.00	180.00	-29.1	0.0	29.1				
100.0	100.0	100.0	100.0	0.1	0.1	180.00	180.00	-29.1	0.0	29.1	28.9	0.22	129.683	
200.0	200.0	200.0	200.0	0.3	0.3	180.00	180.00	-29.1	0.0	29.1	28.5	0.67	43.228	
300.0	300.0	300.0	300.0	0.6	0.6	180.00	180.00	-29.1	0.0	29.1	28.0	1.12	25.937	
400.0	400.0	400.0	400.0	0.8	0.8	180.00	180.00	-29.1	0.0	29.1	27.6	1.57	18.526	
500.0	500.0	500.0	500.0	1.0	1.0	180.00	180.00	-29.1	0.0	29.1	27.1	2.02	14.409 CC	
600.0	600.0	599.0	599.0	1.2	1.2	178.89	178.89	-30.8	0.6	30.8	28.3	2.45	12.586	
700.0	700.0	697.8	697.6	1.5	1.4	176.16	176.16	-35.5	2.4	35.7	32.8	2.86	12.492	
800.0	800.0	796.1	795.6	1.7	1.6	173.00	173.00	-43.5	5.3	44.0	40.7	3.29	13.390	
900.0	900.0	893.7	892.5	1.9	1.8	170.18	170.18	-54.5	9.4	55.8	52.0	3.73	14.939	
1,000.0	1,000.0	991.3	988.9	2.1	2.1	167.94	167.94	-68.3	14.6	70.7	66.5	4.20	16.861	
1,100.0	1,100.0	1,090.3	1,086.6	2.3	2.4	10.14	10.14	-83.0	20.1	84.8	80.2	4.57	18.530	
1,200.0	1,199.8	1,189.7	1,184.8	2.5	2.8	9.49	9.49	-97.8	25.6	95.4	90.4	4.97	19.203	
1,300.0	1,299.5	1,289.4	1,283.3	2.7	3.1	9.29	9.29	-112.6	31.1	102.6	97.2	5.37	19.091	
1,400.0	1,398.7	1,389.3	1,382.0	2.9	3.5	9.42	9.42	-127.4	36.6	106.3	100.6	5.79	18.366	
1,500.0	1,497.5	1,489.3	1,480.7	3.2	3.8	9.86	9.86	-142.3	42.2	106.7	100.5	6.22	17.159	
1,600.0	1,595.9	1,589.3	1,579.4	3.5	4.2	10.52	10.52	-157.1	47.7	104.8	98.1	6.67	15.704	
1,700.0	1,694.2	1,689.3	1,678.1	3.8	4.6	11.22	11.22	-172.0	53.2	102.8	95.7	7.14	14.399	
1,800.0	1,792.6	1,789.3	1,776.8	4.1	4.9	11.94	11.94	-186.8	58.7	100.9	93.3	7.62	13.242	
1,900.0	1,891.0	1,889.2	1,875.5	4.5	5.3	12.69	12.69	-201.7	64.3	99.0	90.9	8.11	12.209	
2,000.0	1,889.4	1,889.2	1,874.2	4.8	5.7	13.47	13.47	-216.5	69.8	97.1	88.5	8.60	11.284	
2,100.0	2,087.7	2,089.2	2,072.9	5.2	6.0	14.27	14.27	-231.4	75.3	95.2	86.1	9.11	10.453	
2,200.0	2,186.1	2,189.2	2,171.6	5.6	6.4	15.12	15.12	-246.2	80.9	93.3	83.7	9.62	9.702	
2,300.0	2,284.5	2,289.1	2,270.4	5.9	6.8	15.99	15.99	-261.1	86.4	91.5	81.3	10.14	9.021	
2,400.0	2,382.9	2,389.1	2,369.1	6.3	7.2	16.90	16.90	-275.9	91.9	89.7	79.0	10.67	8.401	
2,500.0	2,481.2	2,489.1	2,467.8	6.7	7.5	17.85	17.85	-290.7	97.5	87.9	76.7	11.22	7.835	
2,600.0	2,579.6	2,589.0	2,566.5	7.1	7.9	18.84	18.84	-305.6	103.0	86.1	74.3	11.77	7.317	
