PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Jacobucci 32S-423**

Surface Location: Jacobucci 1N67W32S Pad Sec.32-T1N-R67W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 5059.0

+N/-S	+E/-W	Northing	Easting	Latittude	Longitude	Slot
0.0	0.0	1245853.03	3164906.08	40.006750	-104.911310	

Original Well Elev WELL @ 5074.0ft (Original Well Elev)

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 2338'FSL & 1810'FEL, Sec.32	1.0	0.0	0.0	Point
BHL 500'FSL & 1727'FEL, Sec.5	7861.0	-6925.0	512.8	Point

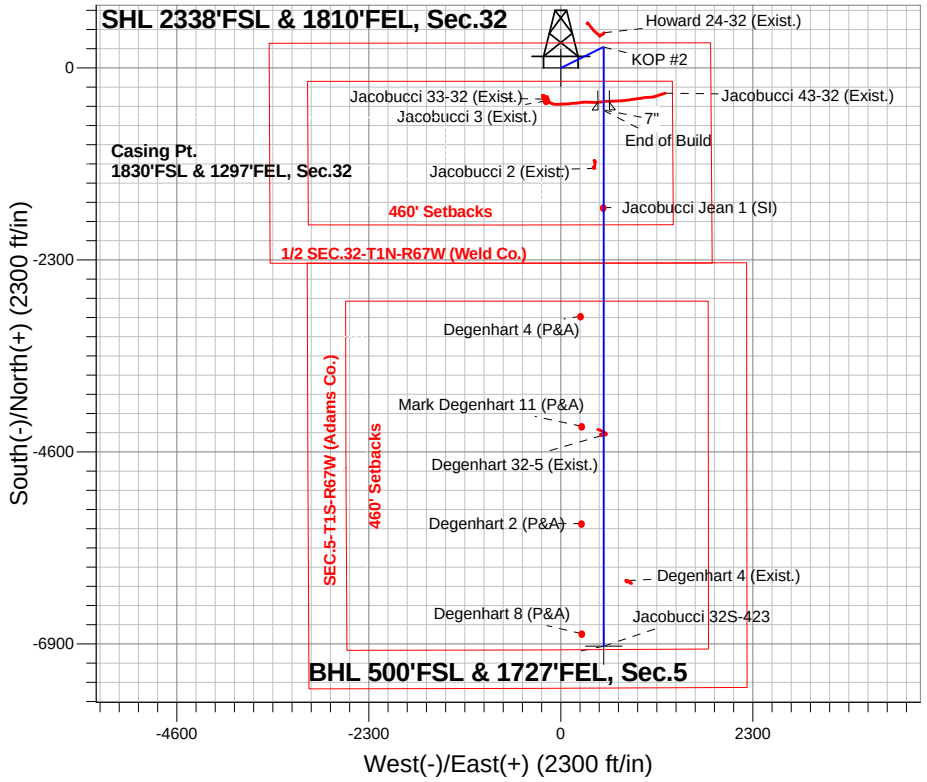
Azimuths to True North
Magnetic North: 8.46°

Magnetic Field
Strength: 52558.0snT
Dip Angle: 66.59°
Date: 10/8/2014
Model: IGRF2010

ANNOTATIONS

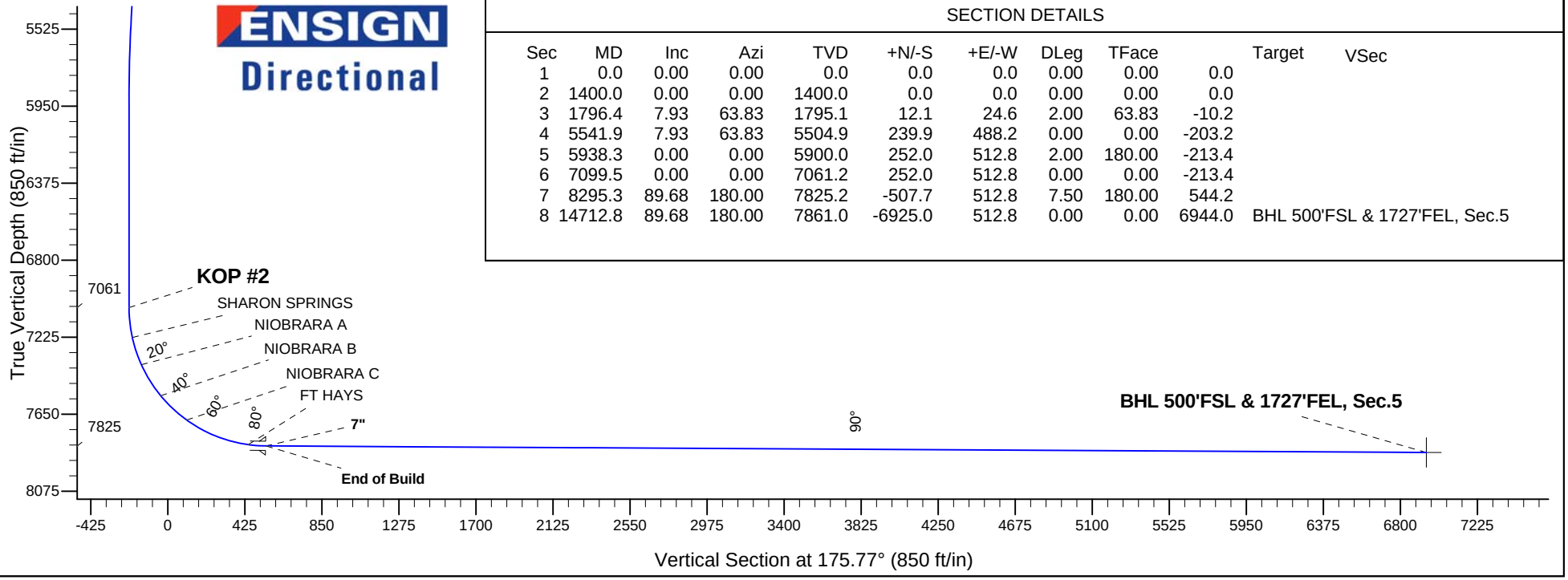
TVD	MD	Annotation
1400.0	1400.0	KOP
7061.2	7099.5	KOP #2
7825.2	8295.3	End of Build

Jacobucci 1N67W32S Pad Sec.32-T1N-R67W
Jacobucci 32S-423
Plan #2 (10-8-14)
14:54, October 17 2014



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	1400.0	0.00	0.00	1400.0	0.0	0.0	0.00	0.00	0.0	
3	1796.4	7.93	63.83	1795.1	12.1	24.6	2.00	63.83	-10.2	
4	5541.9	7.93	63.83	5504.9	239.9	488.2	0.00	0.00	-203.2	
5	5938.3	0.00	0.00	5900.0	252.0	512.8	2.00	180.00	-213.4	
6	7099.5	0.00	0.00	7061.2	252.0	512.8	0.00	0.00	-213.4	
7	8295.3	89.68	180.00	7825.2	-507.7	512.8	7.50	180.00	544.2	
8	14712.8	89.68	180.00	7861.0	-6925.0	512.8	0.00	0.00	6944.0	BHL 500'FSL & 1727'FEL, Sec.5



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.32-T1N-R67W
Jacobucci 1N67W32S Pad Sec.32-T1N-R67W
Jacobucci 32S-423

Wellbore #1

Plan: Plan #2 (10-8-14)

Standard Planning Report

17 October, 2014

PDC ENERGY
Growing E&P Value

Database:	Landmark	**Local Co-ordinate Reference:**	Well Jacobucci 32S-423
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Project:	SEC.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**North Reference:**	True
Well:	Jacobucci 32S-423	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (10-8-14)		

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 1N67W32S Pad Sec.32-T1N-R67W				
Site Position:		**Northing:**	1,245,853.29 ft	**Latitude:**	40.006750
From:	Lat/Long	**Easting:**	3,164,939.70 ft	**Longitude:**	-104.911190
Position Uncertainty:	0.0 ft	**Slot Radius:**	"	**Grid Convergence:**	0.38 °

Well	Jacobucci 32S-423					
Well Position	**+N/-S**	0.0 ft	**Northing:**	1,245,853.03 ft	**Latitude:**	40.006750
	+E/-W	-33.6 ft	**Easting:**	3,164,906.08 ft	**Longitude:**	-104.911310
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	5,059.0 ft

Wellbore	Wellbore #1				
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2010	10/8/2014	8.46	66.60	52,558

Design	Plan #2 (10-8-14)				
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	175.77	

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,796.4	7.93	63.83	1,795.1	12.1	24.6	2.00	2.00	0.00	63.83	
5,541.9	7.93	63.83	5,504.9	239.9	488.2	0.00	0.00	0.00	0.00	
5,938.3	0.00	0.00	5,900.0	252.0	512.8	2.00	-2.00	0.00	180.00	
7,099.5	0.00	0.00	7,061.2	252.0	512.8	0.00	0.00	0.00	0.00	
8,295.3	89.68	180.00	7,825.2	-507.7	512.8	7.50	7.50	0.00	180.00	
14,712.8	89.68	180.00	7,861.0	-6,925.0	512.8	0.00	0.00	0.00	0.00	BHL 500'FSL & 172

Database:	Landmark	**Local Co-ordinate Reference:**	Well Jacobucci 32S-423
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Project:	SEC.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**North Reference:**	True
Well:	Jacobucci 32S-423	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (10-8-14)		

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
KOP									
1,500.0	2.00	63.83	1,500.0	0.8	1.6	-0.7	2.00	2.00	0.00
1,600.0	4.00	63.83	1,599.8	3.1	6.3	-2.6	2.00	2.00	0.00
1,700.0	6.00	63.83	1,699.5	6.9	14.1	-5.9	2.00	2.00	0.00
1,796.4	7.93	63.83	1,795.1	12.1	24.6	-10.2	2.00	2.00	0.00
1,800.0	7.93	63.83	1,798.7	12.3	25.0	-10.4	0.00	0.00	0.00
1,900.0	7.93	63.83	1,897.7	18.4	37.4	-15.6	0.00	0.00	0.00
2,000.0	7.93	63.83	1,996.8	24.5	49.8	-20.7	0.00	0.00	0.00
2,100.0	7.93	63.83	2,095.8	30.5	62.2	-25.9	0.00	0.00	0.00
2,200.0	7.93	63.83	2,194.9	36.6	74.5	-31.0	0.00	0.00	0.00
2,300.0	7.93	63.83	2,293.9	42.7	86.9	-36.2	0.00	0.00	0.00
2,400.0	7.93	63.83	2,393.0	48.8	99.3	-41.3	0.00	0.00	0.00
2,500.0	7.93	63.83	2,492.0	54.9	111.7	-46.5	0.00	0.00	0.00
2,600.0	7.93	63.83	2,591.1	61.0	124.0	-51.6	0.00	0.00	0.00
2,700.0	7.93	63.83	2,690.1	67.0	136.4	-56.8	0.00	0.00	0.00
2,800.0	7.93	63.83	2,789.1	73.1	148.8	-61.9	0.00	0.00	0.00
2,900.0	7.93	63.83	2,888.2	79.2	161.2	-67.1	0.00	0.00	0.00
3,000.0	7.93	63.83	2,987.2	85.3	173.6	-72.2	0.00	0.00	0.00
3,100.0	7.93	63.83	3,086.3	91.4	185.9	-77.4	0.00	0.00	0.00
3,200.0	7.93	63.83	3,185.3	97.5	198.3	-82.5	0.00	0.00	0.00
3,300.0	7.93	63.83	3,284.4	103.5	210.7	-87.7	0.00	0.00	0.00
3,400.0	7.93	63.83	3,383.4	109.6	223.1	-92.9	0.00	0.00	0.00
3,500.0	7.93	63.83	3,482.5	115.7	235.5	-98.0	0.00	0.00	0.00
3,600.0	7.93	63.83	3,581.5	121.8	247.8	-103.2	0.00	0.00	0.00
3,700.0	7.93	63.83	3,680.5	127.9	260.2	-108.3	0.00	0.00	0.00
3,800.0	7.93	63.83	3,779.6	134.0	272.6	-113.5	0.00	0.00	0.00
3,900.0	7.93	63.83	3,878.6	140.0	285.0	-118.6	0.00	0.00	0.00
4,000.0	7.93	63.83	3,977.7	146.1	297.3	-123.8	0.00	0.00	0.00
4,100.0	7.93	63.83	4,076.7	152.2	309.7	-128.9	0.00	0.00	0.00
4,200.0	7.93	63.83	4,175.8	158.3	322.1	-134.1	0.00	0.00	0.00
4,300.0	7.93	63.83	4,274.8	164.4	334.5	-139.2	0.00	0.00	0.00
4,400.0	7.93	63.83	4,373.9	170.5	346.9	-144.4	0.00	0.00	0.00
4,500.0	7.93	63.83	4,472.9	176.5	359.2	-149.5	0.00	0.00	0.00
4,527.4	7.93	63.83	4,500.0	178.2	362.6	-150.9	0.00	0.00	0.00
PARKMAN									
4,600.0	7.93	63.83	4,571.9	182.6	371.6	-154.7	0.00	0.00	0.00
4,700.0	7.93	63.83	4,671.0	188.7	384.0	-159.8	0.00	0.00	0.00

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Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**North Reference:**	True
Well:	Jacobucci 32S-423	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (10-8-14)		

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)
4,800.0	7.93	63.83	4,770.0	194.8	396.4	-165.0	0.00	0.00	0.00
4,900.0	7.93	63.83	4,869.1	200.9	408.8	-170.1	0.00	0.00	0.00
4,931.2	7.93	63.83	4,900.0	202.8	412.6	-171.7	0.00	0.00	0.00
SUSSEX									
5,000.0	7.93	63.83	4,968.1	207.0	421.1	-175.3	0.00	0.00	0.00
5,100.0	7.93	63.83	5,067.2	213.0	433.5	-180.4	0.00	0.00	0.00
5,200.0	7.93	63.83	5,166.2	219.1	445.9	-185.6	0.00	0.00	0.00
5,300.0	7.93	63.83	5,265.3	225.2	458.3	-190.8	0.00	0.00	0.00
5,385.6	7.93	63.83	5,350.0	230.4	468.9	-195.2	0.00	0.00	0.00
SHANNON									
5,400.0	7.93	63.83	5,364.3	231.3	470.6	-195.9	0.00	0.00	0.00
5,500.0	7.93	63.83	5,463.3	237.4	483.0	-201.1	0.00	0.00	0.00
5,541.9	7.93	63.83	5,504.9	239.9	488.2	-203.2	0.00	0.00	0.00
5,600.0	6.77	63.83	5,562.5	243.2	494.9	-206.0	2.00	-2.00	0.00
5,700.0	4.77	63.83	5,661.9	247.6	503.9	-209.7	2.00	-2.00	0.00
5,800.0	2.77	63.83	5,761.7	250.5	509.8	-212.2	2.00	-2.00	0.00
5,900.0	0.77	63.83	5,861.7	251.9	512.6	-213.3	2.00	-2.00	0.00
5,938.3	0.00	0.00	5,900.0	252.0	512.8	-213.4	2.00	-2.00	0.00
6,000.0	0.00	0.00	5,961.7	252.0	512.8	-213.4	0.00	0.00	0.00
6,100.0	0.00	0.00	6,061.7	252.0	512.8	-213.4	0.00	0.00	0.00
6,200.0	0.00	0.00	6,161.7	252.0	512.8	-213.4	0.00	0.00	0.00
6,300.0	0.00	0.00	6,261.7	252.0	512.8	-213.4	0.00	0.00	0.00
6,400.0	0.00	0.00	6,361.7	252.0	512.8	-213.4	0.00	0.00	0.00
6,500.0	0.00	0.00	6,461.7	252.0	512.8	-213.4	0.00	0.00	0.00
6,600.0	0.00	0.00	6,561.7	252.0	512.8	-213.4	0.00	0.00	0.00
6,700.0	0.00	0.00	6,661.7	252.0	512.8	-213.4	0.00	0.00	0.00
6,800.0	0.00	0.00	6,761.7	252.0	512.8	-213.4	0.00	0.00	0.00
6,900.0	0.00	0.00	6,861.7	252.0	512.8	-213.4	0.00	0.00	0.00
7,000.0	0.00	0.00	6,961.7	252.0	512.8	-213.4	0.00	0.00	0.00
7,099.5	0.00	0.00	7,061.2	252.0	512.8	-213.4	0.00	0.00	0.00
KOP #2									
7,100.0	0.03	180.00	7,061.7	252.0	512.8	-213.4	6.75	6.75	0.00
7,200.0	7.53	180.00	7,161.4	245.4	512.8	-206.9	7.50	7.50	0.00
7,265.6	12.46	180.00	7,226.0	234.0	512.8	-195.5	7.50	7.50	0.00
SHARON SPRINGS									
7,300.0	15.03	180.00	7,259.4	225.9	512.8	-187.4	7.50	7.50	0.00
7,400.0	22.53	180.00	7,354.0	193.7	512.8	-155.3	7.50	7.50	0.00
7,425.1	24.42	180.00	7,377.0	183.7	512.8	-145.3	7.50	7.50	0.00
NIOBRARA A									
7,500.0	30.03	180.00	7,443.6	149.4	512.8	-111.2	7.50	7.50	0.00
7,600.0	37.53	180.00	7,526.6	93.9	512.8	-55.7	7.50	7.50	0.00
7,627.3	39.58	180.00	7,548.0	76.8	512.8	-38.8	7.50	7.50	0.00
NIOBRARA B									
7,700.0	45.03	180.00	7,601.7	27.9	512.8	10.0	7.50	7.50	0.00
7,800.0	52.53	180.00	7,667.6	-47.2	512.8	85.0	7.50	7.50	0.00
7,824.2	54.35	180.00	7,682.0	-66.7	512.8	104.4	7.50	7.50	0.00
NIOBRARA C									
7,900.0	60.03	180.00	7,723.0	-130.4	512.8	167.9	7.50	7.50	0.00
8,000.0	67.53	180.00	7,767.2	-220.0	512.8	257.3	7.50	7.50	0.00
8,100.0	75.03	180.00	7,799.3	-314.7	512.8	351.7	7.50	7.50	0.00
8,194.8	82.14	180.00	7,818.0	-407.5	512.8	444.3	7.50	7.50	0.00
FT HAYS									

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Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**North Reference:**	True
Well:	Jacobucci 32S-423	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (10-8-14)		

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)
8,200.0	82.53	180.00	7,818.7	-412.7	512.8	449.4	7.50	7.50	0.00
8,291.0	89.36	180.00	7,825.1	-503.4	512.8	539.9	7.50	7.50	0.00
7"									
8,295.3	89.68	180.00	7,825.2	-507.7	512.8	544.2	7.47	7.47	0.00
End of Build									
8,300.0	89.68	180.00	7,825.2	-512.4	512.8	548.9	0.00	0.00	0.00
8,400.0	89.68	180.00	7,825.7	-612.4	512.8	648.6	0.00	0.00	0.00
8,500.0	89.68	180.00	7,826.3	-712.4	512.8	748.3	0.00	0.00	0.00
8,600.0	89.68	180.00	7,826.9	-812.4	512.8	848.0	0.00	0.00	0.00
8,700.0	89.68	180.00	7,827.4	-912.4	512.8	947.8	0.00	0.00	0.00
8,800.0	89.68	180.00	7,828.0	-1,012.4	512.8	1,047.5	0.00	0.00	0.00
8,900.0	89.68	180.00	7,828.5	-1,112.4	512.8	1,147.2	0.00	0.00	0.00
9,000.0	89.68	180.00	7,829.1	-1,212.4	512.8	1,246.9	0.00	0.00	0.00
9,100.0	89.68	180.00	7,829.7	-1,312.4	512.8	1,346.7	0.00	0.00	0.00
9,200.0	89.68	180.00	7,830.2	-1,412.4	512.8	1,446.4	0.00	0.00	0.00
9,300.0	89.68	180.00	7,830.8	-1,512.4	512.8	1,546.1	0.00	0.00	0.00
9,400.0	89.68	180.00	7,831.3	-1,612.4	512.8	1,645.8	0.00	0.00	0.00
9,500.0	89.68	180.00	7,831.9	-1,712.4	512.8	1,745.6	0.00	0.00	0.00
9,600.0	89.68	180.00	7,832.4	-1,812.4	512.8	1,845.3	0.00	0.00	0.00
9,700.0	89.68	180.00	7,833.0	-1,912.4	512.8	1,945.0	0.00	0.00	0.00
9,800.0	89.68	180.00	7,833.6	-2,012.4	512.8	2,044.7	0.00	0.00	0.00
9,900.0	89.68	180.00	7,834.1	-2,112.4	512.8	2,144.5	0.00	0.00	0.00
10,000.0	89.68	180.00	7,834.7	-2,212.4	512.8	2,244.2	0.00	0.00	0.00
10,100.0	89.68	180.00	7,835.2	-2,312.4	512.8	2,343.9	0.00	0.00	0.00
10,200.0	89.68	180.00	7,835.8	-2,412.4	512.8	2,443.6	0.00	0.00	0.00
10,300.0	89.68	180.00	7,836.4	-2,512.4	512.8	2,543.4	0.00	0.00	0.00
10,400.0	89.68	180.00	7,836.9	-2,612.4	512.8	2,643.1	0.00	0.00	0.00
10,500.0	89.68	180.00	7,837.5	-2,712.4	512.8	2,742.8	0.00	0.00	0.00
10,600.0	89.68	180.00	7,838.0	-2,812.4	512.8	2,842.5	0.00	0.00	0.00
10,700.0	89.68	180.00	7,838.6	-2,912.4	512.8	2,942.3	0.00	0.00	0.00
10,773.6	89.68	180.00	7,839.0	-2,986.0	512.8	3,015.7	0.00	0.00	0.00
CODELL									
10,800.0	89.68	180.00	7,839.1	-3,012.4	512.8	3,042.0	0.00	0.00	0.00
10,900.0	89.68	180.00	7,839.7	-3,112.4	512.8	3,141.7	0.00	0.00	0.00
11,000.0	89.68	180.00	7,840.3	-3,212.4	512.8	3,241.4	0.00	0.00	0.00
11,100.0	89.68	180.00	7,840.8	-3,312.3	512.8	3,341.2	0.00	0.00	0.00
11,200.0	89.68	180.00	7,841.4	-3,412.3	512.8	3,440.9	0.00	0.00	0.00
11,300.0	89.68	180.00	7,841.9	-3,512.3	512.8	3,540.6	0.00	0.00	0.00
11,400.0	89.68	180.00	7,842.5	-3,612.3	512.8	3,640.3	0.00	0.00	0.00
11,500.0	89.68	180.00	7,843.1	-3,712.3	512.8	3,740.1	0.00	0.00	0.00
11,600.0	89.68	180.00	7,843.6	-3,812.3	512.8	3,839.8	0.00	0.00	0.00
11,700.0	89.68	180.00	7,844.2	-3,912.3	512.8	3,939.5	0.00	0.00	0.00
11,800.0	89.68	180.00	7,844.7	-4,012.3	512.8	4,039.3	0.00	0.00	0.00
11,900.0	89.68	180.00	7,845.3	-4,112.3	512.8	4,139.0	0.00	0.00	0.00
12,000.0	89.68	180.00	7,845.8	-4,212.3	512.8	4,238.7	0.00	0.00	0.00
12,100.0	89.68	180.00	7,846.4	-4,312.3	512.8	4,338.4	0.00	0.00	0.00
12,200.0	89.68	180.00	7,847.0	-4,412.3	512.8	4,438.2	0.00	0.00	0.00
12,300.0	89.68	180.00	7,847.5	-4,512.3	512.8	4,537.9	0.00	0.00	0.00
12,400.0	89.68	180.00	7,848.1	-4,612.3	512.8	4,637.6	0.00	0.00	0.00
12,500.0	89.68	180.00	7,848.6	-4,712.3	512.8	4,737.3	0.00	0.00	0.00
12,600.0	89.68	180.00	7,849.2	-4,812.3	512.8	4,837.1	0.00	0.00	0.00
12,700.0	89.68	180.00	7,849.8	-4,912.3	512.8	4,936.8	0.00	0.00	0.00

Database:	Landmark	**Local Co-ordinate Reference:**	Well Jacobucci 32S-423
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Project:	SEC.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**North Reference:**	True
Well:	Jacobucci 32S-423	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (10-8-14)		

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)
12,800.0	89.68	180.00	7,850.3	-5,012.3	512.8	5,036.5	0.00	0.00	0.00
12,900.0	89.68	180.00	7,850.9	-5,112.3	512.8	5,136.2	0.00	0.00	0.00
13,000.0	89.68	180.00	7,851.4	-5,212.3	512.8	5,236.0	0.00	0.00	0.00
13,100.0	89.68	180.00	7,852.0	-5,312.3	512.8	5,335.7	0.00	0.00	0.00
13,200.0	89.68	180.00	7,852.6	-5,412.3	512.8	5,435.4	0.00	0.00	0.00
13,300.0	89.68	180.00	7,853.1	-5,512.3	512.8	5,535.1	0.00	0.00	0.00
13,400.0	89.68	180.00	7,853.7	-5,612.3	512.8	5,634.9	0.00	0.00	0.00
13,500.0	89.68	180.00	7,854.2	-5,712.3	512.8	5,734.6	0.00	0.00	0.00
13,600.0	89.68	180.00	7,854.8	-5,812.3	512.8	5,834.3	0.00	0.00	0.00
13,700.0	89.68	180.00	7,855.3	-5,912.3	512.8	5,934.0	0.00	0.00	0.00
13,800.0	89.68	180.00	7,855.9	-6,012.3	512.8	6,033.8	0.00	0.00	0.00
13,900.0	89.68	180.00	7,856.5	-6,112.3	512.8	6,133.5	0.00	0.00	0.00
14,000.0	89.68	180.00	7,857.0	-6,212.3	512.8	6,233.2	0.00	0.00	0.00
14,100.0	89.68	180.00	7,857.6	-6,312.3	512.8	6,332.9	0.00	0.00	0.00
14,200.0	89.68	180.00	7,858.1	-6,412.3	512.8	6,432.7	0.00	0.00	0.00
14,300.0	89.68	180.00	7,858.7	-6,512.3	512.8	6,532.4	0.00	0.00	0.00
14,400.0	89.68	180.00	7,859.3	-6,612.3	512.8	6,632.1	0.00	0.00	0.00
14,500.0	89.68	180.00	7,859.8	-6,712.3	512.8	6,731.8	0.00	0.00	0.00
14,600.0	89.68	180.00	7,860.4	-6,812.3	512.8	6,831.6	0.00	0.00	0.00
14,700.0	89.68	180.00	7,860.9	-6,912.3	512.8	6,931.3	0.00	0.00	0.00
14,712.8	89.68	180.00	7,861.0	-6,925.0	512.8	6,944.0	0.00	0.00	0.00

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
BHL 500'FSL & 1727'I - plan hits target center - Point	0.00	0.00	7,861.0	-6,925.0	512.8	1,238,931.78	3,165,464.82	39.987740	-104.909480
SHL 2338'FSL & 181(- plan hits target center - Point	0.00	0.00	1.0	0.0	0.0	1,245,853.07	3,164,906.08	40.006750	-104.911310

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
8,291.0	7,825.1	7"	7	7-1/2

Database:	Landmark	**Local Co-ordinate Reference:**	Well Jacobucci 32S-423
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Project:	SEC.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**North Reference:**	True
Well:	Jacobucci 32S-423	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (10-8-14)		

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,527.4	4,500.0	PARKMAN		0.00	
4,931.2	4,900.0	SUSSEX		0.00	
5,385.6	5,350.0	SHANNON		0.00	
7,265.6	7,226.0	SHARON SPRINGS		0.00	
7,425.1	7,377.0	NIOBRARA A		0.00	
7,627.3	7,548.0	NIOBRARA B		0.00	
7,824.2	7,682.0	NIOBRARA C		0.00	
8,194.8	7,818.0	FT HAYS		0.00	
10,773.6	7,839.0	CODELL		0.00	

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
1,400.0	1,400.0	0.0	0.0	KOP
7,099.5	7,061.2	252.0	512.8	KOP #2
8,295.3	7,825.2	-507.7	512.8	End of Build

ENSIGN Directional

PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.32-T1N-R67W
Jacobucci 1N67W32S Pad Sec.32-T1N-R67W
Jacobucci 32S-423

Wellbore #1
Plan #2 (10-8-14)

Anticollision Report

17 October, 2014

PDC ENERGY
Growing E&P Value

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Reference Plan #2 (10-8-14)

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 10,000.0ft	**Error Surface:**	Elliptical Conic

