PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Jacobucci 32O-303**

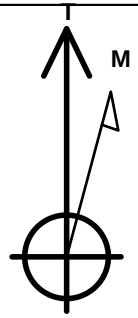
Surface Location: Jacobucci 1N67W32O Pad Sec.32-T1N-R67W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 5058.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1245914.37	3163715.12	40.006940	-104.915560	

Original Well Elev WELL @ 5073.0ft (Original Well Elev)

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 2407'FSL & 2287'FWL, Sec.32	1.0	0.0	0.0	Point
BHL 500'FSL & 2077'FWL, Sec.5	7716.0	-7001.6	257.8	Point



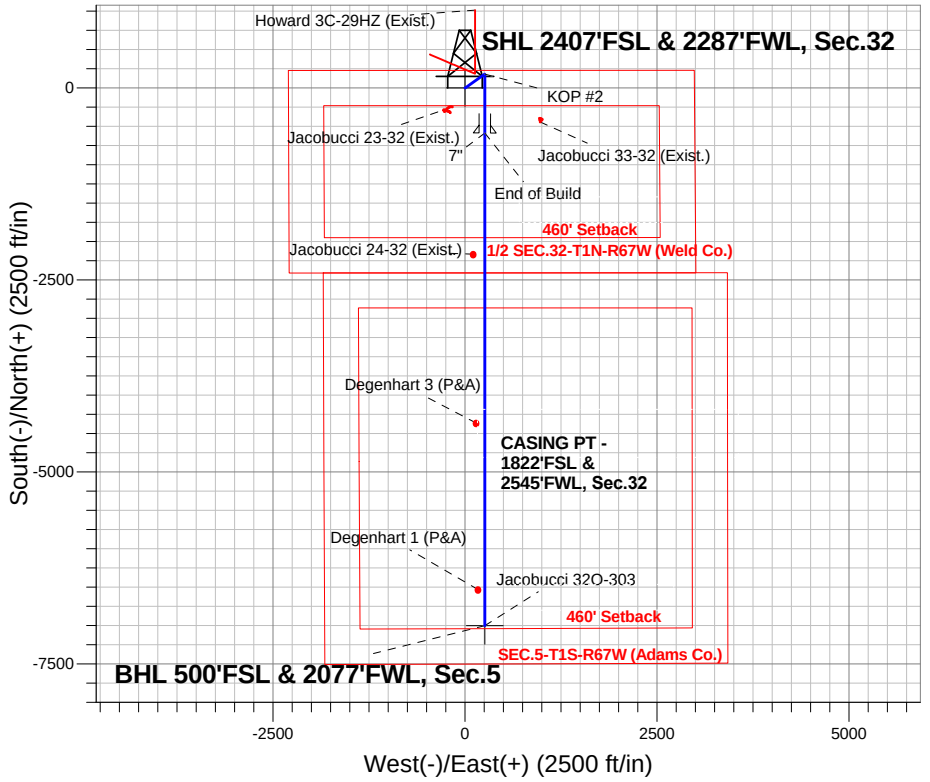
Azimuths to True North
Magnetic North: 8.49°

Magnetic Field
Strength: 52578.3snT
Dip Angle: 66.60°
Date: 7/28/2014
Model: IGRF2010

Jacobucci 1N67W32O Pad Sec.32-T1N-R67W
Jacobucci 32O-303
Plan #1 (7-25-14)

ANNOTATIONS

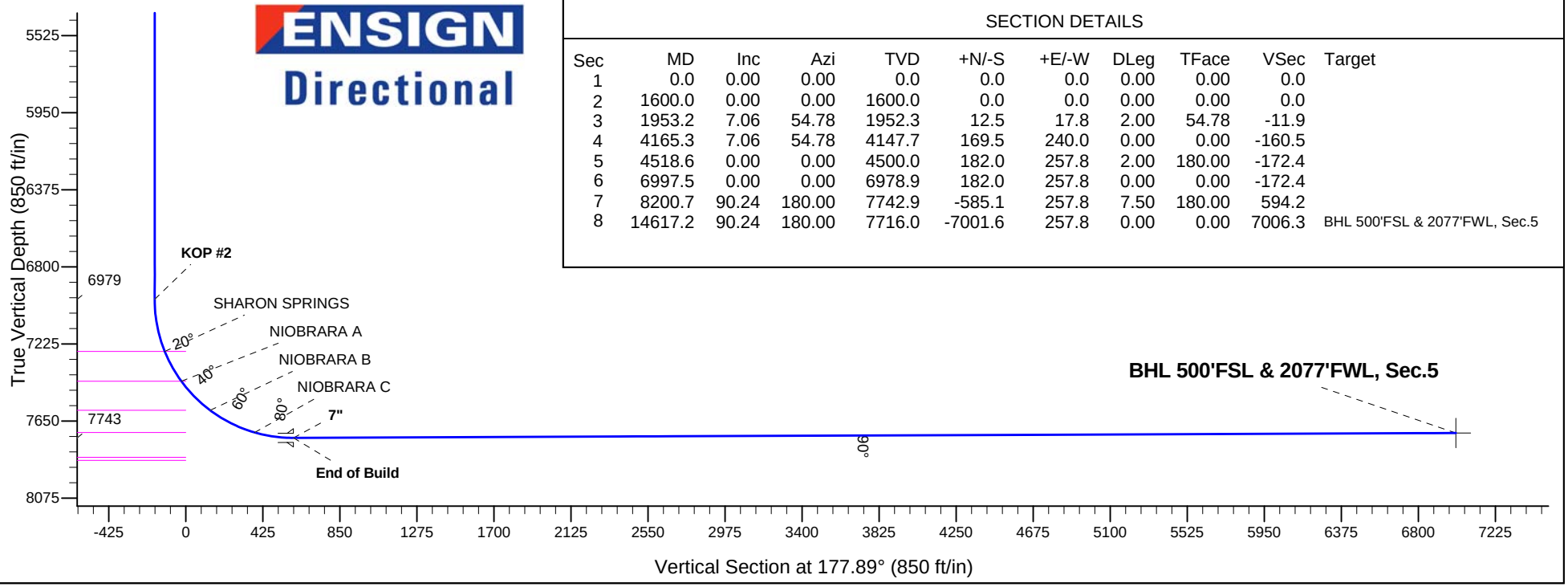
TVD	MD	Annotation
1600.0	1600.0	KOP
6978.9	6997.5	KOP #2
7742.9	8200.7	End of Build



ENSIGN Directional

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	1600.0	0.00	0.00	1600.0	0.0	0.0	0.00	0.00	0.0	
3	1953.2	7.06	54.78	1952.3	12.5	17.8	2.00	54.78	-11.9	
4	4165.3	7.06	54.78	4147.7	169.5	240.0	0.00	0.00	-160.5	
5	4518.6	0.00	0.00	4500.0	182.0	257.8	2.00	180.00	-172.4	
6	6997.5	0.00	0.00	6978.9	182.0	257.8	0.00	0.00	-172.4	
7	8200.7	90.24	180.00	7742.9	-585.1	257.8	7.50	180.00	594.2	
8	14617.2	90.24	180.00	7716.0	-7001.6	257.8	0.00	0.00	7006.3	BHL 500'FSL & 2077'FWL, Sec.5



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.32-T1N-R67W
Jacobucci 1N67W32O Pad Sec.32-T1N-R67W
Jacobucci 32O-303

Wellbore #1

Plan: Plan #1 (7-25-14)

Standard Planning Report

01 August, 2014

Database:	landmark	**Local Co-ordinate Reference:**	Well Jacobucci 32O-303
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**TVD Reference:**	WELL @ 5073.0ft (Original Well Elev)
Project:	SEC.32-T1N-R67W	**MD Reference:**	WELL @ 5073.0ft (Original Well Elev)
Site:	Jacobucci 1N67W32O Pad Sec.32-T1N-R67W	**North Reference:**	True
Well:	Jacobucci 32O-303	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (7-25-14)		

Project SEC.32-T1N-R67W, Weld County, CO

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site Jacobucci 1N67W32O Pad Sec.32-T1N-R67W

Site Position:		**Northing:**	1,245,914.62 ft	**Latitude:**	40.006940
From:	Lat/Long	**Easting:**	3,163,748.73 ft	**Longitude:**	-104.915440
Position Uncertainty:	0.0 ft	**Slot Radius:**	"	**Grid Convergence:**	0.38 °

Well Jacobucci 32O-303

Well Position	**+N/-S**	0.0 ft	**Northing:**	1,245,914.37 ft	**Latitude:**	40.006940
	+E/-W	-33.6 ft	**Easting:**	3,163,715.12 ft	**Longitude:**	-104.915560
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	5,058.0 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/28/2014	8.49	66.60	52,578

Design Plan #1 (7-25-14)

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	177.89

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	
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,953.2	7.06	54.78	1,952.3	12.5	17.8	2.00	2.00	0.00	54.78	
4,165.3	7.06	54.78	4,147.7	169.5	240.0	0.00	0.00	0.00	0.00	
4,518.6	0.00	0.00	4,500.0	182.0	257.8	2.00	-2.00	0.00	180.00	
6,997.5	0.00	0.00	6,978.9	182.0	257.8	0.00	0.00	0.00	0.00	
8,200.7	90.24	180.00	7,742.9	-585.1	257.8	7.50	7.50	0.00	180.00	
14,617.2	90.24	180.00	7,716.0	-7,001.6	257.8	0.00	0.00	0.00	0.00	BHL 500'FSL & 207

Database:	landmark	**Local Co-ordinate Reference:**	Well Jacobucci 32O-303
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**TVD Reference:**	WELL @ 5073.0ft (Original Well Elev)
Project:	SEC.32-T1N-R67W	**MD Reference:**	WELL @ 5073.0ft (Original Well Elev)
Site:	Jacobucci 1N67W32O Pad Sec.32-T1N-R67W	**North Reference:**	True
Well:	Jacobucci 32O-303	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (7-25-14)		

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
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP									
1,700.0	2.00	54.78	1,700.0	1.0	1.4	-1.0	2.00	2.00	0.00
1,800.0	4.00	54.78	1,799.8	4.0	5.7	-3.8	2.00	2.00	0.00
1,900.0	6.00	54.78	1,899.5	9.1	12.8	-8.6	2.00	2.00	0.00
1,953.2	7.06	54.78	1,952.3	12.5	17.8	-11.9	2.00	2.00	0.00
2,000.0	7.06	54.78	1,998.8	15.9	22.5	-15.0	0.00	0.00	0.00
2,100.0	7.06	54.78	2,098.0	23.0	32.5	-21.7	0.00	0.00	0.00
2,200.0	7.06	54.78	2,197.2	30.0	42.6	-28.5	0.00	0.00	0.00
2,300.0	7.06	54.78	2,296.5	37.1	52.6	-35.2	0.00	0.00	0.00
2,400.0	7.06	54.78	2,395.7	44.2	62.7	-41.9	0.00	0.00	0.00
2,500.0	7.06	54.78	2,495.0	51.3	72.7	-48.6	0.00	0.00	0.00
2,600.0	7.06	54.78	2,594.2	58.4	82.8	-55.3	0.00	0.00	0.00
2,700.0	7.06	54.78	2,693.4	65.5	92.8	-62.1	0.00	0.00	0.00
2,800.0	7.06	54.78	2,792.7	72.6	102.8	-68.8	0.00	0.00	0.00
2,900.0	7.06	54.78	2,891.9	79.7	112.9	-75.5	0.00	0.00	0.00
3,000.0	7.06	54.78	2,991.2	86.8	122.9	-82.2	0.00	0.00	0.00
3,100.0	7.06	54.78	3,090.4	93.9	133.0	-88.9	0.00	0.00	0.00
3,200.0	7.06	54.78	3,189.6	101.0	143.0	-95.6	0.00	0.00	0.00
3,300.0	7.06	54.78	3,288.9	108.1	153.1	-102.4	0.00	0.00	0.00
3,400.0	7.06	54.78	3,388.1	115.2	163.1	-109.1	0.00	0.00	0.00
3,500.0	7.06	54.78	3,487.4	122.3	173.2	-115.8	0.00	0.00	0.00
3,600.0	7.06	54.78	3,586.6	129.4	183.2	-122.5	0.00	0.00	0.00
3,700.0	7.06	54.78	3,685.8	136.4	193.3	-129.2	0.00	0.00	0.00
3,800.0	7.06	54.78	3,785.1	143.5	203.3	-136.0	0.00	0.00	0.00
3,900.0	7.06	54.78	3,884.3	150.6	213.4	-142.7	0.00	0.00	0.00
4,000.0	7.06	54.78	3,983.6	157.7	223.4	-149.4	0.00	0.00	0.00
4,100.0	7.06	54.78	4,082.8	164.8	233.5	-156.1	0.00	0.00	0.00
4,165.3	7.06	54.78	4,147.7	169.5	240.0	-160.5	0.00	0.00	0.00
4,200.0	6.37	54.78	4,182.1	171.8	243.3	-162.7	2.00	-2.00	0.00
4,300.0	4.37	54.78	4,281.6	177.2	251.0	-167.8	2.00	-2.00	0.00
4,400.0	2.37	54.78	4,381.5	180.6	255.8	-171.1	2.00	-2.00	0.00
4,500.0	0.37	54.78	4,481.4	182.0	257.8	-172.4	2.00	-2.00	0.00
4,518.6	0.00	0.00	4,500.0	182.0	257.8	-172.4	2.00	-2.00	-294.77
PARKMAN									
4,600.0	0.00	0.00	4,581.4	182.0	257.8	-172.4	0.00	0.00	0.00

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Well:	Jacobucci 32O-303	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (7-25-14)		

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)
4,700.0	0.00	0.00	4,681.4	182.0	257.8	-172.4	0.00	0.00	0.00
4,800.0	0.00	0.00	4,781.4	182.0	257.8	-172.4	0.00	0.00	0.00
4,900.0	0.00	0.00	4,881.4	182.0	257.8	-172.4	0.00	0.00	0.00
4,918.6	0.00	0.00	4,900.0	182.0	257.8	-172.4	0.00	0.00	0.00
SUSSEX									
5,000.0	0.00	0.00	4,981.4	182.0	257.8	-172.4	0.00	0.00	0.00
5,100.0	0.00	0.00	5,081.4	182.0	257.8	-172.4	0.00	0.00	0.00
5,200.0	0.00	0.00	5,181.4	182.0	257.8	-172.4	0.00	0.00	0.00
5,300.0	0.00	0.00	5,281.4	182.0	257.8	-172.4	0.00	0.00	0.00
5,368.6	0.00	0.00	5,350.0	182.0	257.8	-172.4	0.00	0.00	0.00
SHANNON									
5,400.0	0.00	0.00	5,381.4	182.0	257.8	-172.4	0.00	0.00	0.00
5,500.0	0.00	0.00	5,481.4	182.0	257.8	-172.4	0.00	0.00	0.00
5,600.0	0.00	0.00	5,581.4	182.0	257.8	-172.4	0.00	0.00	0.00
5,700.0	0.00	0.00	5,681.4	182.0	257.8	-172.4	0.00	0.00	0.00
5,800.0	0.00	0.00	5,781.4	182.0	257.8	-172.4	0.00	0.00	0.00
5,900.0	0.00	0.00	5,881.4	182.0	257.8	-172.4	0.00	0.00	0.00
6,000.0	0.00	0.00	5,981.4	182.0	257.8	-172.4	0.00	0.00	0.00
6,100.0	0.00	0.00	6,081.4	182.0	257.8	-172.4	0.00	0.00	0.00
6,200.0	0.00	0.00	6,181.4	182.0	257.8	-172.4	0.00	0.00	0.00
6,300.0	0.00	0.00	6,281.4	182.0	257.8	-172.4	0.00	0.00	0.00
6,400.0	0.00	0.00	6,381.4	182.0	257.8	-172.4	0.00	0.00	0.00
6,500.0	0.00	0.00	6,481.4	182.0	257.8	-172.4	0.00	0.00	0.00
6,600.0	0.00	0.00	6,581.4	182.0	257.8	-172.4	0.00	0.00	0.00
6,700.0	0.00	0.00	6,681.4	182.0	257.8	-172.4	0.00	0.00	0.00
6,800.0	0.00	0.00	6,781.4	182.0	257.8	-172.4	0.00	0.00	0.00
6,900.0	0.00	0.00	6,881.4	182.0	257.8	-172.4	0.00	0.00	0.00
6,997.5	0.00	0.00	6,978.9	182.0	257.8	-172.4	0.00	0.00	0.00
KOP #2									
7,000.0	0.19	180.00	6,981.4	182.0	257.8	-172.4	7.43	7.43	0.00
7,100.0	7.69	180.00	7,081.1	175.1	257.8	-165.5	7.50	7.50	0.00
7,200.0	15.19	180.00	7,179.1	155.3	257.8	-145.7	7.50	7.50	0.00
7,291.8	22.07	180.00	7,266.0	126.0	257.8	-116.4	7.50	7.50	0.00
SHARON SPRINGS									
7,300.0	22.69	180.00	7,273.6	122.9	257.8	-113.3	7.50	7.50	0.00
7,400.0	30.19	180.00	7,363.1	78.4	257.8	-68.9	7.50	7.50	0.00
7,480.0	36.19	180.00	7,430.0	34.6	257.8	-25.1	7.50	7.50	0.00
NIOBRARA A									
7,500.0	37.69	180.00	7,446.0	22.6	257.8	-13.1	7.50	7.50	0.00
7,600.0	45.19	180.00	7,520.9	-43.5	257.8	53.0	7.50	7.50	0.00
7,700.0	52.69	180.00	7,586.5	-118.9	257.8	128.3	7.50	7.50	0.00
7,707.4	53.24	180.00	7,591.0	-124.8	257.8	134.2	7.50	7.50	0.00
NIOBRARA B									
7,800.0	60.19	180.00	7,641.8	-202.1	257.8	211.5	7.50	7.50	0.00
7,900.0	67.69	180.00	7,685.7	-291.9	257.8	301.2	7.50	7.50	0.00
7,983.1	73.92	180.00	7,713.0	-370.4	257.8	379.6	7.50	7.50	0.00
NIOBRARA C									
8,000.0	75.19	180.00	7,717.5	-386.6	257.8	395.8	7.50	7.50	0.00
8,100.0	82.69	180.00	7,736.7	-484.7	257.8	493.8	7.50	7.50	0.00
8,200.0	90.19	180.00	7,742.9	-584.4	257.8	593.5	7.50	7.50	0.00
8,200.7	90.24	180.00	7,742.9	-585.1	257.8	594.2	7.50	7.50	0.00
End of Build - 7"									

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Site:	Jacobucci 1N67W32O Pad Sec.32-T1N-R67W	**North Reference:**	True
Well:	Jacobucci 32O-303	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (7-25-14)		