2,700.0	2,678.0	2,689.0	2,665.2	7.5	8.3	19.87	19.87	-320.4	108.5	84.4	72.0	12.33	6.841	
2,800.0	2,776.4	2,789.0	2,763.9	7.9	8.7	20.94	20.94	-335.3	114.1	82.7	69.7	12.91	6.403	
2,900.0	2,874.8	2,889.0	2,862.6	8.3	9.0	22.06	22.06	-350.1	119.6	81.0	67.5	13.50	5.998	
3,000.0	2,973.1	2,988.9	2,961.3	8.7	9.4	23.22	23.22	-365.0	125.1	79.3	65.2	14.10	5.624	
3,100.0	3,071.5	3,088.9	3,060.0	9.1	9.8	24.43	24.43	-379.8	130.6	77.7	63.0	14.72	5.277	
3,200.0	3,169.9	3,188.9	3,158.7	9.5	10.2	25.70	25.70	-394.7	136.2	76.1	60.8	15.36	4.955	
3,300.0	3,268.3	3,288.9	3,257.5	9.9	10.6	27.01	27.01	-409.5	141.7	74.6	58.6	16.02	4.655	
3,400.0	3,366.6	3,388.8	3,356.2	10.3	10.9	28.38	28.38	-424.4	147.2	73.1	56.4	16.70	4.376	
3,500.0	3,465.0	3,488.8	3,454.9	10.7	11.3	29.81	29.81	-439.2	152.8	71.6	54.2	17.40	4.116	
3,600.0	3,563.4	3,588.8	3,553.6	11.1	11.7	31.30	31.30	-454.1	158.3	70.2	52.1	18.12	3.874	
3,700.0	3,661.8	3,688.8	3,652.3	11.5	12.1	32.84	32.84	-468.9	163.8	68.8	50.0	18.87	3.649	
3,800.0	3,760.1	3,788.7	3,751.0	11.9	12.5	34.45	34.45	-483.8	169.4	67.5	47.9	19.64	3.438	
3,900.0	3,858.5	3,888.7	3,849.7	12.3	12.8	36.12	36.12	-498.6	174.9	66.3	45.8	20.44	3.242	
4,000.0	3,956.9	3,988.7	3,948.4	12.7	13.2	37.85	37.85	-513.4	180.4	65.1	43.8	21.27	3.060	
4,100.0	4,055.3	4,088.6	4,047.1	13.1	13.6	39.65	39.65	-528.3	186.0	64.0	41.8	22.13	2.890	
4,200.0	4,153.7	4,188.6	4,145.8	13.5	14.0	41.51	41.51	-543.1	191.5	62.9	39.9	23.01	2.733	
4,300.0	4,252.0	4,288.6	4,244.6	14.0	14.4	43.43	43.43	-558.0	197.0	61.9	38.0	23.93	2.587	
4,400.0	4,350.4	4,388.6	4,343.3	14.4	14.7	45.41	45.41	-572.8	202.6	61.0	36.1	24.87	2.451	
4,500.0	4,448.8	4,488.5	4,442.0	14.8	15.1	47.45	47.45	-587.7	208.1	60.1	34.3	25.83	2.326	
4,600.0	4,547.2	4,588.5	4,540.7	15.2	15.5	49.54	49.54	-602.5	213.6	59.3	32.5	26.83	2.211	
4,700.0	4,645.5	4,688.5	4,639.4	15.6	15.9	51.69	51.69	-617.4	219.1	58.6	30.8	27.84	2.106	
4,800.0	4,743.9	4,788.5	4,738.1	16.0	16.3	53.89	53.89	-632.2	224.7	58.0	29.1	28.88	2.009	
4,900.0	4,842.3	4,888.4	4,836.8	16.4	16.6	56.13	56.13	-647.1	230.2	57.5	27.6	29.93	1.921	
5,000.0	4,940.7	4,988.4	4,935.5	16.8	17.0	58.41	58.41	-661.9	235.7	57.1	26.1	30.99	1.841	

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 Tarin 32Y-314
Project:	SEC.32-T4N-R66W	TVD Reference:	WELL @ 4791.0ft (RKB - 15')