Warning Levels Evaluated at: 2.00 **Sigma**

Survey Tool Program **Date** 10/15/2014

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	14,711.8	Plan #2 (10-8-14) (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 2 (P&A) - Wellbore #1 - Wellbore #1	13,245.0	7,924.8	267.1	2.0	1.008	Level 2, CC, ES, SF
Degenhart 32-5 (Exist.) - Wellbore #1 - Wellbore #1	12,186.1	7,910.5	27.4	-73.6	0.271	Level 1, CC, ES, SF
Degenhart 4 (Exist.) - Wellbore #1 - Wellbore #1	13,928.1	7,930.3	280.3	143.9	2.055	CC, ES, SF
Degenhart 4 (P&A) - Wellbore #1 - Wellbore #1	5,300.0	5,201.0	3,207.7	3,089.5	27.122	SF
Degenhart 4 (P&A) - Wellbore #1 - Wellbore #1	10,746.0	5,201.0	2,684.4	2,648.7	75.304	CC, ES
Degenhart 8 (P&A) - Wellbore #1 - Wellbore #1	14,548.5	5,220.0	2,739.6	2,677.2	43.859	CC, ES
Degenhart 8 (P&A) - Wellbore #1 - Wellbore #1	14,712.8	5,220.0	2,744.5	2,680.9	43.129	SF
Howard 24-32 (Exist.) - Wellbore #1 - Wellbore #1	6,123.7	6,100.2	137.6	107.8	4.609	CC
Howard 24-32 (Exist.) - Wellbore #1 - Wellbore #1	7,103.7	7,080.9	140.9	107.2	4.190	ES, SF
Jacobucci 2 (Exist.) - Wellbore #1 - Wellbore #1	8,984.7	7,858.6	122.5	78.5	2.783	CC, ES, SF
Jacobucci 3 (Exist.) - Wellbore #1 - Wellbore #1	1,400.0	1,395.0	431.2	400.2	13.938	CC
Jacobucci 3 (Exist.) - Wellbore #1 - Wellbore #1	1,500.0	1,495.0	432.5	399.4	13.051	ES
Jacobucci 3 (Exist.) - Wellbore #1 - Wellbore #1	5,100.0	5,062.2	860.2	747.7	7.651	SF
Jacobucci 33-32 (Exist.) - Wellbore #1 - Wellbore #1	1,232.4	1,229.4	385.6	380.0	69.881	CC
Jacobucci 33-32 (Exist.) - Wellbore #1 - Wellbore #1	1,400.0	1,397.1	385.7	379.4	61.505	ES
Jacobucci 33-32 (Exist.) - Wellbore #1 - Wellbore #1	8,300.0	7,824.2	739.6	705.7	21.819	SF
Jacobucci 43-32 (Exist.) - Wellbore #1 - Wellbore #1	0.0	0.0	379.0			
Jacobucci 43-32 (Exist.) - Wellbore #1 - Wellbore #1	100.0	95.7	379.2	378.9	1,699.119	ES
Jacobucci 43-32 (Exist.) - Wellbore #1 - Wellbore #1	8,200.0	7,963.1	705.3	668.2	18.980	SF
Jacobucci Jean 1 (SI) - Wellbore #1 - Wellbore #1	9,459.7	7,850.7	2.9	-191.0	0.015	Level 1, CC, ES, SF
Mark Degenhart 11 (P&A) - Wellbore #1 - Wellbore #1	5,400.0	5,151.0	4,535.9	4,418.2	38.549	SF
Mark Degenhart 11 (P&A) - Wellbore #1 - Wellbore #1	12,064.0	5,151.0	2,755.9	2,711.8	62.470	CC
Mark Degenhart 11 (P&A) - Wellbore #1 - Wellbore #1	12,100.0	5,151.0	2,756.2	2,711.8	62.107	ES
Stonehocker 32-8 (Exist.) - Wellbore #1 - Wellbore #1	14,712.8	7,967.0	2,634.4	2,341.1	8.982	CC, ES, SF
Jacobucci 1N67W32S Pad Sec.32-T1N-R67W						
Jacobucci 32S-203 - Wellbore #1 - Plan #2 (10-8-14)	1,400.0	1,400.0	28.0	21.9	4.616	CC, ES
Jacobucci 32S-203 - Wellbore #1 - Plan #2 (10-8-14)	14,712.8	14,465.9	534.1	291.8	2.204	SF
Jacobucci 32S-303 - Wellbore #1 - Plan #1 (10-8-14)	1,200.0	1,200.0	30.8	25.6	5.961	CC, ES
Jacobucci 32S-303 - Wellbore #1 - Plan #1 (10-8-14)	14,712.8	14,603.6	249.7	29.0	1.131	Level 2, SF
Jacobucci 32S-343 - Wellbore #1 - Plan #2 (10-8-14)	1,400.0	1,400.0	56.0	50.0	9.232	CC, ES
Jacobucci 32S-343 - Wellbore #1 - Plan #2 (10-8-14)	14,712.8	14,581.2	828.0	562.9	3.124	SF
Jacobucci 32S-403 - Wellbore #1 - Plan #1 (10-8-14)	1,000.0	1,000.0	58.8	54.6	13.775	CC, ES
Jacobucci 32S-403 - Wellbore #1 - Plan #1 (10-8-14)	14,712.8	14,757.2	546.4	277.7	2.033	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Degenhart 2 (P&A) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 8097-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	72.0	72.0	0.0	1.4	177.42	-5,457.3	245.7	5,462.9	5,461.4	1.44	3,793.143	
100.0	100.0	172.0	172.0	0.1	3.4	177.42	-5,457.3	245.7	5,462.9	5,459.3	3.55	1,537.722	
200.0	200.0	272.0	272.0	0.3	5.4	177.42	-5,457.3	245.7	5,462.9	5,457.1	5.78	945.569	
300.0	300.0	372.0	372.0	0.6	7.4	177.42	-5,457.3	245.7	5,462.9	5,454.9	8.00	682.680	
400.0	400.0	472.0	472.0	0.8	9.4	177.42	-5,457.3	245.7	5,462.9	5,452.7	10.23	534.169	
500.0	500.0	572.0	572.0	1.0	11.4	177.42	-5,457.3	245.7	5,462.9	5,450.4	12.45	438.728	
600.0	600.0	672.0	672.0	1.2	13.4	177.42	-5,457.3	245.7	5,462.9	5,448.2	14.68	372.222	
700.0	700.0	772.0	772.0	1.5	15.4	177.42	-5,457.3	245.7	5,462.9	5,446.0	16.90	323.225	
800.0	800.0	872.0	872.0	1.7	17.4	177.42	-5,457.3	245.7	5,462.9	5,443.8	19.13	285.627	
900.0	900.0	972.0	972.0	1.9	19.4	177.42	-5,457.3	245.7	5,462.9	5,441.5	21.35	255.864	
1,000.0	1,000.0	1,072.0	1,072.0	2.1	21.4	177.42	-5,457.3	245.7	5,462.9	5,439.3	23.58	231.719	
1,100.0	1,100.0	1,172.0	1,172.0	2.4	23.4	177.42	-5,457.3	245.7	5,462.9	5,437.1	25.80	211.738	
1,200.0	1,200.0	1,272.0	1,272.0	2.6	25.4	177.42	-5,457.3	245.7	5,462.9	5,434.9	28.02	194.929	
1,300.0	1,300.0	1,372.0	1,372.0	2.8	27.4	177.42	-5,457.3	245.7	5,462.9	5,432.6	30.25	180.593	
1,400.0	1,400.0	1,472.0	1,472.0	3.0	29.4	177.42	-5,457.3	245.7	5,462.9	5,430.4	32.47	168.221	
1,500.0	1,500.0	1,572.0	1,572.0	3.3	31.4	113.60	-5,457.3	245.7	5,463.6	5,428.9	34.69	157.504	
1,600.0	1,599.8	1,671.8	1,671.8	3.5	33.4	113.61	-5,457.3	245.7	5,465.7	5,428.8	36.89	148.165	
1,700.0	1,699.5	1,771.5	1,771.5	3.7	35.4	113.63	-5,457.3	245.7	5,469.2	5,430.1	39.08	139.931	
1,800.0	1,798.7	1,870.7	1,870.7	3.9	37.4	113.66	-5,457.3	245.7	5,474.1	5,432.8	41.28	132.614	
1,900.0	1,897.7	1,969.7	1,969.7	4.2	39.4	113.79	-5,457.3	245.7	5,479.7	5,436.2	43.51	125.950	
2,000.0	1,996.8	2,068.8	2,068.8	4.4	41.4	113.92	-5,457.3	245.7	5,485.3	5,439.6	45.75	119.909	
2,100.0	2,095.8	2,167.8	2,167.8	4.7	43.4	114.05	-5,457.3	245.7	5,491.0	5,443.0	47.99	114.413	
2,200.0	2,194.9	2,266.9	2,266.9	5.0	45.3	114.18	-5,457.3	245.7	5,496.6	5,446.4	50.25	109.393	
2,300.0	2,293.9	2,365.9	2,365.9	5.3	47.3	114.31	-5,457.3	245.7	5,502.4	5,449.8	52.51	104.794	
2,400.0	2,393.0	2,465.0	2,465.0	5.6	49.3	114.44	-5,457.3	245.7	5,508.1	5,453.3	54.77	100.566	
2,500.0	2,492.0	2,564.0	2,564.0	5.9	51.3	114.57	-5,457.3	245.7	5,513.9	5,456.8	57.04	96.667	
2,600.0	2,591.1	2,663.1	2,663.1	6.2	53.3	114.70	-5,457.3	245.7	5,519.7	5,460.3	59.31	93.061	
2,700.0	2,690.1	2,762.1	2,762.1	6.5	55.2	114.83	-5,457.3	245.7	5,525.5	5,463.9	61.59	89.718	
2,800.0	2,789.1	2,861.1	2,861.1	6.8	57.2	114.96	-5,457.3	245.7	5,531.3	5,467.5	63.86	86.610	
2,900.0	2,888.2	2,960.2	2,960.2	7.1	59.2	115.08	-5,457.3	245.7	5,537.2	5,471.1	66.14	83.714	
3,000.0	2,987.2	3,059.2	3,059.2	7.5	61.2	115.21	-5,457.3	245.7	5,543.1	5,474.7	68.43	81.009	
3,100.0	3,086.3	3,158.3	3,158.3	7.8	63.2	115.34	-5,457.3	245.7	5,549.0	5,478.3	70.71	78.477	
3,200.0	3,185.3	3,257.3	3,257.3	8.1	65.1	115.47	-5,457.3	245.7	5,555.0	5,482.0	72.99	76.103	
3,300.0	3,284.4	3,356.4	3,356.4	8.4	67.1	115.59	-5,457.3	245.7	5,561.0	5,485.7	75.28	73.872	
3,400.0	3,383.4	3,455.4	3,455.4	8.7	69.1	115.72	-5,457.3	245.7	5,567.0	5,489.5	77.57	71.772	
3,500.0	3,482.5	3,554.5	3,554.5	9.1	71.1	115.85	-5,457.3	245.7	5,573.1	5,493.2	79.85	69.792	
3,600.0	3,581.5	3,653.5	3,653.5	9.4	73.1	115.98	-5,457.3	245.7	5,579.1	5,497.0	82.14	67.922	
3,700.0	3,680.5	3,752.5	3,752.5	9.7	75.1	116.10	-5,457.3	245.7	5,585.2	5,500.8	84.43	66.153	
3,800.0	3,779.6	3,851.6	3,851.6	10.1	77.0	116.23	-5,457.3	245.7	5,591.4	5,504.7	86.72	64.477	
3,900.0	3,878.6	3,950.6	3,950.6	10.4	79.0	116.35	-5,457.3	245.7	5,597.5	5,508.5	89.01	62.888	
4,000.0	3,977.7	4,049.7	4,049.7	10.7	81.0	116.48	-5,457.3	245.7	5,603.7	5,512.4	91.30	61.378	
4,100.0	4,076.7	4,148.7	4,148.7	11.0	83.0	116.60	-5,457.3	245.7	5,609.9	5,516.3	93.59	59.943	
4,200.0	4,175.8	4,247.8	4,247.8	11.4	85.0	116.73	-5,457.3	245.7	5,616.2	5,520.3	95.88	58.576	
4,300.0	4,274.8	4,346.8	4,346.8	11.7	86.9	116.85	-5,457.3	245.7	5,622.4	5,524.3	98.17	57.273	
4,400.0	4,373.9	4,445.9	4,445.9	12.0	88.9	116.98	-5,457.3	245.7	5,628.7	5,528.3	100.46	56.030	
4,500.0	4,472.9	4,544.9	4,544.9	12.4	90.9	117.10	-5,457.3	245.7	5,635.0	5,532.3	102.75	54.842	
4,600.0	4,571.9	4,643.9	4,643.9	12.7	92.9	117.22	-5,457.3	245.7	5,641.4	5,536.3	105.04	53.706	
4,700.0	4,671.0	4,743.0	4,743.0	13.0	94.9	117.35	-5,457.3	245.7	5,647.7	5,540.4	107.33	52.619	
4,800.0	4,770.0	4,842.0	4,842.0	13.4	96.8	117.47	-5,457.3	245.7	5,654.1	5,544.5	109.62	51.578	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Degenhart 2 (P&A) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 8097-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
4,900.0	4,869.1	4,941.1	4,941.1	13.7	98.8	117.59	-5,457.3	245.7	5,660.6	5,548.7	111.91	50.580	
5,000.0	4,968.1	5,040.1	5,040.1	14.0	100.8	117.72	-5,457.3	245.7	5,667.0	5,552.8	114.20	49.622	
5,100.0	5,067.2	5,139.2	5,139.2	14.4	102.8	117.84	-5,457.3	245.7	5,673.5	5,557.0	116.50	48.701	
5,200.0	5,166.2	5,238.2	5,238.2	14.7	104.8	117.96	-5,457.3	245.7	5,680.0	5,561.2	118.79	47.817	
5,300.0	5,265.3	5,337.3	5,337.3	15.1	106.7	118.08	-5,457.3	245.7	5,686.5	5,565.5	121.08	46.966	
5,400.0	5,364.3	5,436.3	5,436.3	15.4	108.7	118.21	-5,457.3	245.7	5,693.1	5,569.7	123.37	46.147	
5,500.0	5,463.3	5,535.3	5,535.3	15.7	110.7	118.33	-5,457.3	245.7	5,699.7	5,574.0	125.66	45.359	
5,600.0	5,562.5	5,634.5	5,634.5	16.0	112.7	118.51	-5,457.3	245.7	5,706.0	5,578.0	127.99	44.583	
5,700.0	5,661.9	5,733.9	5,733.9	16.3	114.7	118.68	-5,457.3	245.7	5,710.8	5,580.5	130.27	43.838	
5,800.0	5,761.7	5,833.7	5,833.7	16.5	116.7	118.79	-5,457.3	245.7	5,714.0	5,581.5	132.51	43.122	
5,900.0	5,861.7	5,933.7	5,933.7	16.6	118.7	118.84	-5,457.3	245.7	5,715.5	5,580.8	134.69	42.434	
6,000.0	5,961.7	6,033.7	6,033.7	16.8	120.7	-177.32	-5,457.3	245.7	5,715.6	5,578.7	136.85	41.767	
6,100.0	6,061.7	6,133.7	6,133.7	16.9	122.7	-177.32	-5,457.3	245.7	5,715.6	5,576.6	139.02	41.113	
6,200.0	6,161.7	6,233.7	6,233.7	17.1	124.7	-177.32	-5,457.3	245.7	5,715.6	5,574.4	141.20	40.478	
6,300.0	6,261.7	6,333.7	6,333.7	17.3	126.7	-177.32	-5,457.3	245.7	5,715.6	5,572.2	143.38	39.863	
6,400.0	6,361.7	6,433.7	6,433.7	17.5	128.7	-177.32	-5,457.3	245.7	5,715.6	5,570.0	145.56	39.266	
6,500.0	6,461.7	6,533.7	6,533.7	17.6	130.7	-177.32	-5,457.3	245.7	5,715.6	5,567.8	147.74	38.686	
6,600.0	6,561.7	6,633.7	6,633.7	17.8	132.7	-177.32	-5,457.3	245.7	5,715.6	5,565.7	149.92	38.123	
6,700.0	6,661.7	6,733.7	6,733.7	18.0	134.7	-177.32	-5,457.3	245.7	5,715.6	5,563.5	152.11	37.576	
6,800.0	6,761.7	6,833.7	6,833.7	18.2	136.7	-177.32	-5,457.3	245.7	5,715.6	5,561.3	154.29	37.044	
6,900.0	6,861.7	6,933.7	6,933.7	18.3	138.7	-177.32	-5,457.3	245.7	5,715.6	5,559.1	156.48	36.527	
7,000.0	6,961.7	7,033.7	7,033.7	18.5	140.7	-177.32	-5,457.3	245.7	5,715.6	5,556.9	158.66	36.024	
7,100.0	7,061.7	7,133.7	7,133.7	18.7	142.7	2.68	-5,457.3	245.7	5,715.6	5,554.7	160.85	35.534	
7,200.0	7,161.4	7,233.4	7,233.4	18.8	144.7	2.70	-5,457.3	245.7	5,709.0	5,547.4	161.56	35.337	
7,300.0	7,259.4	7,331.4	7,331.4	18.9	146.6	2.79	-5,457.3	245.7	5,689.5	5,530.0	159.45	35.681	
7,400.0	7,354.0	7,426.0	7,426.0	19.0	148.5	2.93	-5,457.3	245.7	5,657.3	5,502.8	154.49	36.619	
7,500.0	7,443.6	7,515.6	7,515.6	19.0	150.3	3.15	-5,457.3	245.7	5,613.1	5,466.4	146.70	38.261	
7,600.0	7,526.6	7,598.6	7,598.6	19.0	152.0	3.47	-5,457.3	245.7	5,557.6	5,421.4	136.20	40.805	
7,700.0	7,601.7	7,673.7	7,673.7	19.0	153.5	3.94	-5,457.3	245.7	5,491.8	5,368.6	123.18	44.582	
7,800.0	7,667.6	7,739.6	7,739.6	19.1	154.8	4.64	-5,457.3	245.7	5,416.7	5,308.7	108.00	50.156	
7,900.0	7,723.0	7,795.0	7,795.0	19.2	155.9	5.73	-5,457.3	245.7	5,333.7	5,242.5	91.22	58.470	
8,000.0	7,767.2	7,839.2	7,839.2	19.5	156.8	7.60	-5,457.3	245.7	5,244.1	5,170.0	74.12	70.750	
8,100.0	7,799.3	7,871.3	7,871.3	20.0	157.4	11.37	-5,457.3	245.7	5,149.6	5,088.5	61.12	84.252	
8,200.0	7,818.7	7,890.7	7,890.7	20.6	157.8	22.17	-5,457.3	245.7	5,051.7	4,978.1	73.66	68.579	
8,300.0	7,825.2	7,897.2	7,897.2	21.5	157.9	84.10	-5,457.3	245.7	4,952.2	4,775.2	176.98	27.981	
8,400.0	7,825.7	7,897.7	7,897.7	22.5	158.0	84.21	-5,457.3	245.7	4,852.3	4,674.2	178.08	27.247	
8,500.0	7,826.3	7,898.3	7,898.3	23.6	158.0	84.33	-5,457.3	245.7	4,752.5	4,573.2	179.30	26.506	
8,600.0	7,826.9	7,898.9	7,898.9	24.8	158.0	84.45	-5,457.3	245.7	4,652.6	4,472.0	180.61	25.760	
8,700.0	7,827.4	7,899.4	7,899.4	26.1	158.0	84.57	-5,457.3	245.7	4,552.8	4,370.8	182.01	25.014	
8,800.0	7,828.0	7,900.0	7,900.0	27.5	158.0	84.69	-5,457.3	245.7	4,453.0	4,269.5	183.47	24.270	
8,900.0	7,828.5	7,900.5	7,900.5	28.9	158.0	84.81	-5,457.3	245.7	4,353.2	4,168.2	185.00	23.531	
9,000.0	7,829.1	7,901.1	7,901.1	30.4	158.0	84.93	-5,457.3	245.7	4,253.4	4,066.8	186.57	22.797	
9,100.0	7,829.7	7,901.7	7,901.7	31.9	158.0	85.05	-5,457.3	245.7	4,153.6	3,965.4	188.19	22.071	
9,200.0	7,830.2	7,902.2	7,902.2	33.5	158.0	85.16	-5,457.3	245.7	4,053.8	3,863.9	189.84	21.353	
9,300.0	7,830.8	7,902.8	7,902.8	35.1	158.1	85.28	-5,457.3	245.7	3,954.0	3,762.5	191.53	20.645	
9,400.0	7,831.3	7,903.3	7,903.3	36.7	158.1	85.40	-5,457.3	245.7	3,854.2	3,661.0	193.24	19.946	
9,500.0	7,831.9	7,903.9	7,903.9	38.4	158.1	85.52	-5,457.3	245.7	3,754.5	3,559.5	194.97	19.257	
9,600.0	7,832.4	7,904.4	7,904.4	40.1	158.1	85.64	-5,457.3	245.7	3,654.7	3,458.0	196.73	18.578	
9,700.0	7,833.0	7,905.0	7,905.0	41.8	158.1	85.76	-5,457.3	245.7	3,555.0	3,356.5	198.50	17.910	
9,800.0	7,833.6	7,905.6	7,905.6	43.5	158.1	85.88	-5,457.3	245.7	3,455.3	3,255.0	200.28	17.252	
9,900.0	7,834.1	7,906.1	7,906.1	45.2	158.1	86.00	-5,457.3	245.7	3,355.6	3,153.5	202.08	16.605	

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 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Degenhart 2 (P&A) - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 ft

Survey Program: 8097-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
10,000.0	7,834.7	7,906.7	7,906.7	47.0	158.1	86.12	-5,457.3	245.7	3,256.0	3,052.1	203.90	15.969	
10,100.0	7,835.2	7,907.2	7,907.2	48.7	158.1	86.24	-5,457.3	245.7	3,156.3	2,950.6	205.72	15.343	
10,200.0	7,835.8	7,907.8	7,907.8	50.5	158.2	86.36	-5,457.3	245.7	3,056.7	2,849.1	207.55	14.727	
10,300.0	7,836.4	7,908.4	7,908.4	52.3	158.2	86.48	-5,457.3	245.7	2,957.1	2,747.7	209.39	14.122	
10,400.0	7,836.9	7,908.9	7,908.9	54.1	158.2	86.60	-5,457.3	245.7	2,857.5	2,646.3	211.24	13.527	
10,500.0	7,837.5	7,909.5	7,909.5	55.9	158.2	86.71	-5,457.3	245.7	2,758.0	2,544.9	213.09	12.943	
10,600.0	7,838.0	7,910.0	7,910.0	57.7	158.2	86.83	-5,457.3	245.7	2,658.4	2,443.5	214.95	12.368	
10,700.0	7,838.6	7,910.6	7,910.6	59.5	158.2	86.95	-5,457.3	245.7	2,559.0	2,342.1	216.82	11.802	
10,800.0	7,839.1	7,911.1	7,911.1	61.3	158.2	87.07	-5,457.3	245.7	2,459.5	2,240.8	218.69	11.247	
10,900.0	7,839.7	7,911.7	7,911.7	63.1	158.2	87.19	-5,457.3	245.7	2,360.2	2,139.6	220.56	10.701	
11,000.0	7,840.3	7,912.3	7,912.3	65.0	158.2	87.31	-5,457.3	245.7	2,260.8	2,038.4	222.44	10.164	
11,100.0	7,840.8	7,912.8	7,912.8	66.8	158.3	87.43	-5,457.3	245.7	2,161.6	1,937.2	224.32	9.636	
11,200.0	7,841.4	7,913.4	7,913.4	68.7	158.3	87.55	-5,457.3	245.7	2,062.4	1,836.2	226.21	9.117	
11,300.0	7,841.9	7,913.9	7,913.9	70.5	158.3	87.67	-5,457.3	245.7	1,963.3	1,735.2	228.09	8.607	
11,400.0	7,842.5	7,914.5	7,914.5	72.3	158.3	87.79	-5,457.3	245.7	1,864.2	1,634.2	229.98	8.106	
11,500.0	7,843.1	7,915.1	7,915.1	74.2	158.3	87.91	-5,457.3	245.7	1,765.3	1,533.4	231.87	7.613	
11,600.0	7,843.6	7,915.6	7,915.6	76.0	158.3	88.03	-5,457.3	245.7	1,666.5	1,432.8	233.77	7.129	
11,700.0	7,844.2	7,916.2	7,916.2	77.9	158.3	88.15	-5,457.3	245.7	1,567.9	1,332.3	235.66	6.653	
11,800.0	7,844.7	7,916.7	7,916.7	79.8	158.3	88.27	-5,457.3	245.7	1,469.5	1,231.9	237.56	6.186	
11,900.0	7,845.3	7,917.3	7,917.3	81.6	158.3	88.39	-5,457.3	245.7	1,371.3	1,131.8	239.46	5.727	
12,000.0	7,845.8	7,917.8	7,917.8	83.5	158.4	88.51	-5,457.3	245.7	1,273.3	1,032.0	241.36	5.276	
12,100.0	7,846.4	7,918.4	7,918.4	85.4	158.4	88.63	-5,457.3	245.7	1,175.7	932.5	243.26	4.833	
12,200.0	7,847.0	7,919.0	7,919.0	87.2	158.4	88.75	-5,457.3	245.7	1,078.6	833.4	245.16	4.400	
12,300.0	7,847.5	7,919.5	7,919.5	89.1	158.4	88.87	-5,457.3	245.7	982.0	735.0	247.06	3.975	
12,400.0	7,848.1	7,920.1	7,920.1	91.0	158.4	88.99	-5,457.3	245.7	886.2	637.2	248.97	3.560	
12,500.0	7,848.6	7,920.6	7,920.6	92.8	158.4	89.11	-5,457.3	245.7	791.4	540.6	250.87	3.155	
12,600.0	7,849.2	7,921.2	7,921.2	94.7	158.4	89.23	-5,457.3	245.7	698.1	445.3	252.77	2.762	
12,700.0	7,849.8	7,921.8	7,921.8	96.6	158.4	89.35	-5,457.3	245.7	606.9	352.3	254.68	2.383	
12,800.0	7,850.3	7,922.3	7,922.3	98.5	158.4	89.47	-5,457.3	245.7	519.0	262.4	256.58	2.023	
12,900.0	7,850.9	7,922.9	7,922.9	100.4	158.5	89.59	-5,457.3	245.7	436.3	177.8	258.49	1.688	
13,000.0	7,851.4	7,923.4	7,923.4	102.2	158.5	89.71	-5,457.3	245.7	362.4	102.0	260.39	1.392	Level 3
13,100.0	7,852.0	7,924.0	7,924.0	104.1	158.5	89.83	-5,457.3	245.7	303.9	41.6	262.30	1.159	Level 2
13,200.0	7,852.6	7,924.6	7,924.6	106.0	158.5	89.95	-5,457.3	245.7	270.8	6.6	264.20	1.025	Level 2
13,245.0	7,852.8	7,924.8	7,924.8	106.9	158.5	90.00	-5,457.3	245.7	267.1	2.0	265.06	1.008	Level 2, CC, ES, SF
13,300.0	7,853.1	7,925.1	7,925.1	107.9	158.5	90.07	-5,457.3	245.7	272.7	6.5	266.11	1.025	Level 2
13,400.0	7,853.7	7,925.7	7,925.7	109.8	158.5	90.19	-5,457.3	245.7	308.8	40.8	268.01	1.152	Level 2
13,500.0	7,854.2	7,926.2	7,926.2	111.7	158.5	90.31	-5,457.3	245.7	369.2	99.3	269.92	1.368	Level 3
13,600.0	7,854.8	7,926.8	7,926.8	113.6	158.5	90.43	-5,457.3	245.7	444.2	172.4	271.82	1.634	
13,700.0	7,855.3	7,927.3	7,927.3	115.4	158.5	90.55	-5,457.3	245.7	527.5	253.8	273.72	1.927	
13,800.0	7,855.9	7,927.9	7,927.9	117.3	158.6	90.66	-5,457.3	245.7	615.9	340.2	275.63	2.234	
13,900.0	7,856.5	7,928.5	7,928.5	119.2	158.6	90.78	-5,457.3	245.7	707.3	429.8	277.53	2.549	
14,000.0	7,857.0	7,929.0	7,929.0	121.1	158.6	90.90	-5,457.3	245.7	800.8	521.4	279.43	2.866	
14,100.0	7,857.6	7,929.6	7,929.6	123.0	158.6	91.02	-5,457.3	245.7	895.7	614.4	281.33	3.184	
14,200.0	7,858.1	7,930.1	7,930.1	124.9	158.6	91.14	-5,457.3	245.7	991.6	708.4	283.23	3.501	
14,300.0	7,858.7	7,930.7	7,930.7	126.8	158.6	91.26	-5,457.3	245.7	1,088.2	803.1	285.13	3.817	
14,400.0	7,859.3	7,931.3	7,931.3	128.7	158.6	91.38	-5,457.3	245.7	1,185.4	898.4	287.03	4.130	
14,500.0	7,859.8	7,931.8	7,931.8	130.6	158.6	91.50	-5,457.3	245.7	1,283.0	994.1	288.93	4.441	
14,600.0	7,860.4	7,932.4	7,932.4	132.5	158.6	91.62	-5,457.3	245.7	1,381.0	1,090.2	290.83	4.749	
14,700.0	7,860.9	7,932.9	7,932.9	134.4	158.7	91.74	-5,457.3	245.7	1,479.3	1,186.5	292.72	5.053	
14,712.8	7,861.0	7,933.0	7,933.0	134.6	158.7	91.76	-5,457.3	245.7	1,491.8	1,198.9	292.92	5.093	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Degenhart 32-5 (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	55.7	55.7	0.0	0.1	174.16	-4,331.4	442.8	4,353.9	4,353.8	0.07	N/A	
100.0	100.0	153.5	153.5	0.1	0.3	174.16	-4,331.4	443.2	4,354.0	4,353.7	0.39	N/A	
200.0	200.0	246.6	246.6	0.3	0.5	174.15	-4,331.5	443.9	4,354.2	4,353.3	0.86	5,073.398	
300.0	300.0	337.5	337.5	0.6	0.8	174.13	-4,331.7	445.6	4,354.6	4,353.3	1.32	3,288.005	
400.0	400.0	431.4	431.4	0.8	1.0	174.09	-4,331.9	448.3	4,355.2	4,353.4	1.80	2,421.208	
500.0	500.0	500.0	499.9	1.0	1.2	174.06	-4,332.2	450.7	4,356.0	4,353.8	2.21	1,974.923	
600.0	600.0	581.3	581.1	1.2	1.4	174.01	-4,332.9	454.3	4,357.4	4,354.7	2.65	1,646.728	
700.0	700.0	662.3	662.0	1.5	1.6	173.96	-4,334.2	458.5	4,359.4	4,356.3	3.08	1,413.106	
800.0	800.0	759.2	758.7	1.7	1.9	173.90	-4,335.9	463.7	4,361.7	4,358.2	3.56	1,223.520	
900.0	900.0	856.9	856.4	1.9	2.1	173.84	-4,337.6	468.0	4,364.0	4,360.0	4.05	1,078.593	
1,000.0	1,000.0	939.9	939.2	2.1	2.4	173.80	-4,339.3	471.6	4,366.5	4,362.0	4.49	972.978	
1,100.0	1,100.0	1,016.9	1,016.1	2.4	2.6	173.75	-4,341.3	475.4	4,369.6	4,364.6	4.91	889.209	
1,200.0	1,200.0	1,106.2	1,105.3	2.6	2.8	173.69	-4,343.8	480.3	4,373.0	4,367.6	5.37	813.885	
1,300.0	1,300.0	1,200.0	1,198.8	2.8	3.1	173.62	-4,346.5	485.9	4,376.5	4,370.7	5.84	748.832	
1,400.0	1,400.0	1,291.0	1,289.6	3.0	3.3	173.55	-4,349.3	491.4	4,380.2	4,373.9	6.31	694.314	
1,500.0	1,500.0	1,386.8	1,385.2	3.3	3.6	109.59	-4,352.4	497.5	4,384.8	4,377.9	6.80	644.601	
1,600.0	1,599.8	1,503.4	1,501.5	3.5	3.9	109.47	-4,356.0	504.7	4,390.3	4,383.0	7.33	599.234	
1,700.0	1,699.5	1,603.5	1,601.4	3.7	4.1	109.38	-4,359.0	510.4	4,396.8	4,389.0	7.81	562.731	
1,800.0	1,798.7	1,701.7	1,699.4	3.9	4.4	109.33	-4,361.9	515.7	4,404.5	4,396.2	8.31	530.148	
1,900.0	1,897.7	1,832.5	1,830.0	4.2	4.8	109.47	-4,365.4	522.2	4,412.3	4,403.4	8.91	495.296	
2,000.0	1,996.8	1,942.2	1,939.6	4.4	5.0	109.60	-4,367.9	526.9	4,419.7	4,410.2	9.46	467.053	
2,100.0	2,095.8	2,058.2	2,055.5	4.7	5.4	109.75	-4,370.3	531.0	4,426.9	4,416.9	10.04	440.864	
2,200.0	2,194.9	2,214.9	2,212.1	5.0	5.8	109.96	-4,372.4	535.1	4,433.3	4,422.5	10.73	412.997	
2,300.0	2,293.9	2,329.0	2,326.2	5.3	6.1	110.13	-4,373.1	537.2	4,438.8	4,427.4	11.32	392.081	
2,400.0	2,393.0	2,420.3	2,417.5	5.6	6.3	110.26	-4,373.5	538.7	4,444.2	4,432.3	11.85	374.953	
2,500.0	2,492.0	2,500.0	2,497.2	5.9	6.5	110.37	-4,374.2	540.2	4,450.1	4,437.8	12.36	360.110	
2,600.0	2,591.1	2,569.6	2,566.7	6.2	6.7	110.47	-4,375.3	541.6	4,456.6	4,443.8	12.84	347.190	
2,700.0	2,690.1	2,640.6	2,637.7	6.5	6.9	110.58	-4,376.7	543.0	4,463.7	4,450.3	13.32	335.222	
2,800.0	2,789.1	2,700.0	2,697.1	6.8	7.0	110.66	-4,378.3	544.0	4,471.4	4,457.7	13.76	324.851	
2,900.0	2,888.2	2,781.9	2,778.9	7.1	7.2	110.79	-4,381.0	545.1	4,479.9	4,465.6	14.25	314.365	
3,000.0	2,987.2	2,979.4	2,976.3	7.5	7.5	111.12	-4,386.8	545.1	4,488.1	4,473.2	14.89	301.493	
3,100.0	3,086.3	3,126.3	3,123.2	7.8	7.7	111.38	-4,388.3	543.7	4,494.0	4,478.6	15.32	293.407	
3,200.0	3,185.3	3,228.5	3,225.4	8.1	7.7	111.56	-4,388.8	542.7	4,499.5	4,483.8	15.68	286.922	
3,300.0	3,284.4	3,315.0	3,311.9	8.4	7.8	111.72	-4,389.3	541.5	4,505.1	4,489.1	16.04	280.822	
3,400.0	3,383.4	3,400.0	3,396.9	8.7	7.8	111.87	-4,390.2	540.2	4,511.2	4,494.8	16.42	274.743	
3,500.0	3,482.5	3,482.7	3,479.6	9.1	7.9	112.03	-4,391.3	538.7	4,517.7	4,500.8	16.81	268.687	
3,600.0	3,581.5	3,572.0	3,568.8	9.4	8.0	112.20	-4,392.8	537.0	4,524.4	4,507.2	17.22	262.672	
3,700.0	3,680.5	3,717.4	3,714.2	9.7	8.1	112.48	-4,394.7	533.4	4,530.9	4,513.2	17.67	256.375	
3,800.0	3,779.6	3,848.6	3,845.3	10.1	8.2	112.75	-4,395.2	528.8	4,536.4	4,518.3	18.07	251.078	
3,900.0	3,878.6	3,960.3	3,956.9	10.4	8.3	112.97	-4,395.0	525.2	4,541.5	4,523.0	18.45	246.179	
4,000.0	3,977.7	4,075.1	4,071.7	10.7	8.3	113.19	-4,394.5	522.1	4,546.4	4,527.5	18.83	241.444	
4,100.0	4,076.7	4,225.7	4,222.2	11.0	8.4	113.46	-4,392.7	519.6	4,550.6	4,531.3	19.23	236.686	
4,200.0	4,175.8	4,300.0	4,296.5	11.4	8.5	113.59	-4,391.1	518.9	4,554.1	4,534.5	19.59	232.508	
4,300.0	4,274.8	4,362.5	4,359.0	11.7	8.5	113.70	-4,390.2	518.4	4,558.4	4,538.4	19.97	228.271	
4,400.0	4,373.9	4,400.0	4,396.5	12.0	8.6	113.76	-4,390.2	518.0	4,564.1	4,543.7	20.33	224.527	
4,500.0	4,472.9	4,473.2	4,469.7	12.4	8.7	113.89	-4,391.0	517.2	4,570.7	4,549.9	20.76	220.142	
4,600.0	4,571.9	4,555.8	4,552.3	12.7	8.8	114.03	-4,392.4	516.0	4,577.9	4,556.7	21.22	215.740	
4,700.0	4,671.0	4,688.9	4,685.3	13.0	9.0	114.28	-4,394.4	513.1	4,585.2	4,563.4	21.75	210.847	
4,800.0	4,770.0	4,876.3	4,872.6	13.4	9.3	114.65	-4,394.2	507.2	4,590.5	4,568.2	22.27	206.095	
4,900.0	4,869.1	4,987.5	4,983.8	13.7	9.4	114.87	-4,393.0	503.1	4,595.2	4,572.5	22.71	202.368	
5,000.0	4,968.1	5,073.7	5,069.9	14.0	9.5	115.05	-4,392.1	499.7	4,600.0	4,576.9	23.12	198.940	