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)
8,300.0	90.24	180.00	7,742.5	-684.4	257.8	693.4	0.00	0.00	0.00
8,400.0	90.24	180.00	7,742.0	-784.4	257.8	793.4	0.00	0.00	0.00
8,500.0	90.24	180.00	7,741.6	-884.4	257.8	893.3	0.00	0.00	0.00
8,600.0	90.24	180.00	7,741.2	-984.4	257.8	993.2	0.00	0.00	0.00
8,700.0	90.24	180.00	7,740.8	-1,084.4	257.8	1,093.2	0.00	0.00	0.00
8,800.0	90.24	180.00	7,740.4	-1,184.4	257.8	1,193.1	0.00	0.00	0.00
8,900.0	90.24	180.00	7,739.9	-1,284.4	257.8	1,293.0	0.00	0.00	0.00
9,000.0	90.24	180.00	7,739.5	-1,384.4	257.8	1,393.0	0.00	0.00	0.00
9,100.0	90.24	180.00	7,739.1	-1,484.4	257.8	1,492.9	0.00	0.00	0.00
9,200.0	90.24	180.00	7,738.7	-1,584.4	257.8	1,592.8	0.00	0.00	0.00
9,300.0	90.24	180.00	7,738.3	-1,684.4	257.8	1,692.8	0.00	0.00	0.00
9,400.0	90.24	180.00	7,737.9	-1,784.4	257.8	1,792.7	0.00	0.00	0.00
9,500.0	90.24	180.00	7,737.4	-1,884.4	257.8	1,892.6	0.00	0.00	0.00
9,600.0	90.24	180.00	7,737.0	-1,984.4	257.8	1,992.6	0.00	0.00	0.00
9,700.0	90.24	180.00	7,736.6	-2,084.4	257.8	2,092.5	0.00	0.00	0.00
9,800.0	90.24	180.00	7,736.2	-2,184.4	257.8	2,192.4	0.00	0.00	0.00
9,900.0	90.24	180.00	7,735.8	-2,284.4	257.8	2,292.3	0.00	0.00	0.00
10,000.0	90.24	180.00	7,735.3	-2,384.4	257.8	2,392.3	0.00	0.00	0.00
10,100.0	90.24	180.00	7,734.9	-2,484.4	257.8	2,492.2	0.00	0.00	0.00
10,200.0	90.24	180.00	7,734.5	-2,584.4	257.8	2,592.1	0.00	0.00	0.00
10,300.0	90.24	180.00	7,734.1	-2,684.4	257.8	2,692.1	0.00	0.00	0.00
10,400.0	90.24	180.00	7,733.7	-2,784.4	257.8	2,792.0	0.00	0.00	0.00
10,500.0	90.24	180.00	7,733.2	-2,884.4	257.8	2,891.9	0.00	0.00	0.00
10,600.0	90.24	180.00	7,732.8	-2,984.4	257.8	2,991.9	0.00	0.00	0.00
10,700.0	90.24	180.00	7,732.4	-3,084.4	257.8	3,091.8	0.00	0.00	0.00
10,800.0	90.24	180.00	7,732.0	-3,184.4	257.8	3,191.7	0.00	0.00	0.00
10,900.0	90.24	180.00	7,731.6	-3,284.4	257.8	3,291.7	0.00	0.00	0.00
11,000.0	90.24	180.00	7,731.2	-3,384.4	257.8	3,391.6	0.00	0.00	0.00
11,100.0	90.24	180.00	7,730.7	-3,484.4	257.8	3,491.5	0.00	0.00	0.00
11,200.0	90.24	180.00	7,730.3	-3,584.4	257.8	3,591.5	0.00	0.00	0.00
11,300.0	90.24	180.00	7,729.9	-3,684.4	257.8	3,691.4	0.00	0.00	0.00
11,400.0	90.24	180.00	7,729.5	-3,784.4	257.8	3,791.3	0.00	0.00	0.00
11,500.0	90.24	180.00	7,729.1	-3,884.4	257.8	3,891.2	0.00	0.00	0.00
11,600.0	90.24	180.00	7,728.6	-3,984.4	257.8	3,991.2	0.00	0.00	0.00
11,700.0	90.24	180.00	7,728.2	-4,084.4	257.8	4,091.1	0.00	0.00	0.00
11,800.0	90.24	180.00	7,727.8	-4,184.4	257.8	4,191.0	0.00	0.00	0.00
11,900.0	90.24	180.00	7,727.4	-4,284.4	257.8	4,291.0	0.00	0.00	0.00
12,000.0	90.24	180.00	7,727.0	-4,384.4	257.8	4,390.9	0.00	0.00	0.00
12,100.0	90.24	180.00	7,726.5	-4,484.4	257.8	4,490.8	0.00	0.00	0.00
12,200.0	90.24	180.00	7,726.1	-4,584.4	257.8	4,590.8	0.00	0.00	0.00
12,300.0	90.24	180.00	7,725.7	-4,684.4	257.8	4,690.7	0.00	0.00	0.00
12,400.0	90.24	180.00	7,725.3	-4,784.4	257.8	4,790.6	0.00	0.00	0.00
12,500.0	90.24	180.00	7,724.9	-4,884.4	257.8	4,890.6	0.00	0.00	0.00
12,600.0	90.24	180.00	7,724.4	-4,984.4	257.8	4,990.5	0.00	0.00	0.00
12,700.0	90.24	180.00	7,724.0	-5,084.4	257.8	5,090.4	0.00	0.00	0.00
12,800.0	90.24	180.00	7,723.6	-5,184.4	257.8	5,190.4	0.00	0.00	0.00
12,900.0	90.24	180.00	7,723.2	-5,284.4	257.8	5,290.3	0.00	0.00	0.00
13,000.0	90.24	180.00	7,722.8	-5,384.4	257.8	5,390.2	0.00	0.00	0.00
13,100.0	90.24	180.00	7,722.4	-5,484.4	257.8	5,490.1	0.00	0.00	0.00
13,200.0	90.24	180.00	7,721.9	-5,584.4	257.8	5,590.1	0.00	0.00	0.00
13,300.0	90.24	180.00	7,721.5	-5,684.4	257.8	5,690.0	0.00	0.00	0.00
13,400.0	90.24	180.00	7,721.1	-5,784.4	257.8	5,789.9	0.00	0.00	0.00

Database:	landmark	**Local Co-ordinate Reference:**	Well Jacobucci 32O-303
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**TVD Reference:**	WELL @ 5073.0ft (Original Well Elev)
Project:	SEC.32-T1N-R67W	**MD Reference:**	WELL @ 5073.0ft (Original Well Elev)
Site:	Jacobucci 1N67W32O Pad Sec.32-T1N-R67W	**North Reference:**	True
Well:	Jacobucci 32O-303	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (7-25-14)		

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)
13,500.0	90.24	180.00	7,720.7	-5,884.4	257.8	5,889.9	0.00	0.00	0.00
13,600.0	90.24	180.00	7,720.3	-5,984.4	257.8	5,989.8	0.00	0.00	0.00
13,700.0	90.24	180.00	7,719.8	-6,084.4	257.8	6,089.7	0.00	0.00	0.00
13,800.0	90.24	180.00	7,719.4	-6,184.4	257.8	6,189.7	0.00	0.00	0.00
13,900.0	90.24	180.00	7,719.0	-6,284.4	257.8	6,289.6	0.00	0.00	0.00
14,000.0	90.24	180.00	7,718.6	-6,384.4	257.8	6,389.5	0.00	0.00	0.00
14,100.0	90.24	180.00	7,718.2	-6,484.4	257.8	6,489.5	0.00	0.00	0.00
14,200.0	90.24	180.00	7,717.7	-6,584.4	257.8	6,589.4	0.00	0.00	0.00
14,300.0	90.24	180.00	7,717.3	-6,684.4	257.8	6,689.3	0.00	0.00	0.00
14,400.0	90.24	180.00	7,716.9	-6,784.4	257.8	6,789.3	0.00	0.00	0.00
14,500.0	90.24	180.00	7,716.5	-6,884.4	257.8	6,889.2	0.00	0.00	0.00
14,600.0	90.24	180.00	7,716.1	-6,984.4	257.8	6,989.1	0.00	0.00	0.00
14,617.2	90.24	180.00	7,716.0	-7,001.6	257.8	7,006.3	0.00	0.00	0.00

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
8,200.7	7,742.9	7"	7	7-1/2

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,518.6	4,500.0	PARKMAN		0.00	
4,918.6	4,900.0	SUSSEX		0.00	
5,368.6	5,350.0	SHANNON		0.00	
7,291.8	7,266.0	SHARON SPRINGS		0.00	
7,480.0	7,430.0	NIOBRARA A		0.00	
7,707.4	7,591.0	NIOBRARA B		0.00	
7,983.1	7,713.0	NIOBRARA C		0.00	
	7,850.0	FT HAYS		0.00	
	7,867.0	CODELL		0.00	

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
1,600.0	1,600.0	0.0	0.0	KOP
6,997.5	6,978.9	12.5	17.8	KOP #2
8,200.7	7,742.9	169.5	240.0	End of Build

ENSIGN Directional

PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.32-T1N-R67W
Jacobucci 1N67W32O Pad Sec.32-T1N-R67W
Jacobucci 32O-303

Wellbore #1
Plan #1 (7-25-14)

Anticollision Report

01 August, 2014

PDC ENERGY
Growing E&P Value

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32O-303
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5073.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32O Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5073.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32O-303	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #1 (7-25-14)	**Offset TVD Reference:**	Offset Datum

Reference Plan #1 (7-25-14)

Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0ft	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,000.0ft	**Error Surface:**	Elliptical Conic

Warning Levels Evaluated at: 2.00 **Sigma**

Survey Tool Program **Date** 8/1/2014

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	14,617.2	Plan #1 (7-25-14) (Wellbore #1)	MWD	MWD - Standard

Summary

Site Name / Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Existings Sec.32-T1N-R67W						
Degenhart 1 (P&A) - Wellbore #1 - Wellbore #1	14,144.0	7,804.0	90.5	-192.0	0.320	Level 1, CC, ES, SF
Degenhart 3 (P&A) - Wellbore #1 - Wellbore #1	11,976.4	7,797.1	115.7	-125.7	0.479	Level 1, CC, ES, SF
Howard 3C-29HZ (Exist.) - Wellbore #1 - Wellbore #1	6,900.0	6,910.6	129.0	-43.9	0.746	Level 1, CC
Howard 3C-29HZ (Exist.) - Wellbore #1 - Wellbore #1	7,100.0	7,110.3	129.4	-46.3	0.737	Level 1, ES, SF
Jacobucci 23-32 (Exist.) - Wellbore #1 - Wellbore #1	1,324.1	1,311.3	369.7	364.0	64.288	CC
Jacobucci 23-32 (Exist.) - Wellbore #1 - Wellbore #1	1,500.0	1,485.6	370.2	363.6	56.344	ES
Jacobucci 23-32 (Exist.) - Wellbore #1 - Wellbore #1	7,900.0	7,709.6	484.1	452.5	15.290	SF
Jacobucci 24-32 (Exist.) - Wellbore #1 - Wellbore #1	9,779.4	7,761.3	154.1	-46.1	0.770	Level 1, CC, ES, SF
Jacobucci 33-32 (Exist.) - Wellbore #1 - Wellbore #1	8,040.6	7,724.4	722.2	689.9	22.360	CC, ES
Jacobucci 33-32 (Exist.) - Wellbore #1 - Wellbore #1	8,200.0	7,744.6	739.2	705.3	21.808	SF
Jacobucci 1N67W32O Pad Sec.32-T1N-R67W						
Jacobucci 32O-203 - Wellbore #1 - Plan #1 (7-25-14)	1,600.0	1,600.0	30.8	23.8	4.423	CC, ES
Jacobucci 32O-203 - Wellbore #1 - Plan #1 (7-25-14)	14,617.2	14,502.6	327.6	68.6	1.265	Level 3, SF
Jacobucci 32O-423 - Wellbore #1 - Plan #1 (7-25-14)	1,000.0	1,000.0	33.6	29.3	7.872	CC, ES
Jacobucci 32O-423 - Wellbore #1 - Plan #1 (7-25-14)	14,617.2	14,720.5	374.9	125.2	1.501	SF
Jacobucci 32O-443 - Wellbore #1 - Plan #1 (7-25-14)	1,400.0	1,400.0	61.6	55.6	10.155	CC, ES
Jacobucci 32O-443 - Wellbore #1 - Plan #1 (7-25-14)	14,617.2	14,731.3	670.6	405.7	2.532	SF

Offset Design Existings Sec.32-T1N-R67W - Degenhart 1 (P&A) - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 ft

Survey Program: 8110-UNKNOWN — **Offset Well Error:** 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
13,200.0	7,721.9	7,807.9	7,807.9	108.6	156.2	92.50	-6,528.4	167.3	948.3	683.8	264.54	3.585	
13,300.0	7,721.5	7,807.5	7,807.5	110.5	156.2	92.24	-6,528.4	167.3	848.8	582.4	266.46	3.186	
13,400.0	7,721.1	7,807.1	7,807.1	112.4	156.1	91.97	-6,528.4	167.3	749.5	481.1	268.39	2.793	
13,500.0	7,720.7	7,806.7	7,806.7	114.3	156.1	91.71	-6,528.4	167.3	650.3	380.0	270.31	2.406	
13,600.0	7,720.3	7,806.3	7,806.3	116.2	156.1	91.44	-6,528.4	167.3	551.5	279.3	272.22	2.026	
13,700.0	7,719.8	7,805.8	7,805.8	118.1	156.1	91.18	-6,528.4	167.3	453.1	179.0	274.13	1.653	
13,800.0	7,719.4	7,805.4	7,805.4	120.0	156.1	90.91	-6,528.4	167.3	355.7	79.7	276.03	1.289	Level 3
13,900.0	7,719.0	7,805.0	7,805.0	121.9	156.1	90.65	-6,528.4	167.3	260.2	-17.7	277.94	0.936	Level 1