Reference Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	MD Reference:	WELL @ 4791.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Tarin 32Y-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #3 (12-18-14)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Tarin 32X-HZ Pad Sec.32-T4N-R66W - Tarin 32Y-404 - Wellbore #1 - Plan #2 (7-15-14)													
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)					
5,100.0	5,039.0	5,088.4	5,034.2	17.2	17.4	60.72	-676.8	241.3	56.7	24.7	32.07	1.769	
5,200.0	5,137.4	5,188.3	5,132.9	17.6	17.8	63.05	-691.6	246.8	56.5	23.3	33.14	1.704	
5,250.6	5,187.2	5,238.9	5,182.9	17.8	18.0	64.03	-699.1	249.6	56.5	22.8	33.64	1.679	
5,300.0	5,235.9	5,288.3	5,231.7	18.0	18.2	64.99	-706.4	252.3	56.5	22.4	34.13	1.656	
5,400.0	5,334.8	5,388.3	5,330.4	18.3	18.5	64.15	-721.3	257.9	57.9	23.3	34.62	1.672	
5,500.0	5,434.2	5,488.2	5,429.0	18.5	18.9	60.45	-736.1	263.4	60.9	26.3	34.61	1.760	
5,600.0	5,533.9	5,587.8	5,527.4	18.7	19.3	54.63	-750.9	268.9	66.1	32.0	34.10	1.939	
5,700.0	5,633.8	5,687.1	5,625.4	18.9	19.7	47.71	-765.7	274.4	74.3	41.0	33.21	2.236	
5,800.0	5,733.8	5,786.0	5,723.0	19.0	20.0	-162.81	-780.3	279.9	85.7	50.9	34.87	2.459	
5,900.0	5,833.8	5,884.7	5,820.5	19.1	20.4	-168.41	-795.0	285.3	98.8	62.4	36.39	2.715	
6,000.0	5,933.8	5,983.4	5,918.0	19.2	20.8	-172.68	-809.7	290.8	112.6	75.0	37.59	2.995	
6,100.0	6,033.8	6,085.1	6,018.5	19.4	21.1	-175.92	-823.9	296.1	126.1	87.5	38.54	3.271	
6,200.0	6,133.8	6,188.8	6,121.5	19.5	21.4	-178.01	-835.1	300.3	136.6	97.4	39.20	3.485	
6,300.0	6,233.8	6,293.3	6,225.6	19.6	21.6	-179.26	-842.8	303.1	144.0	104.3	39.70	3.627	
6,400.0	6,333.8	6,398.2	6,330.5	19.8	21.7	-179.89	-847.0	304.7	148.0	107.9	40.07	3.692	
6,500.0	6,433.8	6,501.6	6,433.8	19.9	21.9	-90.16	-847.8	305.0	148.7	117.2	31.55	4.713	
6,600.0	6,533.3	6,601.3	6,533.6	20.0	22.0	-93.76	-847.8	304.6	149.0	117.8	31.27	4.766	
6,700.0	6,630.6	6,702.6	6,634.3	20.0	22.1	-98.71	-847.8	294.8	150.5	119.7	30.81	4.885	
6,800.0	6,724.1	6,805.8	6,734.7	20.0	22.1	-103.44	-847.8	271.1	153.0	122.5	30.43	5.027	
6,900.0	6,812.2	6,910.8	6,832.6	20.0	22.1	-107.82	-847.8	233.4	156.3	126.2	30.14	5.186	
7,000.0	6,893.4	7,017.7	6,926.0	20.0	22.1	-111.75	-847.8	181.6	160.2	130.3	29.95	5.351	
7,100.0	6,966.4	7,126.4	7,012.6	19.9	22.1	-115.17	-847.8	116.1	164.5	134.6	29.87	5.506	