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 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Degenhart 32-5 (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
5,100.0	5,067.2	5,143.4	5,139.5	14.4	9.6	115.19	-4,391.7	496.9	4,605.2	4,581.7	23.53	195.726	
5,200.0	5,166.2	5,221.9	5,218.0	14.7	9.7	115.35	-4,391.8	493.9	4,611.2	4,587.3	23.95	192.517	
5,300.0	5,265.3	5,421.7	5,417.7	15.1	9.9	115.73	-4,389.7	488.1	4,615.9	4,591.4	24.52	188.288	
5,400.0	5,364.3	5,500.0	5,496.0	15.4	10.0	115.87	-4,388.6	486.6	4,620.5	4,595.5	24.93	185.368	
5,500.0	5,463.3	5,555.8	5,551.8	15.7	10.1	115.96	-4,388.2	486.0	4,625.6	4,600.3	25.31	182.739	
5,600.0	5,562.5	5,627.7	5,623.6	16.0	10.2	116.13	-4,387.8	485.7	4,631.0	4,605.3	25.71	180.132	
5,700.0	5,661.9	5,700.0	5,695.9	16.3	10.3	116.29	-4,388.2	486.0	4,636.0	4,609.9	26.05	177.969	
5,800.0	5,761.7	5,762.1	5,758.0	16.5	10.4	116.40	-4,389.0	486.6	4,640.0	4,613.7	26.38	175.920	
5,900.0	5,861.7	5,910.7	5,906.6	16.6	10.7	116.48	-4,390.5	487.3	4,642.5	4,615.6	26.85	172.930	
6,000.0	5,961.7	6,031.6	6,027.5	16.8	10.9	-179.68	-4,390.5	486.5	4,642.6	4,615.4	27.20	170.681	
6,092.4	6,054.0	6,117.1	6,113.0	16.9	11.1	-179.66	-4,390.4	485.6	4,642.5	4,615.0	27.50	168.839	
6,100.0	6,061.7	6,123.4	6,119.3	16.9	11.1	-179.66	-4,390.4	485.5	4,642.5	4,615.0	27.52	168.691	
6,200.0	6,161.7	6,205.7	6,201.6	17.1	11.2	-179.65	-4,390.6	484.6	4,642.7	4,614.9	27.84	166.756	
6,300.0	6,261.7	6,300.0	6,295.9	17.3	11.4	-179.64	-4,391.1	483.8	4,643.3	4,615.0	28.21	164.613	
6,400.0	6,361.7	6,408.7	6,404.6	17.5	11.7	-179.64	-4,391.6	483.4	4,643.7	4,615.1	28.62	162.245	
6,500.0	6,461.7	6,516.5	6,512.4	17.6	11.9	-179.63	-4,391.9	483.2	4,644.0	4,615.0	29.03	159.981	
6,600.0	6,561.7	6,626.8	6,622.7	17.8	12.1	-179.63	-4,391.9	482.8	4,644.0	4,614.6	29.41	157.907	
6,626.3	6,588.0	6,651.1	6,647.0	17.9	12.1	-179.63	-4,391.9	482.7	4,644.0	4,614.5	29.50	157.420	
6,700.0	6,661.7	6,717.2	6,713.1	18.0	12.2	-179.63	-4,392.0	482.6	4,644.1	4,614.3	29.76	156.065	
6,800.0	6,761.7	6,800.4	6,796.3	18.2	12.4	-179.63	-4,392.3	482.6	4,644.4	4,614.3	30.11	154.232	
6,900.0	6,861.7	6,905.6	6,901.5	18.3	12.6	-179.63	-4,392.7	482.9	4,644.9	4,614.4	30.52	152.208	
7,000.0	6,961.7	7,000.0	6,995.9	18.5	12.8	-179.64	-4,393.2	483.4	4,645.4	4,614.5	30.89	150.373	
7,100.0	7,061.7	7,114.0	7,109.9	18.7	13.0	0.35	-4,393.8	484.1	4,645.9	4,614.6	31.30	148.430	
7,200.0	7,161.4	7,299.4	7,295.3	18.8	13.3	0.34	-4,392.7	485.2	4,638.8	4,607.4	31.45	147.480	
7,300.0	7,259.4	7,392.2	7,388.1	18.9	13.4	0.36	-4,391.3	484.6	4,617.7	4,586.8	30.97	149.084	
7,400.0	7,354.0	7,500.0	7,495.8	19.0	13.6	0.42	-4,388.6	482.1	4,583.1	4,553.0	30.07	152.416	
7,500.0	7,443.6	7,548.9	7,544.7	19.0	13.6	0.47	-4,387.5	480.8	4,537.2	4,508.5	28.70	158.097	
7,600.0	7,526.6	7,600.0	7,595.8	19.0	13.7	0.53	-4,387.7	480.0	4,481.7	4,454.7	26.96	166.208	
7,700.0	7,601.7	7,600.0	7,595.8	19.0	13.7	0.59	-4,387.7	480.0	4,416.2	4,391.4	24.86	177.615	
7,800.0	7,667.6	7,600.0	7,595.8	19.1	13.7	0.68	-4,387.7	480.0	4,342.6	4,320.0	22.58	192.353	
7,900.0	7,723.0	7,643.9	7,639.6	19.2	13.8	0.83	-4,388.9	480.0	4,261.0	4,240.7	20.29	209.968	
8,000.0	7,767.2	7,663.5	7,659.2	19.5	13.9	1.06	-4,389.6	480.3	4,173.0	4,154.9	18.09	230.688	
8,100.0	7,799.3	7,700.0	7,695.7	20.0	13.9	1.49	-4,391.3	481.3	4,080.0	4,063.7	16.25	251.002	
8,200.0	7,818.7	7,700.0	7,695.7	20.6	13.9	2.58	-4,391.3	481.3	3,982.9	3,967.9	15.02	265.112	
8,300.0	7,825.2	7,700.0	7,695.7	21.5	13.9	8.52	-4,391.3	481.3	3,883.6	3,868.5	15.06	257.947	
8,400.0	7,825.7	7,700.0	7,695.7	22.5	13.9	8.52	-4,391.3	481.3	3,783.7	3,768.3	15.44	245.140	
8,500.0	7,826.3	7,700.0	7,695.7	23.6	13.9	8.52	-4,391.3	481.3	3,683.9	3,668.0	15.86	232.325	
8,600.0	7,826.9	7,706.0	7,701.6	24.8	14.0	8.70	-4,391.6	481.5	3,584.1	3,567.7	16.35	219.270	
8,700.0	7,827.4	7,717.4	7,713.0	26.1	14.0	9.09	-4,392.2	481.9	3,484.2	3,467.3	16.90	206.107	
8,800.0	7,828.0	7,728.2	7,723.8	27.5	14.0	9.51	-4,392.7	482.3	3,384.4	3,366.9	17.51	193.317	
8,900.0	7,828.5	7,738.3	7,733.9	28.9	14.0	9.96	-4,393.2	482.6	3,284.5	3,266.4	18.15	180.960	
9,000.0	7,829.1	7,748.0	7,743.6	30.4	14.0	10.44	-4,393.6	482.9	3,184.7	3,165.8	18.84	169.075	
9,100.0	7,829.7	7,757.1	7,752.7	31.9	14.1	10.96	-4,394.0	483.1	3,084.8	3,065.2	19.56	157.681	
9,200.0	7,830.2	7,765.8	7,761.4	33.5	14.1	11.51	-4,394.4	483.4	2,984.9	2,964.6	20.34	146.785	
9,300.0	7,830.8	7,774.1	7,769.7	35.1	14.1	12.10	-4,394.8	483.6	2,885.0	2,863.9	21.15	136.387	
9,400.0	7,831.3	7,782.0	7,777.5	36.7	14.1	12.74	-4,395.1	483.8	2,785.2	2,763.1	22.02	126.478	
9,500.0	7,831.9	7,789.5	7,785.0	38.4	14.1	13.42	-4,395.4	484.0	2,685.3	2,662.3	22.94	117.045	
9,600.0	7,832.4	7,796.7	7,792.2	40.1	14.2	14.15	-4,395.7	484.1	2,585.4	2,561.4	23.92	108.072	
9,700.0	7,833.0	7,806.0	7,801.6	41.8	14.2	15.27	-4,396.0	484.3	2,485.5	2,460.4	25.10	99.035	
9,800.0	7,833.6	7,816.6	7,812.1	43.5	14.2	16.78	-4,396.4	484.5	2,385.6	2,359.0	26.52	89.964	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Degenhart 32-5 (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
9,900.0	7,834.1	7,825.9	7,821.4	45.2	14.2	18.41	-4,396.7	484.7	2,285.6	2,257.5	28.09	81.354	
10,000.0	7,834.7	7,834.2	7,829.7	47.0	14.2	20.16	-4,397.0	484.8	2,185.7	2,155.9	29.85	73.227	
10,100.0	7,835.2	7,841.5	7,837.0	48.7	14.3	22.04	-4,397.2	484.9	2,085.8	2,054.0	31.80	65.600	
10,200.0	7,835.8	7,848.2	7,843.7	50.5	14.3	24.07	-4,397.3	485.0	1,985.8	1,951.9	33.95	58.489	
10,300.0	7,836.4	7,854.1	7,849.6	52.3	14.3	26.24	-4,397.5	485.1	1,885.9	1,849.6	36.33	51.904	
10,400.0	7,836.9	7,859.6	7,855.1	54.1	14.3	28.57	-4,397.6	485.1	1,785.9	1,747.0	38.95	45.848	
10,500.0	7,837.5	7,864.5	7,860.0	55.9	14.3	31.06	-4,397.7	485.2	1,686.0	1,644.2	41.82	40.317	
10,600.0	7,838.0	7,869.1	7,864.6	57.7	14.3	33.72	-4,397.8	485.2	1,586.0	1,541.1	44.93	35.298	
10,700.0	7,838.6	7,873.3	7,868.7	59.5	14.3	36.56	-4,397.9	485.2	1,486.1	1,437.8	48.29	30.772	
10,800.0	7,839.1	7,877.1	7,872.6	61.3	14.3	39.57	-4,398.0	485.3	1,386.1	1,334.3	51.89	26.715	
10,900.0	7,839.7	7,880.7	7,876.1	63.1	14.3	42.76	-4,398.1	485.3	1,286.2	1,230.5	55.69	23.096	
11,000.0	7,840.3	7,884.0	7,879.5	65.0	14.3	46.11	-4,398.1	485.3	1,186.2	1,126.6	59.67	19.881	
11,100.0	7,840.8	7,887.0	7,882.5	66.8	14.4	49.61	-4,398.2	485.3	1,086.3	1,022.5	63.78	17.032	
11,200.0	7,841.4	7,889.9	7,885.4	68.7	14.4	53.25	-4,398.2	485.3	986.4	918.4	67.97	14.512	
11,300.0	7,841.9	7,892.6	7,888.1	70.5	14.4	57.00	-4,398.2	485.4	886.4	814.2	72.17	12.282	
11,400.0	7,842.5	7,895.1	7,890.6	72.3	14.4	60.83	-4,398.3	485.4	786.5	710.2	76.32	10.305	
11,500.0	7,843.1	7,897.4	7,892.9	74.2	14.4	64.71	-4,398.3	485.4	686.6	606.2	80.35	8.545	
11,600.0	7,843.6	7,899.7	7,895.1	76.0	14.4	68.61	-4,398.3	485.4	586.7	502.5	84.19	6.969	
11,700.0	7,844.2	7,901.6	7,897.1	77.9	14.4	72.22	-4,398.4	485.4	486.8	399.2	87.67	5.553	
11,800.0	7,844.7	7,903.5	7,899.0	79.8	14.4	75.86	-4,398.4	485.4	387.1	296.1	90.95	4.256	
11,900.0	7,845.3	7,905.3	7,900.8	81.6	14.4	79.55	-4,398.4	485.4	287.4	193.4	93.99	3.058	
12,000.0	7,845.8	7,907.2	7,902.7	83.5	14.4	83.27	-4,398.4	485.4	188.1	91.4	96.74	1.945	
12,100.0	7,846.4	7,909.0	7,904.4	85.4	14.4	86.98	-4,398.5	485.4	90.4	-8.8	99.18	0.911	Level 1
12,186.1	7,846.9	7,910.5	7,906.0	87.0	14.4	90.15	-4,398.5	485.4	27.4	-73.6	101.01	0.271	Level 1, CC, ES, SF
12,200.0	7,847.0	7,910.7	7,906.2	87.2	14.4	90.66	-4,398.5	485.4	30.7	-70.6	101.28	0.303	Level 1
12,300.0	7,847.5	7,912.4	7,907.9	89.1	14.4	94.28	-4,398.5	485.4	117.1	14.1	103.03	1.136	Level 2
12,400.0	7,848.1	7,914.2	7,909.6	91.0	14.4	97.80	-4,398.5	485.4	215.6	111.1	104.44	2.064	
12,500.0	7,848.6	7,915.8	7,911.3	92.8	14.4	101.21	-4,398.5	485.4	315.0	209.5	105.51	2.985	
12,600.0	7,849.2	7,917.5	7,913.0	94.7	14.4	104.50	-4,398.6	485.4	414.7	308.4	106.29	3.902	
12,700.0	7,849.8	7,919.1	7,914.6	96.6	14.4	107.64	-4,398.6	485.4	514.5	407.7	106.80	4.818	
12,800.0	7,850.3	7,920.7	7,916.2	98.5	14.4	110.63	-4,398.6	485.4	614.4	507.3	107.07	5.738	
12,900.0	7,850.9	7,922.3	7,917.8	100.4	14.4	113.46	-4,398.6	485.4	714.3	607.1	107.15	6.666	
13,000.0	7,851.4	7,923.8	7,919.3	102.2	14.4	116.14	-4,398.6	485.4	814.2	707.1	107.06	7.605	
13,100.0	7,852.0	7,925.4	7,920.8	104.1	14.4	118.66	-4,398.6	485.4	914.1	807.3	106.86	8.555	
13,200.0	7,852.6	7,926.9	7,922.3	106.0	14.4	121.04	-4,398.7	485.4	1,014.1	907.5	106.56	9.517	
13,300.0	7,853.1	7,928.3	7,923.8	107.9	14.4	123.26	-4,398.7	485.5	1,114.0	1,007.8	106.19	10.491	
13,400.0	7,853.7	7,929.8	7,925.3	109.8	14.4	125.35	-4,398.7	485.5	1,214.0	1,108.2	105.77	11.478	
13,500.0	7,854.2	7,931.2	7,926.7	111.7	14.4	127.31	-4,398.7	485.5	1,314.0	1,208.6	105.33	12.475	
13,600.0	7,854.8	7,932.6	7,928.1	113.6	14.4	129.15	-4,398.7	485.5	1,413.9	1,309.1	104.87	13.482	
13,700.0	7,855.3	7,934.0	7,929.5	115.4	14.5	130.87	-4,398.7	485.5	1,513.9	1,409.5	104.42	14.498	
13,800.0	7,855.9	7,935.4	7,930.9	117.3	14.5	132.48	-4,398.7	485.5	1,613.9	1,509.9	103.98	15.521	
13,900.0	7,856.5	7,936.8	7,932.3	119.2	14.5	134.00	-4,398.8	485.5	1,713.8	1,610.3	103.55	16.550	
14,000.0	7,857.0	7,938.1	7,933.6	121.1	14.5	135.42	-4,398.8	485.5	1,813.8	1,710.7	103.16	17.583	
14,100.0	7,857.6	7,939.4	7,934.9	123.0	14.5	136.75	-4,398.8	485.5	1,913.8	1,811.0	102.79	18.619	
14,200.0	7,858.1	7,940.7	7,936.2	124.9	14.5	138.01	-4,398.8	485.5	2,013.8	1,911.3	102.45	19.656	
14,300.0	7,858.7	7,942.0	7,937.5	126.8	14.5	139.19	-4,398.8	485.5	2,113.8	2,011.6	102.15	20.694	
14,400.0	7,859.3	7,943.3	7,938.7	128.7	14.5	140.30	-4,398.8	485.5	2,213.7	2,111.9	101.88	21.730	
14,500.0	7,859.8	7,944.5	7,940.0	130.6	14.5	141.35	-4,398.8	485.5	2,313.7	2,212.1	101.64	22.763	
14,600.0	7,860.4	7,945.7	7,941.2	132.5	14.5	142.34	-4,398.8	485.5	2,413.7	2,312.3	101.45	23.793	
14,700.0	7,860.9	7,946.9	7,942.4	134.4	14.5	143.28	-4,398.9	485.5	2,513.7	2,412.4	101.28	24.818	
14,712.8	7,861.0	7,947.1	7,942.6	134.6	14.5	143.39	-4,398.9	485.5	2,526.4	2,425.2	101.22	24.959	

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 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Degenhart 32-5 (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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Degenhart 4 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 100-NS-GYRO-MS

Offset Well Error: 0.0 ft

Reference 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	90.5	90.5	0.0	0.1	172.20	-6,174.5	846.1	6,232.2	6,232.1	0.12	N/A	
100.0	100.0	195.2	195.2	0.1	0.4	172.20	-6,174.3	845.6	6,232.0	6,231.5	0.50	N/A	
200.0	200.0	283.1	283.1	0.3	0.6	172.21	-6,174.2	845.0	6,231.8	6,230.8	0.95	6,578.059	
277.8	277.8	354.8	354.8	0.5	0.8	172.21	-6,174.3	844.5	6,231.8	6,230.4	1.30	4,779.248	
300.0	300.0	375.6	375.6	0.6	0.8	172.21	-6,174.3	844.4	6,231.8	6,230.3	1.41	4,430.454	
400.0	400.0	486.2	486.1	0.8	1.1	172.22	-6,174.3	843.8	6,231.7	6,229.8	1.92	3,252.888	
500.0	500.0	613.7	613.7	1.0	1.4	172.22	-6,173.9	843.4	6,231.3	6,228.9	2.45	2,543.974	
600.0	600.0	707.7	707.7	1.2	1.7	172.23	-6,173.4	842.9	6,230.8	6,227.9	2.90	2,145.371	
700.0	700.0	800.0	800.0	1.5	1.9	172.23	-6,173.2	842.2	6,230.4	6,227.0	3.37	1,847.175	
800.0	800.0	902.4	902.4	1.7	2.2	172.23	-6,172.8	841.7	6,230.0	6,226.2	3.86	1,612.933	
900.0	900.0	1,008.6	1,008.6	1.9	2.4	172.24	-6,172.4	841.3	6,229.6	6,225.2	4.36	1,428.806	
1,000.0	1,000.0	1,111.9	1,111.9	2.1	2.7	172.24	-6,171.9	840.6	6,229.0	6,224.1	4.86	1,283.003	
1,100.0	1,100.0	1,200.0	1,200.0	2.4	2.9	172.25	-6,171.7	839.7	6,228.6	6,223.3	5.31	1,173.422	
1,200.0	1,200.0	1,291.2	1,291.2	2.6	3.2	172.26	-6,171.6	839.0	6,228.4	6,222.6	5.77	1,079.617	
1,300.0	1,300.0	1,411.9	1,411.8	2.8	3.5	172.27	-6,171.2	838.1	6,228.0	6,221.7	6.31	986.757	
1,400.0	1,400.0	1,500.0	1,500.0	3.0	3.7	172.27	-6,171.0	837.3	6,227.6	6,220.8	6.77	920.236	
1,421.9	1,421.9	1,514.1	1,514.0	3.1	3.8	108.45	-6,171.0	837.1	6,227.5	6,220.7	6.85	908.994	
1,500.0	1,500.0	1,578.4	1,578.3	3.3	3.9	108.46	-6,171.0	836.6	6,228.0	6,220.8	7.18	867.188	
1,600.0	1,599.8	1,693.9	1,693.9	3.5	4.2	108.49	-6,171.0	835.8	6,229.5	6,221.9	7.69	810.341	
1,700.0	1,699.5	1,793.8	1,793.8	3.7	4.5	108.52	-6,170.8	834.9	6,232.0	6,223.9	8.17	762.678	
1,800.0	1,798.7	1,875.1	1,875.0	3.9	4.7	108.55	-6,170.8	834.1	6,235.8	6,227.2	8.61	724.146	
1,900.0	1,897.7	1,987.2	1,987.2	4.2	5.0	108.69	-6,170.9	833.2	6,240.2	6,231.1	9.15	682.140	
2,000.0	1,996.8	2,095.5	2,095.4	4.4	5.3	108.83	-6,170.7	832.3	6,244.4	6,234.7	9.70	643.978	
2,100.0	2,095.8	2,178.7	2,178.6	4.7	5.5	108.94	-6,170.6	831.5	6,248.7	6,238.5	10.19	613.503	
2,200.0	2,194.9	2,316.4	2,316.3	5.0	5.8	109.11	-6,170.2	830.6	6,252.9	6,242.1	10.81	578.382	
2,300.0	2,293.9	2,431.4	2,431.4	5.3	6.1	109.25	-6,169.3	829.8	6,256.6	6,245.2	11.37	550.351	
2,400.0	2,393.0	2,548.1	2,548.1	5.6	6.3	109.39	-6,168.1	829.5	6,260.1	6,248.2	11.90	526.205	
2,500.0	2,492.0	2,656.4	2,656.4	5.9	6.5	109.52	-6,166.6	829.3	6,263.3	6,250.9	12.41	504.810	
2,600.0	2,591.1	2,744.7	2,744.6	6.2	6.7	109.63	-6,165.5	828.9	6,266.7	6,253.8	12.90	485.907	
2,700.0	2,690.1	2,847.8	2,847.7	6.5	7.0	109.75	-6,164.3	828.5	6,270.2	6,256.8	13.43	467.011	
2,800.0	2,789.1	2,958.5	2,958.4	6.8	7.2	109.89	-6,162.8	828.1	6,273.4	6,259.5	13.98	448.840	
2,900.0	2,888.2	3,043.4	3,043.3	7.1	7.4	109.99	-6,161.6	827.5	6,276.8	6,262.3	14.48	433.451	
3,000.0	2,987.2	3,124.0	3,123.9	7.5	7.6	110.09	-6,160.8	827.3	6,280.5	6,265.5	14.97	419.521	
3,100.0	3,086.3	3,223.8	3,223.7	7.8	7.8	110.21	-6,159.8	827.4	6,284.3	6,268.8	15.47	406.137	
3,200.0	3,185.3	3,325.1	3,324.9	8.1	8.0	110.32	-6,158.8	827.4	6,288.1	6,272.1	15.97	393.654	
3,300.0	3,284.4	3,409.5	3,409.3	8.4	8.1	110.42	-6,158.0	827.5	6,292.1	6,275.6	16.45	382.542	
3,400.0	3,383.4	3,522.2	3,522.1	8.7	8.3	110.55	-6,157.1	828.0	6,296.1	6,279.2	16.95	371.466	
3,500.0	3,482.5	3,649.2	3,649.0	9.1	8.6	110.70	-6,155.4	828.1	6,299.7	6,282.2	17.51	359.726	
3,600.0	3,581.5	3,738.6	3,738.4	9.4	8.8	110.80	-6,154.2	827.9	6,303.2	6,285.2	18.03	349.541	
3,700.0	3,680.5	3,823.2	3,823.0	9.7	9.0	110.90	-6,153.2	827.8	6,307.0	6,288.5	18.55	340.021	
3,800.0	3,779.6	3,900.0	3,899.8	10.1	9.1	110.99	-6,152.5	827.6	6,311.1	6,292.0	19.05	331.269	
3,900.0	3,878.6	3,975.2	3,975.1	10.4	9.3	111.08	-6,152.2	827.4	6,315.6	6,296.0	19.56	322.930	
4,000.0	3,977.7	4,069.0	4,068.8	10.7	9.6	111.20	-6,152.0	826.8	6,320.4	6,300.3	20.11	314.307	
4,100.0	4,076.7	4,171.2	4,171.0	11.0	9.8	111.32	-6,151.8	826.1	6,325.2	6,304.5	20.68	305.821	
4,200.0	4,175.8	4,265.0	4,264.9	11.4	10.0	111.44	-6,151.7	825.1	6,330.0	6,308.8	21.23	298.139	
4,300.0	4,274.8	4,374.3	4,374.1	11.7	10.3	111.58	-6,151.5	824.0	6,334.9	6,313.0	21.82	290.329	
4,400.0	4,373.9	4,500.0	4,499.8	12.0	10.6	111.73	-6,150.9	822.7	6,339.4	6,316.9	22.46	282.214	
4,500.0	4,472.9	4,585.4	4,585.2	12.4	10.9	111.84	-6,150.4	821.6	6,343.9	6,320.9	23.00	275.764	
4,600.0	4,571.9	4,675.3	4,675.1	12.7	11.1	111.96	-6,150.0	820.3	6,348.6	6,325.0	23.55	269.540	
4,700.0	4,671.0	4,775.0	4,774.7	13.0	11.3	112.08	-6,149.7	819.2	6,353.4	6,329.3	24.13	263.309	
4,800.0	4,770.0	4,867.5	4,867.2	13.4	11.6	112.20	-6,149.4	818.4	6,358.3	6,333.6	24.69	257.535	

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 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Degenhart 4 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 100-NS-GYRO-MS

Offset Well Error: 0.0 ft

Reference 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	4,869.1	4,960.4	4,960.2	13.7	11.8	112.31	-6,149.2	817.7	6,363.3	6,338.0	25.25	252.056	
5,000.0	4,968.1	5,045.7	5,045.5	14.0	12.0	112.42	-6,149.1	816.7	6,368.4	6,342.6	25.77	247.112	
5,100.0	5,067.2	5,136.6	5,136.4	14.4	12.2	112.53	-6,149.3	815.8	6,373.8	6,347.5	26.30	242.346	
5,200.0	5,166.2	5,249.5	5,249.3	14.7	12.5	112.67	-6,149.4	814.7	6,379.2	6,352.3	26.88	237.280	
5,300.0	5,265.3	5,338.1	5,337.8	15.1	12.7	112.78	-6,149.4	813.4	6,384.5	6,357.1	27.42	232.880	
5,400.0	5,364.3	5,412.5	5,412.2	15.4	12.9	112.87	-6,149.6	812.3	6,390.1	6,362.2	27.90	228.997	
5,500.0	5,463.3	5,500.0	5,499.7	15.7	13.0	112.99	-6,150.2	810.9	6,396.1	6,367.7	28.41	225.163	
5,600.0	5,562.5	5,587.7	5,587.4	16.0	13.2	113.16	-6,151.0	809.5	6,402.1	6,373.2	28.88	221.709	
5,700.0	5,661.9	5,686.3	5,686.0	16.3	13.4	113.34	-6,151.9	807.9	6,406.9	6,377.6	29.29	218.746	
5,800.0	5,761.7	5,771.0	5,770.7	16.5	13.6	113.47	-6,152.7	806.5	6,410.5	6,380.8	29.64	216.274	
5,900.0	5,861.7	5,883.6	5,883.2	16.6	13.8	113.55	-6,154.0	804.9	6,412.8	6,382.7	30.01	213.687	
6,000.0	5,961.7	6,000.0	5,999.6	16.8	14.0	177.40	-6,154.8	803.2	6,413.5	6,383.1	30.40	210.981	
6,100.0	6,061.7	6,092.4	6,092.1	16.9	14.2	177.42	-6,155.4	801.8	6,414.1	6,383.3	30.77	208.426	
6,200.0	6,161.7	6,201.3	6,200.9	17.1	14.5	177.43	-6,156.2	800.0	6,414.8	6,383.6	31.18	205.705	
6,300.0	6,261.7	6,344.5	6,344.1	17.3	14.8	177.45	-6,156.5	797.9	6,414.9	6,383.2	31.71	202.327	
6,400.0	6,361.7	6,462.4	6,461.9	17.5	15.1	177.47	-6,156.5	795.6	6,414.7	6,382.6	32.18	199.319	
6,500.0	6,461.7	6,656.7	6,656.2	17.6	15.6	177.52	-6,154.9	790.8	6,414.0	6,381.1	32.87	195.133	
6,600.0	6,561.7	6,894.0	6,893.2	17.8	16.2	177.60	-6,148.1	781.3	6,410.8	6,377.1	33.67	190.413	
6,700.0	6,661.7	6,975.5	6,974.5	18.0	16.4	177.62	-6,145.1	778.4	6,407.0	6,372.9	34.04	188.191	
6,800.0	6,761.7	7,037.7	7,036.7	18.2	16.6	177.63	-6,143.0	777.7	6,403.5	6,369.2	34.35	186.417	
6,900.0	6,861.7	7,100.0	7,099.0	18.3	16.7	177.62	-6,141.3	778.0	6,400.8	6,366.2	34.64	184.774	
7,000.0	6,961.7	7,148.0	7,147.0	18.5	16.7	177.62	-6,140.3	778.7	6,398.8	6,363.9	34.87	183.509	
7,100.0	7,061.7	7,200.0	7,199.0	18.7	16.7	-2.39	-6,139.6	779.6	6,397.4	6,362.3	35.10	182.259	
7,200.0	7,161.4	7,264.9	7,263.8	18.8	16.8	-2.43	-6,139.0	780.8	6,390.1	6,355.2	34.94	182.873	
7,300.0	7,259.4	7,330.8	7,329.8	18.9	16.8	-2.51	-6,138.9	781.9	6,370.5	6,336.2	34.24	186.055	
7,400.0	7,354.0	7,403.4	7,402.3	19.0	16.8	-2.64	-6,139.1	783.1	6,338.6	6,305.6	33.02	191.934	
7,500.0	7,443.6	7,490.0	7,489.0	19.0	16.8	-2.85	-6,139.4	784.7	6,294.8	6,263.5	31.35	200.807	
7,600.0	7,526.6	7,585.1	7,584.0	19.0	16.8	-3.16	-6,139.7	786.7	6,239.6	6,210.4	29.28	213.131	
7,700.0	7,601.7	7,664.4	7,663.3	19.0	16.8	-3.61	-6,139.9	788.4	6,174.0	6,147.1	26.89	229.620	
7,800.0	7,667.6	7,730.4	7,729.3	19.1	16.9	-4.26	-6,140.0	789.6	6,099.0	6,074.7	24.30	251.019	
7,900.0	7,723.0	7,784.1	7,783.0	19.2	16.9	-5.26	-6,140.1	790.6	6,016.2	5,994.5	21.68	277.537	
8,000.0	7,767.2	7,827.2	7,826.0	19.5	16.9	-6.97	-6,140.2	791.3	5,926.7	5,907.4	19.32	306.832	
8,100.0	7,799.3	7,858.6	7,857.5	20.0	16.9	-10.39	-6,140.2	791.9	5,832.3	5,814.5	17.84	326.988	
8,200.0	7,818.7	7,877.8	7,876.7	20.6	16.9	-20.11	-6,140.3	792.2	5,734.5	5,714.9	19.60	292.508	
8,300.0	7,825.2	7,884.4	7,883.3	21.5	16.9	-79.79	-6,140.3	792.3	5,634.9	5,598.1	36.79	153.159	
8,400.0	7,825.7	7,885.2	7,884.1	22.5	16.9	-79.95	-6,140.3	792.3	5,535.0	5,497.2	37.85	146.218	
8,500.0	7,826.3	7,886.0	7,884.9	23.6	16.9	-80.11	-6,140.3	792.3	5,435.2	5,396.1	39.03	139.259	
8,600.0	7,826.9	7,886.8	7,885.7	24.8	16.9	-80.27	-6,140.3	792.3	5,335.3	5,295.0	40.30	132.395	
8,700.0	7,827.4	7,887.6	7,886.5	26.1	16.9	-80.42	-6,140.3	792.3	5,235.4	5,193.8	41.65	125.706	
8,800.0	7,828.0	7,888.4	7,887.3	27.5	16.9	-80.58	-6,140.3	792.4	5,135.6	5,092.5	43.07	119.246	
8,900.0	7,828.5	7,889.2	7,888.1	28.9	16.9	-80.74	-6,140.3	792.4	5,035.7	4,991.2	44.54	113.050	
9,000.0	7,829.1	7,890.0	7,888.8	30.4	16.9	-80.90	-6,140.3	792.4	4,935.9	4,889.8	46.07	107.135	
9,100.0	7,829.7	7,890.8	7,889.6	31.9	16.9	-81.06	-6,140.3	792.4	4,836.1	4,788.4	47.64	101.509	
9,200.0	7,830.2	7,891.6	7,890.4	33.5	16.9	-81.22	-6,140.3	792.4	4,736.2	4,687.0	49.25	96.169	
9,300.0	7,830.8	7,892.4	7,891.2	35.1	16.9	-81.38	-6,140.3	792.4	4,636.4	4,585.5	50.89	91.111	
9,400.0	7,831.3	7,893.2	7,892.0	36.7	16.9	-81.54	-6,140.3	792.4	4,536.6	4,484.1	52.55	86.323	
9,500.0	7,831.9	7,894.0	7,892.8	38.4	16.9	-81.71	-6,140.3	792.4	4,436.8	4,382.6	54.24	81.792	
9,600.0	7,832.4	7,894.8	7,893.6	40.1	16.9	-81.87	-6,140.3	792.5	4,337.0	4,281.1	55.96	77.507	
9,700.0	7,833.0	7,895.6	7,894.5	41.8	16.9	-82.03	-6,140.3	792.5	4,237.2	4,179.6	57.69	73.452	
9,800.0	7,833.6	7,896.4	7,895.3	43.5	16.9	-82.19	-6,140.3	792.5	4,137.5	4,078.0	59.43	69.615	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Degenhart 4 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 100-NS-GYRO-MS