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32O-303
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5073.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32O Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5073.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32O-303	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #1 (7-25-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Degenhart 1 (P&A) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 8110-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
14,000.0	7,718.6	7,804.6	7,804.6	123.8	156.1	90.38	-6,528.4	167.3	170.1	-109.8	279.83	0.608	Level 1
14,100.0	7,718.2	7,804.2	7,804.2	125.7	156.1	90.12	-6,528.4	167.3	100.6	-181.1	281.72	0.357	Level 1
14,144.0	7,718.0	7,804.0	7,804.0	126.5	156.1	90.00	-6,528.4	167.3	90.5	-192.0	282.55	0.320	Level 1, CC, ES, SF
14,200.0	7,717.7	7,803.7	7,803.7	127.6	156.1	89.85	-6,528.4	167.3	106.4	-177.2	283.61	0.375	Level 1
14,300.0	7,717.3	7,803.3	7,803.3	129.5	156.1	89.59	-6,528.4	167.3	180.4	-105.1	285.49	0.632	Level 1
14,400.0	7,716.9	7,802.9	7,802.9	131.4	156.1	89.32	-6,528.4	167.3	271.5	-15.8	287.36	0.945	Level 1
14,500.0	7,716.5	7,802.5	7,802.5	133.3	156.0	89.06	-6,528.4	167.3	367.3	78.1	289.23	1.270	Level 3
14,600.0	7,716.1	7,802.1	7,802.1	135.2	156.0	88.79	-6,528.4	167.3	464.9	173.8	291.10	1.597	
14,617.2	7,716.0	7,802.0	7,802.0	135.5	156.0	88.75	-6,528.4	167.3	481.8	190.4	291.42	1.653	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32O-303
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5073.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32O Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5073.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32O-303	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #1 (7-25-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Degenhart 3 (P&A) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 8156-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
11,000.0	7,731.2	7,801.2	7,801.2	67.4	156.0	92.02	-4,360.9	142.1	983.3	760.1	223.18	4.406	
11,100.0	7,730.7	7,800.7	7,800.7	69.2	156.0	91.82	-4,360.9	142.1	884.1	659.0	225.05	3.928	
11,200.0	7,730.3	7,800.3	7,800.3	71.1	156.0	91.61	-4,360.9	142.1	785.0	558.1	226.92	3.460	
11,300.0	7,729.9	7,799.9	7,799.9	72.9	156.0	91.40	-4,360.9	142.1	686.3	457.5	228.79	3.000	
11,400.0	7,729.5	7,799.5	7,799.5	74.8	156.0	91.20	-4,360.9	142.1	588.0	357.3	230.66	2.549	
11,500.0	7,729.1	7,799.1	7,799.1	76.7	156.0	90.99	-4,360.9	142.1	490.3	257.8	232.53	2.109	
11,600.0	7,728.6	7,798.6	7,798.6	78.5	156.0	90.78	-4,360.9	142.1	393.9	159.5	234.40	1.680	
11,700.0	7,728.2	7,798.2	7,798.2	80.4	156.0	90.57	-4,360.9	142.1	299.7	63.4	236.27	1.269	Level 3
11,800.0	7,727.8	7,797.8	7,797.8	82.3	156.0	90.37	-4,360.9	142.1	211.0	-27.1	238.14	0.886	Level 1
11,900.0	7,727.4	7,797.4	7,797.4	84.2	155.9	90.16	-4,360.9	142.1	138.7	-101.3	240.01	0.578	Level 1
11,976.4	7,727.1	7,797.1	7,797.1	85.6	155.9	90.00	-4,360.9	142.1	115.7	-125.7	241.44	0.479	Level 1, CC, ES, SF
12,000.0	7,727.0	7,797.0	7,797.0	86.0	155.9	89.95	-4,360.9	142.1	118.1	-123.8	241.88	0.488	Level 1
12,100.0	7,726.5	7,796.5	7,796.5	87.9	155.9	89.74	-4,360.9	142.1	169.3	-74.5	243.74	0.694	Level 1
12,200.0	7,726.1	7,796.1	7,796.1	89.8	155.9	89.54	-4,360.9	142.1	251.7	6.1	245.61	1.025	Level 2
12,300.0	7,725.7	7,795.7	7,795.7	91.7	155.9	89.33	-4,360.9	142.1	343.6	96.1	247.47	1.388	Level 3
12,400.0	7,725.3	7,795.3	7,795.3	93.5	155.9	89.12	-4,360.9	142.1	439.1	189.7	249.33	1.761	
12,500.0	7,724.9	7,794.9	7,794.9	95.4	155.9	88.91	-4,360.9	142.1	536.2	285.0	251.19	2.134	
12,600.0	7,724.4	7,794.4	7,794.4	97.3	155.9	88.71	-4,360.9	142.1	634.2	381.1	253.05	2.506	
12,700.0	7,724.0	7,794.0	7,794.0	99.2	155.9	88.50	-4,360.9	142.1	732.7	477.8	254.90	2.875	
12,800.0	7,723.6	7,793.6	7,793.6	101.1	155.9	88.29	-4,360.9	142.1	831.6	574.9	256.75	3.239	
12,900.0	7,723.2	7,793.2	7,793.2	103.0	155.9	88.09	-4,360.9	142.1	930.7	672.1	258.60	3.599	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32O-303
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5073.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32O Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5073.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32O-303	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #1 (7-25-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Howard 3C-29HZ (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 100-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-46.35	436.1	-457.2	632.3				
100.0	100.0	76.0	76.0	0.1	1.5	-46.35	436.1	-457.2	631.8	630.2	1.63	387.030	
200.0	200.0	176.0	176.0	0.3	5.0	-46.35	436.1	-457.2	631.8	626.4	5.38	117.497	
300.0	300.0	276.0	276.0	0.6	9.0	-46.35	436.1	-457.2	631.8	622.2	9.60	65.799	
400.0	400.0	376.0	376.0	0.8	13.0	-46.35	436.1	-457.2	631.8	618.0	13.83	45.694	
500.0	500.0	476.0	476.0	1.0	17.0	-46.35	436.1	-457.2	631.8	613.7	18.05	35.000	
600.0	600.0	576.0	576.0	1.2	21.0	-46.35	436.1	-457.2	631.8	609.5	22.28	28.362	
700.0	700.0	676.0	676.0	1.5	25.0	-46.35	436.1	-457.2	631.8	605.3	26.50	23.841	
800.0	800.0	776.0	776.0	1.7	29.0	-46.35	436.1	-457.2	631.8	601.1	30.73	20.563	
900.0	900.0	876.0	876.0	1.9	33.0	-46.35	436.1	-457.2	631.8	596.8	34.95	18.077	
1,000.0	1,000.0	976.0	976.0	2.1	37.0	-46.35	436.1	-457.2	631.8	592.6	39.18	16.127	
1,100.0	1,100.0	1,076.0	1,076.0	2.4	41.0	-46.35	436.1	-457.2	631.8	588.4	43.40	14.558	
1,200.0	1,200.0	1,176.0	1,176.0	2.6	45.0	-46.35	436.1	-457.2	631.8	584.2	47.62	13.266	
1,300.0	1,300.0	1,276.0	1,276.0	2.8	49.0	-46.35	436.1	-457.2	631.8	579.9	51.85	12.185	
1,400.0	1,400.0	1,395.7	1,395.7	3.0	51.2	-46.30	435.4	-455.7	630.6	576.4	54.23	11.629	
1,500.0	1,500.0	1,521.4	1,521.1	3.3	49.8	-46.08	432.7	-449.3	625.4	572.4	53.00	11.801	
1,600.0	1,600.0	1,646.1	1,645.3	3.5	48.7	-45.67	427.9	-438.0	616.2	564.1	52.12	11.823	
1,700.0	1,700.0	1,769.8	1,767.7	3.7	48.2	-100.30	421.0	-421.8	603.3	551.5	51.76	11.655	
1,800.0	1,799.8	1,874.5	1,870.8	3.9	48.2	-100.47	413.9	-405.2	588.1	536.3	51.87	11.339	
1,900.0	1,899.5	1,973.4	1,968.2	4.1	48.7	-100.98	407.2	-389.4	573.5	521.2	52.32	10.961	
2,000.0	1,998.8	2,072.3	2,065.6	4.4	49.6	-101.68	400.5	-373.7	559.5	506.4	53.11	10.536	
2,100.0	2,098.0	2,171.1	2,163.0	4.6	50.8	-102.31	393.7	-357.9	545.7	491.5	54.21	10.066	
2,200.0	2,197.2	2,270.0	2,260.3	4.9	52.3	-102.97	387.0	-342.1	531.9	476.3	55.62	9.564	
2,300.0	2,296.5	2,368.8	2,357.7	5.1	54.1	-103.67	380.2	-326.3	518.2	460.9	57.29	9.045	
2,400.0	2,395.7	2,467.7	2,455.0	5.4	56.2	-104.40	373.5	-310.5	504.6	445.4	59.22	8.520	
2,500.0	2,495.0	2,566.5	2,552.4	5.7	58.6	-105.17	366.8	-294.7	491.0	429.7	61.38	8.001	
2,600.0	2,594.2	2,665.4	2,649.7	6.0	61.2	-105.99	360.0	-278.9	477.6	413.9	63.73	7.494	
2,700.0	2,693.4	2,764.3	2,747.1	6.2	63.9	-106.85	353.3	-263.1	464.3	398.0	66.27	7.005	
2,800.0	2,792.7	2,863.1	2,844.4	6.5	66.9	-107.76	346.6	-247.3	451.0	382.1	68.97	6.539	
2,900.0	2,891.9	2,962.0	2,941.8	6.8	70.0	-108.73	339.8	-231.5	437.9	366.1	71.81	6.098	
3,000.0	2,991.2	3,060.8	3,039.1	7.1	73.2	-109.76	333.1	-215.8	424.9	350.2	74.78	5.683	
3,100.0	3,090.4	3,159.7	3,136.5	7.4	76.5	-110.85	326.4	-200.0	412.1	334.2	77.85	5.293	
3,200.0	3,189.6	3,258.5	3,233.8	7.7	79.9	-112.01	319.6	-184.2	399.4	318.4	81.02	4.930	
3,300.0	3,288.9	3,357.4	3,331.2	8.0	83.4	-113.25	312.9	-168.4	386.9	302.6	84.28	4.591	
3,400.0	3,388.1	3,456.2	3,428.5	8.3	87.0	-114.57	306.2	-152.6	374.6	287.0	87.62	4.275	
3,500.0	3,487.4	3,555.1	3,525.9	8.6	90.7	-115.97	299.4	-136.8	362.5	271.5	91.03	3.982	
3,600.0	3,586.6	3,653.9	3,623.2	8.9	94.4	-117.47	292.7	-121.0	350.6	256.1	94.50	3.710	
3,700.0	3,685.8	3,752.8	3,720.6	9.2	98.1	-119.08	286.0	-105.2	339.0	240.9	98.04	3.458	
3,800.0	3,785.1	3,851.7	3,818.0	9.5	101.9	-120.79	279.2	-89.4	327.6	226.0	101.64	3.224	
3,900.0	3,884.3	3,950.5	3,915.3	9.8	105.8	-122.63	272.5	-73.6	316.6	211.3	105.30	3.007	
4,000.0	3,983.6	4,049.4	4,012.7	10.1	109.7	-124.59	265.8	-57.9	306.0	196.9	109.02	2.806	
4,100.0	4,082.8	4,148.2	4,110.0	10.4	113.6	-126.69	259.0	-42.1	295.7	182.9	112.81	2.621	
4,200.0	4,182.1	4,247.1	4,207.4	10.7	117.5	-128.85	252.3	-26.3	285.7	169.1	116.59	2.450	
4,300.0	4,281.6	4,346.0	4,304.8	10.9	121.5	-130.63	245.5	-10.5	274.3	154.2	120.17	2.283	
4,400.0	4,381.5	4,444.8	4,402.1	11.1	125.5	-131.97	238.8	5.3	261.0	137.4	123.66	2.111	
4,500.0	4,481.4	4,543.5	4,499.3	11.3	129.5	-132.87	232.1	21.1	245.5	118.5	127.02	1.933	
4,600.0	4,581.4	4,642.0	4,596.3	11.5	133.6	-78.89	225.4	36.8	228.5	97.8	130.73	1.748	
4,700.0	4,681.4	4,740.5	4,693.2	11.7	137.6	-79.87	218.7	52.5	211.6	77.0	134.59	1.572	
4,800.0	4,781.4	4,838.9	4,790.2	11.9	141.7	-81.02	212.0	68.3	194.7	56.2	138.51	1.406	Level 3
4,900.0	4,881.4	4,937.4	4,887.2	12.1	145.7	-82.38	205.3	84.0	177.9	35.4	142.48	1.248	Level 2
5,000.0	4,981.4	5,032.4	4,980.9	12.3	149.6	-83.89	199.1	98.5	161.9	15.5	146.40	1.106	Level 2

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32O-303
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5073.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32O Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5073.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32O-303	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #1 (7-25-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Howard 3C-29HZ (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 100-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,081.4	5,126.6	5,074.2	12.4	153.4	-85.33	194.1	110.2	149.0	-1.3	150.33	0.991	Level 1
5,200.0	5,181.4	5,221.6	5,168.7	12.6	157.1	-86.59	190.2	119.2	139.3	-14.9	154.29	0.903	Level 1
5,300.0	5,281.4	5,317.1	5,264.0	12.8	160.6	-87.56	187.7	125.2	132.8	-25.4	158.24	0.839	Level 1
5,400.0	5,381.4	5,412.9	5,359.7	13.0	163.9	-88.10	186.3	128.4	129.5	-32.4	161.88	0.800	Level 1
5,478.6	5,460.0	5,489.2	5,436.0	13.2	164.7	-88.18	186.1	128.9	129.0	-34.0	162.96	0.791	Level 1
5,500.0	5,481.4	5,510.6	5,457.4	13.2	164.7	-88.18	186.1	128.9	129.0	-34.0	162.95	0.791	Level 1
5,600.0	5,581.4	5,610.6	5,557.4	13.4	164.5	-88.18	186.1	128.9	129.0	-34.0	162.98	0.791	Level 1
5,700.0	5,681.4	5,710.6	5,657.4	13.6	164.4	-88.18	186.1	128.9	129.0	-34.1	163.11	0.791	Level 1
5,800.0	5,781.4	5,810.6	5,757.4	13.8	164.5	-88.18	186.1	128.9	129.0	-34.4	163.35	0.789	Level 1
5,900.0	5,881.4	5,910.6	5,857.4	14.0	164.6	-88.18	186.1	128.9	129.0	-34.7	163.69	0.788	Level 1
6,000.0	5,981.4	6,010.6	5,957.4	14.2	164.8	-88.18	186.1	128.9	129.0	-35.2	164.14	0.786	Level 1
6,100.0	6,081.4	6,110.6	6,057.4	14.4	165.1	-88.18	186.1	128.9	129.0	-35.7	164.70	0.783	Level 1
6,200.0	6,181.4	6,210.6	6,157.4	14.7	165.5	-88.18	186.1	128.9	129.0	-36.4	165.37	0.780	Level 1
6,300.0	6,281.4	6,310.6	6,257.4	14.9	166.0	-88.18	186.1	128.9	129.0	-37.2	166.13	0.776	Level 1
6,400.0	6,381.4	6,410.6	6,357.4	15.1	166.6	-88.18	186.1	128.9	129.0	-38.0	167.00	0.772	Level 1
6,500.0	6,481.4	6,510.6	6,457.4	15.3	167.3	-88.18	186.1	128.9	129.0	-39.0	167.98	0.768	Level 1
6,600.0	6,581.4	6,610.6	6,557.4	15.5	168.1	-88.18	186.1	128.9	129.0	-40.1	169.05	0.763	Level 1
6,700.0	6,681.4	6,710.6	6,657.4	15.7	169.0	-88.18	186.1	128.9	129.0	-41.3	170.22	0.758	Level 1
6,800.0	6,781.4	6,810.6	6,757.4	15.9	170.0	-88.18	186.1	128.9	129.0	-42.5	171.49	0.752	Level 1
6,900.0	6,881.4	6,910.6	6,857.4	16.1	171.0	-88.18	186.1	128.9	129.0	-43.9	172.85	0.746	Level 1, CC
6,965.8	6,947.2	6,976.4	6,923.2	16.2	171.8	91.85	186.1	128.9	129.0	-44.8	173.80	0.742	Level 1
7,000.0	6,981.4	7,010.6	6,957.4	16.3	172.2	91.82	186.1	128.9	129.0	-45.4	174.31	0.740	Level 1
7,100.0	7,081.1	7,110.3	7,057.1	16.5	173.4	94.82	186.1	128.9	129.4	-46.3	175.63	0.737	Level 1, ES, SF
7,200.0	7,179.1	7,208.3	7,155.1	16.6	174.7	102.97	186.1	128.9	132.5	-44.6	177.12	0.748	Level 1
7,300.0	7,273.6	7,302.8	7,249.6	16.7	176.0	114.34	186.1	128.9	143.6	-34.7	178.24	0.805	Level 1
7,400.0	7,363.1	7,384.8	7,331.5	16.7	177.2	125.07	187.5	128.9	169.0	-7.4	176.43	0.958	Level 1
7,500.0	7,446.0	7,450.0	7,396.2	16.8	178.0	133.23	195.6	128.9	217.3	46.6	170.66	1.273	Level 3
7,600.0	7,520.9	7,488.4	7,433.8	16.9	178.5	135.15	203.9	128.9	286.0	121.1	164.91	1.734	
7,700.0	7,586.5	7,516.5	7,460.8	17.1	178.8	132.79	211.5	128.9	368.9	206.2	162.68	2.268	
7,800.0	7,641.8	7,532.5	7,476.0	17.4	179.0	123.42	216.4	128.9	460.3	290.2	170.05	2.707	
7,900.0	7,685.7	7,550.0	7,492.5	17.9	179.2	106.71	222.3	128.9	556.4	373.3	183.14	3.038	
8,000.0	7,717.5	7,550.0	7,492.5	18.7	179.2	73.31	222.3	128.9	654.0	482.5	171.58	3.812	
8,100.0	7,736.7	7,532.1	7,475.6	19.6	179.0	41.47	216.3	128.9	751.1	642.8	108.26	6.938	
8,200.0	7,742.9	7,521.5	7,465.6	20.6	178.9	26.73	213.0	128.9	846.5	779.6	66.94	12.646	
8,300.0	7,742.5	7,500.0	7,444.9	21.7	178.6	24.93	206.9	128.9	941.2	878.8	62.36	15.092	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32O-303
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5073.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32O Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5073.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32O-303	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #1 (7-25-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Jacobucci 23-32 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 100-NS-GYRO-MS

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-148.94	-320.9	-193.3	374.9				
100.0	100.0	87.8	87.8	0.1	0.1	-148.97	-321.0	-193.1	374.5	374.3	0.23	1,635.794	
200.0	200.0	189.1	189.1	0.3	0.4	-149.03	-320.8	-192.5	374.2	373.5	0.69	542.395	
300.0	300.0	290.0	290.0	0.6	0.6	-149.03	-320.2	-192.2	373.5	372.3	1.15	324.599	
400.0	400.0	389.8	389.8	0.8	0.8	-148.98	-319.4	-192.1	372.7	371.1	1.59	233.739	
500.0	500.0	489.6	489.6	1.0	1.0	-148.86	-318.4	-192.3	372.0	369.9	2.03	183.158	
600.0	600.0	589.3	589.3	1.2	1.2	-148.69	-317.2	-193.0	371.3	368.8	2.47	150.549	
700.0	700.0	687.9	687.9	1.5	1.4	-148.46	-316.1	-194.0	370.9	368.0	2.90	128.098	
800.0	800.0	787.7	787.7	1.7	1.6	-148.24	-315.2	-195.1	370.7	367.3	3.33	111.296	
900.0	900.0	887.5	887.4	1.9	1.9	-147.99	-314.2	-196.4	370.5	366.7	3.78	98.121	
1,000.0	1,000.0	987.7	987.6	2.1	2.1	-147.69	-313.0	-198.0	370.4	366.2	4.23	87.531	
1,100.0	1,100.0	1,088.1	1,088.0	2.4	2.3	-147.33	-311.6	-199.8	370.2	365.5	4.70	78.815	
1,200.0	1,200.0	1,188.1	1,188.0	2.6	2.6	-146.93	-310.0	-201.8	369.9	364.7	5.17	71.585	
1,300.0	1,300.0	1,287.4	1,287.2	2.8	2.8	-146.52	-308.4	-203.9	369.7	364.1	5.64	65.580	
1,324.1	1,324.1	1,311.3	1,311.1	2.9	2.9	-146.43	-308.1	-204.5	369.7	364.0	5.75	64.288	CC
1,400.0	1,400.0	1,386.3	1,386.1	3.0	3.1	-146.14	-307.1	-206.0	369.8	363.7	6.10	60.579	
1,500.0	1,500.0	1,485.6	1,485.4	3.3	3.3	-145.78	-306.1	-208.2	370.2	363.6	6.57	56.344	ES
1,600.0	1,600.0	1,584.6	1,584.3	3.5	3.6	-145.41	-305.2	-210.5	370.8	363.7	7.03	52.724	
1,700.0	1,700.0	1,683.4	1,683.1	3.7	3.8	160.27	-304.5	-213.0	373.3	365.8	7.49	49.862	
1,800.0	1,799.8	1,783.3	1,782.9	3.9	4.0	160.88	-303.9	-215.7	379.3	371.4	7.93	47.841	
1,900.0	1,899.5	1,883.2	1,882.9	4.1	4.3	161.61	-303.3	-218.3	388.5	380.1	8.37	46.429	
2,000.0	1,998.8	1,982.5	1,982.1	4.4	4.5	162.46	-302.5	-220.8	400.7	391.8	8.82	45.437	
2,100.0	2,098.0	2,082.2	2,081.8	4.6	4.8	163.32	-301.7	-223.2	413.3	404.0	9.29	44.488	
2,200.0	2,197.2	2,181.5	2,181.0	4.9	5.0	164.11	-300.8	-225.5	425.9	416.1	9.77	43.607	
2,300.0	2,296.5	2,280.7	2,280.2	5.1	5.3	164.85	-300.0	-227.7	438.5	428.2	10.24	42.802	
2,400.0	2,395.7	2,379.4	2,378.9	5.4	5.5	165.53	-299.2	-229.9	451.1	440.4	10.72	42.075	
2,500.0	2,495.0	2,478.3	2,477.7	5.7	5.8	166.17	-298.5	-232.1	464.0	452.8	11.20	41.415	
2,600.0	2,594.2	2,577.3	2,576.7	6.0	6.0	166.80	-297.6	-234.4	476.8	465.1	11.69	40.805	
2,700.0	2,693.4	2,677.9	2,677.3	6.2	6.3	167.41	-296.7	-236.7	489.6	477.5	12.18	40.215	
2,800.0	2,792.7	2,777.9	2,777.2	6.5	6.6	167.99	-295.5	-238.8	502.2	489.5	12.67	39.644	
2,900.0	2,891.9	2,877.0	2,876.3	6.8	6.8	168.50	-294.5	-240.6	514.7	501.6	13.16	39.116	
3,000.0	2,991.2	2,976.0	2,975.4	7.1	7.1	168.97	-293.6	-242.3	527.3	513.7	13.65	38.630	
3,100.0	3,090.4	3,073.7	3,073.0	7.4	7.3	169.41	-292.7	-244.0	540.0	525.9	14.14	38.200	
3,200.0	3,189.6	3,168.6	3,167.9	7.7	7.6	169.83	-292.2	-246.1	553.3	538.7	14.61	37.868	
3,300.0	3,288.9	3,258.0	3,257.2	8.0	7.8	170.26	-292.1	-249.2	567.7	552.6	15.06	37.688	
3,400.0	3,388.1	3,348.2	3,347.3	8.3	8.0	170.79	-292.2	-254.3	583.9	568.4	15.51	37.643	
3,500.0	3,487.4	3,448.9	3,447.7	8.6	8.3	171.49	-292.0	-261.5	601.0	585.0	15.99	37.584	
3,600.0	3,586.6	3,558.5	3,557.1	8.9	8.5	172.17	-290.8	-267.8	616.7	600.2	16.50	37.371	
3,700.0	3,685.8	3,665.0	3,663.5	9.2	8.8	172.68	-289.5	-271.9	630.8	613.8	17.01	37.086	
3,800.0	3,785.1	3,768.8	3,767.3	9.5	9.1	173.04	-288.5	-274.4	644.1	626.6	17.52	36.772	
3,900.0	3,884.3	3,869.4	3,867.8	9.8	9.4	173.32	-287.6	-276.0	656.9	638.9	18.02	36.463	
4,000.0	3,983.6	3,968.5	3,966.9	10.1	9.6	173.58	-286.7	-277.5	669.6	651.1	18.51	36.175	
4,100.0	4,082.8	4,071.3	4,069.8	10.4	9.9	173.84	-285.7	-278.8	682.2	663.2	19.01	35.884	
4,200.0	4,182.1	4,175.4	4,173.9	10.7	10.1	174.06	-284.7	-279.3	693.9	674.4	19.46	35.651	
4,300.0	4,281.6	4,276.4	4,274.8	10.9	10.2	174.16	-284.0	-278.7	702.4	682.6	19.80	35.469	
4,400.0	4,381.5	4,373.9	4,372.4	11.1	10.3	174.21	-283.6	-278.1	707.5	687.4	20.06	35.270	
4,500.0	4,481.4	4,470.6	4,469.1	11.3	10.3	174.19	-283.8	-277.5	709.5	689.3	20.25	35.038	
4,600.0	4,581.4	4,570.2	4,568.6	11.5	10.3	-131.08	-284.3	-277.1	709.6	689.1	20.45	34.704	
4,651.8	4,633.2	4,621.7	4,620.2	11.6	10.3	-131.10	-284.4	-276.9	709.6	689.0	20.57	34.502	
4,700.0	4,681.4	4,669.0	4,667.4	11.7	10.3	-131.12	-284.6	-276.8	709.6	688.9	20.68	34.312	
4,800.0	4,781.4	4,766.6	4,765.0	11.9	10.4	-131.18	-285.4	-276.5	709.9	689.0	20.93	33.915	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32O-303
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5073.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32O Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5073.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32O-303	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #1 (7-25-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Jacobucci 23-32 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 100-NS-GYRO-MS