7,200.0	7,029.8	7,236.8	7,090.2	19.9	22.0	-118.04	-847.8	37.6	168.6	138.6	30.00	5.621	
7,300.0	7,082.5	7,348.7	7,156.5	19.9	22.0	-120.36	-847.8	-52.4	172.5	142.0	30.47	5.660	
7,400.0	7,123.7	7,462.0	7,209.4	20.0	22.0	-122.13	-847.8	-152.4	175.7	144.2	31.44	5.587	
7,500.0	7,152.7	7,576.2	7,247.3	20.5	22.3	-123.34	-847.8	-260.1	178.0	145.0	33.03	5.391	
7,600.0	7,169.0	7,691.1	7,268.7	22.0	23.1	-124.01	-847.8	-372.8	179.4	144.2	35.25	5.089	
7,700.0	7,172.6	7,802.3	7,273.6	23.8	24.7	-124.20	-847.8	-483.9	179.8	141.7	38.09	4.721	
7,800.0	7,172.0	7,902.3	7,273.8	25.9	26.6	-124.38	-847.8	-583.9	180.2	138.8	41.38	4.355	
7,900.0	7,171.5	8,002.3	7,274.0	28.0	28.7	-124.56	-847.8	-683.9	180.6	135.7	44.90	4.022	
8,000.0	7,171.0	8,102.3	7,274.1	30.3	30.9	-124.74	-847.8	-783.9	181.0	132.4	48.59	3.725	
8,100.0	7,170.5	8,202.3	7,274.3	32.7	33.2	-124.92	-847.8	-883.9	181.4	128.9	52.41	3.460	
8,200.0	7,169.9	8,302.3	7,274.4	35.1	35.5	-125.09	-847.8	-983.9	181.7	125.4	56.34	3.226	
8,300.0	7,169.4	8,402.3	7,274.6	37.5	38.0	-125.27	-847.8	-1,083.9	182.1	121.8	60.34	3.019	
8,400.0	7,168.9	8,502.3	7,274.7	40.1	40.5	-125.44	-847.8	-1,183.9	182.5	118.1	64.40	2.834	
8,500.0	7,168.4	8,602.3	7,274.9	42.6	43.0	-125.62	-847.8	-1,283.9	182.9	114.4	68.50	2.670	
8,600.0	7,167.8	8,702.3	7,275.1	45.2	45.5	-125.79	-847.8	-1,383.9	183.3	110.7	72.64	2.524	
8,700.0	7,167.3	8,802.3	7,275.2	47.8	48.1	-125.96	-847.8	-1,483.9	183.7	106.9	76.81	2.392	
8,800.0	7,166.8	8,902.3	7,275.4	50.4	50.7	-126.13	-847.8	-1,583.8	184.1	103.1	80.99	2.273	
8,900.0	7,166.3	9,002.3	7,275.5	53.1	53.3	-126.30	-847.8	-1,683.8	184.5	99.3	85.19	2.166	
9,000.0	7,165.7	9,102.3	7,275.7	55.7	56.0	-126.47	-847.8	-1,783.8	184.9	95.5	89.39	2.069	
9,100.0	7,165.2	9,202.3	7,275.8	58.4	58.6	-126.64	-847.8	-1,883.8	185.3	91.7	93.60	1.980	
9,200.0	7,164.7	9,302.3	7,276.0	61.1	61.3	-126.81	-847.8	-1,983.8	185.7	87.9	97.81	1.899	
9,300.0	7,164.2	9,402.3	7,276.2	63.8	64.0	-126.98	-847.8	-2,083.8	186.2	84.1	102.02	1.825	
9,400.0	7,163.7	9,502.3	7,276.3	66.5	66.7	-127.15	-847.8	-2,183.8	186.6	80.3	106.23	1.756	
9,500.0	7,163.1	9,602.3	7,276.5	69.2	69.4	-127.31	-847.8	-2,283.8	187.0	76.5	110.43	1.693	
9,600.0	7,162.6	9,702.3	7,276.6	71.9	72.1	-127.48	-847.8	-2,383.8	187.4	72.8	114.63	1.635	