Offset Well Error: 0.0 ft

Reference 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	7,834.1	7,897.2	7,896.1	45.2	16.9	-82.35	-6,140.3	792.5	4,037.7	3,976.5	61.19	65.981	
10,000.0	7,834.7	7,898.0	7,896.9	47.0	16.9	-82.51	-6,140.3	792.5	3,938.0	3,875.0	62.97	62.538	
10,100.0	7,835.2	7,898.8	7,897.7	48.7	16.9	-82.68	-6,140.3	792.5	3,838.2	3,773.5	64.76	59.273	
10,200.0	7,835.8	7,900.0	7,898.9	50.5	16.9	-82.92	-6,140.4	792.5	3,738.5	3,671.9	66.56	56.168	
10,300.0	7,836.4	7,900.5	7,899.4	52.3	16.9	-83.02	-6,140.4	792.6	3,638.8	3,570.4	68.36	53.230	
10,400.0	7,836.9	7,901.5	7,900.3	54.1	16.9	-83.22	-6,140.4	792.6	3,539.1	3,468.9	70.18	50.431	
10,500.0	7,837.5	7,902.4	7,901.3	55.9	16.9	-83.41	-6,140.4	792.6	3,439.4	3,367.4	72.00	47.768	
10,600.0	7,838.0	7,903.4	7,902.3	57.7	16.9	-83.61	-6,140.4	792.6	3,339.8	3,265.9	73.83	45.233	
10,700.0	7,838.6	7,904.3	7,903.2	59.5	16.9	-83.80	-6,140.4	792.6	3,240.1	3,164.5	75.67	42.818	
10,800.0	7,839.1	7,905.3	7,904.1	61.3	16.9	-83.99	-6,140.4	792.6	3,140.5	3,063.0	77.52	40.514	
10,900.0	7,839.7	7,906.2	7,905.1	63.1	16.9	-84.18	-6,140.4	792.6	3,040.9	2,961.6	79.36	38.316	
11,000.0	7,840.3	7,907.1	7,906.0	65.0	16.9	-84.36	-6,140.4	792.7	2,941.4	2,860.2	81.22	36.216	
11,100.0	7,840.8	7,908.0	7,906.9	66.8	16.9	-84.55	-6,140.4	792.7	2,841.9	2,758.8	83.08	34.208	
11,200.0	7,841.4	7,908.9	7,907.8	68.7	16.9	-84.73	-6,140.4	792.7	2,742.4	2,657.4	84.94	32.287	
11,300.0	7,841.9	7,909.8	7,908.7	70.5	16.9	-84.91	-6,140.4	792.7	2,642.9	2,556.1	86.80	30.448	
11,400.0	7,842.5	7,910.7	7,909.6	72.3	16.9	-85.09	-6,140.4	792.7	2,543.5	2,454.8	88.67	28.685	
11,500.0	7,843.1	7,911.6	7,910.4	74.2	16.9	-85.26	-6,140.4	792.7	2,444.1	2,353.6	90.54	26.995	
11,600.0	7,843.6	7,912.4	7,911.3	76.0	16.9	-85.44	-6,140.4	792.7	2,344.8	2,252.4	92.41	25.373	
11,700.0	7,844.2	7,913.3	7,912.1	77.9	16.9	-85.61	-6,140.4	792.8	2,245.6	2,151.3	94.29	23.816	
11,800.0	7,844.7	7,914.1	7,913.0	79.8	16.9	-85.79	-6,140.4	792.8	2,146.4	2,050.2	96.17	22.319	
11,900.0	7,845.3	7,915.0	7,913.8	81.6	16.9	-85.96	-6,140.4	792.8	2,047.3	1,949.3	98.05	20.880	
12,000.0	7,845.8	7,915.8	7,914.7	83.5	16.9	-86.13	-6,140.4	792.8	1,948.3	1,848.4	99.93	19.496	
12,100.0	7,846.4	7,916.6	7,915.5	85.4	16.9	-86.29	-6,140.4	792.8	1,849.4	1,747.6	101.82	18.164	
12,200.0	7,847.0	7,917.4	7,916.3	87.2	16.9	-86.46	-6,140.4	792.8	1,750.6	1,646.9	103.70	16.881	
12,300.0	7,847.5	7,918.2	7,917.1	89.1	16.9	-86.62	-6,140.4	792.8	1,652.0	1,546.4	105.59	15.646	
12,400.0	7,848.1	7,919.0	7,917.9	91.0	16.9	-86.79	-6,140.4	792.9	1,553.5	1,446.1	107.48	14.455	
12,500.0	7,848.6	7,919.8	7,918.7	92.8	16.9	-86.95	-6,140.4	792.9	1,455.3	1,345.9	109.36	13.307	
12,600.0	7,849.2	7,920.6	7,919.5	94.7	16.9	-87.11	-6,140.4	792.9	1,357.3	1,246.0	111.25	12.200	
12,700.0	7,849.8	7,921.4	7,920.2	96.6	16.9	-87.27	-6,140.4	792.9	1,259.6	1,146.5	113.15	11.133	
12,800.0	7,850.3	7,922.1	7,921.0	98.5	16.9	-87.42	-6,140.4	792.9	1,162.4	1,047.3	115.04	10.104	
12,900.0	7,850.9	7,922.9	7,921.8	100.4	16.9	-87.58	-6,140.4	792.9	1,065.6	948.6	116.93	9.113	
13,000.0	7,851.4	7,923.7	7,922.5	102.2	16.9	-87.73	-6,140.4	792.9	969.5	850.6	118.82	8.159	
13,100.0	7,852.0	7,924.4	7,923.3	104.1	16.9	-87.88	-6,140.4	792.9	874.2	753.5	120.72	7.242	
13,200.0	7,852.6	7,925.1	7,924.0	106.0	16.9	-88.04	-6,140.4	792.9	780.1	657.5	122.61	6.363	
13,300.0	7,853.1	7,925.9	7,924.7	107.9	16.9	-88.19	-6,140.4	793.0	687.8	563.3	124.51	5.524	
13,400.0	7,853.7	7,926.6	7,925.5	109.8	16.9	-88.33	-6,140.4	793.0	597.8	471.4	126.40	4.730	
13,500.0	7,854.2	7,927.3	7,926.2	111.7	16.9	-88.48	-6,140.4	793.0	511.7	383.4	128.30	3.988	
13,600.0	7,854.8	7,928.0	7,926.9	113.6	16.9	-88.63	-6,140.4	793.0	431.5	301.3	130.19	3.314	
13,700.0	7,855.3	7,928.7	7,927.6	115.4	16.9	-88.77	-6,140.4	793.0	361.3	229.3	132.09	2.736	
13,800.0	7,855.9	7,929.4	7,928.3	117.3	16.9	-88.91	-6,140.4	793.0	308.2	174.2	133.99	2.300	
13,900.0	7,856.5	7,930.1	7,929.0	119.2	16.9	-89.06	-6,140.4	793.0	281.7	145.8	135.88	2.073	
13,928.1	7,856.6	7,930.3	7,929.2	119.8	16.9	-89.10	-6,140.4	793.0	280.3	143.9	136.42	2.055	CC, ES, SF
14,000.0	7,857.0	7,930.8	7,929.7	121.1	16.9	-89.20	-6,140.4	793.0	289.4	151.6	137.78	2.100	
14,100.0	7,857.6	7,931.5	7,930.4	123.0	16.9	-89.34	-6,140.4	793.0	328.8	189.1	139.68	2.354	
14,200.0	7,858.1	7,932.2	7,931.1	124.9	16.9	-89.48	-6,140.4	793.1	390.5	248.9	141.57	2.758	
14,300.0	7,858.7	7,932.9	7,931.7	126.8	16.9	-89.61	-6,140.4	793.1	465.7	322.2	143.47	3.246	
14,400.0	7,859.3	7,933.5	7,932.4	128.7	16.9	-89.75	-6,140.4	793.1	548.9	403.5	145.36	3.776	
14,500.0	7,859.8	7,934.2	7,933.0	130.6	16.9	-89.88	-6,140.4	793.1	636.9	489.6	147.26	4.325	
14,600.0	7,860.4	7,934.8	7,933.7	132.5	16.9	-90.02	-6,140.4	793.1	728.0	578.9	149.16	4.881	
14,700.0	7,860.9	7,935.5	7,934.3	134.4	16.9	-90.15	-6,140.4	793.1	821.2	670.2	151.05	5.437	
14,712.8	7,861.0	7,935.6	7,934.4	134.6	16.9	-90.17	-6,140.4	793.1	833.2	682.0	151.25	5.509	

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 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Degenhart 4 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 100-NS-GYRO-MS

Offset Well Error: 0.0 ft

Reference 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 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Degenhart 4 (P&A) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 5201-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	32.0	32.0	0.0	0.6	175.49	-2,973.3	234.5	2,982.5	2,981.9	0.64	4,658.725	
100.0	100.0	132.0	132.0	0.1	2.6	175.49	-2,973.3	234.5	2,982.5	2,979.8	2.75	1,083.533	
200.0	200.0	232.0	232.0	0.3	4.6	175.49	-2,973.3	234.5	2,982.5	2,977.5	4.98	599.218	
300.0	300.0	332.0	332.0	0.6	6.6	175.49	-2,973.3	234.5	2,982.5	2,975.3	7.20	414.117	
400.0	400.0	432.0	432.0	0.8	8.6	175.49	-2,973.3	234.5	2,982.5	2,973.1	9.43	316.384	
500.0	500.0	532.0	532.0	1.0	10.6	175.49	-2,973.3	234.5	2,982.5	2,970.9	11.65	255.974	
600.0	600.0	632.0	632.0	1.2	12.6	175.49	-2,973.3	234.5	2,982.5	2,968.6	13.88	214.934	
700.0	700.0	732.0	732.0	1.5	14.6	175.49	-2,973.3	234.5	2,982.5	2,966.4	16.10	185.236	
800.0	800.0	832.0	832.0	1.7	16.6	175.49	-2,973.3	234.5	2,982.5	2,964.2	18.33	162.748	
900.0	900.0	932.0	932.0	1.9	18.6	175.49	-2,973.3	234.5	2,982.5	2,962.0	20.55	145.130	
1,000.0	1,000.0	1,032.0	1,032.0	2.1	20.6	175.49	-2,973.3	234.5	2,982.5	2,959.7	22.78	130.953	
1,100.0	1,100.0	1,132.0	1,132.0	2.4	22.6	175.49	-2,973.3	234.5	2,982.5	2,957.5	25.00	119.299	
1,200.0	1,200.0	1,232.0	1,232.0	2.6	24.6	175.49	-2,973.3	234.5	2,982.5	2,955.3	27.22	109.551	
1,300.0	1,300.0	1,332.0	1,332.0	2.8	26.6	175.49	-2,973.3	234.5	2,982.5	2,953.1	29.45	101.275	
1,400.0	1,400.0	1,432.0	1,432.0	3.0	28.6	175.49	-2,973.3	234.5	2,982.5	2,950.8	31.67	94.161	
1,500.0	1,500.0	1,532.0	1,532.0	3.3	30.6	111.68	-2,973.3	234.5	2,983.2	2,949.3	33.89	88.027	
1,600.0	1,599.8	1,631.8	1,631.8	3.5	32.6	111.74	-2,973.3	234.5	2,985.1	2,949.0	36.09	82.709	
1,700.0	1,699.5	1,731.5	1,731.5	3.7	34.6	111.83	-2,973.3	234.5	2,988.3	2,950.0	38.29	78.045	
1,800.0	1,798.7	1,830.7	1,830.7	3.9	36.6	111.97	-2,973.3	234.5	2,992.9	2,952.4	40.49	73.921	
1,900.0	1,897.7	1,929.7	1,929.7	4.2	38.6	112.21	-2,973.3	234.5	2,998.1	2,955.4	42.72	70.186	
2,000.0	1,996.8	2,028.8	2,028.8	4.4	40.6	112.45	-2,973.3	234.5	3,003.4	2,958.5	44.96	66.808	
2,100.0	2,095.8	2,127.8	2,127.8	4.7	42.6	112.69	-2,973.3	234.5	3,008.8	2,961.6	47.20	63.740	
2,200.0	2,194.9	2,226.9	2,226.9	5.0	44.5	112.93	-2,973.3	234.5	3,014.2	2,964.7	49.46	60.944	
2,300.0	2,293.9	2,325.9	2,325.9	5.3	46.5	113.17	-2,973.3	234.5	3,019.6	2,967.9	51.72	58.386	
2,400.0	2,393.0	2,425.0	2,425.0	5.6	48.5	113.41	-2,973.3	234.5	3,025.1	2,971.1	53.98	56.038	
2,500.0	2,492.0	2,524.0	2,524.0	5.9	50.5	113.65	-2,973.3	234.5	3,030.6	2,974.4	56.25	53.877	
2,600.0	2,591.1	2,623.1	2,623.1	6.2	52.5	113.88	-2,973.3	234.5	3,036.2	2,977.7	58.52	51.881	
2,700.0	2,690.1	2,722.1	2,722.1	6.5	54.4	114.12	-2,973.3	234.5	3,041.9	2,981.1	60.80	50.033	
2,800.0	2,789.1	2,821.1	2,821.1	6.8	56.4	114.35	-2,973.3	234.5	3,047.6	2,984.5	63.07	48.317	
2,900.0	2,888.2	2,920.2	2,920.2	7.1	58.4	114.59	-2,973.3	234.5	3,053.4	2,988.0	65.35	46.721	
3,000.0	2,987.2	3,019.2	3,019.2	7.5	60.4	114.82	-2,973.3	234.5	3,059.2	2,991.5	67.63	45.231	
3,100.0	3,086.3	3,118.3	3,118.3	7.8	62.4	115.05	-2,973.3	234.5	3,065.0	2,995.1	69.92	43.839	
3,200.0	3,185.3	3,217.3	3,217.3	8.1	64.3	115.28	-2,973.3	234.5	3,070.9	2,998.8	72.20	42.535	
3,300.0	3,284.4	3,316.4	3,316.4	8.4	66.3	115.51	-2,973.3	234.5	3,076.9	3,002.4	74.48	41.311	
3,400.0	3,383.4	3,415.4	3,415.4	8.7	68.3	115.74	-2,973.3	234.5	3,082.9	3,006.2	76.77	40.160	
3,500.0	3,482.5	3,514.5	3,514.5	9.1	70.3	115.97	-2,973.3	234.5	3,089.0	3,009.9	79.05	39.076	
3,600.0	3,581.5	3,613.5	3,613.5	9.4	72.3	116.20	-2,973.3	234.5	3,095.1	3,013.8	81.34	38.053	
3,700.0	3,680.5	3,712.5	3,712.5	9.7	74.3	116.43	-2,973.3	234.5	3,101.3	3,017.6	83.62	37.087	
3,800.0	3,779.6	3,811.6	3,811.6	10.1	76.2	116.65	-2,973.3	234.5	3,107.5	3,021.6	85.91	36.172	
3,900.0	3,878.6	3,910.6	3,910.6	10.4	78.2	116.88	-2,973.3	234.5	3,113.7	3,025.5	88.19	35.306	
4,000.0	3,977.7	4,009.7	4,009.7	10.7	80.2	117.10	-2,973.3	234.5	3,120.0	3,029.6	90.48	34.483	
4,100.0	4,076.7	4,108.7	4,108.7	11.0	82.2	117.32	-2,973.3	234.5	3,126.4	3,033.6	92.77	33.702	
4,200.0	4,175.8	4,207.8	4,207.8	11.4	84.2	117.55	-2,973.3	234.5	3,132.8	3,037.7	95.05	32.959	
4,300.0	4,274.8	4,306.8	4,306.8	11.7	86.1	117.77	-2,973.3	234.5	3,139.2	3,041.9	97.34	32.251	
4,400.0	4,373.9	4,405.9	4,405.9	12.0	88.1	117.99	-2,973.3	234.5	3,145.7	3,046.1	99.62	31.577	
4,500.0	4,472.9	4,504.9	4,504.9	12.4	90.1	118.21	-2,973.3	234.5	3,152.3	3,050.4	101.91	30.933	
4,600.0	4,571.9	4,603.9	4,603.9	12.7	92.1	118.43	-2,973.3	234.5	3,158.9	3,054.7	104.19	30.317	
4,700.0	4,671.0	4,703.0	4,703.0	13.0	94.1	118.65	-2,973.3	234.5	3,165.5	3,059.0	106.48	29.729	
4,800.0	4,770.0	4,802.0	4,802.0	13.4	96.0	118.86	-2,973.3	234.5	3,172.2	3,063.4	108.76	29.166	
4,900.0	4,869.1	4,901.1	4,901.1	13.7	98.0	119.08	-2,973.3	234.5	3,178.9	3,067.9	111.05	28.627	
5,000.0	4,968.1	5,000.1	5,000.1	14.0	100.0	119.29	-2,973.3	234.5	3,185.7	3,072.4	113.33	28.110	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Degenhart 4 (P&A) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 5201-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	5,067.2	5,099.2	5,099.2	14.4	102.0	119.51	-2,973.3	234.5	3,192.5	3,076.9	115.61	27.614	
5,200.0	5,166.2	5,198.2	5,198.2	14.7	104.0	119.72	-2,973.3	234.5	3,199.4	3,081.5	117.90	27.137	
5,300.0	5,265.3	5,201.0	5,201.0	15.1	104.0	119.73	-2,973.3	234.5	3,207.7	3,089.5	118.27	27.122	SF
5,400.0	5,364.3	5,201.0	5,201.0	15.4	104.0	119.73	-2,973.3	234.5	3,219.2	3,100.6	118.59	27.146	
5,500.0	5,463.3	5,201.0	5,201.0	15.7	104.0	119.73	-2,973.3	234.5	3,233.7	3,114.8	118.91	27.195	
5,600.0	5,562.5	5,201.0	5,201.0	16.0	104.0	119.91	-2,973.3	234.5	3,250.9	3,131.6	119.26	27.260	
5,700.0	5,661.9	5,201.0	5,201.0	16.3	104.0	120.24	-2,973.3	234.5	3,269.5	3,150.0	119.54	27.350	
5,800.0	5,761.7	5,201.0	5,201.0	16.5	104.0	120.59	-2,973.3	234.5	3,289.4	3,169.6	119.77	27.463	
5,900.0	5,861.7	5,201.0	5,201.0	16.6	104.0	120.96	-2,973.3	234.5	3,310.4	3,190.5	119.94	27.599	
6,000.0	5,961.7	5,201.0	5,201.0	16.8	104.0	-175.07	-2,973.3	234.5	3,332.9	3,212.8	120.09	27.753	
6,100.0	6,061.7	5,201.0	5,201.0	16.9	104.0	-175.07	-2,973.3	234.5	3,358.1	3,237.8	120.27	27.921	
6,200.0	6,161.7	5,201.0	5,201.0	17.1	104.0	-175.07	-2,973.3	234.5	3,386.0	3,265.6	120.45	28.112	
6,300.0	6,261.7	5,201.0	5,201.0	17.3	104.0	-175.07	-2,973.3	234.5	3,416.7	3,296.1	120.63	28.324	
6,400.0	6,361.7	5,201.0	5,201.0	17.5	104.0	-175.07	-2,973.3	234.5	3,450.0	3,329.2	120.81	28.557	
6,500.0	6,461.7	5,201.0	5,201.0	17.6	104.0	-175.07	-2,973.3	234.5	3,485.8	3,364.8	120.99	28.810	
6,600.0	6,561.7	5,201.0	5,201.0	17.8	104.0	-175.07	-2,973.3	234.5	3,524.1	3,402.9	121.18	29.082	
6,700.0	6,661.7	5,201.0	5,201.0	18.0	104.0	-175.07	-2,973.3	234.5	3,564.8	3,443.5	121.36	29.374	
6,800.0	6,761.7	5,201.0	5,201.0	18.2	104.0	-175.07	-2,973.3	234.5	3,607.8	3,486.3	121.55	29.683	
6,900.0	6,861.7	5,201.0	5,201.0	18.3	104.0	-175.07	-2,973.3	234.5	3,653.1	3,531.3	121.73	30.009	
7,000.0	6,961.7	5,201.0	5,201.0	18.5	104.0	-175.07	-2,973.3	234.5	3,700.5	3,578.6	121.92	30.352	
7,100.0	7,061.7	5,201.0	5,201.0	18.7	104.0	4.93	-2,973.3	234.5	3,749.9	3,627.8	122.11	30.710	
7,200.0	7,161.4	5,201.0	5,201.0	18.8	104.0	4.61	-2,973.3	234.5	3,795.7	3,674.5	121.19	31.320	
7,300.0	7,259.4	5,201.0	5,201.0	18.9	104.0	4.38	-2,973.3	234.5	3,831.7	3,713.4	118.25	32.403	
7,400.0	7,354.0	5,201.0	5,201.0	19.0	104.0	4.23	-2,973.3	234.5	3,857.6	3,744.3	113.36	34.030	
7,500.0	7,443.6	5,201.0	5,201.0	19.0	104.0	4.14	-2,973.3	234.5	3,873.3	3,766.7	106.61	36.331	
7,600.0	7,526.6	5,201.0	5,201.0	19.0	104.0	4.11	-2,973.3	234.5	3,878.6	3,780.4	98.15	39.516	
7,700.0	7,601.7	5,201.0	5,201.0	19.0	104.0	4.14	-2,973.3	234.5	3,873.4	3,785.2	88.17	43.933	
7,800.0	7,667.6	5,201.0	5,201.0	19.1	104.0	4.23	-2,973.3	234.5	3,857.7	3,780.8	76.89	50.175	
7,900.0	7,723.0	5,201.0	5,201.0	19.2	104.0	4.38	-2,973.3	234.5	3,831.8	3,767.2	64.60	59.317	
8,000.0	7,767.2	5,201.0	5,201.0	19.5	104.0	4.61	-2,973.3	234.5	3,795.9	3,744.2	51.68	73.454	
8,100.0	7,799.3	5,201.0	5,201.0	20.0	104.0	4.93	-2,973.3	234.5	3,750.2	3,711.5	38.65	97.041	
8,200.0	7,818.7	5,201.0	5,201.0	20.6	104.0	5.37	-2,973.3	234.5	3,695.3	3,668.6	26.66	138.617	
8,300.0	7,825.2	5,201.0	5,201.0	21.5	104.0	5.95	-2,973.3	234.5	3,631.6	3,610.7	20.91	173.681	
8,400.0	7,825.7	5,201.0	5,201.0	22.5	104.0	5.95	-2,973.3	234.5	3,565.0	3,543.8	21.28	167.515	
8,500.0	7,826.3	5,201.0	5,201.0	23.6	104.0	5.95	-2,973.3	234.5	3,500.0	3,478.4	21.69	161.339	
8,600.0	7,826.9	5,201.0	5,201.0	24.8	104.0	5.95	-2,973.3	234.5	3,436.7	3,414.6	22.14	155.219	
8,700.0	7,827.4	5,201.0	5,201.0	26.1	104.0	5.95	-2,973.3	234.5	3,375.2	3,352.6	22.62	149.213	
8,800.0	7,828.0	5,201.0	5,201.0	27.5	104.0	5.95	-2,973.3	234.5	3,315.5	3,292.4	23.13	143.365	
8,900.0	7,828.5	5,201.0	5,201.0	28.9	104.0	5.95	-2,973.3	234.5	3,257.8	3,234.2	23.66	137.708	
9,000.0	7,829.1	5,201.0	5,201.0	30.4	104.0	5.95	-2,973.3	234.5	3,202.2	3,178.0	24.21	132.268	
9,100.0	7,829.7	5,201.0	5,201.0	31.9	104.0	5.95	-2,973.3	234.5	3,148.8	3,124.0	24.78	127.062	
9,200.0	7,830.2	5,201.0	5,201.0	33.5	104.0	5.95	-2,973.3	234.5	3,097.7	3,072.4	25.37	122.101	
9,300.0	7,830.8	5,201.0	5,201.0	35.1	104.0	5.95	-2,973.3	234.5	3,049.0	3,023.1	25.97	117.391	
9,400.0	7,831.3	5,201.0	5,201.0	36.7	104.0	5.95	-2,973.3	234.5	3,002.9	2,976.3	26.59	112.935	
9,500.0	7,831.9	5,201.0	5,201.0	38.4	104.0	5.95	-2,973.3	234.5	2,959.4	2,932.2	27.22	108.732	
9,600.0	7,832.4	5,201.0	5,201.0	40.1	104.0	5.95	-2,973.3	234.5	2,918.7	2,890.9	27.86	104.779	
9,700.0	7,833.0	5,201.0	5,201.0	41.8	104.0	5.95	-2,973.3	234.5	2,881.0	2,852.4	28.50	101.073	
9,800.0	7,833.6	5,201.0	5,201.0	43.5	104.0	5.95	-2,973.3	234.5	2,846.2	2,817.0	29.16	97.607	
9,900.0	7,834.1	5,201.0	5,201.0	45.2	104.0	5.95	-2,973.3	234.5	2,814.5	2,784.7	29.82	94.374	
10,000.0	7,834.7	5,201.0	5,201.0	47.0	104.0	5.95	-2,973.3	234.5	2,786.1	2,755.6	30.49	91.369	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Degenhart 4 (P&A) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 5201-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
10,100.0	7,835.2	5,201.0	5,201.0	48.7	104.0	5.95	-2,973.3	234.5	2,761.0	2,729.8	31.17	88.582	
10,200.0	7,835.8	5,201.0	5,201.0	50.5	104.0	5.95	-2,973.3	234.5	2,739.3	2,707.5	31.85	86.007	
10,300.0	7,836.4	5,201.0	5,201.0	52.3	104.0	5.95	-2,973.3	234.5	2,721.2	2,688.6	32.54	83.634	
10,400.0	7,836.9	5,201.0	5,201.0	54.1	104.0	5.95	-2,973.3	234.5	2,706.6	2,673.3	33.23	81.456	
10,500.0	7,837.5	5,201.0	5,201.0	55.9	104.0	5.95	-2,973.3	234.5	2,695.6	2,661.7	33.92	79.465	
10,600.0	7,838.0	5,201.0	5,201.0	57.7	104.0	5.95	-2,973.3	234.5	2,688.3	2,653.7	34.62	77.651	
10,700.0	7,838.6	5,201.0	5,201.0	59.5	104.0	5.95	-2,973.3	234.5	2,684.7	2,649.4	35.32	76.007	
10,746.0	7,838.8	5,201.0	5,201.0	60.3	104.0	5.95	-2,973.3	234.5	2,684.4	2,648.7	35.65	75.304	CC, ES
10,800.0	7,839.1	5,201.0	5,201.0	61.3	104.0	5.95	-2,973.3	234.5	2,684.9	2,648.9	36.03	74.524	
10,900.0	7,839.7	5,201.0	5,201.0	63.1	104.0	5.95	-2,973.3	234.5	2,688.8	2,652.0	36.74	73.193	
11,000.0	7,840.3	5,201.0	5,201.0	65.0	104.0	5.95	-2,973.3	234.5	2,696.3	2,658.9	37.45	72.007	
11,100.0	7,840.8	5,201.0	5,201.0	66.8	104.0	5.95	-2,973.3	234.5	2,707.6	2,669.4	38.16	70.956	
11,200.0	7,841.4	5,201.0	5,201.0	68.7	104.0	5.95	-2,973.3	234.5	2,722.5	2,683.6	38.87	70.034	
11,300.0	7,841.9	5,201.0	5,201.0	70.5	104.0	5.95	-2,973.3	234.5	2,740.9	2,701.3	39.59	69.231	
11,400.0	7,842.5	5,201.0	5,201.0	72.3	104.0	5.95	-2,973.3	234.5	2,762.9	2,722.6	40.31	68.540	
11,500.0	7,843.1	5,201.0	5,201.0	74.2	104.0	5.95	-2,973.3	234.5	2,788.2	2,747.2	41.03	67.954	
11,600.0	7,843.6	5,201.0	5,201.0	76.0	104.0	5.95	-2,973.3	234.5	2,816.9	2,775.2	41.75	67.465	
11,700.0	7,844.2	5,201.0	5,201.0	77.9	104.0	5.95	-2,973.3	234.5	2,848.8	2,806.4	42.48	67.066	
11,800.0	7,844.7	5,201.0	5,201.0	79.8	104.0	5.95	-2,973.3	234.5	2,883.9	2,840.7	43.20	66.751	
11,900.0	7,845.3	5,201.0	5,201.0	81.6	104.0	5.95	-2,973.3	234.5	2,921.9	2,878.0	43.93	66.512	
12,000.0	7,845.8	5,201.0	5,201.0	83.5	104.0	5.95	-2,973.3	234.5	2,962.8	2,918.1	44.66	66.344	
12,100.0	7,846.4	5,201.0	5,201.0	85.4	104.0	5.95	-2,973.3	234.5	3,006.5	2,961.1	45.39	66.240	
12,200.0	7,847.0	5,201.0	5,201.0	87.2	104.0	5.95	-2,973.3	234.5	3,052.8	3,006.7	46.12	66.196	
12,300.0	7,847.5	5,201.0	5,201.0	89.1	104.0	5.95	-2,973.3	234.5	3,101.7	3,054.9	46.85	66.206	
12,400.0	7,848.1	5,201.0	5,201.0	91.0	104.0	5.95	-2,973.3	234.5	3,153.0	3,105.4	47.58	66.264	
12,500.0	7,848.6	5,201.0	5,201.0	92.8	104.0	5.95	-2,973.3	234.5	3,206.6	3,158.3	48.32	66.368	
12,600.0	7,849.2	5,201.0	5,201.0	94.7	104.0	5.95	-2,973.3	234.5	3,262.4	3,213.3	49.05	66.511	
12,700.0	7,849.8	5,201.0	5,201.0	96.6	104.0	5.95	-2,973.3	234.5	3,320.2	3,270.4	49.79	66.691	
12,800.0	7,850.3	5,201.0	5,201.0	98.5	104.0	5.95	-2,973.3	234.5	3,380.0	3,329.5	50.52	66.904	
12,900.0	7,850.9	5,201.0	5,201.0	100.4	104.0	5.95	-2,973.3	234.5	3,441.7	3,390.5	51.26	67.146	
13,000.0	7,851.4	5,201.0	5,201.0	102.2	104.0	5.95	-2,973.3	234.5	3,505.2	3,453.2	51.99	67.414	
13,100.0	7,852.0	5,201.0	5,201.0	104.1	104.0	5.95	-2,973.3	234.5	3,570.3	3,517.6	52.73	67.706	
13,200.0	7,852.6	5,201.0	5,201.0	106.0	104.0	5.95	-2,973.3	234.5	3,637.0	3,583.5	53.47	68.018	
13,300.0	7,853.1	5,201.0	5,201.0	107.9	104.0	5.95	-2,973.3	234.5	3,705.2	3,651.0	54.21	68.349	
13,400.0	7,853.7	5,201.0	5,201.0	109.8	104.0	5.95	-2,973.3	234.5	3,774.8	3,719.9	54.95	68.696	
13,500.0	7,854.2	5,201.0	5,201.0	111.7	104.0	5.95	-2,973.3	234.5	3,845.8	3,790.1	55.69	69.057	
13,600.0	7,854.8	5,201.0	5,201.0	113.6	104.0	5.95	-2,973.3	234.5	3,918.0	3,861.6	56.43	69.430	
13,700.0	7,855.3	5,201.0	5,201.0	115.4	104.0	5.95	-2,973.3	234.5	3,991.5	3,934.3	57.17	69.815	
13,800.0	7,855.9	5,201.0	5,201.0	117.3	104.0	5.95	-2,973.3	234.5	4,066.0	4,008.1	57.91	70.208	
13,900.0	7,856.5	5,201.0	5,201.0	119.2	104.0	5.95	-2,973.3	234.5	4,141.7	4,083.0	58.66	70.609	
14,000.0	7,857.0	5,201.0	5,201.0	121.1	104.0	5.95	-2,973.3	234.5	4,218.3	4,158.9	59.40	71.017	
14,100.0	7,857.6	5,201.0	5,201.0	123.0	104.0	5.95	-2,973.3	234.5	4,295.9	4,235.8	60.14	71.430	
14,200.0	7,858.1	5,201.0	5,201.0	124.9	104.0	5.95	-2,973.3	234.5	4,374.4	4,313.6	60.88	71.848	
14,300.0	7,858.7	5,201.0	5,201.0	126.8	104.0	5.95	-2,973.3	234.5	4,453.8	4,392.2	61.63	72.269	
14,400.0	7,859.3	5,201.0	5,201.0	128.7	104.0	5.95	-2,973.3	234.5	4,534.0	4,471.7	62.37	72.692	
14,500.0	7,859.8	5,201.0	5,201.0	130.6	104.0	5.95	-2,973.3	234.5	4,615.0	4,551.9	63.12	73.118	
14,600.0	7,860.4	5,201.0	5,201.0	132.5	104.0	5.95	-2,973.3	234.5	4,696.7	4,632.8	63.86	73.545	
14,700.0	7,860.9	5,201.0	5,201.0	134.4	104.0	5.95	-2,973.3	234.5	4,779.1	4,714.5	64.61	73.972	
14,712.8	7,861.0	5,201.0	5,201.0	134.6	104.0	5.95	-2,973.3	234.5	4,789.7	4,725.0	64.66	74.079	