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
4,900.0	4,881.4	4,865.2	4,863.6	12.1	10.4	-131.29	-286.8	-276.1	710.5	689.3	21.20	33.520	
5,000.0	4,981.4	4,963.4	4,961.8	12.3	10.5	-131.39	-288.3	-275.8	711.3	689.8	21.48	33.121	
5,100.0	5,081.4	5,062.7	5,061.1	12.4	10.5	-131.51	-290.1	-275.5	712.3	690.5	21.76	32.727	
5,200.0	5,181.4	5,165.7	5,164.0	12.6	10.6	-131.67	-292.2	-274.9	713.2	691.1	22.05	32.340	
5,300.0	5,281.4	5,270.7	5,269.0	12.8	10.7	-131.88	-294.3	-273.4	713.5	691.1	22.33	31.951	
5,400.0	5,381.4	5,372.4	5,370.7	13.0	10.7	-132.09	-296.1	-271.4	713.2	690.6	22.60	31.554	
5,500.0	5,481.4	5,472.1	5,470.3	13.2	10.8	-132.30	-297.8	-269.4	712.9	690.0	22.88	31.160	
5,598.6	5,580.1	5,568.8	5,567.1	13.4	10.8	-132.50	-299.5	-267.7	712.7	689.6	23.16	30.777	
5,600.0	5,581.4	5,570.1	5,568.4	13.4	10.8	-132.50	-299.6	-267.6	712.7	689.6	23.16	30.772	
5,700.0	5,681.4	5,667.9	5,666.1	13.6	10.9	-132.68	-301.3	-266.3	712.9	689.4	23.46	30.394	
5,800.0	5,781.4	5,766.3	5,764.5	13.8	11.0	-132.84	-303.1	-265.2	713.4	689.6	23.76	30.021	
5,900.0	5,881.4	5,864.4	5,862.6	14.0	11.1	-132.99	-304.8	-264.5	714.0	689.9	24.09	29.645	
6,000.0	5,981.4	5,966.2	5,964.4	14.2	11.2	-133.06	-306.1	-264.5	714.8	690.4	24.43	29.255	
6,100.0	6,081.4	6,070.9	6,069.0	14.4	11.4	-133.10	-306.5	-264.4	715.1	690.3	24.78	28.852	
6,200.0	6,181.4	6,174.5	6,172.7	14.7	11.5	-133.09	-306.3	-264.1	714.7	689.6	25.14	28.431	
6,300.0	6,281.4	6,276.7	6,274.9	14.9	11.7	-133.05	-305.4	-263.9	713.9	688.4	25.52	27.972	
6,400.0	6,381.4	6,375.7	6,373.9	15.1	11.9	-132.97	-304.1	-263.9	713.1	687.1	25.93	27.499	
6,500.0	6,481.4	6,475.2	6,473.4	15.3	12.1	-132.87	-302.6	-264.3	712.3	686.0	26.35	27.029	
6,600.0	6,581.4	6,574.5	6,572.6	15.5	12.3	-132.75	-301.1	-264.8	711.7	684.9	26.79	26.568	
6,700.0	6,681.4	6,681.6	6,679.7	15.7	12.5	-132.64	-299.4	-265.0	710.7	683.5	27.22	26.114	
6,800.0	6,781.4	6,787.3	6,785.4	15.9	12.7	-132.59	-297.5	-263.8	708.7	681.1	27.61	25.669	
6,900.0	6,881.4	6,893.6	6,891.7	16.1	12.8	-132.55	-295.0	-262.0	705.9	677.9	28.00	25.213	
7,000.0	6,981.4	6,999.6	6,997.6	16.3	13.0	47.50	-292.0	-259.3	702.1	673.8	28.38	24.741	
7,100.0	7,081.1	7,101.3	7,099.1	16.5	13.2	48.44	-288.9	-256.3	693.2	664.7	28.56	24.270	
7,200.0	7,179.1	7,205.0	7,202.8	16.6	13.3	50.83	-285.4	-252.5	675.3	646.7	28.60	23.612	
7,300.0	7,273.6	7,302.4	7,300.0	16.7	13.5	54.70	-281.8	-248.2	649.1	620.6	28.58	22.709	
7,400.0	7,363.1	7,394.4	7,391.8	16.7	13.6	60.18	-278.3	-243.5	616.6	587.9	28.69	21.490	
7,500.0	7,446.0	7,479.2	7,476.4	16.8	13.7	67.23	-274.3	-238.8	580.2	551.2	29.08	19.955	
7,600.0	7,520.9	7,555.8	7,552.7	16.9	13.9	75.46	-269.8	-234.4	543.6	513.9	29.74	18.279	
7,700.0	7,586.5	7,619.8	7,616.5	17.1	14.0	83.61	-265.4	-230.3	511.5	481.0	30.47	16.788	
7,800.0	7,641.8	7,670.4	7,666.8	17.4	14.1	90.38	-261.9	-226.9	489.8	458.7	31.09	15.755	
7,881.3	7,678.3	7,703.0	7,699.3	17.8	14.1	94.39	-259.8	-224.6	483.8	452.2	31.56	15.327	
7,900.0	7,685.7	7,709.6	7,705.8	17.9	14.1	95.10	-259.3	-224.1	484.1	452.5	31.66	15.290 SF	
8,000.0	7,717.5	7,737.0	7,733.0	18.7	14.2	97.19	-257.6	-222.1	497.7	465.3	32.36	15.379	
8,100.0	7,736.7	7,751.1	7,747.1	19.6	14.2	96.23	-256.7	-221.0	530.8	497.4	33.34	15.920	
8,200.0	7,742.9	7,751.3	7,747.3	20.6	14.2	91.96	-256.7	-221.0	580.4	545.9	34.49	16.828	
8,300.0	7,742.5	7,744.1	7,740.2	21.7	14.2	91.07	-257.2	-221.5	642.2	606.6	35.63	18.025	
8,400.0	7,742.0	7,736.8	7,732.9	23.0	14.2	90.20	-257.6	-222.1	712.6	675.7	36.86	19.333	
8,500.0	7,741.6	7,729.3	7,725.4	24.3	14.2	89.31	-258.1	-222.6	789.4	751.2	38.17	20.679	
8,600.0	7,741.2	7,721.6	7,717.8	25.7	14.2	88.40	-258.6	-223.2	870.8	831.3	39.55	22.018	
8,700.0	7,740.8	7,713.7	7,709.9	27.2	14.1	87.46	-259.1	-223.8	955.7	914.8	40.98	23.323	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32O-303
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5073.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32O Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5073.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32O-303	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #1 (7-25-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Jacobucci 24-32 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 8585-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,800.0	7,740.4	7,765.4	7,765.4	28.7	155.3	91.52	-2,163.8	103.7	991.5	807.8	183.69	5.397	
8,900.0	7,739.9	7,764.9	7,764.9	30.2	155.3	91.37	-2,163.8	103.7	892.8	707.6	185.27	4.819	
9,000.0	7,739.5	7,764.5	7,764.5	31.8	155.3	91.21	-2,163.8	103.7	794.5	607.6	186.88	4.252	
9,100.0	7,739.1	7,764.1	7,764.1	33.5	155.3	91.06	-2,163.8	103.7	696.7	508.2	188.52	3.696	
9,200.0	7,738.7	7,763.7	7,763.7	35.1	155.3	90.90	-2,163.8	103.7	599.6	409.4	190.19	3.153	
9,300.0	7,738.3	7,763.3	7,763.3	36.8	155.3	90.75	-2,163.8	103.7	503.6	311.7	191.88	2.625	
9,400.0	7,737.9	7,762.9	7,762.9	38.5	155.3	90.59	-2,163.8	103.7	409.5	216.0	193.59	2.116	
9,500.0	7,737.4	7,762.4	7,762.4	40.2	155.2	90.44	-2,163.8	103.7	319.1	123.8	195.31	1.634	
9,600.0	7,737.0	7,762.0	7,762.0	42.0	155.2	90.28	-2,163.8	103.7	236.6	39.5	197.05	1.200	Level 2
9,700.0	7,736.6	7,761.6	7,761.6	43.7	155.2	90.12	-2,163.8	103.7	173.4	-25.4	198.81	0.872	Level 1
9,779.4	7,736.3	7,761.3	7,761.3	45.1	155.2	90.00	-2,163.8	103.7	154.1	-46.1	200.21	0.770	Level 1, CC, ES, SF
9,800.0	7,736.2	7,761.2	7,761.2	45.5	155.2	89.97	-2,163.8	103.7	155.5	-45.1	200.57	0.775	Level 1
9,900.0	7,735.8	7,760.8	7,760.8	47.3	155.2	89.81	-2,163.8	103.7	195.7	-6.7	202.35	0.967	Level 1
10,000.0	7,735.3	7,760.3	7,760.3	49.1	155.2	89.66	-2,163.8	103.7	269.1	65.0	204.13	1.318	Level 3
10,100.0	7,734.9	7,759.9	7,759.9	50.9	155.2	89.50	-2,163.8	103.7	355.7	149.8	205.92	1.727	
10,200.0	7,734.5	7,759.5	7,759.5	52.7	155.2	89.35	-2,163.8	103.7	447.9	240.2	207.72	2.156	
10,300.0	7,734.1	7,759.1	7,759.1	54.5	155.2	89.19	-2,163.8	103.7	542.9	333.4	209.52	2.591	
10,400.0	7,733.7	7,758.7	7,758.7	56.3	155.2	89.03	-2,163.8	103.7	639.4	428.1	211.32	3.026	
10,500.0	7,733.2	7,758.2	7,758.2	58.2	155.2	88.88	-2,163.8	103.7	736.9	523.7	213.13	3.457	
10,600.0	7,732.8	7,757.8	7,757.8	60.0	155.2	88.72	-2,163.8	103.7	834.9	620.0	214.95	3.884	
10,700.0	7,732.4	7,757.4	7,757.4	61.8	155.1	88.57	-2,163.8	103.7	933.4	716.6	216.77	4.306	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32O-303
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5073.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32O Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5073.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32O-303	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #1 (7-25-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Jacobucci 33-32 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 100-NS-GYRO-MS

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
2,700.0	2,693.4	2,716.2	2,715.9	6.2	6.4	63.11	-396.2	977.6	998.3	985.8	12.57	79.403	
2,800.0	2,792.7	2,808.4	2,808.0	6.5	6.7	63.68	-395.1	976.0	990.7	977.6	13.09	75.690	
2,900.0	2,891.9	2,902.3	2,902.0	6.8	6.9	64.31	-394.7	974.6	983.8	970.2	13.60	72.337	
3,000.0	2,991.2	3,000.0	2,999.6	7.1	7.1	64.99	-394.9	973.3	977.4	963.3	14.10	69.330	
3,100.0	3,090.4	3,093.9	3,093.5	7.4	7.3	65.65	-395.2	972.3	971.5	956.9	14.57	66.669	
3,200.0	3,189.6	3,189.9	3,189.6	7.7	7.5	66.34	-395.8	971.6	966.1	951.1	15.02	64.305	
3,300.0	3,288.9	3,288.8	3,288.4	8.0	7.6	67.06	-396.6	971.0	961.0	945.6	15.46	62.153	
3,400.0	3,388.1	3,377.6	3,377.2	8.3	7.7	67.73	-397.5	970.7	956.6	940.7	15.85	60.352	
3,500.0	3,487.4	3,470.4	3,470.0	8.6	7.8	68.45	-399.4	971.0	953.3	937.1	16.21	58.819	
3,600.0	3,586.6	3,570.8	3,570.4	8.9	7.8	69.25	-401.9	971.3	950.5	933.9	16.57	57.352	
3,700.0	3,685.8	3,671.4	3,670.9	9.2	7.9	70.06	-404.2	971.4	947.6	930.6	16.95	55.903	
3,800.0	3,785.1	3,773.8	3,773.3	9.5	8.0	70.86	-406.0	971.7	944.7	927.4	17.34	54.488	
3,900.0	3,884.3	3,870.5	3,870.1	9.8	8.1	71.60	-407.3	972.0	941.8	924.1	17.72	53.155	
4,000.0	3,983.6	3,970.6	3,970.1	10.1	8.1	72.35	-408.7	972.7	939.3	921.2	18.10	51.908	
4,100.0	4,082.8	4,067.8	4,067.3	10.4	8.2	73.09	-409.9	973.3	936.9	918.4	18.48	50.710	
4,200.0	4,182.1	4,168.0	4,167.5	10.7	8.3	73.82	-411.3	974.1	934.9	916.1	18.86	49.586	
4,300.0	4,281.6	4,266.1	4,265.5	10.9	8.4	74.37	-412.5	974.8	933.7	914.5	19.17	48.704	
4,338.9	4,320.4	4,303.3	4,302.8	11.0	8.4	74.53	-413.0	975.1	933.6	914.3	19.28	48.412	
4,400.0	4,381.5	4,360.9	4,360.3	11.1	8.5	74.74	-414.0	975.7	933.9	914.4	19.47	47.974	
4,500.0	4,481.4	4,458.3	4,457.7	11.3	8.6	74.99	-416.4	976.6	935.5	915.8	19.75	47.364	
4,600.0	4,581.4	4,555.3	4,554.6	11.5	8.7	129.88	-419.2	977.3	937.9	917.9	20.04	46.793	
4,700.0	4,681.4	4,652.0	4,651.4	11.7	8.8	129.98	-422.2	978.4	940.8	920.4	20.35	46.225	
4,800.0	4,781.4	4,755.6	4,754.9	11.9	8.9	129.97	-424.1	980.8	943.7	923.1	20.65	45.702	
4,900.0	4,881.4	4,863.9	4,863.1	12.1	9.0	129.90	-424.6	983.4	945.9	924.9	20.94	45.169	
5,000.0	4,981.4	4,966.3	4,965.5	12.3	9.1	129.83	-424.8	985.2	947.4	926.1	21.23	44.619	
5,100.0	5,081.4	5,067.9	5,067.1	12.4	9.2	129.78	-425.0	986.9	948.8	927.3	21.53	44.065	
5,200.0	5,181.4	5,172.1	5,171.3	12.6	9.3	129.72	-425.0	988.4	949.9	928.0	21.84	43.492	
5,300.0	5,281.4	5,274.9	5,274.1	12.8	9.4	129.70	-425.2	989.2	950.6	928.4	22.16	42.890	
5,400.0	5,381.4	5,374.2	5,373.4	13.0	9.6	129.70	-425.6	989.5	951.1	928.6	22.50	42.280	
5,500.0	5,481.4	5,473.7	5,472.9	13.2	9.7	129.70	-426.0	990.1	951.8	929.0	22.83	41.688	
5,600.0	5,581.4	5,575.8	5,575.0	13.4	9.8	129.69	-426.2	990.7	952.4	929.2	23.17	41.108	
5,700.0	5,681.4	5,678.1	5,677.3	13.6	10.0	129.68	-426.3	991.0	952.7	929.2	23.52	40.501	
5,800.0	5,781.4	5,777.2	5,776.4	13.8	10.2	129.69	-426.6	991.1	953.0	929.1	23.89	39.885	
5,900.0	5,881.4	5,876.0	5,875.2	14.0	10.3	129.70	-426.9	991.3	953.4	929.1	24.26	39.297	
6,000.0	5,981.4	5,977.9	5,977.1	14.2	10.5	129.69	-427.1	991.7	953.7	929.1	24.62	38.737	
6,100.0	6,081.4	6,079.6	6,078.8	14.4	10.6	129.68	-427.0	992.0	953.9	928.9	24.97	38.198	
6,200.0	6,181.4	6,179.7	6,178.9	14.7	10.8	129.67	-426.9	992.1	953.9	928.6	25.32	37.670	
6,300.0	6,281.4	6,279.3	6,278.5	14.9	10.9	129.66	-426.9	992.2	954.0	928.3	25.68	37.151	
6,400.0	6,381.4	6,384.8	6,384.0	15.1	11.1	129.64	-426.6	992.3	953.9	927.8	26.05	36.611	
6,500.0	6,481.4	6,496.7	6,495.9	15.3	11.3	129.62	-425.5	991.6	952.8	926.4	26.46	36.016	
6,600.0	6,581.4	6,598.4	6,597.5	15.5	11.5	129.61	-424.2	990.3	951.0	924.1	26.85	35.421	
6,700.0	6,681.4	6,698.5	6,697.6	15.7	11.7	129.62	-423.1	988.7	949.1	921.8	27.24	34.835	
6,800.0	6,781.4	6,789.1	6,788.3	15.9	11.8	129.64	-422.5	987.5	947.6	920.0	27.63	34.301	
6,900.0	6,881.4	6,891.6	6,890.7	16.1	12.0	129.66	-422.1	986.6	946.6	918.6	28.03	33.767	
7,000.0	6,981.4	6,996.4	6,995.6	16.3	12.3	-50.30	-421.7	984.9	945.2	916.7	28.45	33.219	
7,100.0	7,081.1	7,094.2	7,093.3	16.5	12.5	-50.90	-421.5	983.0	939.2	910.5	28.70	32.725	
7,200.0	7,179.1	7,191.1	7,190.1	16.6	12.6	-52.58	-421.6	981.1	925.3	896.6	28.74	32.192	
7,300.0	7,273.6	7,283.7	7,282.8	16.7	12.8	-55.36	-422.0	979.3	904.2	875.5	28.66	31.545	
7,400.0	7,363.1	7,366.9	7,365.9	16.7	13.0	-59.13	-422.5	977.9	877.2	848.6	28.58	30.698	
7,500.0	7,446.0	7,441.6	7,440.6	16.8	13.1	-63.75	-423.1	977.4	846.5	817.8	28.62	29.577	
7,600.0	7,520.9	7,508.6	7,507.7	16.9	13.3	-69.03	-423.6	977.8	814.3	785.3	28.90	28.170	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32O-303
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5073.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32O Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5073.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32O-303	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #1 (7-25-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Jacobucci 33-32 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 100-NS-GYRO-MS