9,700.0	7,162.1	9,802.3	7,276.8	74.6	74.8	-127.64	-847.8	-2,483.8	187.8	69.0	118.82	1.581	
9,800.0	7,161.6	9,902.3	7,276.9	77.4	77.5	-127.81	-847.8	-2,583.8	188.2	65.2	123.00	1.530	
9,900.0	7,161.0	10,002.3	7,277.1	80.1	80.2	-127.97	-847.8	-2,683.8	188.6	61.5	127.17	1.483 Level 3	
10,000.0	7,160.5	10,102.3	7,277.3	82.8	83.0	-128.13	-847.8	-2,783.8	189.1	57.7	131.33	1.440 Level 3	

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 Tarin 32Y-314
Project:	SEC.32-T4N-R66W	TVD Reference:	WELL @ 4791.0ft (RKB - 15')
Reference Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	MD Reference:	WELL @ 4791.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Tarin 32Y-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #3 (12-18-14)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference														
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
10,100.0	7,160.0	10,202.3	7,277.4	85.6	85.7	-128.29	-128.29	-847.8	-2,883.8	189.5	54.0	135.48	1.399	Level 3
10,200.0	7,159.5	10,302.3	7,277.6	88.3	88.5	-128.46	-128.46	-847.8	-2,983.8	189.9	50.3	139.62	1.360	Level 3
10,300.0	7,158.9	10,402.3	7,277.7	91.1	91.2	-128.62	-128.62	-847.8	-3,083.8	190.3	46.6	143.75	1.324	Level 3
10,400.0	7,158.4	10,502.3	7,277.9	93.8	93.9	-128.78	-128.78	-847.8	-3,183.8	190.7	42.9	147.86	1.290	Level 3
10,500.0	7,157.9	10,602.3	7,278.0	96.6	96.7	-128.93	-128.93	-847.8	-3,283.8	191.2	39.2	151.97	1.258	Level 3
10,600.0	7,157.4	10,702.3	7,278.2	99.4	99.5	-129.09	-129.09	-847.8	-3,383.8	191.6	35.6	156.05	1.228	Level 2
10,700.0	7,156.8	10,802.3	7,278.4	102.1	102.2	-129.25	-129.25	-847.8	-3,483.8	192.0	31.9	160.13	1.199	Level 2
10,800.0	7,156.3	10,902.2	7,278.5	104.9	105.0	-129.41	-129.41	-847.8	-3,583.8	192.5	28.3	164.19	1.172	Level 2
10,900.0	7,155.8	11,002.2	7,278.7	107.7	107.7	-129.56	-129.56	-847.8	-3,683.8	192.9	24.7	168.24	1.147	Level 2
11,000.0	7,155.3	11,102.2	7,278.8	110.4	110.5	-129.72	-129.72	-847.8	-3,783.8	193.3	21.1	172.27	1.122	Level 2
11,100.0	7,154.8	11,202.2	7,279.0	113.2	113.3	-129.87	-129.87	-847.8	-3,883.8	193.8	17.5	176.29	1.099	Level 2
11,200.0	7,154.2	11,302.2	7,279.1	116.0	116.0	-130.03	-130.03	-847.8	-3,983.8	194.2	13.9	180.30	1.077	Level 2
11,300.0	7,153.7	11,402.2	7,279.3	118.8	118.8	-130.18	-130.18	-847.8	-4,083.8	194.6	10.4	184.29	1.056	Level 2