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 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Degenhart 8 (P&A) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 5220-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	87.0	87.0	0.0	1.7	177.88	-6,776.1	251.4	6,780.7	6,779.0	1.74	3,896.529	
100.0	100.0	187.0	187.0	0.1	3.7	177.88	-6,776.1	251.4	6,780.7	6,776.9	3.85	1,760.050	
200.0	200.0	287.0	287.0	0.3	5.7	177.88	-6,776.1	251.4	6,780.7	6,774.6	6.08	1,115.740	
300.0	300.0	387.0	387.0	0.6	7.7	177.88	-6,776.1	251.4	6,780.7	6,772.4	8.30	816.748	
400.0	400.0	487.0	487.0	0.8	9.7	177.88	-6,776.1	251.4	6,780.7	6,770.2	10.53	644.136	
500.0	500.0	587.0	587.0	1.0	11.7	177.88	-6,776.1	251.4	6,780.7	6,768.0	12.75	531.754	
600.0	600.0	687.0	687.0	1.2	13.7	177.88	-6,776.1	251.4	6,780.7	6,765.8	14.98	452.761	
700.0	700.0	787.0	787.0	1.5	15.7	177.88	-6,776.1	251.4	6,780.7	6,763.5	17.20	394.202	
800.0	800.0	887.0	887.0	1.7	17.7	177.88	-6,776.1	251.4	6,780.7	6,761.3	19.43	349.056	
900.0	900.0	987.0	987.0	1.9	19.7	177.88	-6,776.1	251.4	6,780.7	6,759.1	21.65	313.188	
1,000.0	1,000.0	1,087.0	1,087.0	2.1	21.7	177.88	-6,776.1	251.4	6,780.7	6,756.9	23.88	284.004	
1,100.0	1,100.0	1,187.0	1,187.0	2.4	23.7	177.88	-6,776.1	251.4	6,780.7	6,754.6	26.10	259.796	
1,200.0	1,200.0	1,287.0	1,287.0	2.6	25.7	177.88	-6,776.1	251.4	6,780.7	6,752.4	28.32	239.391	
1,300.0	1,300.0	1,387.0	1,387.0	2.8	27.7	177.88	-6,776.1	251.4	6,780.7	6,750.2	30.55	221.957	
1,400.0	1,400.0	1,487.0	1,487.0	3.0	29.7	177.88	-6,776.1	251.4	6,780.7	6,748.0	32.77	206.890	
1,500.0	1,500.0	1,587.0	1,587.0	3.3	31.7	114.05	-6,776.1	251.4	6,781.4	6,746.4	34.99	193.820	
1,600.0	1,599.8	1,686.8	1,686.8	3.5	33.7	114.05	-6,776.1	251.4	6,783.6	6,746.4	37.19	182.410	
1,700.0	1,699.5	1,786.5	1,786.5	3.7	35.7	114.05	-6,776.1	251.4	6,787.1	6,747.8	39.38	172.335	
1,800.0	1,798.7	1,885.7	1,885.7	3.9	37.7	114.06	-6,776.1	251.4	6,792.1	6,750.6	41.58	163.368	
1,900.0	1,897.7	1,984.7	1,984.7	4.2	39.7	114.16	-6,776.1	251.4	6,797.8	6,754.0	43.80	155.187	
2,000.0	1,996.8	2,083.8	2,083.8	4.4	41.7	114.27	-6,776.1	251.4	6,803.5	6,757.5	46.04	147.765	
2,100.0	2,095.8	2,182.8	2,182.8	4.7	43.7	114.37	-6,776.1	251.4	6,809.2	6,761.0	48.29	141.008	
2,200.0	2,194.9	2,281.9	2,281.9	5.0	45.6	114.48	-6,776.1	251.4	6,815.0	6,764.4	50.54	134.834	
2,300.0	2,293.9	2,380.9	2,380.9	5.3	47.6	114.58	-6,776.1	251.4	6,820.8	6,768.0	52.80	129.173	
2,400.0	2,393.0	2,480.0	2,480.0	5.6	49.6	114.68	-6,776.1	251.4	6,826.6	6,771.5	55.07	123.966	
2,500.0	2,492.0	2,579.0	2,579.0	5.9	51.6	114.79	-6,776.1	251.4	6,832.4	6,775.0	57.34	119.162	
2,600.0	2,591.1	2,678.1	2,678.1	6.2	53.6	114.89	-6,776.1	251.4	6,838.2	6,778.6	59.61	114.718	
2,700.0	2,690.1	2,777.1	2,777.1	6.5	55.5	115.00	-6,776.1	251.4	6,844.1	6,782.2	61.88	110.595	
2,800.0	2,789.1	2,876.1	2,876.1	6.8	57.5	115.10	-6,776.1	251.4	6,850.0	6,785.8	64.16	106.760	
2,900.0	2,888.2	2,975.2	2,975.2	7.1	59.5	115.20	-6,776.1	251.4	6,855.9	6,789.4	66.44	103.186	
3,000.0	2,987.2	3,074.2	3,074.2	7.5	61.5	115.31	-6,776.1	251.4	6,861.8	6,793.1	68.72	99.846	
3,100.0	3,086.3	3,173.3	3,173.3	7.8	63.5	115.41	-6,776.1	251.4	6,867.8	6,796.7	71.01	96.719	
3,200.0	3,185.3	3,272.3	3,272.3	8.1	65.4	115.51	-6,776.1	251.4	6,873.7	6,800.4	73.29	93.786	
3,300.0	3,284.4	3,371.4	3,371.4	8.4	67.4	115.62	-6,776.1	251.4	6,879.7	6,804.2	75.58	91.028	
3,400.0	3,383.4	3,470.4	3,470.4	8.7	69.4	115.72	-6,776.1	251.4	6,885.8	6,807.9	77.86	88.432	
3,500.0	3,482.5	3,569.5	3,569.5	9.1	71.4	115.82	-6,776.1	251.4	6,891.8	6,811.6	80.15	85.983	
3,600.0	3,581.5	3,668.5	3,668.5	9.4	73.4	115.92	-6,776.1	251.4	6,897.9	6,815.4	82.44	83.670	
3,700.0	3,680.5	3,767.5	3,767.5	9.7	75.4	116.03	-6,776.1	251.4	6,903.9	6,819.2	84.73	81.481	
3,800.0	3,779.6	3,866.6	3,866.6	10.1	77.3	116.13	-6,776.1	251.4	6,910.1	6,823.0	87.02	79.407	
3,900.0	3,878.6	3,965.6	3,965.6	10.4	79.3	116.23	-6,776.1	251.4	6,916.2	6,826.9	89.31	77.439	
4,000.0	3,977.7	4,064.7	4,064.7	10.7	81.3	116.33	-6,776.1	251.4	6,922.3	6,830.7	91.60	75.570	
4,100.0	4,076.7	4,163.7	4,163.7	11.0	83.3	116.43	-6,776.1	251.4	6,928.5	6,834.6	93.89	73.792	
4,200.0	4,175.8	4,262.8	4,262.8	11.4	85.3	116.53	-6,776.1	251.4	6,934.7	6,838.5	96.18	72.098	
4,300.0	4,274.8	4,361.8	4,361.8	11.7	87.2	116.64	-6,776.1	251.4	6,940.9	6,842.5	98.48	70.483	
4,400.0	4,373.9	4,460.9	4,460.9	12.0	89.2	116.74	-6,776.1	251.4	6,947.2	6,846.4	100.77	68.942	
4,500.0	4,472.9	4,559.9	4,559.9	12.4	91.2	116.84	-6,776.1	251.4	6,953.4	6,850.4	103.06	67.470	
4,600.0	4,571.9	4,658.9	4,658.9	12.7	93.2	116.94	-6,776.1	251.4	6,959.7	6,854.4	105.35	66.061	
4,700.0	4,671.0	4,758.0	4,758.0	13.0	95.2	117.04	-6,776.1	251.4	6,966.0	6,858.4	107.64	64.713	
4,800.0	4,770.0	4,857.0	4,857.0	13.4	97.1	117.14	-6,776.1	251.4	6,972.4	6,862.4	109.94	63.421	
4,900.0	4,869.1	4,956.1	4,956.1	13.7	99.1	117.24	-6,776.1	251.4	6,978.7	6,866.5	112.23	62.183	
5,000.0	4,968.1	5,055.1	5,055.1	14.0	101.1	117.34	-6,776.1	251.4	6,985.1	6,870.6	114.52	60.993	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Degenhart 8 (P&A) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 5220-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	5,067.2	5,154.2	5,154.2	14.4	103.1	117.44	-6,776.1	251.4	6,991.5	6,874.7	116.81	59.851	
5,200.0	5,166.2	5,220.0	5,220.0	14.7	104.4	117.50	-6,776.1	251.4	6,998.0	6,879.5	118.45	59.082	
5,300.0	5,265.3	5,220.0	5,220.0	15.1	104.4	117.50	-6,776.1	251.4	7,005.6	6,886.8	118.77	58.986	
5,400.0	5,364.3	5,220.0	5,220.0	15.4	104.4	117.50	-6,776.1	251.4	7,014.6	6,895.5	119.09	58.903	
5,500.0	5,463.3	5,220.0	5,220.0	15.7	104.4	117.50	-6,776.1	251.4	7,025.0	6,905.6	119.41	58.832	
5,600.0	5,562.5	5,220.0	5,220.0	16.0	104.4	117.63	-6,776.1	251.4	7,036.6	6,916.9	119.75	58.759	
5,700.0	5,661.9	5,220.0	5,220.0	16.3	104.4	117.83	-6,776.1	251.4	7,048.1	6,928.1	120.04	58.715	
5,800.0	5,761.7	5,220.0	5,220.0	16.5	104.4	118.03	-6,776.1	251.4	7,059.4	6,939.1	120.27	58.696	
5,900.0	5,861.7	5,220.0	5,220.0	16.6	104.4	118.23	-6,776.1	251.4	7,070.5	6,950.0	120.45	58.703	
6,000.0	5,961.7	5,220.0	5,220.0	16.8	104.4	-177.87	-6,776.1	251.4	7,081.6	6,961.0	120.60	58.722	
6,100.0	6,061.7	5,220.0	5,220.0	16.9	104.4	-177.87	-6,776.1	251.4	7,094.0	6,973.2	120.77	58.738	
6,200.0	6,161.7	5,220.0	5,220.0	17.1	104.4	-177.87	-6,776.1	251.4	7,107.8	6,986.8	120.95	58.766	
6,300.0	6,261.7	5,220.0	5,220.0	17.3	104.4	-177.87	-6,776.1	251.4	7,122.9	7,001.8	121.13	58.804	
6,400.0	6,361.7	5,220.0	5,220.0	17.5	104.4	-177.87	-6,776.1	251.4	7,139.4	7,018.1	121.31	58.853	
6,500.0	6,461.7	5,220.0	5,220.0	17.6	104.4	-177.87	-6,776.1	251.4	7,157.3	7,035.8	121.49	58.913	
6,600.0	6,561.7	5,220.0	5,220.0	17.8	104.4	-177.87	-6,776.1	251.4	7,176.6	7,054.9	121.67	58.983	
6,700.0	6,661.7	5,220.0	5,220.0	18.0	104.4	-177.87	-6,776.1	251.4	7,197.1	7,075.3	121.85	59.063	
6,800.0	6,761.7	5,220.0	5,220.0	18.2	104.4	-177.87	-6,776.1	251.4	7,219.0	7,097.0	122.04	59.154	
6,900.0	6,861.7	5,220.0	5,220.0	18.3	104.4	-177.87	-6,776.1	251.4	7,242.3	7,120.0	122.22	59.254	
7,000.0	6,961.7	5,220.0	5,220.0	18.5	104.4	-177.87	-6,776.1	251.4	7,266.8	7,144.4	122.41	59.365	
7,100.0	7,061.7	5,220.0	5,220.0	18.7	104.4	2.13	-6,776.1	251.4	7,292.6	7,170.0	122.60	59.485	
7,200.0	7,161.4	5,220.0	5,220.0	18.8	104.4	2.07	-6,776.1	251.4	7,313.3	7,191.6	121.66	60.112	
7,300.0	7,259.4	5,220.0	5,220.0	18.9	104.4	2.05	-6,776.1	251.4	7,322.3	7,203.7	118.69	61.693	
7,400.0	7,354.0	5,220.0	5,220.0	19.0	104.4	2.05	-6,776.1	251.4	7,319.7	7,206.0	113.75	64.349	
7,500.0	7,443.6	5,220.0	5,220.0	19.0	104.4	2.09	-6,776.1	251.4	7,305.5	7,198.5	106.94	68.311	
7,600.0	7,526.6	5,220.0	5,220.0	19.0	104.4	2.17	-6,776.1	251.4	7,279.7	7,181.3	98.41	73.973	
7,700.0	7,601.7	5,220.0	5,220.0	19.0	104.4	2.28	-6,776.1	251.4	7,242.7	7,154.4	88.33	81.993	
7,800.0	7,667.6	5,220.0	5,220.0	19.1	104.4	2.45	-6,776.1	251.4	7,195.1	7,118.2	76.94	93.513	
7,900.0	7,723.0	5,220.0	5,220.0	19.2	104.4	2.69	-6,776.1	251.4	7,137.4	7,072.9	64.52	110.631	
8,000.0	7,767.2	5,220.0	5,220.0	19.5	104.4	3.03	-6,776.1	251.4	7,070.3	7,018.9	51.40	137.546	
8,100.0	7,799.3	5,220.0	5,220.0	20.0	104.4	3.52	-6,776.1	251.4	6,994.8	6,956.7	38.09	183.626	
8,200.0	7,818.7	5,220.0	5,220.0	20.6	104.4	4.28	-6,776.1	251.4	6,911.9	6,886.2	25.66	269.327	
8,300.0	7,825.2	5,220.0	5,220.0	21.5	104.4	5.48	-6,776.1	251.4	6,822.7	6,802.7	20.09	339.575	
8,400.0	7,825.7	5,220.0	5,220.0	22.5	104.4	5.48	-6,776.1	251.4	6,731.3	6,710.8	20.46	328.943	
8,500.0	7,826.3	5,220.0	5,220.0	23.6	104.4	5.48	-6,776.1	251.4	6,640.1	6,619.2	20.87	318.101	
8,600.0	7,826.9	5,220.0	5,220.0	24.8	104.4	5.48	-6,776.1	251.4	6,549.1	6,527.8	21.32	307.183	
8,700.0	7,827.4	5,220.0	5,220.0	26.1	104.4	5.48	-6,776.1	251.4	6,458.4	6,436.6	21.80	296.301	
8,800.0	7,828.0	5,220.0	5,220.0	27.5	104.4	5.48	-6,776.1	251.4	6,368.0	6,345.7	22.30	285.545	
8,900.0	7,828.5	5,220.0	5,220.0	28.9	104.4	5.48	-6,776.1	251.4	6,277.9	6,255.0	22.83	274.984	
9,000.0	7,829.1	5,220.0	5,220.0	30.4	104.4	5.48	-6,776.1	251.4	6,188.0	6,164.7	23.38	264.673	
9,100.0	7,829.7	5,220.0	5,220.0	31.9	104.4	5.48	-6,776.1	251.4	6,098.5	6,074.6	23.95	254.648	
9,200.0	7,830.2	5,220.0	5,220.0	33.5	104.4	5.48	-6,776.1	251.4	6,009.4	5,984.8	24.53	244.935	
9,300.0	7,830.8	5,220.0	5,220.0	35.1	104.4	5.48	-6,776.1	251.4	5,920.5	5,895.4	25.13	235.551	
9,400.0	7,831.3	5,220.0	5,220.0	36.7	104.4	5.48	-6,776.1	251.4	5,832.1	5,806.3	25.75	226.504	
9,500.0	7,831.9	5,220.0	5,220.0	38.4	104.4	5.48	-6,776.1	251.4	5,744.0	5,717.6	26.37	217.796	
9,600.0	7,832.4	5,220.0	5,220.0	40.1	104.4	5.48	-6,776.1	251.4	5,656.3	5,629.3	27.01	209.427	
9,700.0	7,833.0	5,220.0	5,220.0	41.8	104.4	5.48	-6,776.1	251.4	5,569.0	5,541.4	27.65	201.390	
9,800.0	7,833.6	5,220.0	5,220.0	43.5	104.4	5.48	-6,776.1	251.4	5,482.2	5,453.9	28.31	193.678	
9,900.0	7,834.1	5,220.0	5,220.0	45.2	104.4	5.48	-6,776.1	251.4	5,395.8	5,366.8	28.97	186.283	
10,000.0	7,834.7	5,220.0	5,220.0	47.0	104.4	5.48	-6,776.1	251.4	5,309.9	5,280.2	29.63	179.192	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Degenhart 8 (P&A) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 5220-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
10,100.0	7,835.2	5,220.0	5,220.0	48.7	104.4	5.48	-6,776.1	251.4	5,224.5	5,194.2	30.30	172.397	
10,200.0	7,835.8	5,220.0	5,220.0	50.5	104.4	5.48	-6,776.1	251.4	5,139.6	5,108.6	30.98	165.884	
10,300.0	7,836.4	5,220.0	5,220.0	52.3	104.4	5.48	-6,776.1	251.4	5,055.3	5,023.6	31.67	159.644	
10,400.0	7,836.9	5,220.0	5,220.0	54.1	104.4	5.48	-6,776.1	251.4	4,971.5	4,939.2	32.35	153.663	
10,500.0	7,837.5	5,220.0	5,220.0	55.9	104.4	5.48	-6,776.1	251.4	4,888.4	4,855.3	33.04	147.932	
10,600.0	7,838.0	5,220.0	5,220.0	57.7	104.4	5.48	-6,776.1	251.4	4,805.9	4,772.1	33.74	142.439	
10,700.0	7,838.6	5,220.0	5,220.0	59.5	104.4	5.48	-6,776.1	251.4	4,724.1	4,689.6	34.44	137.174	
10,800.0	7,839.1	5,220.0	5,220.0	61.3	104.4	5.48	-6,776.1	251.4	4,643.0	4,607.8	35.14	132.127	
10,900.0	7,839.7	5,220.0	5,220.0	63.1	104.4	5.48	-6,776.1	251.4	4,562.6	4,526.8	35.84	127.289	
11,000.0	7,840.3	5,220.0	5,220.0	65.0	104.4	5.48	-6,776.1	251.4	4,483.0	4,446.5	36.55	122.649	
11,100.0	7,840.8	5,220.0	5,220.0	66.8	104.4	5.48	-6,776.1	251.4	4,404.3	4,367.1	37.26	118.201	
11,200.0	7,841.4	5,220.0	5,220.0	68.7	104.4	5.48	-6,776.1	251.4	4,326.5	4,288.5	37.97	113.935	
11,300.0	7,841.9	5,220.0	5,220.0	70.5	104.4	5.48	-6,776.1	251.4	4,249.5	4,210.9	38.69	109.845	
11,400.0	7,842.5	5,220.0	5,220.0	72.3	104.4	5.48	-6,776.1	251.4	4,173.6	4,134.2	39.40	105.922	
11,500.0	7,843.1	5,220.0	5,220.0	74.2	104.4	5.48	-6,776.1	251.4	4,098.7	4,058.6	40.12	102.160	
11,600.0	7,843.6	5,220.0	5,220.0	76.0	104.4	5.48	-6,776.1	251.4	4,024.9	3,984.0	40.84	98.553	
11,700.0	7,844.2	5,220.0	5,220.0	77.9	104.4	5.48	-6,776.1	251.4	3,952.2	3,910.6	41.56	95.096	
11,800.0	7,844.7	5,220.0	5,220.0	79.8	104.4	5.48	-6,776.1	251.4	3,880.7	3,838.4	42.28	91.782	
11,900.0	7,845.3	5,220.0	5,220.0	81.6	104.4	5.48	-6,776.1	251.4	3,810.6	3,767.5	43.01	88.606	
12,000.0	7,845.8	5,220.0	5,220.0	83.5	104.4	5.48	-6,776.1	251.4	3,741.7	3,698.0	43.73	85.564	
12,100.0	7,846.4	5,220.0	5,220.0	85.4	104.4	5.48	-6,776.1	251.4	3,674.4	3,629.9	44.46	82.651	
12,200.0	7,847.0	5,220.0	5,220.0	87.2	104.4	5.48	-6,776.1	251.4	3,608.5	3,563.3	45.18	79.863	
12,300.0	7,847.5	5,220.0	5,220.0	89.1	104.4	5.48	-6,776.1	251.4	3,544.2	3,498.3	45.91	77.197	
12,400.0	7,848.1	5,220.0	5,220.0	91.0	104.4	5.48	-6,776.1	251.4	3,481.6	3,435.0	46.64	74.648	
12,500.0	7,848.6	5,220.0	5,220.0	92.8	104.4	5.48	-6,776.1	251.4	3,420.8	3,373.5	47.37	72.214	
12,600.0	7,849.2	5,220.0	5,220.0	94.7	104.4	5.48	-6,776.1	251.4	3,361.9	3,313.8	48.10	69.892	
12,700.0	7,849.8	5,220.0	5,220.0	96.6	104.4	5.48	-6,776.1	251.4	3,304.9	3,256.1	48.83	67.678	
12,800.0	7,850.3	5,220.0	5,220.0	98.5	104.4	5.48	-6,776.1	251.4	3,250.1	3,200.5	49.57	65.571	
12,900.0	7,850.9	5,220.0	5,220.0	100.4	104.4	5.48	-6,776.1	251.4	3,197.4	3,147.1	50.30	63.568	
13,000.0	7,851.4	5,220.0	5,220.0	102.2	104.4	5.48	-6,776.1	251.4	3,147.0	3,096.0	51.03	61.666	
13,100.0	7,852.0	5,220.0	5,220.0	104.1	104.4	5.48	-6,776.1	251.4	3,099.0	3,047.2	51.77	59.864	
13,200.0	7,852.6	5,220.0	5,220.0	106.0	104.4	5.48	-6,776.1	251.4	3,053.5	3,001.0	52.50	58.160	
13,300.0	7,853.1	5,220.0	5,220.0	107.9	104.4	5.48	-6,776.1	251.4	3,010.7	2,957.5	53.24	56.552	
13,400.0	7,853.7	5,220.0	5,220.0	109.8	104.4	5.48	-6,776.1	251.4	2,970.6	2,916.7	53.97	55.038	
13,500.0	7,854.2	5,220.0	5,220.0	111.7	104.4	5.48	-6,776.1	251.4	2,933.4	2,878.7	54.71	53.616	
13,600.0	7,854.8	5,220.0	5,220.0	113.6	104.4	5.48	-6,776.1	251.4	2,899.2	2,843.7	55.45	52.286	
13,700.0	7,855.3	5,220.0	5,220.0	115.4	104.4	5.48	-6,776.1	251.4	2,868.0	2,811.8	56.19	51.045	
13,800.0	7,855.9	5,220.0	5,220.0	117.3	104.4	5.48	-6,776.1	251.4	2,840.0	2,783.1	56.92	49.891	
13,900.0	7,856.5	5,220.0	5,220.0	119.2	104.4	5.48	-6,776.1	251.4	2,815.3	2,757.7	57.66	48.824	
14,000.0	7,857.0	5,220.0	5,220.0	121.1	104.4	5.48	-6,776.1	251.4	2,794.0	2,735.6	58.40	47.840	
14,100.0	7,857.6	5,220.0	5,220.0	123.0	104.4	5.48	-6,776.1	251.4	2,776.1	2,717.0	59.14	46.939	
14,200.0	7,858.1	5,220.0	5,220.0	124.9	104.4	5.48	-6,776.1	251.4	2,761.7	2,701.8	59.88	46.119	
14,300.0	7,858.7	5,220.0	5,220.0	126.8	104.4	5.48	-6,776.1	251.4	2,750.9	2,690.3	60.62	45.377	
14,400.0	7,859.3	5,220.0	5,220.0	128.7	104.4	5.48	-6,776.1	251.4	2,743.7	2,682.3	61.36	44.712	
14,500.0	7,859.8	5,220.0	5,220.0	130.6	104.4	5.48	-6,776.1	251.4	2,740.1	2,678.0	62.10	44.120	
14,548.5	7,860.1	5,220.0	5,220.0	131.5	104.4	5.48	-6,776.1	251.4	2,739.6	2,677.2	62.46	43.859	CC, ES
14,600.0	7,860.4	5,220.0	5,220.0	132.5	104.4	5.48	-6,776.1	251.4	2,740.1	2,677.3	62.85	43.601	
14,700.0	7,860.9	5,220.0	5,220.0	134.4	104.4	5.48	-6,776.1	251.4	2,743.8	2,680.2	63.59	43.151	
14,712.8	7,861.0	5,220.0	5,220.0	134.6	104.4	5.48	-6,776.1	251.4	2,744.5	2,680.9	63.64	43.129	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