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
7,700.0	7,586.5	7,572.5	7,571.5	17.1	13.3	-74.83	-424.2	978.6	782.9	753.4	29.47	26.570	
7,800.0	7,641.8	7,629.5	7,628.5	17.4	13.4	-80.52	-424.9	979.4	755.3	725.0	30.22	24.990	
7,900.0	7,685.7	7,678.0	7,677.1	17.9	13.5	-85.50	-425.6	979.8	734.3	703.2	31.06	23.644	
8,000.0	7,717.5	7,713.8	7,712.8	18.7	13.6	-88.99	-426.2	979.9	723.2	691.3	31.91	22.662	
8,040.6	7,726.8	7,724.4	7,723.4	19.0	13.6	-89.89	-426.4	980.0	722.2	689.9	32.30	22.360	CC, ES
8,100.0	7,736.7	7,736.0	7,735.0	19.6	13.6	-90.61	-426.7	980.0	724.5	691.7	32.84	22.059	
8,200.0	7,742.9	7,744.6	7,743.7	20.6	13.6	-90.18	-426.8	980.0	739.2	705.3	33.90	21.808	SF
8,300.0	7,742.5	7,746.3	7,745.3	21.7	13.6	-90.30	-426.9	980.0	766.8	731.7	35.04	21.880	
8,400.0	7,742.0	7,748.0	7,747.1	23.0	13.6	-90.44	-426.9	980.0	805.9	769.6	36.30	22.203	
8,500.0	7,741.6	7,749.8	7,748.8	24.3	13.6	-90.57	-426.9	980.0	854.9	817.3	37.63	22.717	
8,600.0	7,741.2	7,751.5	7,750.5	25.7	13.6	-90.71	-427.0	980.0	912.4	873.3	39.05	23.366	
8,700.0	7,740.8	7,753.3	7,752.3	27.2	13.6	-90.85	-427.0	980.0	976.7	936.2	40.52	24.103	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32O-303
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5073.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32O Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5073.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32O-303	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #1 (7-25-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Jacobucci 1N67W32O Pad Sec.32-T1N-R67W - Jacobucci 32O-203 - Wellbore #1 - Plan #1 (7-25-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-89.98	0.0	-30.8	30.8				
100.0	100.0	100.0	100.0	0.1	0.1	-89.98	0.0	-30.8	30.8	30.6	0.22	137.098	
200.0	200.0	200.0	200.0	0.3	0.3	-89.98	0.0	-30.8	30.8	30.1	0.67	45.699	
300.0	300.0	300.0	300.0	0.6	0.6	-89.98	0.0	-30.8	30.8	29.7	1.12	27.420	
400.0	400.0	400.0	400.0	0.8	0.8	-89.98	0.0	-30.8	30.8	29.2	1.57	19.585	
500.0	500.0	500.0	500.0	1.0	1.0	-89.98	0.0	-30.8	30.8	28.8	2.02	15.233	
600.0	600.0	600.0	600.0	1.2	1.2	-89.98	0.0	-30.8	30.8	28.3	2.47	12.463	
700.0	700.0	700.0	700.0	1.5	1.5	-89.98	0.0	-30.8	30.8	27.9	2.92	10.546	
800.0	800.0	800.0	800.0	1.7	1.7	-89.98	0.0	-30.8	30.8	27.4	3.37	9.140	
900.0	900.0	900.0	900.0	1.9	1.9	-89.98	0.0	-30.8	30.8	27.0	3.82	8.065	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-89.98	0.0	-30.8	30.8	26.5	4.27	7.216	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	-89.98	0.0	-30.8	30.8	26.1	4.72	6.528	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	-89.98	0.0	-30.8	30.8	25.6	5.17	5.961	
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	-89.98	0.0	-30.8	30.8	25.2	5.62	5.484	
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	-89.98	0.0	-30.8	30.8	24.7	6.07	5.078	
1,500.0	1,500.0	1,500.0	1,500.0	3.3	3.3	-89.98	0.0	-30.8	30.8	24.3	6.52	4.728	
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	-89.98	0.0	-30.8	30.8	23.8	6.97	4.423	CC, ES
1,700.0	1,700.0	1,700.0	1,700.0	3.7	3.7	-146.53	0.0	-30.8	32.3	24.8	7.41	4.354	
1,800.0	1,799.8	1,799.8	1,799.8	3.9	3.9	-150.99	0.0	-30.8	36.7	28.9	7.84	4.687	
1,900.0	1,899.5	1,899.5	1,899.5	4.1	4.2	-156.37	0.0	-30.8	44.6	36.3	8.26	5.395	
2,000.0	1,998.8	1,998.8	1,998.8	4.4	4.4	-161.21	0.0	-30.8	55.6	46.9	8.68	6.401	
2,100.0	2,098.0	2,098.0	2,098.0	4.6	4.6	-164.58	0.0	-30.8	67.4	58.2	9.12	7.383	
2,200.0	2,197.2	2,197.2	2,197.2	4.9	4.8	-166.94	0.0	-30.8	79.3	69.7	9.57	8.289	
2,300.0	2,296.5	2,297.3	2,297.3	5.1	5.1	-167.70	1.7	-31.0	90.8	80.8	10.01	9.075	
2,400.0	2,395.7	2,397.6	2,397.5	5.4	5.3	-166.37	6.8	-31.6	101.5	91.0	10.46	9.703	
2,500.0	2,495.0	2,497.9	2,497.3	5.7	5.5	-163.54	15.4	-32.7	111.4	100.5	10.91	10.207	
2,600.0	2,594.2	2,597.6	2,596.3	6.0	5.7	-159.65	27.2	-34.2	121.0	109.7	11.38	10.633	
2,700.0	2,693.4	2,696.8	2,694.7	6.2	6.0	-156.03	39.6	-35.7	131.1	119.2	11.87	11.047	
2,800.0	2,792.7	2,795.9	2,793.1	6.5	6.2	-152.94	52.1	-37.2	141.6	129.2	12.36	11.452	
2,900.0	2,891.9	2,895.1	2,891.5	6.8	6.5	-150.28	64.6	-38.8	152.4	139.5	12.87	11.844	
3,000.0	2,991.2	2,994.3	2,989.8	7.1	6.7	-147.97	77.0	-40.3	163.5	150.2	13.39	12.218	
3,100.0	3,090.4	3,093.5	3,088.2	7.4	7.0	-145.96	89.5	-41.8	174.9	161.0	13.91	12.574	
3,200.0	3,189.6	3,192.6	3,186.6	7.7	7.2	-144.19	102.0	-43.4	186.4	172.0	14.44	12.910	
3,300.0	3,288.9	3,291.8	3,285.0	8.0	7.5	-142.64	114.5	-44.9	198.1	183.2	14.98	13.228	
3,400.0	3,388.1	3,391.0	3,383.4	8.3	7.8	-141.25	126.9	-46.4	210.0	194.4	15.52	13.527	
3,500.0	3,487.4	3,490.2	3,481.7	8.6	8.1	-140.02	139.4	-48.0	221.9	205.8	16.07	13.809	
3,600.0	3,586.6	3,589.4	3,580.1	8.9	8.4	-138.91	151.9	-49.5	233.9	217.3	16.62	14.074	
3,700.0	3,685.8	3,689.4	3,679.4	9.2	8.6	-137.97	164.2	-51.0	246.0	228.8	17.16	14.330	
3,800.0	3,785.1	3,790.9	3,780.4	9.5	8.8	-137.76	173.6	-52.2	257.3	239.7	17.65	14.581	
3,900.0	3,884.3	3,892.4	3,881.8	9.8	9.0	-138.31	179.6	-52.9	267.9	249.8	18.10	14.798	
4,000.0	3,983.6	3,993.9	3,983.2	10.1	9.2	-139.55	182.0	-53.2	277.7	259.2	18.53	14.988	
4,100.0	4,082.8	4,093.5	4,082.8	10.4	9.4	-141.13	182.0	-53.2	287.2	268.3	18.95	15.158	
4,200.0	4,182.1	4,192.8	4,182.1	10.7	9.6	-142.63	182.0	-53.2	296.8	277.4	19.39	15.305	
4,300.0	4,281.6	4,292.3	4,281.6	10.9	9.8	-143.79	182.0	-53.2	304.3	284.5	19.80	15.364	
4,400.0	4,381.5	4,392.1	4,381.5	11.1	10.0	-144.49	182.0	-53.2	309.0	288.8	20.20	15.297	
4,500.0	4,481.4	4,492.1	4,481.4	11.3	10.2	-144.77	182.0	-53.2	311.0	290.4	20.58	15.109	
4,600.0	4,581.4	4,592.1	4,581.4	11.5	10.5	-90.00	182.0	-53.2	311.0	290.1	20.98	14.827	
4,700.0	4,681.4	4,692.1	4,681.4	11.7	10.7	-90.00	182.0	-53.2	311.0	289.6	21.40	14.538	
4,800.0	4,781.4	4,792.1	4,781.4	11.9	10.9	-90.00	182.0	-53.2	311.0	289.2	21.81	14.258	
4,900.0	4,881.4	4,892.1	4,881.4	12.1	11.1	-90.00	182.0	-53.2	311.0	288.8	22.23	13.989	
5,000.0	4,981.4	4,992.1	4,981.4	12.3	11.3	-90.00	182.0	-53.2	311.0	288.4	22.65	13.729	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32O-303
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5073.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32O Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5073.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32O-303	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #1 (7-25-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Jacobucci 1N67W32O Pad Sec.32-T1N-R67W - Jacobucci 32O-203 - Wellbore #1 - Plan #1 (7-25-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,081.4	5,092.1	5,081.4	12.4	11.5	-90.00	182.0	-53.2	311.0	288.0	23.08	13.478	
5,200.0	5,181.4	5,192.1	5,181.4	12.6	11.7	-90.00	182.0	-53.2	311.0	287.5	23.50	13.235	
5,300.0	5,281.4	5,292.1	5,281.4	12.8	12.0	-90.00	182.0	-53.2	311.0	287.1	23.92	13.001	
5,400.0	5,381.4	5,392.1	5,381.4	13.0	12.2	-90.00	182.0	-53.2	311.0	286.7	24.35	12.774	
5,500.0	5,481.4	5,492.1	5,481.4	13.2	12.4	-90.00	182.0	-53.2	311.0	286.3	24.78	12.554	
5,600.0	5,581.4	5,592.1	5,581.4	13.4	12.6	-90.00	182.0	-53.2	311.0	285.8	25.20	12.341	
5,700.0	5,681.4	5,692.1	5,681.4	13.6	12.8	-90.00	182.0	-53.2	311.0	285.4	25.63	12.136	
5,800.0	5,781.4	5,792.1	5,781.4	13.8	13.0	-90.00	182.0	-53.2	311.0	285.0	26.06	11.936	
5,900.0	5,881.4	5,892.1	5,881.4	14.0	13.3	-90.00	182.0	-53.2	311.0	284.5	26.49	11.743	
6,000.0	5,981.4	5,992.1	5,981.4	14.2	13.5	-90.00	182.0	-53.2	311.0	284.1	26.92	11.555	
6,100.0	6,081.4	6,092.1	6,081.4	14.4	13.7	-90.00	182.0	-53.2	311.0	283.7	27.35	11.374	
6,200.0	6,181.4	6,192.1	6,181.4	14.7	13.9	-90.00	182.0	-53.2	311.0	283.3	27.78	11.197	
6,300.0	6,281.4	6,292.1	6,281.4	14.9	14.1	-90.00	182.0	-53.2	311.0	282.8	28.21	11.026	
6,400.0	6,381.4	6,392.1	6,381.4	15.1	14.3	-90.00	182.0	-53.2	311.0	282.4	28.64	10.860	
6,500.0	6,481.4	6,492.1	6,481.4	15.3	14.6	-90.00	182.0	-53.2	311.0	282.0	29.07	10.698	
6,600.0	6,581.4	6,592.1	6,581.4	15.5	14.8	-90.00	182.0	-53.2	311.0	281.5	29.51	10.541	
6,700.0	6,681.4	6,692.1	6,681.4	15.7	15.0	-90.00	182.0	-53.2	311.0	281.1	29.94	10.388	
6,800.0	6,781.4	6,792.1	6,781.4	15.9	15.2	-90.00	182.0	-53.2	311.0	280.7	30.37	10.240	
6,865.6	6,847.1	6,857.7	6,847.1	16.0	15.4	-90.00	182.0	-53.2	311.0	280.4	30.66	10.145	
6,900.0	6,881.4	6,892.1	6,881.4	16.1	15.4	-90.01	182.0	-53.2	311.0	280.2	30.81	10.096	
6,918.9	6,900.3	6,911.0	6,900.3	16.1	15.5	89.91	181.5	-53.2	311.0	280.2	30.88	10.073	
7,000.0	6,981.4	6,991.4	6,980.3	16.3	15.6	88.60	174.4	-53.2	311.1	280.0	31.14	9.990	
7,100.0	7,081.1	7,088.6	7,075.4	16.5	15.7	86.11	154.6	-53.2	311.8	280.4	31.36	9.943	
7,200.0	7,179.1	7,184.2	7,165.8	16.6	15.7	83.73	123.5	-53.2	312.9	281.4	31.50	9.934	
7,300.0	7,273.6	7,278.4	7,250.3	16.7	15.8	81.47	82.1	-53.2	314.6	282.9	31.61	9.951	
7,400.0	7,363.1	7,371.3	7,328.1	16.7	15.9	79.39	31.3	-53.2	316.5	284.8	31.73	9.976	
7,500.0	7,446.0	7,463.1	7,398.3	16.8	16.1	77.51	-27.6	-53.2	318.7	286.8	31.89	9.991	
7,600.0	7,520.9	7,553.8	7,460.3	16.9	16.3	75.84	-93.8	-53.2	320.9	288.7	32.17	9.975	
7,700.0	7,586.5	7,643.7	7,513.5	17.1	16.6	74.41	-166.2	-53.2	323.0	290.4	32.60	9.908	
7,800.0	7,641.8	7,732.9	7,557.6	17.4	17.1	73.23	-243.7	-53.2	324.9	291.7	33.25	9.773	
7,900.0	7,685.7	7,821.5	7,592.1	17.9	17.7	72.31	-325.3	-53.2	326.5	292.4	34.14	9.563	
8,000.0	7,717.5	7,909.7	7,616.9	18.7	18.4	71.64	-409.9	-53.2	327.7	292.4	35.32	9.279	
8,100.0	7,736.7	8,000.0	7,632.0	19.6	19.2	71.24	-498.8	-53.2	328.5	291.7	36.80	8.925	
8,103.2	7,737.1	8,000.0	7,632.0	19.6	19.2	71.24	-498.8	-53.2	328.5	291.7	36.83	8.918	
8,200.0	7,742.9	8,086.1	7,636.5	20.6	20.1	71.12	-584.7	-53.2	328.7	290.2	38.53	8.532	
8,238.6	7,742.7	8,124.0	7,636.4	21.0	20.6	71.12	-622.7	-53.2	328.7	289.4	39.36	8.351	
8,300.0	7,742.5	8,185.4	7,636.2	21.7	21.3	71.13	-684.0	-53.2	328.7	288.0	40.71	8.074	
8,400.0	7,742.0	8,285.4	7,635.8	23.0	22.6	71.14	-784.0	-53.2	328.7	285.6	43.10	7.627	
8,500.0	7,741.6	8,385.4	7,635.4	24.3	23.9	71.15	-884.0	-53.2	328.7	283.0	45.65	7.200	
8,600.0	7,741.2	8,485.4	7,635.1	25.7	25.3	71.16	-984.0	-53.2	328.6	280.3	48.35	6.798	
8,700.0	7,740.8	8,585.4	7,634.7	27.2	26.8	71.16	-1,084.0	-53.2	328.6	277.5	51.16	6.423	
8,800.0	7,740.4	8,685.4	7,634.3	28.7	28.4	71.17	-1,184.0	-53.2	328.6	274.5	54.08	6.077	
8,900.0	7,739.9	8,785.4	7,634.0	30.2	29.9	71.18	-1,284.0	-53.2	328.6	271.5	57.08	5.757	
9,000.0	7,739.5	8,885.4	7,633.6	31.8	31.5	71.19	-1,384.0	-53.2	328.6	268.4	60.16	5.462	
9,100.0	7,739.1	8,985.4	7,633.2	33.5	33.2	71.20	-1,484.0	-53.2	328.6	265.3	63.29	5.191	
9,200.0	7,738.7	9,085.4	7,632.9	35.1	34.9	71.21	-1,584.0	-53.2	328.5	262.1	66.49	4.942	
9,300.0	7,738.3	9,185.4	7,632.5	36.8	36.6	71.22	-1,684.0	-53.2	328.5	258.8	69.72	4.712	
9,400.0	7,737.9	9,285.4	7,632.1	38.5	38.3	71.23	-1,784.0	-53.2	328.5	255.5	73.00	4.500	
9,500.0	7,737.4	9,385.4	7,631.8	40.2	40.0	71.23	-1,884.0	-53.2	328.5	252.2	76.31	4.305	
9,600.0	7,737.0	9,485.4	7,631.4	42.0	41.8	71.24	-1,984.0	-53.2	328.5	248.8	79.66	4.124	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32O-303
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5073.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32O Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5073.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32O-303	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #1 (7-25-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Jacobucci 1N67W32O Pad Sec.32-T1N-R67W - Jacobucci 32O-203 - Wellbore #1 - Plan #1 (7-25-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
9,700.0	7,736.6	9,585.4	7,631.0	43.7	43.5	71.25	-2,084.0	-53.2	328.5	245.4	83.03	3.956	
9,800.0	7,736.2	9,685.4	7,630.7	45.5	45.3	71.26	-2,184.0	-53.2	328.4	242.0	86.42	3.800	
9,900.0	7,735.8	9,785.4	7,630.3	47.3	47.1	71.27	-2,284.0	-53.2	328.4	238.6	89.84	3.656	
10,000.0	7,735.3	9,885.4	7,629.9	49.1	48.9	71.28	-2,384.0	-53.2	328.4	235.1	93.27	3.521	
10,100.0	7,734.9	9,985.4	7,629.6	50.9	50.7	71.29	-2,484.0	-53.2	328.4	231.7	96.72	3.395	
10,200.0	7,734.5	10,085.4	7,629.2	52.7	52.5	71.29	-2,584.0	-53.2	328.4	228.2	100.19	3.278	
10,300.0	7,734.1	10,185.4	7,628.8	54.5	54.4	71.30	-2,684.0	-53.2	328.4	224.7	103.67	3.167	
10,400.0	7,733.7	10,285.4	7,628.5	56.3	56.2	71.31	-2,784.0	-53.2	328.3	221.2	107.16	3.064	
10,500.0	7,733.2	10,385.4	7,628.1	58.2	58.0	71.32	-2,884.0	-53.2	328.3	217.7	110.67	2.967	
10,600.0	7,732.8	10,485.4	7,627.7	60.0	59.9	71.33	-2,984.0	-53.2	328.3	214.1	114.18	2.875	
10,700.0	7,732.4	10,585.4	7,627.4	61.8	61.7	71.34	-3,084.0	-53.2	328.3	210.6	117.70	2.789	
10,800.0	7,732.0	10,685.4	7,627.0	63.7	63.6	71.35	-3,184.0	-53.2	328.3	207.0	121.24	2.708	
10,900.0	7,731.6	10,785.4	7,626.6	65.5	65.4	71.35	-3,284.0	-53.2	328.3	203.5	124.78	2.631	
11,000.0	7,731.2	10,885.4	7,626.3	67.4	67.3	71.36	-3,384.0	-53.2	328.2	199.9	128.32	2.558	
11,100.0	7,730.7	10,985.4	7,625.9	69.2	69.1	71.37	-3,484.0	-53.2	328.2	196.3	131.88	2.489	
11,200.0	7,730.3	11,085.4	7,625.5	71.1	71.0	71.38	-3,584.0	-53.2	328.2	192.8	135.44	2.423	
11,300.0	7,729.9	11,185.4	7,625.2	72.9	72.8	71.39	-3,684.0	-53.2	328.2	189.2	139.00	2.361	
11,400.0	7,729.5	11,285.4	7,624.8	74.8	74.7	71.40	-3,784.0	-53.2	328.2	185.6	142.57	2.302	
11,500.0	7,729.1	11,385.4	7,624.4	76.7	76.6	71.41	-3,884.0	-53.2	328.2	182.0	146.15	2.245	
11,600.0	7,728.6	11,485.4	7,624.1	78.5	78.5	71.42	-3,984.0	-53.2	328.1	178.4	149.73	2.192	
11,700.0	7,728.2	11,585.4	7,623.7	80.4	80.3	71.42	-4,084.0	-53.2	328.1	174.8	153.32	2.140	
11,800.0	7,727.8	11,685.4	7,623.3	82.3	82.2	71.43	-4,184.0	-53.2	328.1	171.2	156.91	2.091	
11,900.0	7,727.4	11,785.4	7,623.0	84.2	84.1	71.44	-4,284.0	-53.2	328.1	167.6	160.50	2.044	
12,000.0	7,727.0	11,885.4	7,622.6	86.0	86.0	71.45	-4,384.0	-53.2	328.1	164.0	164.10	1.999	
12,100.0	7,726.5	11,985.4	7,622.2	87.9	87.8	71.46	-4,484.0	-53.2	328.1	160.4	167.70	1.956	
12,200.0	7,726.1	12,085.4	7,621.9	89.8	89.7	71.47	-4,584.0	-53.2	328.0	156.7	171.30	1.915	
12,300.0	7,725.7	12,185.4	7,621.5	91.7	91.6	71.48	-4,684.0	-53.2	328.0	153.1	174.91	1.875	
12,400.0	7,725.3	12,285.4	7,621.1	93.5	93.5	71.48	-4,784.0	-53.2	328.0	149.5	178.51	1.837	
12,500.0	7,724.9	12,385.4	7,620.8	95.4	95.4	71.49	-4,884.0	-53.2	328.0	145.9	182.13	1.801	
12,600.0	7,724.4	12,485.4	7,620.4	97.3	97.3	71.50	-4,984.0	-53.2	328.0	142.2	185.74	1.766	
12,700.0	7,724.0	12,585.4	7,620.0	99.2	99.1	71.51	-5,084.0	-53.2	328.0	138.6	189.36	1.732	
12,800.0	7,723.6	12,685.4	7,619.7	101.1	101.0	71.52	-5,184.0	-53.2	327.9	135.0	192.98	1.699	
12,900.0	7,723.2	12,785.4	7,619.3	103.0	102.9	71.53	-5,284.0	-53.2	327.9	131.3	196.60	1.668	
13,000.0	7,722.8	12,885.4	7,618.9	104.9	104.8	71.54	-5,384.0	-53.2	327.9	127.7	200.22	1.638	
13,100.0	7,722.4	12,985.4	7,618.6	106.8	106.7	71.55	-5,484.0	-53.2	327.9	124.0	203.85	1.609	
13,200.0	7,721.9	13,085.4	7,618.2	108.6	108.6	71.55	-5,584.0	-53.2	327.9	120.4	207.47	1.580	
13,300.0	7,721.5	13,185.4	7,617.8	110.5	110.5	71.56	-5,684.0	-53.2	327.9	116.8	211.10	1.553	
13,400.0	7,721.1	13,285.4	7,617.5	112.4	112.4	71.57	-5,784.0	-53.2	327.8	113.1	214.73	1.527	
13,500.0	7,720.7	13,385.4	7,617.1	114.3	114.3	71.58	-5,884.0	-53.2	327.8	109.5	218.37	1.501	
13,600.0	7,720.3	13,485.4	7,616.7	116.2	116.2	71.59	-5,984.0	-53.2	327.8	105.8	222.00	1.477	Level 3
13,700.0	7,719.8	13,585.4	7,616.4	118.1	118.1	71.60	-6,084.0	-53.2	327.8	102.2	225.64	1.453	Level 3
13,800.0	7,719.4	13,685.4	7,616.0	120.0	120.0	71.61	-6,184.0	-53.2	327.8	98.5	229.27	1.430	Level 3
13,900.0	7,719.0	13,785.4	7,615.6	121.9	121.9	71.62	-6,284.0	-53.2	327.8	94.8	232.91	1.407	Level 3
14,000.0	7,718.6	13,885.4	7,615.3	123.8	123.8	71.62	-6,384.0	-53.2	327.7	91.2	236.55	1.385	Level 3
14,100.0	7,718.2	13,985.4	7,614.9	125.7	125.7	71.63	-6,484.0	-53.2	327.7	87.5	240.19	1.364	Level 3
14,200.0	7,717.7	14,085.4	7,614.5	127.6	127.6	71.64	-6,584.0	-53.2	327.7	83.9	243.84	1.344	Level 3
14,300.0	7,717.3	14,185.4	7,614.2	129.5	129.5	71.65	-6,684.0	-53.2	327.7	80.2	247.48	1.324	Level 3
14,400.0	7,716.9	14,285.4	7,613.8	131.4	131.4	71.66	-6,784.0	-53.2	327.7	76.6	251.12	1.305	Level 3
14,500.0	7,716.5	14,385.4	7,613.4	133.3	133.3	71.67	-6,884.0	-53.2	327.7	72.9	254.77	1.286	Level 3
14,600.0	7,716.1	14,485.4	7,613.1	135.2	135.2	71.68	-6,984.0	-53.2	327.6	69.2	258.42	1.268	Level 3
14,617.2	7,716.0	14,502.6	7,613.0	135.5	135.5	71.68	-7,001.2	-53.2	327.6	68.6	259.04	1.265	Level 3, SF