11,400.0	7,153.2	11,502.2	7,279.4	121.5	121.6	-130.33	-130.33	-847.8	-4,183.8	195.1	6.8	188.26	1.036	Level 2
11,500.0	7,152.7	11,602.2	7,279.6	124.3	124.4	-130.49	-130.49	-847.8	-4,283.8	195.5	3.3	192.22	1.017	Level 2
11,600.0	7,152.1	11,702.2	7,279.8	127.1	127.1	-130.64	-130.64	-847.8	-4,383.8	196.0	-0.2	196.17	0.999	Level 1
11,700.0	7,151.6	11,802.2	7,279.9	129.9	129.9	-130.79	-130.79	-847.8	-4,483.8	196.4	-3.7	200.10	0.982	Level 1
11,800.0	7,151.1	11,902.2	7,280.1	132.7	132.7	-130.94	-130.94	-847.8	-4,583.8	196.9	-7.2	204.02	0.965	Level 1
11,900.0	7,150.6	12,002.2	7,280.2	135.4	135.5	-131.09	-131.09	-847.8	-4,683.8	197.3	-10.6	207.92	0.949	Level 1
12,000.0	7,150.0	12,102.2	7,280.4	138.2	138.2	-131.24	-131.24	-847.8	-4,783.8	197.8	-14.1	211.80	0.934	Level 1
12,100.0	7,149.5	12,202.2	7,280.5	141.0	141.0	-131.38	-131.38	-847.8	-4,883.8	198.2	-17.5	215.67	0.919	Level 1
12,200.0	7,149.0	12,302.2	7,280.7	143.8	143.8	-131.53	-131.53	-847.8	-4,983.8	198.7	-20.9	219.53	0.905	Level 1
12,300.0	7,148.5	12,402.2	7,280.9	146.6	146.6	-131.68	-131.68	-847.8	-5,083.8	199.1	-24.3	223.37	0.891	Level 1
12,400.0	7,147.9	12,502.2	7,281.0	149.4	149.4	-131.82	-131.82	-847.8	-5,183.8	199.6	-27.6	227.19	0.878	Level 1
12,500.0	7,147.4	12,602.2	7,281.2	152.1	152.2	-131.97	-131.97	-847.8	-5,283.8	200.0	-31.0	231.00	0.866	Level 1
12,600.0	7,146.9	12,702.2	7,281.3	154.9	155.0	-132.11	-132.11	-847.8	-5,383.8	200.5	-34.3	234.80	0.854	Level 1
12,700.0	7,146.4	12,802.2	7,281.5	157.7	157.7	-132.26	-132.26	-847.8	-5,483.8	200.9	-37.7	238.58	0.842	Level 1
12,800.0	7,145.9	12,902.2	7,281.6	160.5	160.5	-132.40	-132.40	-847.8	-5,583.8	201.4	-41.0	242.34	0.831	Level 1
12,900.0	7,145.3	13,002.2	7,281.8	163.3	163.3	-132.54	-132.54	-847.8	-5,683.7	201.8	-44.2	246.09	0.820	Level 1
13,000.0	7,144.8	13,102.2	7,282.0	166.1	166.1	-132.69	-132.69	-847.8	-5,783.7	202.3	-47.5	249.83	0.810	Level 1
13,100.0	7,144.3	13,202.2	7,282.1	168.9	168.9	-132.83	-132.83	-847.8	-5,883.7	202.8	-50.8	253.54	0.800	Level 1
13,200.0	7,143.8	13,302.2	7,282.3	171.7	171.7	-132.97	-132.97	-847.8	-5,983.7	203.2	-54.0	257.25	0.790	Level 1
13,300.0	7,143.2	13,402.2	7,282.4	174.5	174.5	-133.11	-133.11	-847.8	-6,083.7	203.7	-57.2	260.94	0.781	Level 1