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

Offset Site Error: 0.0 ft

Survey Program: 15-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	2.0	2.0	0.0	0.0	30.86	539.2	322.1	628.1				
100.0	100.0	104.6	104.6	0.1	0.2	30.85	539.0	322.0	627.9	627.6	0.33	1,897.272	
200.0	200.0	205.9	205.9	0.3	0.4	30.84	538.6	321.6	627.3	626.5	0.77	809.725	
300.0	300.0	306.8	306.8	0.6	0.6	30.86	537.9	321.4	626.6	625.4	1.21	517.631	
400.0	400.0	405.0	405.0	0.8	0.9	30.89	537.2	321.3	625.9	624.3	1.64	382.062	
492.1	492.1	494.1	494.1	1.0	1.0	30.91	536.9	321.4	625.7	623.7	2.02	309.042	
500.0	500.0	501.8	501.7	1.0	1.0	30.90	536.9	321.3	625.7	623.7	2.06	304.083	
600.0	600.0	602.4	602.4	1.2	1.3	30.90	537.0	321.3	625.8	623.3	2.49	251.373	
700.0	700.0	703.6	703.6	1.5	1.5	31.02	536.1	322.4	625.6	622.7	2.93	213.617	
800.0	800.0	805.5	805.5	1.7	1.7	31.19	534.8	323.8	625.2	621.8	3.37	185.348	
900.0	900.0	906.0	905.9	1.9	1.9	31.35	533.4	324.9	624.6	620.8	3.81	164.035	
1,000.0	1,000.0	1,005.9	1,005.8	2.1	2.1	31.37	532.7	324.8	623.9	619.7	4.24	147.252	
1,100.0	1,100.0	1,104.1	1,104.0	2.4	2.3	31.36	532.4	324.4	623.4	618.8	4.66	133.691	
1,195.4	1,195.4	1,197.5	1,197.4	2.6	2.5	31.31	532.5	323.9	623.3	618.2	5.07	122.921	
1,200.0	1,200.0	1,202.0	1,201.9	2.6	2.5	31.31	532.5	323.9	623.3	618.2	5.09	122.443	
1,300.0	1,300.0	1,300.6	1,300.5	2.8	2.7	31.21	533.2	323.0	623.4	617.9	5.52	112.881	
1,400.0	1,400.0	1,402.2	1,402.1	3.0	2.9	31.09	534.0	322.0	623.5	617.6	5.96	104.600	
1,500.0	1,500.0	1,505.4	1,505.3	3.3	3.1	-32.98	534.5	320.6	621.9	615.5	6.39	97.252	
1,600.0	1,599.8	1,609.8	1,609.7	3.5	3.4	-33.44	534.3	318.9	616.4	609.6	6.82	90.333	
1,700.0	1,699.5	1,707.1	1,706.9	3.7	3.6	-34.11	534.0	317.1	608.0	600.8	7.24	84.014	
1,800.0	1,798.7	1,802.9	1,802.8	3.9	3.8	-34.87	533.6	316.7	597.4	589.7	7.65	78.122	
1,900.0	1,897.7	1,901.1	1,900.9	4.2	4.0	-35.66	533.5	316.4	585.8	577.8	8.09	72.446	
2,000.0	1,996.8	1,999.4	1,999.3	4.4	4.2	-36.51	533.6	315.9	574.5	566.0	8.54	67.289	
2,100.0	2,095.8	2,099.0	2,098.9	4.7	4.4	-37.40	533.8	315.3	563.3	554.3	9.00	62.623	
2,200.0	2,194.9	2,197.5	2,197.3	5.0	4.6	-38.32	533.9	314.8	552.2	542.8	9.45	58.410	
2,300.0	2,293.9	2,297.0	2,296.9	5.3	4.8	-39.29	534.0	314.1	541.3	531.4	9.93	54.529	
2,400.0	2,393.0	2,395.9	2,395.8	5.6	5.0	-40.30	534.2	313.4	530.5	520.1	10.40	50.998	
2,500.0	2,492.0	2,494.6	2,494.4	5.9	5.2	-41.30	534.1	313.2	519.9	509.0	10.88	47.797	
2,600.0	2,591.1	2,594.6	2,594.4	6.2	5.4	-42.30	533.9	313.4	509.5	498.1	11.36	44.849	
2,700.0	2,690.1	2,696.4	2,696.2	6.5	5.6	-43.26	533.0	314.3	498.7	486.9	11.85	42.079	
2,800.0	2,789.1	2,793.0	2,792.8	6.8	5.8	-44.17	532.0	315.3	488.1	475.8	12.34	39.556	
2,900.0	2,888.2	2,890.1	2,890.0	7.1	6.0	-45.16	531.5	316.4	478.1	465.3	12.84	37.250	
3,000.0	2,987.2	2,987.0	2,986.8	7.5	6.2	-46.20	531.3	317.4	468.7	455.3	13.34	35.142	
3,100.0	3,086.3	3,082.6	3,082.4	7.8	6.4	-47.27	531.9	318.6	460.1	446.2	13.84	33.241	
3,200.0	3,185.3	3,180.2	3,180.0	8.1	6.7	-48.40	533.0	320.0	452.2	437.9	14.36	31.503	
3,300.0	3,284.4	3,278.4	3,278.2	8.4	6.9	-49.62	534.4	321.1	444.9	430.0	14.88	29.902	
3,400.0	3,383.4	3,377.8	3,377.6	8.7	7.1	-50.95	536.1	321.9	437.9	422.5	15.41	28.417	
3,500.0	3,482.5	3,483.6	3,483.3	9.1	7.3	-52.49	537.4	321.9	430.5	414.5	15.96	26.973	
3,600.0	3,581.5	3,584.5	3,584.3	9.4	7.5	-54.03	537.4	321.7	422.1	405.6	16.50	25.581	
3,700.0	3,680.5	3,696.5	3,696.2	9.7	7.7	-55.34	534.9	324.4	412.3	395.2	17.07	24.160	
3,800.0	3,779.6	3,805.1	3,804.5	10.1	8.0	-56.15	529.1	330.3	400.0	382.4	17.62	22.705	
3,900.0	3,878.6	3,912.0	3,910.7	10.4	8.2	-56.67	520.6	338.0	385.4	367.3	18.16	21.223	
4,000.0	3,977.7	4,015.2	4,013.3	10.7	8.4	-57.20	510.8	345.3	369.3	350.6	18.70	19.746	
4,100.0	4,076.7	4,113.0	4,110.2	11.0	8.6	-57.71	501.0	352.4	352.8	333.5	19.24	18.337	
4,200.0	4,175.8	4,213.0	4,209.4	11.4	8.9	-58.21	490.8	360.0	336.1	316.4	19.78	16.993	
4,300.0	4,274.8	4,307.2	4,302.9	11.7	9.1	-58.69	481.8	367.5	320.2	299.9	20.31	15.762	
4,400.0	4,373.9	4,407.9	4,402.9	12.0	9.3	-59.26	472.6	375.6	304.7	283.8	20.87	14.601	
4,500.0	4,472.9	4,510.5	4,504.5	12.4	9.6	-59.78	461.7	384.2	287.8	266.4	21.43	13.429	
4,600.0	4,571.9	4,607.7	4,600.7	12.7	9.8	-60.21	451.0	393.0	270.6	248.6	21.98	12.311	
4,700.0	4,671.0	4,702.4	4,694.6	13.0	10.1	-60.72	441.6	401.4	254.4	231.9	22.53	11.293	
4,800.0	4,770.0	4,798.1	4,789.5	13.4	10.3	-61.16	433.6	410.6	239.9	216.8	23.08	10.393	

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 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Howard 24-32 (Exist.) - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 ft

Survey Program: 15-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
4,900.0	4,869.1	4,896.7	4,887.3	13.7	10.6	-61.51	426.1	420.8	226.1	202.4	23.65	9.561	
5,000.0	4,968.1	4,997.3	4,987.1	14.0	10.8	-61.85	418.0	431.3	212.0	187.7	24.22	8.752	
5,100.0	5,067.2	5,098.2	5,087.0	14.4	11.1	-62.47	409.0	441.1	196.9	172.1	24.80	7.940	
5,200.0	5,166.2	5,194.7	5,182.8	14.7	11.3	-63.50	400.5	449.5	182.0	156.6	25.38	7.171	
5,300.0	5,265.3	5,291.2	5,278.8	15.1	11.6	-65.16	393.3	456.4	168.5	142.5	25.97	6.489	
5,400.0	5,364.3	5,387.2	5,374.5	15.4	11.8	-67.90	387.5	461.1	156.7	130.1	26.57	5.897	
5,500.0	5,463.3	5,481.9	5,469.1	15.7	12.0	-71.86	384.1	463.2	148.1	120.9	27.19	5.445	
5,600.0	5,562.5	5,578.3	5,565.5	16.0	12.2	-76.35	382.8	464.2	142.9	115.1	27.77	5.146	
5,700.0	5,661.9	5,677.0	5,664.2	16.3	12.4	-80.19	382.6	464.4	140.6	112.4	28.24	4.979	
5,800.0	5,761.7	5,777.2	5,764.4	16.5	12.6	-82.90	382.2	464.3	139.3	110.7	28.66	4.862	
5,900.0	5,861.7	5,877.4	5,864.6	16.6	12.8	-84.19	381.7	464.4	138.4	109.4	29.03	4.768	
6,000.0	5,961.7	5,977.0	5,964.2	16.8	13.0	-20.42	381.2	464.7	137.8	108.4	29.39	4.690	
6,100.0	6,061.7	6,076.6	6,063.8	16.9	13.2	-20.41	381.0	464.8	137.6	107.8	29.77	4.623	
6,123.7	6,085.4	6,100.2	6,087.4	17.0	13.3	-20.41	381.0	464.8	137.6	107.8	29.86	4.609	CC
6,200.0	6,161.7	6,176.3	6,163.4	17.1	13.4	-20.42	381.0	464.7	137.7	107.5	30.14	4.567	
6,300.0	6,261.7	6,276.1	6,263.2	17.3	13.6	-20.45	381.2	464.6	137.9	107.4	30.53	4.518	
6,400.0	6,361.7	6,376.1	6,363.3	17.5	13.8	-20.44	381.5	464.5	138.2	107.3	30.91	4.473	
6,500.0	6,461.7	6,475.9	6,463.1	17.6	14.0	-20.35	381.9	464.6	138.6	107.3	31.29	4.428	
6,600.0	6,561.7	6,575.4	6,562.6	17.8	14.2	-20.20	382.6	464.7	139.2	107.5	31.67	4.395	
6,700.0	6,661.7	6,675.2	6,662.3	18.0	14.4	-19.88	383.7	465.2	140.1	108.0	32.06	4.369	
6,800.0	6,761.7	6,775.7	6,762.9	18.2	14.6	-19.43	384.9	465.9	140.9	108.5	32.44	4.343	
6,900.0	6,861.7	6,876.4	6,863.5	18.3	14.8	-19.06	385.5	466.7	141.2	108.4	32.83	4.301	
7,000.0	6,961.7	6,976.8	6,963.9	18.5	15.0	-18.66	385.8	467.6	141.2	108.0	33.22	4.250	
7,100.0	7,061.7	7,077.2	7,064.4	18.7	15.3	161.73	385.8	468.6	140.9	107.3	33.61	4.191	
7,103.7	7,065.3	7,080.9	7,068.1	18.7	15.3	161.74	385.8	468.7	140.9	107.2	33.62	4.190	ES, SF
7,200.0	7,161.4	7,177.4	7,164.5	18.8	15.5	162.80	385.5	469.8	146.5	112.8	33.75	4.341	
7,300.0	7,259.4	7,274.4	7,261.5	18.9	15.7	164.85	385.2	471.1	164.7	131.3	33.42	4.928	
7,400.0	7,354.0	7,366.0	7,353.1	19.0	15.9	167.06	386.1	472.2	196.7	164.1	32.62	6.032	
7,500.0	7,443.6	7,452.1	7,439.2	19.0	16.0	168.97	388.2	473.1	242.1	210.7	31.39	7.712	
7,600.0	7,526.6	7,532.3	7,519.3	19.0	16.2	170.48	390.8	474.2	299.6	269.7	29.82	10.045	
7,700.0	7,601.7	7,605.9	7,592.9	19.0	16.3	171.72	393.3	476.3	367.3	339.3	27.98	13.126	
7,800.0	7,667.6	7,670.1	7,657.0	19.1	16.5	172.63	395.4	479.2	444.1	418.1	26.00	17.081	
7,900.0	7,723.0	7,723.6	7,710.3	19.2	16.6	173.21	397.1	482.9	528.5	504.5	24.02	22.004	
8,000.0	7,767.2	7,765.3	7,751.8	19.5	16.7	173.24	398.5	486.7	619.3	597.0	22.26	27.814	
8,100.0	7,799.3	7,793.0	7,779.3	20.0	16.7	171.85	399.4	489.4	714.8	693.7	21.08	33.899	
8,200.0	7,818.7	7,808.2	7,794.4	20.6	16.8	164.64	399.9	490.9	813.3	791.6	21.74	37.402	
8,300.0	7,825.2	7,811.0	7,797.2	21.5	16.8	40.91	400.0	491.2	913.1	886.2	26.98	33.845	
8,400.0	7,825.7	7,808.2	7,794.5	22.5	16.8	38.33	399.9	490.9	1,013.1	986.2	26.87	37.706	
8,500.0	7,826.3	7,805.5	7,791.7	23.6	16.8	36.09	399.8	490.7	1,113.0	1,086.1	26.89	41.390	
8,600.0	7,826.9	7,802.8	7,789.1	24.8	16.8	34.14	399.7	490.4	1,213.0	1,185.9	27.02	44.884	
8,700.0	7,827.4	7,800.1	7,786.4	26.1	16.8	32.42	399.6	490.1	1,312.9	1,285.7	27.25	48.182	
8,800.0	7,828.0	7,797.5	7,783.8	27.5	16.7	30.91	399.5	489.9	1,412.9	1,385.3	27.55	51.289	
8,900.0	7,828.5	7,794.9	7,781.2	28.9	16.7	29.57	399.5	489.6	1,512.8	1,484.9	27.91	54.210	
9,000.0	7,829.1	7,792.3	7,778.7	30.4	16.7	28.36	399.4	489.4	1,612.8	1,584.5	28.32	56.955	
9,100.0	7,829.7	7,789.8	7,776.2	31.9	16.7	27.29	399.3	489.1	1,712.7	1,684.0	28.77	59.534	
9,200.0	7,830.2	7,787.3	7,773.7	33.5	16.7	26.31	399.2	488.9	1,812.7	1,783.4	29.26	61.960	
9,300.0	7,830.8	7,784.9	7,771.2	35.1	16.7	25.43	399.1	488.6	1,912.6	1,882.9	29.77	64.241	
9,400.0	7,831.3	7,782.4	7,768.8	36.7	16.7	24.63	399.0	488.4	2,012.6	1,982.3	30.32	66.389	
9,500.0	7,831.9	7,780.0	7,766.4	38.4	16.7	23.89	399.0	488.1	2,112.5	2,081.7	30.88	68.413	
9,600.0	7,832.4	7,777.6	7,764.1	40.1	16.7	23.22	398.9	487.9	2,212.5	2,181.0	31.46	70.322	

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 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

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

Offset Site Error: 0.0 ft

Survey Program: 15-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	7,833.0	7,768.0	7,754.5	41.8	16.7	20.93	398.6	486.9	2,312.5	2,281.2	31.30	73.887	
9,800.0	7,833.6	7,768.0	7,754.5	43.5	16.7	20.93	398.6	486.9	2,412.4	2,380.3	32.16	75.021	
9,900.0	7,834.1	7,768.0	7,754.5	45.2	16.7	20.93	398.6	486.9	2,512.4	2,479.4	33.02	76.077	
10,000.0	7,834.7	7,768.0	7,754.5	47.0	16.7	20.93	398.6	486.9	2,612.3	2,578.4	33.90	77.061	
10,100.0	7,835.2	7,765.7	7,752.2	48.7	16.7	20.47	398.5	486.7	2,712.3	2,677.8	34.54	78.518	
10,200.0	7,835.8	7,763.0	7,749.5	50.5	16.7	19.95	398.4	486.4	2,812.3	2,777.1	35.15	80.008	
10,300.0	7,836.4	7,760.2	7,746.8	52.3	16.7	19.46	398.3	486.2	2,912.2	2,876.5	35.76	81.429	
10,400.0	7,836.9	7,757.5	7,744.0	54.1	16.7	19.00	398.2	485.9	3,012.2	2,975.8	36.39	82.786	
10,500.0	7,837.5	7,754.8	7,741.3	55.9	16.7	18.57	398.1	485.7	3,112.2	3,075.1	37.01	84.083	
10,600.0	7,838.0	7,752.0	7,738.6	57.7	16.6	18.16	398.0	485.4	3,212.1	3,174.5	37.65	85.324	
10,700.0	7,838.6	7,749.3	7,735.8	59.5	16.6	17.77	398.0	485.1	3,312.1	3,273.8	38.28	86.513	
10,800.0	7,839.1	7,746.5	7,733.1	61.3	16.6	17.40	397.9	484.9	3,412.0	3,373.1	38.93	87.652	
10,900.0	7,839.7	7,743.8	7,730.4	63.1	16.6	17.05	397.8	484.6	3,512.0	3,472.4	39.57	88.745	
11,000.0	7,840.3	7,741.0	7,727.6	65.0	16.6	16.72	397.7	484.4	3,612.0	3,571.7	40.23	89.793	
11,100.0	7,840.8	7,738.2	7,724.9	66.8	16.6	16.40	397.6	484.2	3,711.9	3,671.1	40.88	90.801	
11,200.0	7,841.4	7,735.5	7,722.1	68.7	16.6	16.10	397.5	483.9	3,811.9	3,770.4	41.54	91.770	
11,300.0	7,841.9	7,732.7	7,719.3	70.5	16.6	15.81	397.4	483.7	3,911.9	3,869.7	42.20	92.702	
11,400.0	7,842.5	7,729.9	7,716.6	72.3	16.6	15.53	397.3	483.5	4,011.8	3,969.0	42.86	93.600	
11,500.0	7,843.1	7,727.1	7,713.8	74.2	16.6	15.27	397.2	483.2	4,111.8	4,068.3	43.53	94.465	
11,600.0	7,843.6	7,724.3	7,711.0	76.0	16.6	15.01	397.2	483.0	4,211.7	4,167.6	44.19	95.300	
11,700.0	7,844.2	7,721.5	7,708.2	77.9	16.6	14.77	397.1	482.8	4,311.7	4,266.8	44.86	96.105	
11,800.0	7,844.7	7,718.8	7,705.5	79.8	16.6	14.53	397.0	482.6	4,411.7	4,366.1	45.54	96.882	
11,900.0	7,845.3	7,716.0	7,702.7	81.6	16.6	14.31	396.9	482.3	4,511.6	4,465.4	46.21	97.633	
12,000.0	7,845.8	7,713.2	7,699.9	83.5	16.6	14.09	396.8	482.1	4,611.6	4,564.7	46.89	98.359	
12,100.0	7,846.4	7,710.4	7,697.1	85.4	16.6	13.88	396.7	481.9	4,711.6	4,664.0	47.56	99.061	
12,200.0	7,847.0	7,707.5	7,694.3	87.2	16.6	13.67	396.6	481.7	4,811.5	4,763.3	48.24	99.741	
12,300.0	7,847.5	7,704.7	7,691.5	89.1	16.5	13.47	396.5	481.5	4,911.5	4,862.6	48.92	100.399	
12,400.0	7,848.1	7,701.9	7,688.7	91.0	16.5	13.28	396.4	481.3	5,011.5	4,961.9	49.60	101.037	
12,500.0	7,848.6	7,699.1	7,685.9	92.8	16.5	13.10	396.3	481.1	5,111.4	5,061.1	50.28	101.656	
12,600.0	7,849.2	7,696.3	7,683.1	94.7	16.5	12.92	396.2	480.9	5,211.4	5,160.4	50.96	102.256	
12,700.0	7,849.8	7,693.5	7,680.2	96.6	16.5	12.75	396.1	480.7	5,311.3	5,259.7	51.65	102.838	
12,800.0	7,850.3	7,690.6	7,677.4	98.5	16.5	12.58	396.1	480.5	5,411.3	5,359.0	52.33	103.403	
12,900.0	7,850.9	7,687.8	7,674.6	100.4	16.5	12.41	396.0	480.3	5,511.3	5,458.2	53.02	103.952	
13,000.0	7,851.4	7,685.0	7,671.8	102.2	16.5	12.25	395.9	480.1	5,611.2	5,557.5	53.70	104.486	
13,100.0	7,852.0	7,682.1	7,668.9	104.1	16.5	12.10	395.8	480.0	5,711.2	5,656.8	54.39	105.005	
13,200.0	7,852.6	7,679.3	7,666.1	106.0	16.5	11.95	395.7	479.8	5,811.2	5,756.1	55.08	105.510	
13,300.0	7,853.1	7,676.4	7,663.3	107.9	16.5	11.80	395.6	479.6	5,911.1	5,855.3	55.76	106.002	
13,400.0	7,853.7	7,673.6	7,660.4	109.8	16.5	11.65	395.5	479.4	6,011.1	5,954.6	56.45	106.480	
13,500.0	7,854.2	7,670.7	7,657.6	111.7	16.5	11.51	395.4	479.3	6,111.0	6,053.9	57.14	106.946	
13,600.0	7,854.8	7,667.9	7,654.7	113.6	16.5	11.38	395.3	479.1	6,211.0	6,153.2	57.83	107.400	
13,700.0	7,855.3	7,665.0	7,651.9	115.4	16.5	11.24	395.2	478.9	6,311.0	6,252.4	58.52	107.843	
13,800.0	7,855.9	7,662.1	7,649.0	117.3	16.5	11.11	395.1	478.8	6,410.9	6,351.7	59.21	108.275	
13,900.0	7,856.5	7,659.3	7,646.1	119.2	16.4	10.98	395.0	478.6	6,510.9	6,451.0	59.90	108.696	
14,000.0	7,857.0	7,656.4	7,643.3	121.1	16.4	10.86	394.9	478.5	6,610.8	6,550.3	60.59	109.107	
14,100.0	7,857.6	7,653.5	7,640.4	123.0	16.4	10.74	394.8	478.3	6,710.8	6,649.5	61.28	109.508	
14,200.0	7,858.1	7,650.6	7,637.5	124.9	16.4	10.62	394.7	478.2	6,810.8	6,748.8	61.97	109.900	
14,300.0	7,858.7	7,647.7	7,634.6	126.8	16.4	10.50	394.6	478.1	6,910.7	6,848.1	62.66	110.282	
14,400.0	7,859.3	7,644.8	7,631.7	128.7	16.4	10.38	394.6	477.9	7,010.7	6,947.3	63.36	110.656	
14,500.0	7,859.8	7,642.0	7,628.9	130.6	16.4	10.27	394.5	477.8	7,110.7	7,046.6	64.05	111.022	
14,600.0	7,860.4	7,639.1	7,626.0	132.5	16.4	10.16	394.4	477.6	7,210.6	7,145.9	64.74	111.379	
14,700.0	7,860.9	7,636.2	7,623.1	134.4	16.4	10.05	394.3	477.5	7,310.6	7,245.1	65.43	111.729	

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 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

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

Survey Program: 15-MWD

Offset Site Error: 0.0 ft

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
14,712.8	7,861.0	7,635.8	7,622.7	134.6	16.4	10.03	394.3	477.5	7,323.3	7,257.9	65.48	111.849	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Jacobucci 2 (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	23.1	23.1	0.0	0.0	159.72	-1,122.0	414.6	1,196.1	1,196.1	0.03	N/A	
100.0	100.0	120.4	120.4	0.1	0.2	159.70	-1,122.1	415.0	1,196.4	1,196.1	0.30	4,046.264	
200.0	200.0	222.0	222.0	0.3	0.4	159.70	-1,122.2	415.2	1,196.6	1,195.8	0.76	1,576.962	
300.0	300.0	322.4	322.4	0.6	0.6	159.71	-1,122.5	415.0	1,196.7	1,195.6	1.17	1,022.945	
400.0	400.0	422.4	422.4	0.8	0.8	159.73	-1,122.7	414.7	1,196.9	1,195.3	1.58	755.392	
500.0	500.0	523.1	523.1	1.0	1.0	159.74	-1,123.0	414.4	1,197.0	1,195.0	2.03	589.812	
600.0	600.0	624.6	624.6	1.2	1.2	159.75	-1,123.0	414.2	1,197.0	1,194.5	2.46	485.829	
700.0	700.0	724.7	724.7	1.5	1.4	159.76	-1,123.0	414.1	1,196.9	1,194.0	2.87	417.457	
732.0	732.0	756.0	756.0	1.5	1.5	159.76	-1,123.0	414.1	1,196.9	1,193.9	2.99	400.209	
800.0	800.0	822.4	822.4	1.7	1.6	159.76	-1,123.0	414.1	1,196.9	1,193.7	3.26	367.054	
900.0	900.0	919.8	919.8	1.9	1.8	159.76	-1,123.3	414.2	1,197.2	1,193.5	3.69	324.877	
1,000.0	1,000.0	1,018.1	1,018.0	2.1	2.0	159.76	-1,123.7	414.3	1,197.6	1,193.5	4.13	290.175	
1,100.0	1,100.0	1,120.2	1,120.2	2.4	2.2	159.75	-1,124.0	414.7	1,198.1	1,193.5	4.55	263.499	
1,200.0	1,200.0	1,224.4	1,224.4	2.6	2.3	159.74	-1,124.0	415.0	1,198.2	1,193.3	4.92	243.625	
1,300.0	1,300.0	1,324.9	1,324.9	2.8	2.5	159.74	-1,123.9	415.0	1,198.1	1,192.8	5.27	227.150	
1,348.5	1,348.5	1,372.5	1,372.5	2.9	2.5	159.74	-1,124.0	414.9	1,198.1	1,192.6	5.46	219.257	
1,400.0	1,400.0	1,423.8	1,423.8	3.0	2.6	159.75	-1,124.0	414.7	1,198.1	1,192.4	5.68	211.104	
1,500.0	1,500.0	1,526.3	1,526.3	3.3	2.8	96.02	-1,124.1	414.4	1,198.2	1,192.1	6.10	196.535	
1,600.0	1,599.8	1,631.5	1,631.5	3.5	3.0	96.30	-1,123.8	413.8	1,198.3	1,191.8	6.50	184.472	
1,700.0	1,699.5	1,732.8	1,732.7	3.7	3.2	96.75	-1,123.4	412.8	1,198.6	1,191.7	6.90	173.767	
1,800.0	1,798.7	1,831.9	1,831.9	3.9	3.4	97.36	-1,123.0	411.6	1,199.3	1,192.0	7.33	163.681	
1,900.0	1,897.7	1,931.6	1,931.6	4.2	3.6	98.05	-1,122.6	410.5	1,200.4	1,192.7	7.78	154.294	
2,000.0	1,996.8	2,034.6	2,034.6	4.4	3.8	98.76	-1,121.8	409.4	1,201.4	1,193.2	8.25	145.685	
2,100.0	2,095.8	2,133.2	2,133.2	4.7	4.0	99.44	-1,121.0	408.2	1,202.5	1,193.7	8.72	137.914	
2,200.0	2,194.9	2,230.1	2,230.0	5.0	4.2	100.11	-1,120.3	407.0	1,203.8	1,194.6	9.21	130.765	
2,300.0	2,293.9	2,330.2	2,330.1	5.3	4.4	100.79	-1,119.6	406.1	1,205.4	1,195.7	9.71	124.201	
2,400.0	2,393.0	2,429.7	2,429.7	5.6	4.6	101.46	-1,118.7	405.3	1,207.0	1,196.8	10.20	118.308	
2,500.0	2,492.0	2,525.5	2,525.5	5.9	4.8	102.09	-1,118.0	404.8	1,208.9	1,198.3	10.68	113.169	
2,600.0	2,591.1	2,626.7	2,626.6	6.2	5.0	102.71	-1,117.0	405.0	1,211.1	1,199.9	11.14	108.696	
2,700.0	2,690.1	2,728.7	2,728.6	6.5	5.1	103.33	-1,115.8	405.3	1,213.1	1,201.5	11.59	104.656	
2,800.0	2,789.1	2,829.9	2,829.8	6.8	5.3	103.95	-1,114.4	405.6	1,215.1	1,203.0	12.06	100.715	
2,900.0	2,888.2	2,928.4	2,928.3	7.1	5.5	104.57	-1,113.1	405.3	1,217.1	1,204.5	12.56	96.865	
3,000.0	2,987.2	3,023.5	3,023.4	7.5	5.7	105.18	-1,112.1	404.7	1,219.6	1,206.5	13.09	93.197	
3,100.0	3,086.3	3,124.0	3,123.9	7.8	5.9	105.84	-1,111.2	403.8	1,222.2	1,208.6	13.63	89.658	
3,200.0	3,185.3	3,224.1	3,224.0	8.1	6.1	106.50	-1,110.2	402.8	1,224.9	1,210.7	14.18	86.371	
3,300.0	3,284.4	3,320.1	3,320.0	8.4	6.4	107.15	-1,109.3	401.5	1,227.8	1,213.1	14.73	83.373	
3,400.0	3,383.4	3,416.9	3,416.7	8.7	6.6	107.80	-1,108.7	400.1	1,231.2	1,215.9	15.28	80.589	
3,500.0	3,482.5	3,518.4	3,518.2	9.1	6.9	108.47	-1,108.0	398.8	1,234.7	1,218.8	15.84	77.943	
3,600.0	3,581.5	3,617.4	3,617.2	9.4	7.1	109.13	-1,107.2	397.5	1,238.1	1,221.8	16.40	75.511	
3,700.0	3,680.5	3,710.5	3,710.3	9.7	7.3	109.71	-1,106.6	396.9	1,242.1	1,225.1	16.92	73.393	
3,800.0	3,779.6	3,800.0	3,799.8	10.1	7.4	110.21	-1,106.4	397.6	1,246.7	1,229.3	17.37	71.768	
3,900.0	3,878.6	3,896.4	3,896.2	10.4	7.5	110.71	-1,106.6	399.2	1,251.9	1,234.1	17.75	70.520	
4,000.0	3,977.7	3,990.4	3,990.1	10.7	7.6	111.20	-1,107.1	400.9	1,257.6	1,239.4	18.13	69.348	
4,100.0	4,076.7	4,082.2	4,082.0	11.0	7.7	111.68	-1,108.1	402.2	1,263.8	1,245.3	18.52	68.235	
4,200.0	4,175.8	4,173.3	4,173.0	11.4	7.7	112.16	-1,109.7	403.2	1,270.8	1,251.9	18.92	67.166	
4,300.0	4,274.8	4,266.3	4,266.0	11.7	7.8	112.67	-1,111.8	404.1	1,278.5	1,259.2	19.33	66.133	
4,400.0	4,373.9	4,362.1	4,361.7	12.0	8.0	113.18	-1,114.4	404.9	1,286.7	1,266.9	19.76	65.126	
4,500.0	4,472.9	4,452.3	4,451.9	12.4	8.1	113.66	-1,117.1	405.6	1,295.2	1,275.1	20.18	64.177	
4,600.0	4,571.9	4,541.7	4,541.3	12.7	8.2	114.13	-1,120.6	406.4	1,304.8	1,284.2	20.61	63.299	
4,700.0	4,671.0	4,634.7	4,634.2	13.0	8.3	114.61	-1,124.6	407.4	1,314.9	1,293.9	21.05	62.457	
4,800.0	4,770.0	4,723.6	4,723.0	13.4	8.5	115.06	-1,129.0	408.2	1,325.7	1,304.2	21.49	61.679	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Jacobucci 2 (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	4,869.1	4,807.3	4,806.5	13.7	8.6	115.50	-1,134.0	408.5	1,337.6	1,315.7	21.93	60.983	
5,000.0	4,968.1	4,902.0	4,901.0	14.0	8.7	116.00	-1,140.2	408.6	1,350.3	1,327.9	22.40	60.289	
5,100.0	5,067.2	5,001.1	4,999.9	14.4	8.9	116.53	-1,146.9	408.4	1,363.2	1,340.4	22.87	59.603	
5,200.0	5,166.2	5,103.1	5,101.7	14.7	9.1	117.07	-1,153.6	408.0	1,376.1	1,352.7	23.36	58.919	
5,300.0	5,265.3	5,205.2	5,203.5	15.1	9.3	117.61	-1,160.0	407.4	1,388.8	1,365.0	23.84	58.246	
5,400.0	5,364.3	5,322.7	5,320.9	15.4	9.5	118.21	-1,166.5	406.9	1,400.8	1,376.5	24.36	57.502	
5,500.0	5,463.3	5,435.7	5,433.8	15.7	9.7	118.79	-1,171.2	406.4	1,411.7	1,386.8	24.88	56.747	
5,600.0	5,562.5	5,542.0	5,540.0	16.0	10.0	119.41	-1,174.9	405.5	1,421.7	1,396.3	25.36	56.050	
5,700.0	5,661.9	5,648.7	5,646.7	16.3	10.2	119.96	-1,178.1	404.4	1,429.7	1,403.9	25.79	55.441	
5,800.0	5,761.7	5,755.0	5,752.9	16.5	10.4	120.35	-1,180.6	403.1	1,435.5	1,409.3	26.19	54.802	
5,900.0	5,861.7	5,858.3	5,856.2	16.6	10.6	120.58	-1,182.7	401.6	1,439.2	1,412.6	26.58	54.153	
6,000.0	5,961.7	5,962.1	5,959.9	16.8	10.9	-175.52	-1,184.6	400.2	1,441.3	1,414.3	26.96	53.460	
6,100.0	6,061.7	6,065.8	6,063.6	16.9	11.1	-175.47	-1,186.3	399.0	1,442.9	1,415.5	27.37	52.717	
6,200.0	6,161.7	6,166.7	6,164.6	17.1	11.3	-175.43	-1,187.6	397.6	1,444.4	1,416.6	27.78	51.994	
6,300.0	6,261.7	6,265.8	6,263.6	17.3	11.6	-175.39	-1,189.0	396.6	1,445.9	1,417.7	28.19	51.298	
6,400.0	6,361.7	6,369.8	6,367.5	17.5	11.8	-175.36	-1,190.5	395.8	1,447.3	1,418.7	28.60	50.599	
6,500.0	6,461.7	6,473.9	6,471.7	17.6	12.1	-175.34	-1,191.5	395.0	1,448.4	1,419.4	29.03	49.899	
6,600.0	6,561.7	6,574.7	6,572.4	17.8	12.3	-175.30	-1,192.4	394.1	1,449.3	1,419.9	29.45	49.220	
6,700.0	6,661.7	6,673.9	6,671.6	18.0	12.5	-175.26	-1,193.2	393.0	1,450.3	1,420.4	29.86	48.563	
6,800.0	6,761.7	6,774.1	6,771.9	18.2	12.8	-175.23	-1,194.1	392.2	1,451.2	1,420.9	30.28	47.919	
6,900.0	6,861.7	6,879.3	6,877.0	18.3	13.0	-175.21	-1,194.9	391.5	1,452.0	1,421.3	30.72	47.269	
7,000.0	6,961.7	6,977.6	6,975.4	18.5	13.3	-175.18	-1,195.5	390.6	1,452.6	1,421.5	31.14	46.650	
7,100.0	7,061.7	7,077.8	7,075.5	18.7	13.5	4.86	-1,196.1	389.7	1,453.4	1,421.8	31.57	46.042	
7,200.0	7,161.4	7,178.4	7,176.1	18.8	13.7	4.96	-1,196.7	388.7	1,447.5	1,415.8	31.68	45.686	
7,300.0	7,259.4	7,282.0	7,279.7	18.9	14.0	5.20	-1,197.1	387.7	1,428.5	1,397.2	31.32	45.611	
7,400.0	7,354.0	7,384.4	7,382.1	19.0	14.2	5.61	-1,197.0	386.7	1,396.4	1,365.9	30.47	45.831	
7,500.0	7,443.6	7,480.0	7,477.7	19.0	14.4	6.24	-1,196.4	385.9	1,351.9	1,322.7	29.15	46.380	
7,600.0	7,526.6	7,561.0	7,558.8	19.0	14.5	7.13	-1,195.8	385.5	1,296.0	1,268.5	27.41	47.285	
7,700.0	7,601.7	7,630.6	7,628.3	19.0	14.6	8.38	-1,195.5	385.7	1,230.0	1,204.6	25.38	48.464	
7,800.0	7,667.6	7,690.1	7,687.8	19.1	14.6	10.21	-1,195.6	386.5	1,155.3	1,132.1	23.23	49.737	
7,900.0	7,723.0	7,743.8	7,741.5	19.2	14.7	13.13	-1,196.0	387.5	1,073.0	1,051.7	21.24	50.524	
8,000.0	7,767.2	7,787.6	7,785.3	19.5	14.7	18.17	-1,196.3	388.5	984.2	964.3	19.98	49.270	
8,100.0	7,799.3	7,819.9	7,817.6	20.0	14.8	27.89	-1,196.7	389.3	890.6	869.7	20.89	42.632	
8,200.0	7,818.7	7,840.0	7,837.7	20.6	14.8	48.99	-1,196.9	389.9	793.8	766.8	26.93	29.472	
8,300.0	7,825.2	7,847.4	7,845.1	21.5	14.8	86.32	-1,196.9	390.1	695.5	660.7	34.76	20.006	
8,400.0	7,825.7	7,849.1	7,846.7	22.5	14.8	87.06	-1,197.0	390.1	597.3	561.5	35.86	16.656	
8,500.0	7,826.3	7,850.7	7,848.3	23.6	14.8	87.82	-1,197.0	390.1	499.9	462.8	37.07	13.484	
8,600.0	7,826.9	7,852.3	7,850.0	24.8	14.8	88.57	-1,197.0	390.2	403.7	365.3	38.38	10.519	
8,700.0	7,827.4	7,853.9	7,851.6	26.1	14.8	89.34	-1,197.0	390.2	309.9	270.1	39.76	7.794	
8,800.0	7,828.0	7,855.6	7,853.2	27.5	14.8	90.10	-1,197.0	390.3	221.6	180.4	41.21	5.378	
8,900.0	7,828.5	7,857.2	7,854.9	28.9	14.8	90.87	-1,197.0	390.3	148.9	106.2	42.71	3.487	
8,984.7	7,829.0	7,858.6	7,856.3	30.1	14.8	91.53	-1,197.1	390.3	122.5	78.5	44.02	2.783	CC, ES, SF
9,000.0	7,829.1	7,858.9	7,856.5	30.4	14.8	91.65	-1,197.1	390.4	123.4	79.2	44.25	2.789	
9,100.0	7,829.7	7,860.5	7,858.2	31.9	14.8	92.43	-1,197.1	390.4	168.2	122.4	45.83	3.670	
9,200.0	7,830.2	7,862.2	7,859.9	33.5	14.8	93.21	-1,197.1	390.4	247.7	200.2	47.44	5.221	
9,300.0	7,830.8	7,863.9	7,861.5	35.1	14.8	93.99	-1,197.1	390.5	338.2	289.1	49.07	6.893	
9,400.0	7,831.3	7,865.6	7,863.2	36.7	14.8	94.78	-1,197.1	390.5	432.9	382.2	50.71	8.537	
9,500.0	7,831.9	7,867.3	7,864.9	38.4	14.8	95.57	-1,197.2	390.6	529.6	477.2	52.37	10.112	
9,600.0	7,832.4	7,869.0	7,866.6	40.1	14.8	96.37	-1,197.2	390.6	627.3	573.3	54.03	11.609	
9,700.0	7,833.0	7,870.7	7,868.4	41.8	14.8	97.16	-1,197.2	390.7	725.6	669.9	55.70	13.026	