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32O-303
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5073.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32O Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5073.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32O-303	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #1 (7-25-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Jacobucci 1N67W32O Pad Sec.32-T1N-R67W - Jacobucci 32O-203 - Wellbore #1 - Plan #1 (7-25-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32O-303
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5073.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32O Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5073.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32O-303	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #1 (7-25-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Jacobucci 1N67W32O Pad Sec.32-T1N-R67W - Jacobucci 32O-423 - Wellbore #1 - Plan #1 (7-25-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	89.97	0.0	33.6	33.6				
100.0	100.0	100.0	100.0	0.1	0.1	89.97	0.0	33.6	33.6	33.4	0.22	149.561	
200.0	200.0	200.0	200.0	0.3	0.3	89.97	0.0	33.6	33.6	32.9	0.67	49.854	
300.0	300.0	300.0	300.0	0.6	0.6	89.97	0.0	33.6	33.6	32.5	1.12	29.912	
400.0	400.0	400.0	400.0	0.8	0.8	89.97	0.0	33.6	33.6	32.0	1.57	21.366	
500.0	500.0	500.0	500.0	1.0	1.0	89.97	0.0	33.6	33.6	31.6	2.02	16.618	
600.0	600.0	600.0	600.0	1.2	1.2	89.97	0.0	33.6	33.6	31.1	2.47	13.596	
700.0	700.0	700.0	700.0	1.5	1.5	89.97	0.0	33.6	33.6	30.7	2.92	11.505	
800.0	800.0	800.0	800.0	1.7	1.7	89.97	0.0	33.6	33.6	30.2	3.37	9.971	
900.0	900.0	900.0	900.0	1.9	1.9	89.97	0.0	33.6	33.6	29.8	3.82	8.798	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	89.97	0.0	33.6	33.6	29.3	4.27	7.872	CC, ES
1,100.0	1,100.0	1,098.9	1,098.8	2.4	2.3	89.12	0.5	35.2	35.3	30.6	4.71	7.489	
1,200.0	1,200.0	1,197.5	1,197.3	2.6	2.6	87.00	2.1	40.1	40.2	35.1	5.14	7.822	
1,300.0	1,300.0	1,295.6	1,295.1	2.8	2.8	84.44	4.7	48.1	48.6	43.0	5.59	8.699	
1,400.0	1,400.0	1,393.1	1,391.9	3.0	3.0	82.06	8.3	59.3	60.4	54.3	6.04	9.994	
1,500.0	1,500.0	1,491.9	1,489.7	3.3	3.3	80.21	12.5	72.4	74.2	67.7	6.51	11.398	
1,600.0	1,600.0	1,590.9	1,587.7	3.5	3.6	78.94	16.7	85.7	88.1	81.1	6.99	12.606	
1,700.0	1,700.0	1,690.1	1,686.0	3.7	3.8	23.53	21.0	98.9	100.5	93.2	7.34	13.697	
1,800.0	1,799.8	1,789.7	1,784.5	3.9	4.1	23.76	25.3	112.2	109.7	101.9	7.77	14.121	
1,900.0	1,899.5	1,889.5	1,883.4	4.1	4.4	24.67	29.6	125.5	115.7	107.5	8.20	14.114	
2,000.0	1,998.8	1,989.4	1,982.3	4.4	4.8	26.17	33.9	138.9	118.9	110.3	8.64	13.767	
2,100.0	2,098.0	2,089.3	2,081.2	4.6	5.1	27.71	38.2	152.2	121.8	112.7	9.10	13.388	
2,200.0	2,197.2	2,189.2	2,180.1	4.9	5.4	29.18	42.4	165.6	124.8	115.2	9.57	13.044	
2,300.0	2,296.5	2,289.1	2,279.0	5.1	5.7	30.57	46.7	178.9	127.9	117.8	10.04	12.729	
2,400.0	2,395.7	2,389.0	2,377.9	5.4	6.0	31.91	51.0	192.3	131.0	120.5	10.53	12.441	
2,500.0	2,495.0	2,488.9	2,476.9	5.7	6.4	33.18	55.3	205.6	134.2	123.2	11.02	12.176	
2,600.0	2,594.2	2,588.8	2,575.8	6.0	6.7	34.39	59.6	218.9	137.4	125.9	11.52	11.932	
2,700.0	2,693.4	2,688.7	2,674.7	6.2	7.0	35.54	63.9	232.3	140.7	128.7	12.02	11.706	
2,800.0	2,792.7	2,788.6	2,773.6	6.5	7.4	36.64	68.2	245.6	144.1	131.6	12.54	11.496	
2,900.0	2,891.9	2,888.5	2,872.5	6.8	7.7	37.69	72.5	259.0	147.5	134.5	13.05	11.301	
3,000.0	2,991.2	2,988.5	2,971.4	7.1	8.0	38.69	76.8	272.3	151.0	137.4	13.58	11.120	
3,100.0	3,090.4	3,088.4	3,070.4	7.4	8.4	39.65	81.1	285.7	154.5	140.4	14.11	10.950	
3,200.0	3,189.6	3,188.3	3,169.3	7.7	8.7	40.56	85.3	299.0	158.1	143.4	14.65	10.791	
3,300.0	3,288.9	3,288.2	3,268.2	8.0	9.0	41.44	89.6	312.3	161.6	146.5	15.19	10.643	
3,400.0	3,388.1	3,388.1	3,367.1	8.3	9.4	42.27	93.9	325.7	165.3	149.5	15.74	10.503	
3,500.0	3,487.4	3,488.0	3,466.0	8.6	9.7	43.07	98.2	339.0	168.9	152.6	16.29	10.373	
3,600.0	3,586.6	3,587.9	3,565.0	8.9	10.0	43.84	102.5	352.4	172.6	155.8	16.84	10.249	
3,700.0	3,685.8	3,687.8	3,663.9	9.2	10.4	44.57	106.8	365.7	176.3	158.9	17.40	10.133	
3,800.0	3,785.1	3,787.7	3,762.8	9.5	10.7	45.27	111.1	379.1	180.1	162.1	17.97	10.024	
3,900.0	3,884.3	3,887.6	3,861.7	9.8	11.1	45.95	115.4	392.4	183.9	165.3	18.53	9.921	
4,000.0	3,983.6	3,987.5	3,960.6	10.1	11.4	46.60	119.7	405.7	187.7	168.6	19.10	9.823	
4,100.0	4,082.8	4,087.4	4,059.5	10.4	11.7	47.22	124.0	419.1	191.5	171.8	19.68	9.731	
4,200.0	4,182.1	4,187.3	4,158.5	10.7	12.1	47.79	128.3	432.4	195.5	175.2	20.25	9.655	
4,300.0	4,281.6	4,287.1	4,257.3	10.9	12.4	47.82	132.5	445.8	201.3	180.6	20.72	9.713	
4,400.0	4,381.5	4,386.8	4,355.9	11.1	12.8	47.18	136.8	459.1	209.5	188.4	21.13	9.913	
4,500.0	4,481.4	4,486.1	4,454.2	11.3	13.1	45.98	141.1	472.3	220.1	198.7	21.48	10.250	
4,600.0	4,581.4	4,585.1	4,552.3	11.5	13.4	99.15	145.3	485.6	232.5	210.7	21.81	10.663	
4,700.0	4,681.4	4,684.1	4,650.3	11.7	13.8	97.66	149.6	498.8	245.1	223.0	22.17	11.057	
4,800.0	4,781.4	4,783.1	4,748.3	11.9	14.1	96.32	153.8	512.0	257.9	235.3	22.54	11.440	
4,900.0	4,881.4	4,882.1	4,846.4	12.1	14.5	95.11	158.1	525.2	270.8	247.9	22.93	11.811	
5,000.0	4,981.4	4,981.1	4,944.4	12.3	14.8	94.01	162.3	538.5	283.8	260.5	23.32	12.171	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32O-303
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5073.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32O Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5073.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32O-303	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #1 (7-25-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Jacobucci 1N67W32O Pad Sec.32-T1N-R67W - Jacobucci 32O-423 - Wellbore #1 - Plan #1 (7-25-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,081.4	5,080.1	5,042.4	12.4	15.1	93.00	166.6	551.7	296.9	273.1	23.71	12.519	
5,200.0	5,181.4	5,179.1	5,140.5	12.6	15.5	92.08	170.8	564.9	310.0	285.9	24.12	12.855	
5,300.0	5,281.4	5,283.0	5,243.4	12.8	15.8	91.22	175.2	578.4	323.0	298.4	24.52	13.169	
5,400.0	5,381.4	5,394.6	5,354.3	13.0	16.1	90.55	178.8	589.6	332.9	308.0	24.92	13.361	
5,500.0	5,481.4	5,506.9	5,466.4	13.2	16.3	90.16	181.1	596.7	339.2	313.9	25.31	13.401	
5,600.0	5,581.4	5,619.6	5,579.0	13.4	16.5	90.00	182.0	599.6	341.8	316.1	25.71	13.293	
5,700.0	5,681.4	5,722.0	5,681.4	13.6	16.6	90.00	182.0	599.6	341.8	315.7	26.11	13.092	
5,800.0	5,781.4	5,822.0	5,781.4	13.8	16.8	90.00	182.0	599.6	341.8	315.3	26.52	12.891	
5,900.0	5,881.4	5,922.0	5,881.4	14.0	16.9	90.00	182.0	599.6	341.8	314.9	26.93	12.696	
6,000.0	5,981.4	6,022.0	5,981.4	14.2	17.1	90.00	182.0	599.6	341.8	314.5	27.34	12.506	
6,100.0	6,081.4	6,122.0	6,081.4	14.4	17.3	90.00	182.0	599.6	341.8	314.1	27.75	12.321	
6,200.0	6,181.4	6,222.0	6,181.4	14.7	17.4	90.00	182.0	599.6	341.8	313.7	28.16	12.141	
6,300.0	6,281.4	6,322.0	6,281.4	14.9	17.6	90.00	182.0	599.6	341.8	313.3	28.57	11.965	
6,400.0	6,381.4	6,422.0	6,381.4	15.1	17.8	90.00	182.0	599.6	341.8	312.9	28.98	11.794	
6,500.0	6,481.4	6,522.0	6,481.4	15.3	18.0	90.00	182.0	599.6	341.8	312.4	29.40	11.628	
6,600.0	6,581.4	6,622.0	6,581.4	15.5	18.1	90.00	182.0	599.6	341.8	312.0	29.82	11.465	
6,700.0	6,681.4	6,722.0	6,681.4	15.7	18.3	90.00	182.0	599.6	341.8	311.6	30.23	11.307	
6,800.0	6,781.4	6,822.0	6,781.4	15.9	18.5	90.00	182.0	599.6	341.8	311.2	30.65	11.153	
6,900.0	6,881.4	6,922.0	6,881.4	16.1	18.7	90.00	182.0	599.6	341.8	310.8	31.07	11.003	
6,965.9	6,947.3	6,987.9	6,947.3	16.2	18.8	-90.01	182.0	599.6	341.8	310.5	31.35	10.906	
7,000.0	6,981.4	7,022.0	6,981.4	16.3	18.8	-90.00	182.0	599.6	341.8	310.4	31.49	10.856	
7,007.9	6,989.3	7,029.9	6,989.3	16.3	18.8	-90.01	182.0	599.6	341.8	310.3	31.52	10.847	
7,100.0	7,081.1	7,121.9	7,081.3	16.5	19.0	-91.10	181.8	599.6	341.9	310.1	31.78	10.757	
7,200.0	7,179.1	7,222.9	7,181.8	16.6	19.1	-92.89	172.4	599.6	342.3	310.3	31.96	10.710	
7,300.0	7,273.6	7,325.4	7,281.6	16.7	19.2	-94.63	149.5	599.6	343.0	310.9	32.09	10.690	
7,400.0	7,363.1	7,429.3	7,378.8	16.7	19.3	-96.30	112.9	599.6	343.9	311.7	32.21	10.679	
7,500.0	7,446.0	7,534.8	7,471.4	16.8	19.4	-97.85	62.6	599.6	345.1	312.7	32.38	10.659	
7,600.0	7,520.9	7,641.6	7,557.2	16.9	19.5	-99.27	-0.9	599.6	346.4	313.7	32.66	10.606	
7,700.0	7,586.5	7,749.8	7,634.3	17.1	19.6	-100.52	-76.7	599.6	347.7	314.6	33.12	10.500	
7,800.0	7,641.8	7,859.2	7,700.5	17.4	19.8	-101.58	-163.7	599.6	349.0	315.2	33.81	10.323	
7,900.0	7,685.7	7,969.6	7,754.1	17.9	20.2	-102.43	-260.1	599.6	350.1	315.3	34.78	10.066	
8,000.0	7,717.5	8,080.8	7,793.4	18.7	20.7	-103.04	-364.0	599.6	350.9	314.9	36.05	9.733	
8,100.0	7,736.7	8,192.6	7,817.4	19.6	21.5	-103.41	-473.1	599.6	351.4	313.8	37.64	9.338	
8,200.0	7,742.9	8,303.7	7,825.2	20.6	22.5	-103.54	-583.8	599.6	351.6	312.1	39.50	8.902	
8,300.0	7,742.5	8,403.7	7,825.9	21.7	23.5	-103.72	-683.8	599.6	351.9	310.2	41.66	8.446	
8,400.0	7,742.0	8,503.7	7,826.6	23.0	24.6	-103.89	-783.8	599.6	352.2	308.1	44.03	7.997	
8,500.0	7,741.6	8,603.7	7,827.3	24.3	25.9	-104.07	-883.8	599.6	352.4	305.8	46.57	7.567	
8,600.0	7,741.2	8,703.7	7,828.0	25.7	27.2	-104.24	-983.8	599.6	352.7	303.4	49.26	7.160	
8,700.0	7,740.8	8,803.7	7,828.7	27.2	28.6	-104.42	-1,083.8	599.6	353.0	300.9	52.07	6.779	
8,800.0	7,740.4	8,903.7	7,829.4	28.7	30.0	-104.60	-1,183.8	599.6	353.2	298.3	54.97	6.426	
8,900.0	7,739.9	9,003.7	7,830.1	30.2	31.5	-104.77	-1,283.8	599.6	353.5	295.6	57.96	6.099	
9,000.0	7,739.5	9,103.7	7,830.8	31.8	33.1	-104.95	-1,383.8	599.6	353.8	292.8	61.03	5.798	
9,100.0	7,739.1	9,203.7	7,831.5	33.5	34.6	-105.12	-1,483.8	599.6	354.1	290.0	64.15	5.520	
9,200.0	7,738.7	9,303.7	7,832.2	35.1	36.2	-105.29	-1,583.8	599.6	354.4	287.1	67.32	5.264	
9,300.0	7,738.3	9,403.7	7,832.9	36.8	37.9	-105.47	-1,683.8	599.6	354.7	284.2	70.54	5.028	
9,400.0	7,737.9	9,503.6	7,833.6	38.5	39.5	-105.64	-1,783.7	599.6	355.0	281.2	73.80	4.811	
9,500.0	7,737.4	9,603.6	7,834.3	40.2	41.2	-105.82	-1,883.7	599.6	355.3	278.2	77.08	4.610	
9,600.0	7,737.0	9,703.6	7,835.0	42.0	42.9	-105.99	-1,983.7	599.6	355.6	275.2	80.39	4.423	
9,700.0	7,736.6	9,803.6	7,835.7	43.7	44.7	-106.16	-2,083.7	599.6	355.9	272.2	83.72	4.251	
9,800.0	7,736.2	9,903.6	7,836.4	45.5	46.4	-106.33	-2,183.7	599.6	356.2	269.2	87.08	4.091	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32O-303
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5073.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32O Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5073.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32O-303	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #1 (7-25-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Jacobucci 1N67W32O Pad Sec.32-T1N-R67W - Jacobucci 32O-423 - Wellbore #1 - Plan #1 (7-25-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
9,900.0	7,735.8	10,003.6	7,837.1	47.3	48.1	-106.51	-2,283.7	599.6	356.5	266.1	90.44	3.942	
10,000.0	7,735.3	10,103.6	7,837.8	49.1	49.9	-106.68	-2,383.7	599.6	356.9	263.0	93.83	3.803	
10,100.0	7,734.9	10,203.6	7,838.5	50.9	51.7	-106.85	-2,483.7	599.6	357.2	260.0	97.22	3.674	
10,200.0	7,734.5	10,303.6	7,839.2	52.7	53.5	-107.02	-2,583.7	599.6	357.5	256.9	100.62	3.553	
10,300.0	7,734.1	10,403.6	7,839.9	54.5	55.2	-107.19	-2,683.7	599.6	357.8	253.8	104.04	3.440	
10,400.0	7,733.7	10,503.6	7,840.6	56.3	57.0	-107.36	-2,783.7	599.6	358.2	250.7	107.45	3.333	
10,500.0	7,733.2	10,603.6	7,841.3	58.2	58.9	-107.53	-2,883.6	599.6	358.5	247.6	110.88	3.233	
10,600.0	7,732.8	10,703.6	7,841.9	60.0	60.7	-107.70	-2,983.6	599.6	358.8	244.5	114.30	3.139	
10,700.0	7,732.4	10,803.6	7,842.6	61.8	62.5	-107.87	-3,083.6	599.6	359.2	241.5	117.73	3.051	
10,800.0	7,732.0	10,903.6	7,843.3	63.7	64.3	-108.04	-3,183.6	599.6	359.5	238.4	121.17	2.967	
10,900.0	7,731.6	11,003.6	7,844.0	65.5	66.1	-108.21	-3,283.6	599.6	359.9	235.3	124.60	2.888	
11,000.0	7,731.2	11,103.5	7,844.7	67.4	68.0	-108.38	-3,383.6	599.6	360.2	232.2	128.03	2.814	
11,100.0	7,730.7	11,203.5	7,845.4	69.2	69.8	-108.55	-3,483.6	599.6	360.6	229.1	131.47	2.743	
11,200.0	7,730.3	11,303.5	7,846.1	71.1	71.7	-108.72	-3,583.6	599.6	360.9	226.0	134.90	2.676	
11,300.0	7,729.9	11,403.5	7,846.8	72.9	73.5	-108.88	-3,683.6	599.6	361.3	223.0	138.34	2.612	
11,400.0	7,729.5	11,503.5	7,847.5	74.8	75.3	-109.05	-3,783.6	599.6	361.7	219.9	141.77	2.551	
11,500.0	7,729.1	11,603.5	7,848.2	76.7	77.2	-109.22	-3,883.6	599.6	362.0	216.8	145.20	2.493	
11,600.0	7,728.6	11,703.5	7,848.9	78.5	79.1	-109.39	-3,983.6	599.6	362.4	213.8	148.63	2.438	
11,700.0	7,728.2	11,803.5	7,849.6	80.4	80.9	-109.55	-4,083.5	599.6	362.8	210.7	152.05	2.386	
11,800.0	7,727.8	11,903.5	7,850.3	82.3	82.8	-109.72	-4,183.5	599.6	363.1	207.7	155.47	2.336	
11,900.0	7,727.4	12,003.5	7,851.0	84.2	84.6	-109.88	-4,283.5	599.6	363.5	204.6	158.89	2.288	
12,000.0	7,727.0	12,103.5	7,851.7	86.0	86.5	-110.05	-4,383.5	599.6	363.9	201.6	162.30	2.242	
12,100.0	7,726.5	12,203.5	7,852.4	87.9	88.4	-110.21	-4,483.5	599.6	364.3	198.6	165.71	2.198	