13,400.0	7,142.7	13,502.2	7,282.6	177.3	177.3	-133.25	-133.25	-847.8	-6,183.7	204.2	-60.5	264.61	0.772	Level 1
13,500.0	7,142.2	13,602.2	7,282.7	180.1	180.1	-133.39	-133.39	-847.8	-6,283.7	204.6	-63.6	268.27	0.763	Level 1
13,600.0	7,141.7	13,702.2	7,282.9	182.9	182.8	-133.53	-133.53	-847.8	-6,383.7	205.1	-66.8	271.91	0.754	Level 1
13,700.0	7,141.1	13,802.2	7,283.1	185.6	185.6	-133.66	-133.66	-847.8	-6,483.7	205.6	-70.0	275.54	0.746	Level 1
13,800.0	7,140.6	13,902.2	7,283.2	188.4	188.4	-133.80	-133.80	-847.8	-6,583.7	206.0	-73.1	279.16	0.738	Level 1
13,900.0	7,140.1	14,002.2	7,283.4	191.2	191.2	-133.94	-133.94	-847.8	-6,683.7	206.5	-76.3	282.76	0.730	Level 1
14,000.0	7,139.6	14,102.2	7,283.5	194.0	194.0	-134.07	-134.07	-847.8	-6,783.7	207.0	-79.4	286.34	0.723	Level 1
14,100.0	7,139.0	14,202.2	7,283.7	196.8	196.8	-134.21	-134.21	-847.8	-6,883.7	207.5	-82.5	289.91	0.716	Level 1
14,200.0	7,138.5	14,302.2	7,283.8	199.6	199.6	-134.34	-134.34	-847.8	-6,983.7	207.9	-85.5	293.47	0.709	Level 1
14,299.4	7,138.0	14,399.1	7,284.0	202.4	202.3	-134.47	-134.47	-847.8	-7,080.6	208.4	-88.5	296.95	0.702	Level 1, ES, SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Tarin 32Y-314
Project:	SEC.32-T4N-R66W	TVD Reference:	WELL @ 4791.0ft (RKB - 15')
Reference Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	MD Reference:	WELL @ 4791.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Tarin 32Y-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #3 (12-18-14)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4791.0ft (RKB - 15')

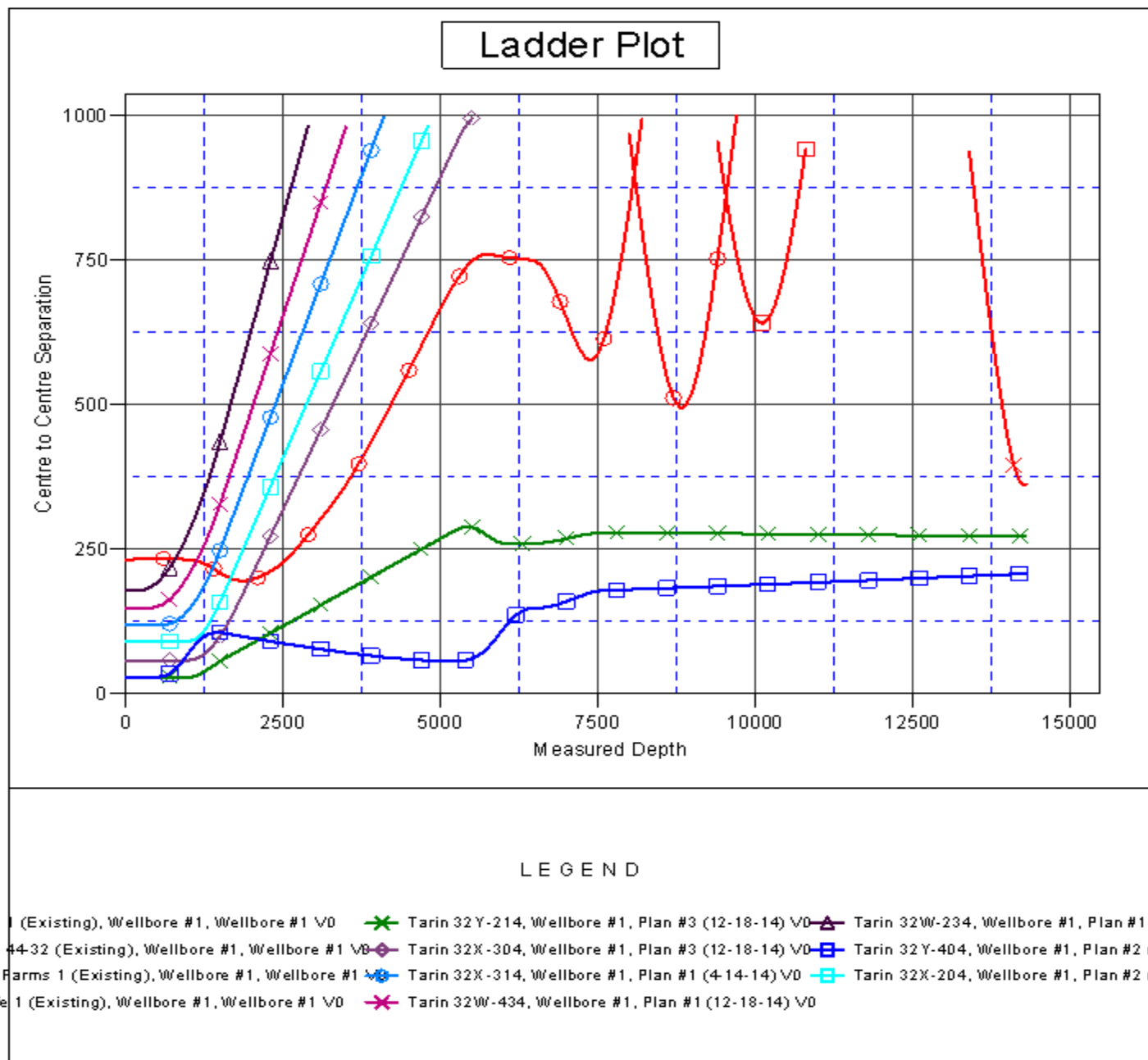
Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Tarin 32Y-314

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.46°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Tarin 32Y-314
Project:	SEC.32-T4N-R66W	TVD Reference:	WELL @ 4791.0ft (RKB - 15')
Reference Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	MD Reference:	WELL @ 4791.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Tarin 32Y-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #3 (12-18-14)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4791.0ft (RKB - 15')

Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Tarin 32Y-314

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