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 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Jacobucci 2 (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
9,800.0	7,833.6	7,872.4	7,870.1	43.5	14.8	97.96	-1,197.2	390.7	824.3	767.0	57.37	14.368	
9,900.0	7,834.1	7,874.2	7,871.8	45.2	14.8	98.76	-1,197.2	390.8	923.3	864.3	59.04	15.639	
10,000.0	7,834.7	7,875.9	7,873.6	47.0	14.8	99.56	-1,197.3	390.8	1,022.5	961.8	60.70	16.844	
10,100.0	7,835.2	7,877.7	7,875.3	48.7	14.8	100.36	-1,197.3	390.9	1,121.8	1,059.5	62.36	17.990	
10,200.0	7,835.8	7,879.4	7,877.1	50.5	14.8	101.16	-1,197.3	390.9	1,221.3	1,157.3	64.01	19.080	
10,300.0	7,836.4	7,881.2	7,878.8	52.3	14.8	101.96	-1,197.3	391.0	1,320.8	1,255.2	65.65	20.119	
10,400.0	7,836.9	7,883.0	7,880.6	54.1	14.8	102.76	-1,197.3	391.0	1,420.4	1,353.1	67.27	21.113	
10,500.0	7,837.5	7,884.7	7,882.4	55.9	14.8	103.57	-1,197.4	391.1	1,520.0	1,451.1	68.89	22.066	
10,600.0	7,838.0	7,886.5	7,884.2	57.7	14.8	104.37	-1,197.4	391.1	1,619.7	1,549.2	70.48	22.980	
10,700.0	7,838.6	7,888.3	7,886.0	59.5	14.8	105.17	-1,197.4	391.2	1,719.4	1,647.4	72.07	23.859	
10,800.0	7,839.1	7,890.2	7,887.8	61.3	14.8	105.96	-1,197.4	391.2	1,819.2	1,745.5	73.63	24.707	
10,900.0	7,839.7	7,892.0	7,889.6	63.1	14.8	106.76	-1,197.4	391.3	1,918.9	1,843.8	75.17	25.527	
11,000.0	7,840.3	7,893.8	7,891.4	65.0	14.9	107.55	-1,197.5	391.3	2,018.7	1,942.0	76.70	26.321	
11,100.0	7,840.8	7,895.6	7,893.3	66.8	14.9	108.35	-1,197.5	391.4	2,118.5	2,040.3	78.20	27.091	
11,200.0	7,841.4	7,897.5	7,895.1	68.7	14.9	109.14	-1,197.5	391.4	2,218.4	2,138.7	79.68	27.839	
11,300.0	7,841.9	7,899.4	7,897.0	70.5	14.9	109.92	-1,197.5	391.5	2,318.2	2,237.1	81.14	28.569	
11,400.0	7,842.5	7,900.0	7,897.6	72.3	14.9	110.19	-1,197.5	391.5	2,418.1	2,335.3	82.80	29.205	
11,500.0	7,843.1	7,900.0	7,897.6	74.2	14.9	110.19	-1,197.5	391.5	2,517.9	2,433.4	84.56	29.777	
11,600.0	7,843.6	7,904.4	7,902.0	76.0	14.9	112.01	-1,197.6	391.6	2,617.8	2,532.3	85.51	30.615	
11,700.0	7,844.2	7,906.0	7,903.6	77.9	14.9	112.67	-1,197.6	391.6	2,717.7	2,630.7	86.93	31.262	
11,800.0	7,844.7	7,907.6	7,905.2	79.8	14.9	113.33	-1,197.6	391.7	2,817.6	2,729.2	88.34	31.894	
11,900.0	7,845.3	7,909.2	7,906.9	81.6	14.9	113.98	-1,197.6	391.7	2,917.4	2,827.7	89.73	32.513	
12,000.0	7,845.8	7,910.8	7,908.5	83.5	14.9	114.62	-1,197.7	391.8	3,017.3	2,926.2	91.11	33.119	
12,100.0	7,846.4	7,912.4	7,910.1	85.4	14.9	115.25	-1,197.7	391.8	3,117.2	3,024.8	92.46	33.713	
12,200.0	7,847.0	7,914.0	7,911.6	87.2	14.9	115.87	-1,197.7	391.9	3,217.2	3,123.4	93.81	34.296	
12,300.0	7,847.5	7,915.6	7,913.2	89.1	14.9	116.48	-1,197.7	391.9	3,317.1	3,221.9	95.13	34.868	
12,400.0	7,848.1	7,917.2	7,914.8	91.0	14.9	117.08	-1,197.7	392.0	3,417.0	3,320.6	96.44	35.431	
12,500.0	7,848.6	7,918.7	7,916.4	92.8	14.9	117.68	-1,197.8	392.0	3,516.9	3,419.2	97.73	35.984	
12,600.0	7,849.2	7,920.3	7,917.9	94.7	14.9	118.26	-1,197.8	392.0	3,616.8	3,517.8	99.01	36.529	
12,700.0	7,849.8	7,921.8	7,919.5	96.6	14.9	118.84	-1,197.8	392.1	3,716.8	3,616.5	100.27	37.066	
12,800.0	7,850.3	7,923.4	7,921.0	98.5	14.9	119.41	-1,197.8	392.1	3,816.7	3,715.2	101.52	37.595	
12,900.0	7,850.9	7,924.9	7,922.6	100.4	14.9	119.96	-1,197.8	392.2	3,916.6	3,813.9	102.75	38.117	
13,000.0	7,851.4	7,926.5	7,924.1	102.2	14.9	120.52	-1,197.8	392.2	4,016.6	3,912.6	103.97	38.633	
13,100.0	7,852.0	7,928.0	7,925.6	104.1	14.9	121.06	-1,197.9	392.3	4,116.5	4,011.3	105.17	39.141	
13,200.0	7,852.6	7,929.5	7,927.1	106.0	14.9	121.59	-1,197.9	392.3	4,216.5	4,110.1	106.36	39.644	
13,300.0	7,853.1	7,931.0	7,928.6	107.9	14.9	122.12	-1,197.9	392.3	4,316.4	4,208.9	107.53	40.140	
13,400.0	7,853.7	7,932.5	7,930.1	109.8	14.9	122.64	-1,197.9	392.4	4,416.4	4,307.7	108.69	40.631	
13,500.0	7,854.2	7,934.0	7,931.6	111.7	14.9	123.15	-1,197.9	392.4	4,516.3	4,406.5	109.84	41.117	
13,600.0	7,854.8	7,935.5	7,933.1	113.6	14.9	123.65	-1,197.9	392.5	4,616.3	4,505.3	110.97	41.598	
13,700.0	7,855.3	7,937.0	7,934.6	115.4	14.9	124.14	-1,198.0	392.5	4,716.2	4,604.1	112.09	42.074	
13,800.0	7,855.9	7,938.4	7,936.1	117.3	14.9	124.63	-1,198.0	392.6	4,816.2	4,703.0	113.20	42.545	
13,900.0	7,856.5	7,939.9	7,937.5	119.2	14.9	125.11	-1,198.0	392.6	4,916.1	4,801.8	114.30	43.011	
14,000.0	7,857.0	7,941.4	7,939.0	121.1	14.9	125.58	-1,198.0	392.6	5,016.1	4,900.7	115.38	43.474	
14,100.0	7,857.6	7,942.8	7,940.4	123.0	14.9	126.05	-1,198.0	392.7	5,116.0	4,999.6	116.45	43.932	
14,200.0	7,858.1	7,944.3	7,941.9	124.9	14.9	126.50	-1,198.0	392.7	5,216.0	5,098.5	117.51	44.386	
14,300.0	7,858.7	7,945.7	7,943.3	126.8	14.9	126.95	-1,198.1	392.8	5,315.9	5,197.4	118.56	44.836	
14,400.0	7,859.3	7,947.1	7,944.7	128.7	14.9	127.40	-1,198.1	392.8	5,415.9	5,296.3	119.60	45.282	
14,500.0	7,859.8	7,948.6	7,946.2	130.6	14.9	127.83	-1,198.1	392.8	5,515.9	5,395.2	120.63	45.725	
14,600.0	7,860.4	7,950.0	7,947.6	132.5	14.9	128.26	-1,198.1	392.9	5,615.8	5,494.2	121.65	46.164	
14,700.0	7,860.9	7,951.4	7,949.0	134.4	14.9	128.69	-1,198.1	392.9	5,715.8	5,593.1	122.66	46.600	
14,712.8	7,861.0	7,951.6	7,949.2	134.6	14.9	128.74	-1,198.1	392.9	5,728.5	5,605.8	122.74	46.672	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Jacobucci 2 (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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Jacobucci 3 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 5104-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	-155.84	-393.4	-176.5	431.2				
100.0	100.0	95.0	95.0	0.1	1.9	-155.84	-393.4	-176.5	431.2	429.2	2.01	214.238	
200.0	200.0	195.0	195.0	0.3	3.9	-155.84	-393.4	-176.5	431.2	426.9	4.24	101.755	
300.0	300.0	295.0	295.0	0.6	5.9	-155.84	-393.4	-176.5	431.2	424.7	6.46	66.723	
400.0	400.0	395.0	395.0	0.8	7.9	-155.84	-393.4	-176.5	431.2	422.5	8.69	49.635	
500.0	500.0	495.0	495.0	1.0	9.9	-155.84	-393.4	-176.5	431.2	420.3	10.91	39.515	
600.0	600.0	595.0	595.0	1.2	11.9	-155.84	-393.4	-176.5	431.2	418.0	13.14	32.823	
700.0	700.0	695.0	695.0	1.5	13.9	-155.84	-393.4	-176.5	431.2	415.8	15.36	28.069	
800.0	800.0	795.0	795.0	1.7	15.9	-155.84	-393.4	-176.5	431.2	413.6	17.59	24.518	
900.0	900.0	895.0	895.0	1.9	17.9	-155.84	-393.4	-176.5	431.2	411.4	19.81	21.765	
1,000.0	1,000.0	995.0	995.0	2.1	19.9	-155.84	-393.4	-176.5	431.2	409.1	22.04	19.567	
1,100.0	1,100.0	1,095.0	1,095.0	2.4	21.9	-155.84	-393.4	-176.5	431.2	406.9	24.26	17.773	
1,200.0	1,200.0	1,195.0	1,195.0	2.6	23.9	-155.84	-393.4	-176.5	431.2	404.7	26.48	16.280	
1,300.0	1,300.0	1,295.0	1,295.0	2.8	25.9	-155.84	-393.4	-176.5	431.2	402.5	28.71	15.018	
1,400.0	1,400.0	1,395.0	1,395.0	3.0	27.9	-155.84	-393.4	-176.5	431.2	400.2	30.93	13.938	CC
1,500.0	1,500.0	1,495.0	1,495.0	3.3	29.9	140.46	-393.4	-176.5	432.5	399.4	33.14	13.051	ES
1,600.0	1,599.8	1,594.8	1,594.8	3.5	31.9	140.85	-393.4	-176.5	436.6	401.3	35.31	12.363	
1,700.0	1,699.5	1,694.5	1,694.5	3.7	33.9	141.47	-393.4	-176.5	443.4	405.9	37.45	11.839	
1,800.0	1,798.7	1,793.7	1,793.7	3.9	35.9	142.32	-393.4	-176.5	453.0	413.4	39.55	11.452	
1,900.0	1,897.7	1,892.7	1,892.7	4.2	37.9	143.36	-393.4	-176.5	464.0	422.3	41.75	11.114	
2,000.0	1,996.8	1,991.8	1,991.8	4.4	39.8	144.35	-393.4	-176.5	475.2	431.2	43.95	10.811	
2,100.0	2,095.8	2,090.8	2,090.8	4.7	41.8	145.29	-393.4	-176.5	486.5	440.3	46.16	10.540	
2,200.0	2,194.9	2,189.9	2,189.9	5.0	43.8	146.19	-393.4	-176.5	497.9	449.6	48.36	10.295	
2,300.0	2,293.9	2,288.9	2,288.9	5.3	45.8	147.05	-393.4	-176.5	509.5	458.9	50.57	10.074	
2,400.0	2,393.0	2,388.0	2,388.0	5.6	47.8	147.87	-393.4	-176.5	521.1	468.4	52.78	9.873	
2,500.0	2,492.0	2,487.0	2,487.0	5.9	49.7	148.66	-393.4	-176.5	532.9	477.9	54.99	9.690	
2,600.0	2,591.1	2,586.1	2,586.1	6.2	51.7	149.41	-393.4	-176.5	544.8	487.6	57.20	9.523	
2,700.0	2,690.1	2,685.1	2,685.1	6.5	53.7	150.13	-393.4	-176.5	556.7	497.3	59.42	9.370	
2,800.0	2,789.1	2,784.1	2,784.1	6.8	55.7	150.82	-393.4	-176.5	568.7	507.1	61.63	9.229	
2,900.0	2,888.2	2,883.2	2,883.2	7.1	57.7	151.49	-393.4	-176.5	580.8	517.0	63.84	9.099	
3,000.0	2,987.2	2,982.2	2,982.2	7.5	59.6	152.12	-393.4	-176.5	593.0	527.0	66.05	8.978	
3,100.0	3,086.3	3,081.3	3,081.3	7.8	61.6	152.73	-393.4	-176.5	605.3	537.0	68.26	8.867	
3,200.0	3,185.3	3,180.3	3,180.3	8.1	63.6	153.32	-393.4	-176.5	617.6	547.1	70.47	8.764	
3,300.0	3,284.4	3,279.4	3,279.4	8.4	65.6	153.88	-393.4	-176.5	630.0	557.3	72.68	8.668	
3,400.0	3,383.4	3,378.4	3,378.4	8.7	67.6	154.42	-393.4	-176.5	642.4	567.5	74.89	8.578	
3,500.0	3,482.5	3,477.5	3,477.5	9.1	69.5	154.94	-393.4	-176.5	654.9	577.8	77.10	8.494	
3,600.0	3,581.5	3,576.5	3,576.5	9.4	71.5	155.44	-393.4	-176.5	667.4	588.1	79.31	8.415	
3,700.0	3,680.5	3,675.5	3,675.5	9.7	73.5	155.92	-393.4	-176.5	680.0	598.5	81.52	8.342	
3,800.0	3,779.6	3,774.6	3,774.6	10.1	75.5	156.39	-393.4	-176.5	692.7	608.9	83.73	8.273	
3,900.0	3,878.6	3,873.6	3,873.6	10.4	77.5	156.83	-393.4	-176.5	705.3	619.4	85.94	8.207	
4,000.0	3,977.7	3,972.7	3,972.7	10.7	79.5	157.27	-393.4	-176.5	718.1	629.9	88.15	8.146	
4,100.0	4,076.7	4,071.7	4,071.7	11.0	81.4	157.68	-393.4	-176.5	730.8	640.5	90.35	8.088	
4,200.0	4,175.8	4,170.8	4,170.8	11.4	83.4	158.09	-393.4	-176.5	743.6	651.0	92.56	8.034	
4,300.0	4,274.8	4,269.8	4,269.8	11.7	85.4	158.48	-393.4	-176.5	756.4	661.7	94.77	7.982	
4,400.0	4,373.9	4,368.9	4,368.9	12.0	87.4	158.85	-393.4	-176.5	769.3	672.3	96.98	7.933	
4,500.0	4,472.9	4,467.9	4,467.9	12.4	89.4	159.22	-393.4	-176.5	782.2	683.0	99.18	7.886	
4,600.0	4,571.9	4,566.9	4,566.9	12.7	91.3	159.57	-393.4	-176.5	795.1	693.7	101.39	7.842	
4,700.0	4,671.0	4,666.0	4,666.0	13.0	93.3	159.91	-393.4	-176.5	808.1	704.5	103.60	7.800	
4,800.0	4,770.0	4,765.0	4,765.0	13.4	95.3	160.24	-393.4	-176.5	821.1	715.3	105.81	7.760	
4,900.0	4,869.1	4,864.1	4,864.1	13.7	97.3	160.56	-393.4	-176.5	834.1	726.1	108.01	7.722	
5,000.0	4,968.1	4,963.1	4,963.1	14.0	99.3	160.87	-393.4	-176.5	847.1	736.9	110.22	7.686	