12,200.0	7,726.1	12,303.5	7,853.1	89.8	90.2	-110.38	-4,583.5	599.6	364.7	195.6	169.12	2.156	
12,300.0	7,725.7	12,403.5	7,853.8	91.7	92.1	-110.54	-4,683.5	599.6	365.1	192.5	172.52	2.116	
12,400.0	7,725.3	12,503.5	7,854.5	93.5	94.0	-110.71	-4,783.5	599.6	365.5	189.5	175.92	2.077	
12,500.0	7,724.9	12,603.5	7,855.2	95.4	95.9	-110.87	-4,883.5	599.6	365.9	186.5	179.31	2.040	
12,600.0	7,724.4	12,703.4	7,855.9	97.3	97.7	-111.03	-4,983.5	599.6	366.3	183.6	182.70	2.005	
12,700.0	7,724.0	12,803.4	7,856.6	99.2	99.6	-111.20	-5,083.5	599.6	366.7	180.6	186.08	1.970	
12,800.0	7,723.6	12,903.4	7,857.3	101.1	101.5	-111.36	-5,183.4	599.6	367.1	177.6	189.46	1.937	
12,900.0	7,723.2	13,003.4	7,858.0	103.0	103.4	-111.52	-5,283.4	599.6	367.5	174.6	192.83	1.906	
13,000.0	7,722.8	13,103.4	7,858.7	104.9	105.3	-111.68	-5,383.4	599.6	367.9	171.7	196.20	1.875	
13,100.0	7,722.4	13,203.4	7,859.4	106.8	107.1	-111.84	-5,483.4	599.6	368.3	168.7	199.56	1.846	
13,200.0	7,721.9	13,303.4	7,860.1	108.6	109.0	-112.01	-5,583.4	599.6	368.7	165.8	202.91	1.817	
13,300.0	7,721.5	13,403.4	7,860.8	110.5	110.9	-112.17	-5,683.4	599.6	369.1	162.9	206.26	1.790	
13,400.0	7,721.1	13,503.4	7,861.5	112.4	112.8	-112.33	-5,783.4	599.6	369.6	160.0	209.60	1.763	
13,500.0	7,720.7	13,603.4	7,862.2	114.3	114.7	-112.49	-5,883.4	599.6	370.0	157.0	212.94	1.738	
13,600.0	7,720.3	13,703.4	7,862.9	116.2	116.6	-112.65	-5,983.4	599.6	370.4	154.1	216.27	1.713	
13,700.0	7,719.8	13,803.4	7,863.6	118.1	118.5	-112.81	-6,083.4	599.6	370.8	151.3	219.59	1.689	
13,800.0	7,719.4	13,903.4	7,864.3	120.0	120.4	-112.96	-6,183.4	599.6	371.3	148.4	222.91	1.666	
13,900.0	7,719.0	14,003.4	7,865.0	121.9	122.2	-113.12	-6,283.4	599.6	371.7	145.5	226.22	1.643	
14,000.0	7,718.6	14,103.4	7,865.7	123.8	124.1	-113.28	-6,383.3	599.6	372.2	142.6	229.52	1.621	
14,100.0	7,718.2	14,203.4	7,866.4	125.7	126.0	-113.44	-6,483.3	599.6	372.6	139.8	232.81	1.600	
14,200.0	7,717.7	14,303.3	7,867.1	127.6	127.9	-113.60	-6,583.3	599.6	373.0	136.9	236.10	1.580	
14,300.0	7,717.3	14,403.3	7,867.8	129.5	129.8	-113.75	-6,683.3	599.6	373.5	134.1	239.39	1.560	
14,400.0	7,716.9	14,503.3	7,868.5	131.4	131.7	-113.91	-6,783.3	599.6	373.9	131.3	242.66	1.541	
14,500.0	7,716.5	14,603.3	7,869.2	133.3	133.6	-114.07	-6,883.3	599.6	374.4	128.5	245.93	1.522	
14,600.0	7,716.1	14,703.3	7,869.9	135.2	135.5	-114.22	-6,983.3	599.6	374.9	125.7	249.19	1.504	
14,617.2	7,716.0	14,720.5	7,870.0	135.5	135.8	-114.25	-7,000.5	599.6	374.9	125.2	249.75	1.501	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32O-303
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5073.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32O Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5073.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32O-303	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #1 (7-25-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Jacobucci 1N67W32O Pad Sec.32-T1N-R67W - Jacobucci 32O-443 - Wellbore #1 - Plan #1 (7-25-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-90.02	0.0	-61.6	61.6				
100.0	100.0	100.0	100.0	0.1	0.1	-90.02	0.0	-61.6	61.6	61.4	0.22	274.195	
200.0	200.0	200.0	200.0	0.3	0.3	-90.02	0.0	-61.6	61.6	61.0	0.67	91.398	
300.0	300.0	300.0	300.0	0.6	0.6	-90.02	0.0	-61.6	61.6	60.5	1.12	54.839	
400.0	400.0	400.0	400.0	0.8	0.8	-90.02	0.0	-61.6	61.6	60.1	1.57	39.171	
500.0	500.0	500.0	500.0	1.0	1.0	-90.02	0.0	-61.6	61.6	59.6	2.02	30.466	
600.0	600.0	600.0	600.0	1.2	1.2	-90.02	0.0	-61.6	61.6	59.2	2.47	24.927	
700.0	700.0	700.0	700.0	1.5	1.5	-90.02	0.0	-61.6	61.6	58.7	2.92	21.092	
800.0	800.0	800.0	800.0	1.7	1.7	-90.02	0.0	-61.6	61.6	58.3	3.37	18.280	
900.0	900.0	900.0	900.0	1.9	1.9	-90.02	0.0	-61.6	61.6	57.8	3.82	16.129	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-90.02	0.0	-61.6	61.6	57.4	4.27	14.431	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	-90.02	0.0	-61.6	61.6	56.9	4.72	13.057	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	-90.02	0.0	-61.6	61.6	56.5	5.17	11.922	
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	-90.02	0.0	-61.6	61.6	56.0	5.62	10.968	
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	-90.02	0.0	-61.6	61.6	55.6	6.07	10.155	CC, ES
1,500.0	1,500.0	1,498.1	1,498.1	3.3	3.2	-89.28	0.8	-63.1	63.1	56.6	6.51	9.703	
1,600.0	1,600.0	1,596.0	1,595.8	3.5	3.5	-87.29	3.2	-67.5	67.7	60.8	6.94	9.754	
1,700.0	1,700.0	1,693.3	1,692.8	3.7	3.7	-140.02	7.2	-74.8	76.8	69.4	7.37	10.423	
1,800.0	1,799.8	1,790.6	1,789.4	3.9	3.9	-138.98	12.6	-84.8	91.5	83.7	7.79	11.738	
1,900.0	1,899.5	1,889.0	1,887.0	4.1	4.2	-139.21	18.5	-95.5	109.4	101.2	8.22	13.317	
2,000.0	1,998.8	1,986.9	1,984.2	4.4	4.4	-140.31	24.3	-106.1	129.7	121.0	8.64	15.002	
2,100.0	2,098.0	2,084.7	2,081.2	4.6	4.7	-141.34	30.1	-116.7	150.4	141.3	9.09	16.547	
2,200.0	2,197.2	2,182.5	2,178.3	4.9	4.9	-142.12	35.9	-127.4	171.1	161.6	9.54	17.936	
2,300.0	2,296.5	2,280.3	2,275.3	5.1	5.2	-142.73	41.7	-138.0	191.8	181.8	10.00	19.191	
2,400.0	2,395.7	2,378.1	2,372.4	5.4	5.5	-143.22	47.5	-148.6	212.6	202.2	10.46	20.326	
2,500.0	2,495.0	2,475.9	2,469.4	5.7	5.8	-143.63	53.3	-159.3	233.4	222.5	10.93	21.357	
2,600.0	2,594.2	2,573.7	2,566.5	6.0	6.1	-143.97	59.1	-169.9	254.2	242.8	11.40	22.295	
2,700.0	2,693.4	2,671.5	2,663.5	6.2	6.3	-144.25	64.9	-180.5	275.0	263.1	11.88	23.152	
2,800.0	2,792.7	2,769.3	2,760.6	6.5	6.6	-144.50	70.7	-191.2	295.8	283.4	12.36	23.937	
2,900.0	2,891.9	2,867.1	2,857.6	6.8	6.9	-144.71	76.5	-201.8	316.6	303.7	12.84	24.658	
3,000.0	2,991.2	2,964.9	2,954.7	7.1	7.2	-144.90	82.3	-212.4	337.4	324.1	13.32	25.322	
3,100.0	3,090.4	3,062.7	3,051.7	7.4	7.5	-145.07	88.1	-223.1	358.2	344.4	13.81	25.936	
3,200.0	3,189.6	3,160.5	3,148.8	7.7	7.8	-145.21	93.9	-233.7	379.0	364.7	14.30	26.504	
3,300.0	3,288.9	3,258.3	3,245.8	8.0	8.1	-145.35	99.7	-244.3	399.8	385.0	14.79	27.031	
3,400.0	3,388.1	3,356.1	3,342.9	8.3	8.4	-145.47	105.5	-255.0	420.6	405.4	15.28	27.521	
3,500.0	3,487.4	3,453.9	3,439.9	8.6	8.7	-145.57	111.3	-265.6	441.5	425.7	15.78	27.978	
3,600.0	3,586.6	3,551.7	3,537.0	8.9	9.0	-145.67	117.1	-276.2	462.3	446.0	16.28	28.405	
3,700.0	3,685.8	3,649.5	3,634.1	9.2	9.3	-145.76	122.9	-286.9	483.1	466.3	16.77	28.804	
3,800.0	3,785.1	3,747.4	3,731.1	9.5	9.6	-145.84	128.7	-297.5	503.9	486.7	17.27	29.179	
3,900.0	3,884.3	3,845.2	3,828.2	9.8	9.9	-145.92	134.5	-308.1	524.8	507.0	17.77	29.531	
4,000.0	3,983.6	3,943.0	3,925.2	10.1	10.2	-145.99	140.3	-318.8	545.6	527.3	18.27	29.862	
4,100.0	4,082.8	4,040.8	4,022.3	10.4	10.5	-146.06	146.1	-329.4	566.4	547.6	18.77	30.173	
4,200.0	4,182.1	4,138.6	4,119.4	10.7	10.9	-146.18	151.9	-340.0	587.1	567.8	19.28	30.446	
4,300.0	4,281.6	4,236.9	4,216.9	10.9	11.2	-146.29	157.8	-350.7	605.5	585.7	19.77	30.624	
4,400.0	4,381.5	4,335.6	4,314.8	11.1	11.5	-146.19	163.6	-361.4	621.1	600.8	20.24	30.688	
4,500.0	4,481.4	4,434.7	4,413.1	11.3	11.8	-145.89	169.5	-372.2	633.8	613.1	20.68	30.649	
4,600.0	4,581.4	4,550.3	4,528.0	11.5	12.1	-90.56	175.8	-383.7	643.8	622.7	21.12	30.482	
4,700.0	4,681.4	4,674.6	4,652.0	11.7	12.3	-90.16	180.1	-391.7	650.2	628.6	21.56	30.155	
4,800.0	4,781.4	4,799.5	4,776.8	11.9	12.6	-90.01	181.9	-395.0	652.8	630.8	21.99	29.686	
4,900.0	4,881.4	4,904.1	4,881.4	12.1	12.7	-90.00	182.0	-395.1	652.9	630.5	22.39	29.159	
5,000.0	4,981.4	5,004.1	4,981.4	12.3	12.9	-90.00	182.0	-395.1	652.9	630.1	22.80	28.633	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32O-303
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5073.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32O Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5073.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32O-303	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #1 (7-25-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Jacobucci 1N67W32O Pad Sec.32-T1N-R67W - Jacobucci 32O-443 - Wellbore #1 - Plan #1 (7-25-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,081.4	5,104.1	5,081.4	12.4	13.1	-90.00	182.0	-395.1	652.9	629.7	23.21	28.125	
5,200.0	5,181.4	5,204.1	5,181.4	12.6	13.3	-90.00	182.0	-395.1	652.9	629.3	23.63	27.633	
5,300.0	5,281.4	5,304.1	5,281.4	12.8	13.5	-90.00	182.0	-395.1	652.9	628.8	24.04	27.157	
5,400.0	5,381.4	5,404.1	5,381.4	13.0	13.7	-90.00	182.0	-395.1	652.9	628.4	24.46	26.695	
5,500.0	5,481.4	5,504.1	5,481.4	13.2	13.9	-90.00	182.0	-395.1	652.9	628.0	24.87	26.247	
5,600.0	5,581.4	5,604.1	5,581.4	13.4	14.0	-90.00	182.0	-395.1	652.9	627.6	25.29	25.813	
5,700.0	5,681.4	5,704.1	5,681.4	13.6	14.2	-90.00	182.0	-395.1	652.9	627.2	25.71	25.392	
5,800.0	5,781.4	5,804.1	5,781.4	13.8	14.4	-90.00	182.0	-395.1	652.9	626.8	26.13	24.984	
5,900.0	5,881.4	5,904.1	5,881.4	14.0	14.6	-90.00	182.0	-395.1	652.9	626.3	26.55	24.588	
6,000.0	5,981.4	6,004.1	5,981.4	14.2	14.8	-90.00	182.0	-395.1	652.9	625.9	26.98	24.203	
6,100.0	6,081.4	6,104.1	6,081.4	14.4	15.0	-90.00	182.0	-395.1	652.9	625.5	27.40	23.829	
6,200.0	6,181.4	6,204.1	6,181.4	14.7	15.2	-90.00	182.0	-395.1	652.9	625.1	27.82	23.466	
6,300.0	6,281.4	6,304.1	6,281.4	14.9	15.4	-90.00	182.0	-395.1	652.9	624.6	28.25	23.113	
6,400.0	6,381.4	6,404.1	6,381.4	15.1	15.6	-90.00	182.0	-395.1	652.9	624.2	28.67	22.770	
6,500.0	6,481.4	6,504.1	6,481.4	15.3	15.8	-90.00	182.0	-395.1	652.9	623.8	29.10	22.437	
6,600.0	6,581.4	6,604.1	6,581.4	15.5	16.0	-90.00	182.0	-395.1	652.9	623.4	29.53	22.113	
6,700.0	6,681.4	6,704.1	6,681.4	15.7	16.2	-90.00	182.0	-395.1	652.9	622.9	29.95	21.797	
6,800.0	6,781.4	6,804.1	6,781.4	15.9	16.4	-90.00	182.0	-395.1	652.9	622.5	30.38	21.490	
6,900.0	6,881.4	6,904.1	6,881.4	16.1	16.6	-90.00	182.0	-395.1	652.9	622.1	30.81	21.191	
7,000.0	6,981.4	7,004.1	6,981.4	16.3	16.8	90.00	182.0	-395.1	652.9	621.6	31.24	20.900	
7,026.2	7,007.6	7,030.3	7,007.6	16.3	16.9	90.05	182.0	-395.1	652.9	621.6	31.33	20.837	
7,100.0	7,081.1	7,103.8	7,081.1	16.5	17.0	90.60	182.0	-395.1	652.9	621.3	31.60	20.664	
7,200.0	7,179.1	7,204.5	7,181.6	16.6	17.2	91.84	176.4	-395.1	653.2	621.4	31.86	20.504	
7,300.0	7,273.6	7,307.3	7,282.5	16.7	17.3	93.07	157.2	-395.1	653.8	621.8	32.04	20.407	
7,400.0	7,363.1	7,412.2	7,381.9	16.7	17.4	94.26	123.8	-395.1	654.7	622.5	32.19	20.342	
7,500.0	7,446.0	7,519.2	7,477.5	16.8	17.5	95.39	76.1	-395.1	655.8	623.5	32.36	20.267	
7,600.0	7,520.9	7,628.2	7,567.1	16.9	17.5	96.42	14.2	-395.1	657.1	624.4	32.63	20.136	
7,700.0	7,586.5	7,739.1	7,648.4	17.1	17.6	97.34	-61.2	-395.1	658.3	625.2	33.09	19.898	
7,800.0	7,641.8	7,851.9	7,718.9	17.4	17.8	98.13	-149.1	-395.1	659.6	625.7	33.82	19.503	
7,900.0	7,685.7	7,966.2	7,776.3	17.9	18.2	98.76	-247.8	-395.1	660.6	625.7	34.89	18.933	
8,000.0	7,717.5	8,081.7	7,818.8	18.7	18.9	99.23	-355.1	-395.1	661.5	625.1	36.34	18.201	
8,100.0	7,736.7	8,198.1	7,844.8	19.6	19.9	99.51	-468.4	-395.1	662.0	623.8	38.16	17.346	
8,200.0	7,742.9	8,314.3	7,853.3	20.6	21.0	99.60	-584.2	-395.1	662.2	621.8	40.31	16.425	
8,300.0	7,742.5	8,414.3	7,853.6	21.7	22.1	99.66	-684.1	-395.1	662.3	619.7	42.56	15.560	
8,400.0	7,742.0	8,514.3	7,853.8	23.0	23.4	99.71	-784.1	-395.1	662.4	617.4	45.01	14.716	
8,500.0	7,741.6	8,614.3	7,854.1	24.3	24.7	99.77	-884.1	-395.1	662.5	614.9	47.63	13.908	
8,600.0	7,741.2	8,714.2	7,854.3	25.7	26.0	99.83	-984.1	-395.1	662.6	612.2	50.40	13.146	
8,700.0	7,740.8	8,814.2	7,854.5	27.2	27.5	99.88	-1,084.1	-395.1	662.7	609.4	53.30	12.435	
8,800.0	7,740.4	8,914.2	7,854.8	28.7	29.0	99.94	-1,184.1	-395.1	662.8	606.5	56.29	11.775	
8,900.0	7,739.9	9,014.2	7,855.0	30.2	30.5	100.00	-1,284.1	-395.1	662.9	603.6	59.38	11.165	
9,000.0	7,739.5	9,114.2	7,855.3	31.8	32.1	100.05	-1,384.1	-395.1	663.1	600.5	62.54	10.603	
9,100.0	7,739.1	9,214.2	7,855.5	33.5	33.7	100.11	-1,484.1	-395.1	663.2	597.4	65.76	10.085	
9,200.0	7,738.7	9,314.2	7,855.8	35.1	35.4	100.17	-1,584.1	-395.1	663.3	594.3	69.04	9.608	
9,300.0	7,738.3	9,414.2	7,856.0	36.8	37.1	100.22	-1,684.1	-395.1	663.4	591.1	72.36	9.168	
9,400.0	7,737.9	9,514.2	7,856.3	38.5	38.8	100.28	-1,784.1	-395.1	663.5	587.8	75.73	8.762	
9,500.0	7,737.4	9,614.2	7,856.5	40.2	40.5	100.33	-1,884.1	-395.1	663.7	584.5	79.13	8.387	
9,600.0	7,737.0	9,714.2	7,856.7	42.0	42.2	100.39	-1,984.1	-395.1	663.8	581.2	82.56	8.040	
9,700.0	7,736.6	9,814.2	7,857.0	43.7	44.0	100.45	-2,084.1	-395.1	663.9	577.9	86.02	7.718	
9,800.0	7,736.2	9,914.2	7,857.2	45.5	45.7	100.50	-2,184.1	-395.1	664.0	574.5	89.50	7.419	
9,900.0	7,735.8	10,014.2	7,857.5	47.3	47.5	100.56	-2,284.1	-395.1	664.1	571.1	93.00	7.141	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32O-303
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5073.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32O Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5073.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32O-303	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #1 (7-25-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Jacobucci 1N67W32O Pad Sec.32-T1N-R67W - Jacobucci 32O-443 - Wellbore #1 - Plan #1 (7-25-14)

Offset Site Error: 0.0 ft

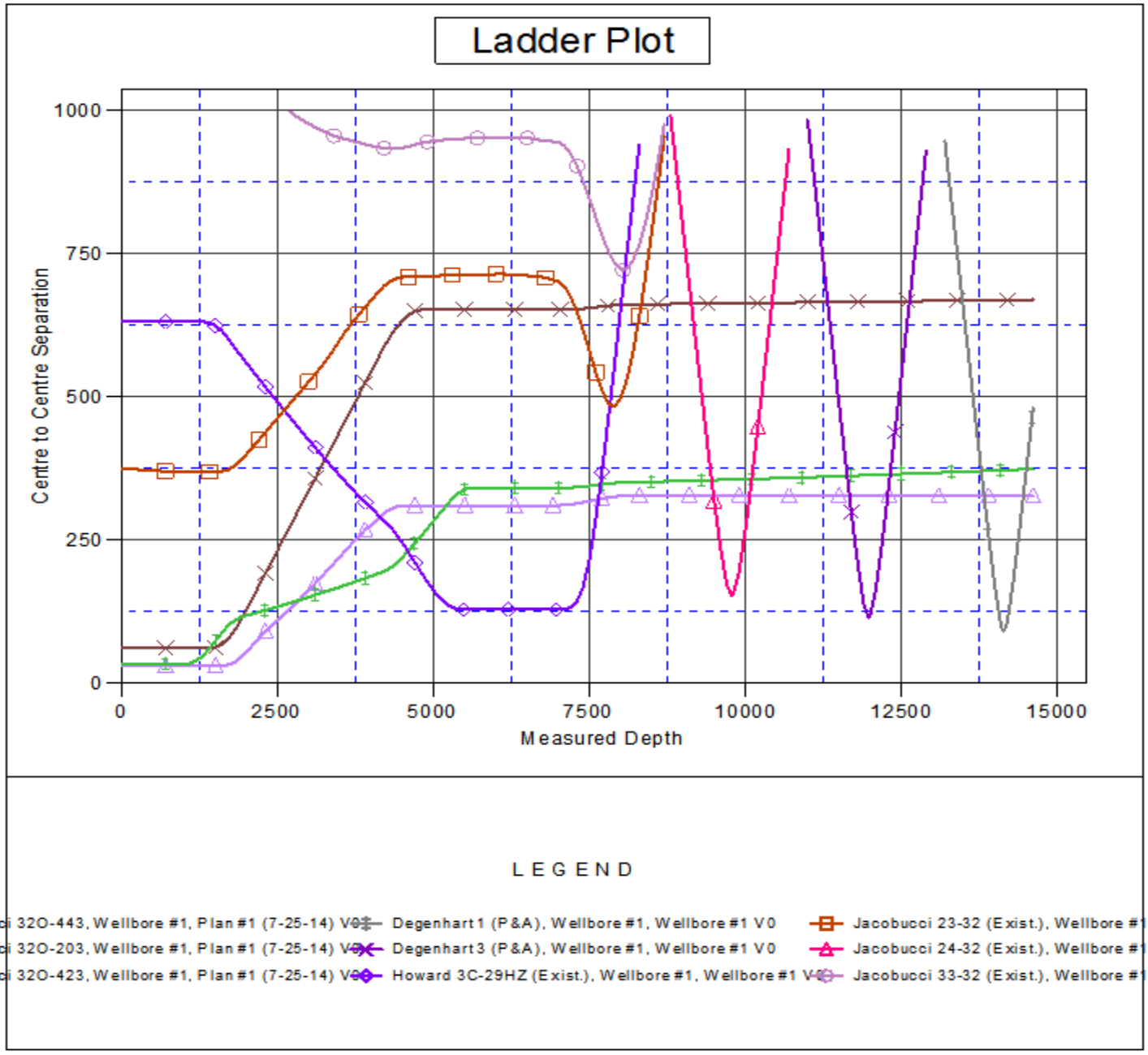
Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,000.0	7,735.3	10,114.2	7,857.7	49.1	49.3	100.62	-2,384.1	-395.1	664.3	567.7	96.52	6.882	
10,100.0	7,734.9	10,214.2	7,858.0	50.9	51.1	100.67	-2,484.1	-395.1	664.4	564.3	100.06	6.640	
10,200.0	7,734.5	10,314.2	7,858.2	52.7	52.9	100.73	-2,584.1	-395.1	664.5	560.9	103.61	6.413	
10,300.0	7,734.1	10,414.2	7,858.5	54.5	54.7	100.78	-2,684.1	-395.1	664.6	557.4	107.18	6.201	
10,400.0	7,733.7	10,514.2	7,858.7	56.3	56.5	100.84	-2,784.1	-395.1	664.7	554.0	110.75	6.002	
10,500.0	7,733.2	10,614.2	7,858.9	58.2	58.3	100.90	-2,884.1	-395.1	664.9	550.5	114.34	5.815	
10,600.0	7,732.8	10,714.2	7,859.2	60.0	60.1	100.95	-2,984.1	-395.1	665.0	547.1	117.94	5.639	
10,700.0	7,732.4	10,814.2	7,859.4	61.8	62.0	101.01	-3,084.1	-395.1	665.1	543.6	121.54	5.473	
10,800.0	7,732.0	10,914.2	7,859.7	63.7	63.8	101.07	-3,184.1	-395.1	665.3	540.1	125.15	5.316	
10,900.0	7,731.6	11,014.2	7,859.9	65.5	65.7	101.12	-3,284.1	-395.1	665.4	536.6	128.77	5.167	
11,000.0	7,731.2	11,114.2	7,860.2	67.4	67.5	101.18	-3,384.1	-395.1	665.5	533.1	132.39	5.027	
11,100.0	7,730.7	11,214.2	7,860.4	69.2	69.4	101.23	-3,484.1	-395.1	665.6	529.6	136.02	4.894	
11,200.0	7,730.3	11,314.2	7,860.6	71.1	71.2	101.29	-3,584.1	-395.1	665.8	526.1	139.66	4.767	
11,300.0	7,729.9	11,414.2	7,860.9	72.9	73.1	101.35	-3,684.1	-395.1	665.9	522.6	143.30	4.647	
11,400.0	7,729.5	11,514.2	7,861.1	74.8	74.9	101.40	-3,784.1	-395.1	666.0	519.1	146.94	4.533	
11,500.0	7,729.1	11,614.2	7,861.4	76.7	76.8	101.46	-3,884.1	-395.1	666.2	515.6	150.59	4.424	
11,600.0	7,728.6	11,714.2	7,861.6	78.5	78.7	101.51	-3,984.1	-395.1	666.3	512.1	154.24	4.320	
11,700.0	7,728.2	11,814.2	7,861.9	80.4	80.5	101.57	-4,084.1	-395.1	666.4	508.5	157.89	4.221	
11,800.0	7,727.8	11,914.2	7,862.1	82.3	82.4	101.62	-4,184.1	-395.1	666.6	505.0	161.55	4.126	
11,900.0	7,727.4	12,014.2	7,862.4	84.2	84.3	101.68	-4,284.1	-395.1	666.7	501.5	165.20	4.036	
12,000.0	7,727.0	12,114.2	7,862.6	86.0	86.1	101.74	-4,384.1	-395.1	666.8	498.0	168.86	3.949	
12,100.0	7,726.5	12,214.2	7,862.8	87.9	88.0	101.79	-4,484.1	-395.1	667.0	494.4	172.53	3.866	
12,200.0	7,726.1	12,314.2	7,863.1	89.8	89.9	101.85	-4,584.1	-395.1	667.1	490.9	176.19	3.786	
12,300.0	7,725.7	12,414.2	7,863.3	91.7	91.8	101.90	-4,684.0	-395.1	667.2	487.4	179.85	3.710	
12,400.0	7,725.3	12,514.2	7,863.6	93.5	93.6	101.96	-4,784.0	-395.1	667.4	483.8	183.52	3.636	
12,500.0	7,724.9	12,614.2	7,863.8	95.4	95.5	102.02	-4,884.0	-395.1	667.5	480.3	187.19	3.566	
12,600.0	7,724.4	12,714.2	7,864.1	97.3	97.4	102.07	-4,984.0	-395.1	667.6	476.8	190.86	3.498	
12,700.0	7,724.0	12,814.2	7,864.3	99.2	99.3	102.13	-5,084.0	-395.1	667.8	473.3	194.52	3.433	
12,800.0	7,723.6	12,914.2	7,864.6	101.1	101.2	102.18	-5,184.0	-395.1	667.9	469.7	198.19	3.370	
12,900.0	7,723.2	13,014.2	7,864.8	103.0	103.1	102.24	-5,284.0	-395.1	668.1	466.2	201.86	3.309	
13,000.0	7,722.8	13,114.2	7,865.0	104.9	105.0	102.29	-5,384.0	-395.1	668.2	462.7	205.53	3.251	
13,100.0	7,722.4	13,214.1	7,865.3	106.8	106.8	102.35	-5,484.0	-395.1	668.3	459.1	209.21	3.195	
13,200.0	7,721.9	13,314.1	7,865.5	108.6	108.7	102.40	-5,584.0	-395.1	668.5	455.6	212.88	3.140	
13,300.0	7,721.5	13,414.1	7,865.8	110.5	110.6	102.46	-5,684.0	-395.1	668.6	452.1	216.55	3.088	
13,400.0	7,721.1	13,514.1	7,866.0	112.4	112.5	102.52	-5,784.0	-395.1	668.8	448.6	220.22	3.037	
13,500.0	7,720.7	13,614.1	7,866.3	114.3	114.4	102.57	-5,884.0	-395.1	668.9	445.0	223.89	2.988	
13,600.0	7,720.3	13,714.1	7,866.5	116.2	116.3	102.63	-5,984.0	-395.1	669.1	441.5	227.56	2.940	
13,700.0	7,719.8	13,814.1	7,866.8	118.1	118.2	102.68	-6,084.0	-395.1	669.2	438.0	231.23	2.894	
13,800.0	7,719.4	13,914.1	7,867.0	120.0	120.1	102.74	-6,184.0	-395.1	669.4	434.5	234.90	2.850	
13,900.0	7,719.0	14,014.1	7,867.2	121.9	122.0	102.79	-6,284.0	-395.1	669.5	430.9	238.57	2.806	
14,000.0	7,718.6	14,114.1	7,867.5	123.8	123.9	102.85	-6,384.0	-395.1	669.6	427.4	242.24	2.764	
14,100.0	7,718.2	14,214.1	7,867.7	125.7	125.8	102.90	-6,484.0	-395.1	669.8	423.9	245.91	2.724	
14,200.0	7,717.7	14,314.1	7,868.0	127.6	127.7	102.96	-6,584.0	-395.1	669.9	420.4	249.58	2.684	
14,300.0	7,717.3	14,414.1	7,868.2	129.5	129.6	103.01	-6,684.0	-395.1	670.1	416.8	253.25	2.646	
14,400.0	7,716.9	14,514.1	7,868.5	131.4	131.5	103.07	-6,784.0	-395.1	670.2	413.3	256.91	2.609	
14,500.0	7,716.5	14,614.1	7,868.7	133.3	133.4	103.12	-6,884.0	-395.1	670.4	409.8	260.58	2.573	
14,600.0	7,716.1	14,714.1	7,869.0	135.2	135.3	103.18	-6,984.0	-395.1	670.5	406.3	264.25	2.538	
14,617.2	7,716.0	14,731.3	7,869.0	135.5	135.6	103.19	-7,001.2	-395.1	670.6	405.7	264.88	2.532	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32O-303
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5073.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32O Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5073.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32O-303	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #1 (7-25-14)	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 5073.0ft (Original Well Elev)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °
Coordinates are relative to: Jacobucci 32O-303
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.38°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32O-303
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5073.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32O Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5073.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32O-303	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	landmark
Reference Design:	Plan #1 (7-25-14)	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 5073.0ft (Original Well Elev) Coordinates are relative to: Jacobucci 32O-303
Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone
Central Meridian is -105.500000 ° Grid Convergence at Surface is: 0.38°