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 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Jacobucci 3 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 5104-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	5,067.2	5,062.2	5,062.2	14.4	101.2	161.17	-393.4	-176.5	860.2	747.7	112.42	7.651	SF
5,200.0	5,166.2	5,104.0	5,104.0	14.7	102.1	161.30	-393.4	-176.5	875.1	761.6	113.50	7.710	
5,300.0	5,265.3	5,104.0	5,104.0	15.1	102.1	161.30	-393.4	-176.5	900.0	786.2	113.76	7.911	
5,400.0	5,364.3	5,104.0	5,104.0	15.4	102.1	161.30	-393.4	-176.5	935.0	821.0	114.02	8.200	
5,500.0	5,463.3	5,104.0	5,104.0	15.7	102.1	161.30	-393.4	-176.5	979.0	864.7	114.27	8.567	
5,600.0	5,562.5	5,104.0	5,104.0	16.0	102.1	161.52	-393.4	-176.5	1,030.3	915.6	114.74	8.980	
5,700.0	5,661.9	5,104.0	5,104.0	16.3	102.1	161.95	-393.4	-176.5	1,086.1	970.9	115.23	9.425	
5,800.0	5,761.7	5,104.0	5,104.0	16.5	102.1	162.40	-393.4	-176.5	1,145.3	1,029.7	115.59	9.908	
5,900.0	5,861.7	5,104.0	5,104.0	16.6	102.1	162.87	-393.4	-176.5	1,207.4	1,091.5	115.82	10.425	
6,000.0	5,961.7	5,104.0	5,104.0	16.8	102.1	-133.12	-393.4	-176.5	1,272.3	1,156.3	115.99	10.969	
6,100.0	6,061.7	5,104.0	5,104.0	16.9	102.1	-133.12	-393.4	-176.5	1,341.4	1,225.2	116.19	11.545	
6,200.0	6,161.7	5,104.0	5,104.0	17.1	102.1	-133.12	-393.4	-176.5	1,414.1	1,297.7	116.39	12.150	
6,300.0	6,261.7	5,104.0	5,104.0	17.3	102.1	-133.12	-393.4	-176.5	1,490.1	1,373.5	116.59	12.780	
6,400.0	6,361.7	5,104.0	5,104.0	17.5	102.1	-133.12	-393.4	-176.5	1,568.7	1,451.9	116.80	13.431	
6,500.0	6,461.7	5,104.0	5,104.0	17.6	102.1	-133.12	-393.4	-176.5	1,649.7	1,532.7	117.00	14.100	
6,600.0	6,561.7	5,104.0	5,104.0	17.8	102.1	-133.12	-393.4	-176.5	1,732.6	1,615.4	117.21	14.783	
6,700.0	6,661.7	5,104.0	5,104.0	18.0	102.1	-133.12	-393.4	-176.5	1,817.3	1,699.9	117.41	15.478	
6,800.0	6,761.7	5,104.0	5,104.0	18.2	102.1	-133.12	-393.4	-176.5	1,903.4	1,785.8	117.62	16.183	
6,900.0	6,861.7	5,104.0	5,104.0	18.3	102.1	-133.12	-393.4	-176.5	1,990.9	1,873.0	117.82	16.897	
7,000.0	6,961.7	5,104.0	5,104.0	18.5	102.1	-133.12	-393.4	-176.5	2,079.4	1,961.4	118.03	17.618	
7,100.0	7,061.7	5,104.0	5,104.0	18.7	102.1	46.83	-393.4	-176.5	2,169.0	2,050.8	118.24	18.344	
7,200.0	7,161.4	5,104.0	5,104.0	18.8	102.1	37.37	-393.4	-176.5	2,257.3	2,139.2	118.07	19.119	
7,300.0	7,259.4	5,104.0	5,104.0	18.9	102.1	30.81	-393.4	-176.5	2,341.5	2,225.4	116.16	20.157	
7,400.0	7,354.0	5,104.0	5,104.0	19.0	102.1	26.17	-393.4	-176.5	2,420.7	2,308.4	112.30	21.555	
7,500.0	7,443.6	5,104.0	5,104.0	19.0	102.1	22.82	-393.4	-176.5	2,494.0	2,387.5	106.55	23.408	
7,600.0	7,526.6	5,104.0	5,104.0	19.0	102.1	20.34	-393.4	-176.5	2,560.8	2,461.7	99.06	25.850	
7,700.0	7,601.7	5,104.0	5,104.0	19.0	102.1	18.49	-393.4	-176.5	2,620.4	2,530.3	90.09	29.087	
7,800.0	7,667.6	5,104.0	5,104.0	19.1	102.1	17.09	-393.4	-176.5	2,672.3	2,592.4	79.93	33.435	
7,900.0	7,723.0	5,104.0	5,104.0	19.2	102.1	16.05	-393.4	-176.5	2,716.2	2,647.2	68.97	39.381	
8,000.0	7,767.2	5,104.0	5,104.0	19.5	102.1	15.28	-393.4	-176.5	2,751.6	2,693.8	57.77	47.628	
8,100.0	7,799.3	5,104.0	5,104.0	20.0	102.1	14.74	-393.4	-176.5	2,778.3	2,731.1	47.20	58.859	
8,200.0	7,818.7	5,104.0	5,104.0	20.6	102.1	14.40	-393.4	-176.5	2,796.1	2,757.2	38.86	71.949	
8,300.0	7,825.2	5,104.0	5,104.0	21.5	102.1	14.24	-393.4	-176.5	2,804.8	2,769.3	35.53	78.949	
8,400.0	7,825.7	5,104.0	5,104.0	22.5	102.1	14.24	-393.4	-176.5	2,811.4	2,775.4	35.94	78.228	
8,500.0	7,826.3	5,104.0	5,104.0	23.6	102.1	14.24	-393.4	-176.5	2,821.5	2,785.1	36.40	77.515	
8,600.0	7,826.9	5,104.0	5,104.0	24.8	102.1	14.24	-393.4	-176.5	2,835.0	2,798.1	36.90	76.824	
8,700.0	7,827.4	5,104.0	5,104.0	26.1	102.1	14.24	-393.4	-176.5	2,852.1	2,814.6	37.45	76.165	
8,800.0	7,828.0	5,104.0	5,104.0	27.5	102.1	14.24	-393.4	-176.5	2,872.5	2,834.4	38.02	75.547	
8,900.0	7,828.5	5,104.0	5,104.0	28.9	102.1	14.24	-393.4	-176.5	2,896.2	2,857.6	38.63	74.977	
9,000.0	7,829.1	5,104.0	5,104.0	30.4	102.1	14.24	-393.4	-176.5	2,923.1	2,883.9	39.26	74.459	
9,100.0	7,829.7	5,104.0	5,104.0	31.9	102.1	14.24	-393.4	-176.5	2,953.2	2,913.3	39.91	73.994	
9,200.0	7,830.2	5,104.0	5,104.0	33.5	102.1	14.24	-393.4	-176.5	2,986.4	2,945.8	40.58	73.584	
9,300.0	7,830.8	5,104.0	5,104.0	35.1	102.1	14.24	-393.4	-176.5	3,022.5	2,981.2	41.27	73.230	
9,400.0	7,831.3	5,104.0	5,104.0	36.7	102.1	14.24	-393.4	-176.5	3,061.4	3,019.4	41.98	72.928	
9,500.0	7,831.9	5,104.0	5,104.0	38.4	102.1	14.24	-393.4	-176.5	3,103.1	3,060.4	42.70	72.678	
9,600.0	7,832.4	5,104.0	5,104.0	40.1	102.1	14.24	-393.4	-176.5	3,147.3	3,103.9	43.42	72.478	
9,700.0	7,833.0	5,104.0	5,104.0	41.8	102.1	14.24	-393.4	-176.5	3,194.1	3,150.0	44.16	72.325	
9,800.0	7,833.6	5,104.0	5,104.0	43.5	102.1	14.24	-393.4	-176.5	3,243.4	3,198.5	44.91	72.215	
9,900.0	7,834.1	5,104.0	5,104.0	45.2	102.1	14.24	-393.4	-176.5	3,294.9	3,249.2	45.67	72.147	
10,000.0	7,834.7	5,104.0	5,104.0	47.0	102.1	14.24	-393.4	-176.5	3,348.6	3,302.2	46.43	72.117	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Jacobucci 3 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 5104-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
10,100.0	7,835.2	5,104.0	5,104.0	48.7	102.1	14.24	-393.4	-176.5	3,404.4	3,357.2	47.20	72.123	
10,200.0	7,835.8	5,104.0	5,104.0	50.5	102.1	14.24	-393.4	-176.5	3,462.2	3,414.2	47.98	72.161	
10,300.0	7,836.4	5,104.0	5,104.0	52.3	102.1	14.24	-393.4	-176.5	3,521.9	3,473.1	48.76	72.229	
10,400.0	7,836.9	5,104.0	5,104.0	54.1	102.1	14.24	-393.4	-176.5	3,583.4	3,533.8	49.55	72.324	
10,500.0	7,837.5	5,104.0	5,104.0	55.9	102.1	14.24	-393.4	-176.5	3,646.5	3,596.2	50.34	72.444	
10,600.0	7,838.0	5,104.0	5,104.0	57.7	102.1	14.24	-393.4	-176.5	3,711.3	3,660.2	51.13	72.586	
10,700.0	7,838.6	5,104.0	5,104.0	59.5	102.1	14.24	-393.4	-176.5	3,777.7	3,725.8	51.93	72.748	
10,800.0	7,839.1	5,104.0	5,104.0	61.3	102.1	14.24	-393.4	-176.5	3,845.5	3,792.8	52.73	72.929	
10,900.0	7,839.7	5,104.0	5,104.0	63.1	102.1	14.24	-393.4	-176.5	3,914.7	3,861.1	53.53	73.126	
11,000.0	7,840.3	5,104.0	5,104.0	65.0	102.1	14.24	-393.4	-176.5	3,985.1	3,930.8	54.34	73.337	
11,100.0	7,840.8	5,104.0	5,104.0	66.8	102.1	14.24	-393.4	-176.5	4,056.9	4,001.7	55.15	73.562	
11,200.0	7,841.4	5,104.0	5,104.0	68.7	102.1	14.24	-393.4	-176.5	4,129.8	4,073.8	55.96	73.798	
11,300.0	7,841.9	5,104.0	5,104.0	70.5	102.1	14.24	-393.4	-176.5	4,203.8	4,147.0	56.77	74.044	
11,400.0	7,842.5	5,104.0	5,104.0	72.3	102.1	14.24	-393.4	-176.5	4,278.9	4,221.3	57.59	74.299	
11,500.0	7,843.1	5,104.0	5,104.0	74.2	102.1	14.24	-393.4	-176.5	4,354.9	4,296.5	58.41	74.561	
11,600.0	7,843.6	5,104.0	5,104.0	76.0	102.1	14.24	-393.4	-176.5	4,432.0	4,372.7	59.23	74.830	
11,700.0	7,844.2	5,104.0	5,104.0	77.9	102.1	14.24	-393.4	-176.5	4,509.9	4,449.9	60.05	75.105	
11,800.0	7,844.7	5,104.0	5,104.0	79.8	102.1	14.24	-393.4	-176.5	4,588.7	4,527.8	60.87	75.385	
11,900.0	7,845.3	5,104.0	5,104.0	81.6	102.1	14.24	-393.4	-176.5	4,668.3	4,606.6	61.69	75.669	
12,000.0	7,845.8	5,104.0	5,104.0	83.5	102.1	14.24	-393.4	-176.5	4,748.7	4,686.1	62.52	75.956	
12,100.0	7,846.4	5,104.0	5,104.0	85.4	102.1	14.24	-393.4	-176.5	4,829.8	4,766.4	63.34	76.246	
12,200.0	7,847.0	5,104.0	5,104.0	87.2	102.1	14.24	-393.4	-176.5	4,911.6	4,847.4	64.17	76.538	
12,300.0	7,847.5	5,104.0	5,104.0	89.1	102.1	14.24	-393.4	-176.5	4,994.0	4,929.0	65.00	76.831	
12,400.0	7,848.1	5,104.0	5,104.0	91.0	102.1	14.24	-393.4	-176.5	5,077.1	5,011.3	65.83	77.125	
12,500.0	7,848.6	5,104.0	5,104.0	92.8	102.1	14.24	-393.4	-176.5	5,160.8	5,094.1	66.66	77.420	
12,600.0	7,849.2	5,104.0	5,104.0	94.7	102.1	14.24	-393.4	-176.5	5,245.1	5,177.6	67.49	77.715	
12,700.0	7,849.8	5,104.0	5,104.0	96.6	102.1	14.24	-393.4	-176.5	5,329.9	5,261.6	68.32	78.010	
12,800.0	7,850.3	5,104.0	5,104.0	98.5	102.1	14.24	-393.4	-176.5	5,415.2	5,346.0	69.16	78.305	
12,900.0	7,850.9	5,104.0	5,104.0	100.4	102.1	14.24	-393.4	-176.5	5,501.0	5,431.0	69.99	78.599	
13,000.0	7,851.4	5,104.0	5,104.0	102.2	102.1	14.24	-393.4	-176.5	5,587.3	5,516.5	70.82	78.891	
13,100.0	7,852.0	5,104.0	5,104.0	104.1	102.1	14.24	-393.4	-176.5	5,674.1	5,602.4	71.66	79.183	
13,200.0	7,852.6	5,104.0	5,104.0	106.0	102.1	14.24	-393.4	-176.5	5,761.2	5,688.7	72.49	79.473	
13,300.0	7,853.1	5,104.0	5,104.0	107.9	102.1	14.24	-393.4	-176.5	5,848.8	5,775.5	73.33	79.761	
13,400.0	7,853.7	5,104.0	5,104.0	109.8	102.1	14.24	-393.4	-176.5	5,936.8	5,862.6	74.17	80.048	
13,500.0	7,854.2	5,104.0	5,104.0	111.7	102.1	14.24	-393.4	-176.5	6,025.1	5,950.1	75.00	80.332	
13,600.0	7,854.8	5,104.0	5,104.0	113.6	102.1	14.24	-393.4	-176.5	6,113.8	6,038.0	75.84	80.615	
13,700.0	7,855.3	5,104.0	5,104.0	115.4	102.1	14.24	-393.4	-176.5	6,202.9	6,126.2	76.68	80.895	
13,800.0	7,855.9	5,104.0	5,104.0	117.3	102.1	14.24	-393.4	-176.5	6,292.3	6,214.8	77.52	81.173	
13,900.0	7,856.5	5,104.0	5,104.0	119.2	102.1	14.24	-393.4	-176.5	6,382.0	6,303.6	78.36	81.449	
14,000.0	7,857.0	5,104.0	5,104.0	121.1	102.1	14.24	-393.4	-176.5	6,472.0	6,392.8	79.19	81.722	
14,100.0	7,857.6	5,104.0	5,104.0	123.0	102.1	14.24	-393.4	-176.5	6,562.3	6,482.2	80.03	81.993	
14,200.0	7,858.1	5,104.0	5,104.0	124.9	102.1	14.24	-393.4	-176.5	6,652.8	6,571.9	80.87	82.261	
14,300.0	7,858.7	5,104.0	5,104.0	126.8	102.1	14.24	-393.4	-176.5	6,743.7	6,661.9	81.72	82.526	
14,400.0	7,859.3	5,104.0	5,104.0	128.7	102.1	14.24	-393.4	-176.5	6,834.7	6,752.2	82.56	82.789	
14,500.0	7,859.8	5,104.0	5,104.0	130.6	102.1	14.24	-393.4	-176.5	6,926.1	6,842.7	83.40	83.049	
14,600.0	7,860.4	5,104.0	5,104.0	132.5	102.1	14.24	-393.4	-176.5	7,017.6	6,933.4	84.24	83.307	
14,700.0	7,860.9	5,104.0	5,104.0	134.4	102.1	14.24	-393.4	-176.5	7,109.4	7,024.4	85.08	83.561	
14,712.8	7,861.0	5,104.0	5,104.0	134.6	102.1	14.24	-393.4	-176.5	7,121.2	7,036.0	85.14	83.636	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**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
0.0	0.0	0.0	0.0	0.0	0.0	-151.63	-342.4	-184.9	389.1				
100.0	100.0	96.2	96.2	0.1	0.1	-151.60	-342.4	-185.1	389.2	389.0	0.24	1,621.548	
200.0	200.0	197.4	197.4	0.3	0.4	-151.56	-342.3	-185.4	389.3	388.6	0.69	563.663	
279.2	279.2	276.2	276.2	0.5	0.5	-151.54	-342.2	-185.5	389.2	388.2	1.06	367.154	
300.0	300.0	296.9	296.9	0.6	0.6	-151.52	-342.2	-185.6	389.2	388.1	1.16	336.361	
400.0	400.0	398.4	398.4	0.8	0.8	-151.48	-341.9	-185.8	389.1	387.5	1.61	241.116	
500.0	500.0	498.4	498.4	1.0	1.1	-151.44	-341.4	-185.9	388.7	386.7	2.07	187.605	
600.0	600.0	600.0	600.0	1.2	1.3	-151.38	-340.7	-185.9	388.2	385.6	2.55	152.391	
700.0	700.0	699.0	699.0	1.5	1.5	-151.34	-340.0	-185.8	387.5	384.5	3.00	129.056	
800.0	800.0	798.7	798.7	1.7	1.8	-151.31	-339.5	-185.8	387.0	383.6	3.47	111.426	
900.0	900.0	899.7	899.7	1.9	2.0	-151.27	-338.9	-185.8	386.5	382.5	3.95	97.892	
1,000.0	1,000.0	997.6	997.6	2.1	2.3	-151.26	-338.5	-185.6	386.1	381.6	4.41	87.447	
1,100.0	1,100.0	1,098.4	1,098.4	2.4	2.5	-151.22	-338.1	-185.8	385.8	380.9	4.90	78.708	
1,200.0	1,200.0	1,197.3	1,197.3	2.6	2.8	-151.14	-337.7	-186.1	385.6	380.2	5.37	71.773	
1,232.4	1,232.4	1,229.4	1,229.4	2.7	2.9	-151.11	-337.6	-186.3	385.6	380.0	5.52	69.881	CC
1,300.0	1,300.0	1,296.4	1,296.3	2.8	3.0	-151.02	-337.3	-186.8	385.6	379.8	5.82	66.265	
1,400.0	1,400.0	1,397.0	1,397.0	3.0	3.2	-150.85	-336.9	-187.9	385.7	379.4	6.27	61.506	
1,400.0	1,400.0	1,397.1	1,397.0	3.0	3.2	-150.85	-336.9	-187.9	385.7	379.4	6.27	61.505	ES
1,500.0	1,500.0	1,495.2	1,495.2	3.3	3.5	145.64	-336.4	-189.1	387.4	380.7	6.71	57.767	
1,600.0	1,599.8	1,596.1	1,596.1	3.5	3.7	146.25	-336.0	-190.6	392.1	384.9	7.14	54.925	
1,700.0	1,699.5	1,694.2	1,694.2	3.7	3.9	147.07	-335.5	-192.2	399.7	392.2	7.57	52.820	
1,800.0	1,798.7	1,794.1	1,794.0	3.9	4.1	148.12	-335.0	-193.8	410.5	402.5	8.00	51.301	
1,900.0	1,897.7	1,891.9	1,891.8	4.2	4.4	149.34	-334.5	-195.6	422.9	414.4	8.46	49.982	
2,000.0	1,996.8	1,990.5	1,990.4	4.4	4.6	150.50	-334.1	-197.6	435.6	426.7	8.93	48.805	
2,100.0	2,095.8	2,090.4	2,090.2	4.7	4.8	151.65	-333.4	-199.7	448.4	439.0	9.40	47.684	
2,200.0	2,194.9	2,188.2	2,188.0	5.0	5.1	152.70	-332.8	-201.7	461.3	451.4	9.88	46.689	
2,300.0	2,293.9	2,286.7	2,286.5	5.3	5.3	153.72	-332.2	-203.9	474.5	464.1	10.36	45.803	
2,400.0	2,393.0	2,387.6	2,387.4	5.6	5.6	154.76	-331.2	-206.4	487.7	476.8	10.85	44.936	
2,500.0	2,492.0	2,488.3	2,488.1	5.9	5.9	155.72	-329.9	-208.5	500.6	489.2	11.35	44.090	
2,600.0	2,591.1	2,586.5	2,586.2	6.2	6.1	156.59	-328.7	-210.3	513.5	501.6	11.85	43.329	
2,700.0	2,690.1	2,685.9	2,685.6	6.5	6.4	157.45	-327.4	-212.3	526.5	514.2	12.35	42.634	
2,800.0	2,789.1	2,784.5	2,784.2	6.8	6.6	158.25	-326.1	-214.2	539.6	526.8	12.85	42.001	
2,900.0	2,888.2	2,880.9	2,880.6	7.1	6.9	158.92	-325.5	-215.7	553.1	539.7	13.33	41.494	
3,000.0	2,987.2	2,978.4	2,978.0	7.5	7.1	159.50	-325.6	-217.0	566.9	553.2	13.79	41.118	
3,100.0	3,086.3	3,078.5	3,078.1	7.8	7.3	160.04	-326.0	-218.1	580.9	566.7	14.23	40.816	
3,200.0	3,185.3	3,176.6	3,176.3	8.1	7.5	160.51	-326.5	-218.9	594.8	580.2	14.64	40.616	
3,300.0	3,284.4	3,275.6	3,275.3	8.4	7.6	160.94	-327.3	-219.6	608.9	593.9	15.04	40.497	
3,400.0	3,383.4	3,374.3	3,373.9	8.7	7.7	161.31	-328.3	-219.9	622.9	607.6	15.39	40.486	
3,500.0	3,482.5	3,470.9	3,470.5	9.1	7.8	161.56	-330.2	-219.6	637.2	621.5	15.69	40.601	
3,600.0	3,581.5	3,568.9	3,568.4	9.4	7.8	161.76	-332.7	-219.3	651.8	635.8	16.00	40.733	
3,700.0	3,680.5	3,669.8	3,669.3	9.7	7.9	161.99	-334.9	-219.2	666.4	650.0	16.32	40.828	
3,800.0	3,779.6	3,770.8	3,770.3	10.1	8.0	162.23	-336.7	-218.9	680.6	663.9	16.65	40.884	
3,900.0	3,878.6	3,872.5	3,872.0	10.4	8.1	162.48	-338.2	-218.6	694.4	677.5	16.97	40.928	
4,000.0	3,977.7	3,972.3	3,971.8	10.7	8.1	162.70	-339.5	-217.9	708.0	690.8	17.28	40.970	
4,100.0	4,076.7	4,071.7	4,071.2	11.0	8.2	162.92	-340.7	-217.3	721.6	704.0	17.60	41.004	
4,200.0	4,175.8	4,170.8	4,170.3	11.4	8.3	163.12	-342.1	-216.5	735.1	717.2	17.92	41.021	
4,300.0	4,274.8	4,270.1	4,269.6	11.7	8.4	163.32	-343.3	-215.8	748.7	730.4	18.25	41.024	
4,400.0	4,373.9	4,365.7	4,365.1	12.0	8.5	163.47	-344.9	-214.9	762.4	743.8	18.59	41.017	
4,500.0	4,472.9	4,461.2	4,460.6	12.4	8.6	163.57	-347.3	-214.0	776.6	757.7	18.94	41.005	
4,600.0	4,571.9	4,557.7	4,557.0	12.7	8.7	163.66	-350.0	-213.3	791.2	771.9	19.31	40.983	
4,700.0	4,671.0	4,667.7	4,667.0	13.0	8.8	163.73	-353.4	-211.9	805.6	785.9	19.68	40.929	

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 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**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
4,800.0	4,770.0	4,778.9	4,778.2	13.4	8.9	163.82	-355.1	-209.2	818.1	798.0	20.04	40.825	
4,900.0	4,869.1	4,878.1	4,877.4	13.7	9.0	163.96	-355.4	-207.0	829.9	809.5	20.38	40.728	
5,000.0	4,968.1	4,975.3	4,974.6	14.0	9.1	164.12	-355.6	-205.2	841.9	821.2	20.72	40.641	
5,100.0	5,067.2	5,074.4	5,073.6	14.4	9.2	164.29	-355.8	-203.6	854.1	833.1	21.06	40.549	
5,200.0	5,166.2	5,170.8	5,170.0	14.7	9.3	164.47	-355.8	-202.2	866.4	845.0	21.41	40.459	
5,300.0	5,265.3	5,265.0	5,264.2	15.1	9.4	164.66	-355.9	-201.5	879.2	857.4	21.77	40.379	
5,400.0	5,364.3	5,362.4	5,361.6	15.4	9.6	164.86	-356.3	-201.1	892.5	870.3	22.15	40.296	
5,500.0	5,463.3	5,463.4	5,462.6	15.7	9.7	165.05	-356.7	-200.6	905.7	883.2	22.53	40.199	
5,600.0	5,562.5	5,563.1	5,562.3	16.0	9.8	165.26	-357.0	-200.0	918.2	895.2	22.92	40.061	
5,700.0	5,661.9	5,660.0	5,659.2	16.3	10.0	165.44	-357.1	-199.6	927.7	904.4	23.27	39.860	
5,800.0	5,761.7	5,758.5	5,757.7	16.5	10.1	165.56	-357.3	-199.5	934.1	910.5	23.62	39.547	
5,900.0	5,861.7	5,859.3	5,858.5	16.6	10.3	165.60	-357.7	-199.3	937.2	913.2	23.95	39.137	
6,000.0	5,961.7	5,961.6	5,960.8	16.8	10.5	-130.59	-357.9	-199.0	937.3	913.1	24.27	38.614	
6,100.0	6,061.7	6,061.5	6,060.7	16.9	10.6	-130.60	-357.8	-198.7	937.1	912.4	24.62	38.055	
6,200.0	6,161.7	6,161.1	6,160.3	17.1	10.8	-130.60	-357.7	-198.5	936.9	911.9	24.97	37.517	
6,300.0	6,261.7	6,261.0	6,260.2	17.3	10.9	-130.61	-357.7	-198.4	936.7	911.4	25.33	36.985	
6,400.0	6,361.7	6,361.8	6,360.9	17.5	11.1	-130.60	-357.5	-198.3	936.5	910.8	25.69	36.453	
6,500.0	6,461.7	6,460.2	6,459.4	17.6	11.2	-130.55	-356.8	-198.6	936.3	910.3	26.06	35.925	
6,521.1	6,482.8	6,480.6	6,479.8	17.7	11.3	-130.54	-356.5	-198.8	936.3	910.2	26.14	35.816	
6,600.0	6,561.7	6,558.6	6,557.8	17.8	11.4	-130.45	-355.5	-199.8	936.4	909.9	26.44	35.411	
6,700.0	6,661.7	6,654.1	6,653.3	18.0	11.6	-130.34	-354.3	-201.1	936.6	909.8	26.82	34.917	
6,800.0	6,761.7	6,755.2	6,754.3	18.2	11.8	-130.24	-353.5	-202.7	937.4	910.1	27.22	34.436	
6,900.0	6,861.7	6,854.1	6,853.2	18.3	12.0	-130.18	-353.0	-203.6	937.6	910.0	27.62	33.951	
7,000.0	6,961.7	6,949.8	6,948.9	18.5	12.2	-130.12	-352.7	-204.9	938.6	910.6	28.01	33.505	
7,100.0	7,061.7	7,047.8	7,047.0	18.7	12.4	49.97	-352.3	-206.7	939.7	911.3	28.42	33.068	
7,200.0	7,161.4	7,144.0	7,143.0	18.8	12.6	50.50	-352.3	-208.5	936.9	908.3	28.61	32.745	
7,300.0	7,259.4	7,240.5	7,239.6	18.9	12.8	52.10	-352.6	-210.5	926.3	897.7	28.64	32.348	
7,400.0	7,354.0	7,337.7	7,336.7	19.0	12.9	54.85	-353.0	-212.3	908.2	879.6	28.58	31.772	
7,500.0	7,443.6	7,435.9	7,435.0	19.0	13.1	58.87	-353.9	-213.2	883.4	854.8	28.59	30.897	
7,600.0	7,526.6	7,529.6	7,528.6	19.0	13.3	64.08	-354.6	-212.6	852.8	824.0	28.79	29.626	
7,700.0	7,601.7	7,605.5	7,604.5	19.0	13.4	69.78	-355.4	-211.5	819.5	790.3	29.20	28.061	
7,800.0	7,667.6	7,666.0	7,665.1	19.1	13.5	75.47	-356.2	-210.9	786.9	757.1	29.82	26.391	
7,900.0	7,723.0	7,718.4	7,717.5	19.2	13.6	80.93	-357.1	-210.6	758.1	727.6	30.54	24.823	
8,000.0	7,767.2	7,761.8	7,760.8	19.5	13.7	85.59	-358.0	-210.6	736.4	705.1	31.30	23.526	
8,100.0	7,799.3	7,794.2	7,793.2	20.0	13.7	88.86	-358.7	-210.7	724.8	692.7	32.09	22.588	
8,145.0	7,809.6	7,805.2	7,804.2	20.2	13.7	89.81	-358.9	-210.7	723.5	691.0	32.48	22.274	
8,200.0	7,818.7	7,815.5	7,814.5	20.6	13.8	90.46	-359.2	-210.7	725.5	692.6	32.95	22.019	
8,300.0	7,825.2	7,824.2	7,823.2	21.5	13.8	90.15	-359.3	-210.8	739.6	705.7	33.90	21.819	SF
8,400.0	7,825.7	7,827.0	7,826.0	22.5	13.8	90.37	-359.4	-210.8	766.5	731.6	34.97	21.922	
8,500.0	7,826.3	7,829.8	7,828.8	23.6	13.8	90.59	-359.5	-210.8	805.1	768.9	36.15	22.270	
8,600.0	7,826.9	7,832.6	7,831.6	24.8	13.8	90.82	-359.5	-210.8	853.6	816.2	37.43	22.806	
8,700.0	7,827.4	7,835.5	7,834.4	26.1	13.8	91.04	-359.6	-210.8	910.6	871.8	38.79	23.474	
8,800.0	7,828.0	7,838.3	7,837.2	27.5	13.8	91.26	-359.7	-210.8	974.6	934.3	40.22	24.228	
8,900.0	7,828.5	7,841.1	7,840.0	28.9	13.8	91.48	-359.7	-210.8	1,044.2	1,002.5	41.71	25.031	
9,000.0	7,829.1	7,843.9	7,842.8	30.4	13.8	91.70	-359.8	-210.8	1,118.4	1,075.1	43.25	25.857	
9,100.0	7,829.7	7,846.7	7,845.6	31.9	13.8	91.92	-359.8	-210.8	1,196.4	1,151.5	44.83	26.684	
9,200.0	7,830.2	7,849.5	7,848.4	33.5	13.8	92.15	-359.9	-210.8	1,277.4	1,231.0	46.45	27.500	
9,300.0	7,830.8	7,852.3	7,851.2	35.1	13.8	92.37	-360.0	-210.9	1,361.0	1,312.9	48.10	28.296	
9,400.0	7,831.3	7,855.1	7,854.1	36.7	13.8	92.59	-360.0	-210.9	1,446.6	1,396.8	49.77	29.066	
9,500.0	7,831.9	7,857.9	7,856.9	38.4	13.8	92.81	-360.1	-210.9	1,534.0	1,482.5	51.47	29.806	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**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
9,600.0	7,832.4	7,860.7	7,859.7	40.1	13.8	93.03	-360.2	-210.9	1,622.8	1,569.6	53.18	30.516	
9,700.0	7,833.0	7,863.5	7,862.5	41.8	13.8	93.25	-360.2	-210.9	1,712.9	1,658.0	54.91	31.194	
9,800.0	7,833.6	7,866.3	7,865.3	43.5	13.8	93.47	-360.3	-210.9	1,804.0	1,747.3	56.66	31.841	
9,900.0	7,834.1	7,869.1	7,868.1	45.2	13.9	93.69	-360.4	-210.9	1,896.0	1,837.5	58.41	32.458	
10,000.0	7,834.7	7,871.9	7,870.9	47.0	13.9	93.91	-360.4	-210.9	1,988.7	1,928.5	60.18	33.046	
10,100.0	7,835.2	7,874.7	7,873.7	48.7	13.9	94.14	-360.5	-210.9	2,082.1	2,020.2	61.96	33.606	
10,200.0	7,835.8	7,877.5	7,876.5	50.5	13.9	94.36	-360.5	-210.9	2,176.2	2,112.4	63.74	34.140	
10,300.0	7,836.4	7,880.3	7,879.3	52.3	13.9	94.58	-360.6	-210.9	2,270.7	2,205.1	65.54	34.648	
10,400.0	7,836.9	7,883.1	7,882.1	54.1	13.9	94.80	-360.7	-211.0	2,365.6	2,298.3	67.33	35.133	
10,500.0	7,837.5	7,885.9	7,884.9	55.9	13.9	95.02	-360.7	-211.0	2,461.0	2,391.9	69.14	35.596	
10,600.0	7,838.0	7,888.7	7,887.7	57.7	13.9	95.24	-360.8	-211.0	2,556.7	2,485.8	70.95	36.038	
10,700.0	7,838.6	7,891.5	7,890.5	59.5	13.9	95.46	-360.9	-211.0	2,652.7	2,580.0	72.76	36.460	
10,800.0	7,839.1	7,894.3	7,893.3	61.3	13.9	95.68	-360.9	-211.0	2,749.0	2,674.5	74.57	36.864	
10,900.0	7,839.7	7,897.1	7,896.1	63.1	13.9	95.90	-361.0	-211.0	2,845.6	2,769.2	76.39	37.251	
11,000.0	7,840.3	7,899.9	7,898.9	65.0	13.9	96.12	-361.0	-211.0	2,942.4	2,864.2	78.21	37.622	
11,100.0	7,840.8	7,902.7	7,901.7	66.8	13.9	96.33	-361.1	-211.0	3,039.4	2,959.3	80.03	37.977	
11,200.0	7,841.4	7,905.5	7,904.5	68.7	13.9	96.55	-361.2	-211.0	3,136.6	3,054.7	81.85	38.319	
11,300.0	7,841.9	7,908.3	7,907.3	70.5	13.9	96.77	-361.2	-211.0	3,233.9	3,150.2	83.68	38.647	
11,400.0	7,842.5	7,911.1	7,910.1	72.3	13.9	96.99	-361.3	-211.0	3,331.4	3,245.9	85.50	38.962	
11,500.0	7,843.1	7,913.9	7,912.9	74.2	13.9	97.21	-361.4	-211.1	3,429.0	3,341.7	87.33	39.266	
11,600.0	7,843.6	7,916.7	7,915.7	76.0	13.9	97.43	-361.4	-211.1	3,526.8	3,437.7	89.15	39.559	
11,700.0	7,844.2	7,919.5	7,918.5	77.9	14.0	97.64	-361.5	-211.1	3,624.7	3,533.7	90.98	39.841	
11,800.0	7,844.7	7,922.3	7,921.3	79.8	14.0	97.86	-361.5	-211.1	3,722.7	3,629.9	92.80	40.114	
11,900.0	7,845.3	7,925.1	7,924.1	81.6	14.0	98.08	-361.6	-211.1	3,820.8	3,726.2	94.63	40.377	
12,000.0	7,845.8	7,927.9	7,926.9	83.5	14.0	98.30	-361.7	-211.1	3,919.0	3,822.6	96.45	40.632	
12,100.0	7,846.4	7,930.7	7,929.7	85.4	14.0	98.51	-361.7	-211.1	4,017.3	3,919.0	98.27	40.879	
12,200.0	7,847.0	7,933.6	7,932.5	87.2	14.0	98.73	-361.8	-211.1	4,115.7	4,015.6	100.10	41.118	
12,300.0	7,847.5	7,936.4	7,935.3	89.1	14.0	98.95	-361.9	-211.1	4,214.1	4,112.2	101.91	41.349	
12,400.0	7,848.1	7,939.2	7,938.1	91.0	14.0	99.16	-361.9	-211.1	4,312.6	4,208.9	103.73	41.574	
12,500.0	7,848.6	7,942.0	7,940.9	92.8	14.0	99.38	-362.0	-211.1	4,411.2	4,305.6	105.55	41.793	
12,600.0	7,849.2	7,944.8	7,943.7	94.7	14.0	99.59	-362.1	-211.2	4,509.8	4,402.5	107.36	42.005	
12,700.0	7,849.8	7,947.6	7,946.5	96.6	14.0	99.81	-362.1	-211.2	4,608.5	4,499.3	109.18	42.211	
12,800.0	7,850.3	7,950.4	7,949.3	98.5	14.0	100.02	-362.2	-211.2	4,707.3	4,596.3	110.99	42.412	
12,900.0	7,850.9	7,953.2	7,952.1	100.4	14.0	100.24	-362.2	-211.2	4,806.1	4,693.3	112.80	42.608	
13,000.0	7,851.4	7,956.0	7,954.9	102.2	14.0	100.45	-362.3	-211.2	4,904.9	4,790.3	114.60	42.799	
13,100.0	7,852.0	7,958.8	7,957.7	104.1	14.0	100.67	-362.4	-211.2	5,003.8	4,887.4	116.41	42.985	
13,200.0	7,852.6	7,961.6	7,960.5	106.0	14.0	100.88	-362.4	-211.2	5,102.7	4,984.5	118.21	43.167	
13,300.0	7,853.1	7,964.4	7,963.3	107.9	14.0	101.10	-362.5	-211.2	5,201.7	5,081.7	120.01	43.345	
13,400.0	7,853.7	7,967.2	7,966.1	109.8	14.0	101.31	-362.6	-211.2	5,300.7	5,178.9	121.80	43.519	
13,500.0	7,854.2	7,970.0	7,968.9	111.7	14.0	101.52	-362.6	-211.2	5,399.8	5,276.2	123.60	43.689	
13,600.0	7,854.8	7,972.8	7,971.7	113.6	14.1	101.73	-362.7	-211.2	5,498.8	5,373.4	125.39	43.855	
13,700.0	7,855.3	7,975.6	7,974.5	115.4	14.1	101.95	-362.7	-211.3	5,597.9	5,470.8	127.17	44.018	
13,800.0	7,855.9	7,978.4	7,977.3	117.3	14.1	102.16	-362.8	-211.3	5,697.1	5,568.1	128.96	44.178	
13,900.0	7,856.5	7,981.2	7,980.1	119.2	14.1	102.37	-362.9	-211.3	5,796.2	5,665.5	130.74	44.335	
14,000.0	7,857.0	7,984.0	7,982.9	121.1	14.1	102.58	-362.9	-211.3	5,895.4	5,762.9	132.52	44.489	
14,100.0	7,857.6	7,986.8	7,985.8	123.0	14.1	102.79	-363.0	-211.3	5,994.6	5,860.4	134.29	44.640	
14,200.0	7,858.1	7,989.6	7,988.6	124.9	14.1	103.00	-363.1	-211.3	6,093.9	5,957.8	136.06	44.788	
14,300.0	7,858.7	7,992.4	7,991.4	126.8	14.1	103.21	-363.1	-211.3	6,193.2	6,055.3	137.83	44.934	
14,400.0	7,859.3	7,995.2	7,994.2	128.7	14.1	103.42	-363.2	-211.3	6,292.4	6,152.8	139.59	45.078	
14,500.0	7,859.8	7,998.0	7,997.0	130.6	14.1	103.63	-363.2	-211.3	6,391.7	6,250.4	141.35	45.219	
14,600.0	7,860.4	8,000.8	7,999.8	132.5	14.1	103.84	-363.3	-211.3	6,491.1	6,348.0	143.11	45.358	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**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
14,700.0	7,860.9	8,003.6	8,002.6	134.4	14.1	104.05	-363.4	-211.4	6,590.4	6,445.6	144.86	45.495	
14,712.8	7,861.0	8,004.0	8,002.9	134.6	14.1	104.08	-363.4	-211.4	6,603.1	6,458.1	145.04	45.527	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Jacobucci 43-32 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 1105-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	-154.61	-342.4	-162.5	379.0				
100.0	100.0	95.7	95.7	0.1	0.1	-154.64	-342.6	-162.4	379.2	378.9	0.22	1,699.119	ES
200.0	200.0	194.4	194.4	0.3	0.2	-154.72	-343.3	-162.1	379.7	379.1	0.56	675.673	
300.0	300.0	293.1	293.1	0.6	0.4	-154.85	-344.4	-161.7	380.5	379.6	0.90	422.479	
400.0	400.0	391.7	391.7	0.8	0.5	-155.03	-346.0	-161.1	381.7	380.5	1.24	307.968	
500.0	500.0	490.4	490.3	1.0	0.6	-155.27	-348.1	-160.4	383.3	381.7	1.58	242.838	
600.0	600.0	589.0	588.9	1.2	0.7	-155.55	-350.6	-159.4	385.2	383.3	1.92	200.911	
700.0	700.0	687.6	687.4	1.5	0.9	-155.88	-353.6	-158.3	387.5	385.3	2.26	171.736	
800.0	800.0	786.1	785.9	1.7	1.0	-156.26	-357.0	-157.0	390.2	387.6	2.60	150.320	
900.0	900.0	884.6	884.3	1.9	1.1	-156.68	-360.9	-155.6	393.2	390.3	2.93	133.976	
1,000.0	1,000.0	983.1	982.7	2.1	1.2	-157.15	-365.3	-153.9	396.6	393.4	3.27	121.132	
1,100.0	1,100.0	1,081.5	1,080.9	2.4	1.4	-157.65	-370.1	-152.1	400.4	396.8	3.61	110.803	
1,200.0	1,200.0	1,181.0	1,180.3	2.6	1.6	-158.17	-375.2	-150.3	404.6	400.5	4.03	100.463	
1,300.0	1,300.0	1,280.8	1,279.9	2.8	1.8	-158.64	-380.3	-148.7	408.7	404.2	4.46	91.581	
1,400.0	1,400.0	1,381.1	1,380.1	3.0	2.0	-159.05	-385.3	-147.5	412.9	408.0	4.90	84.332	
1,500.0	1,500.0	1,482.8	1,481.8	3.3	2.2	136.85	-389.9	-146.4	418.0	412.7	5.35	78.141	
1,600.0	1,599.8	1,584.5	1,583.3	3.5	2.4	136.90	-394.0	-145.3	425.2	419.5	5.76	73.827	
1,700.0	1,699.5	1,684.9	1,683.7	3.7	2.6	137.28	-397.6	-144.3	434.7	428.5	6.18	70.373	
1,800.0	1,798.7	1,784.7	1,783.4	3.9	2.8	137.96	-401.0	-143.7	446.5	439.9	6.60	67.674	
1,900.0	1,897.7	1,883.7	1,882.4	4.2	3.0	138.93	-404.0	-143.4	459.6	452.5	7.04	65.307	
2,000.0	1,996.8	1,986.3	1,984.9	4.4	3.2	139.90	-407.0	-143.2	472.7	465.2	7.49	63.082	
2,100.0	2,095.8	2,088.2	2,086.8	4.7	3.5	140.74	-409.0	-141.9	484.6	476.7	7.95	60.939	
2,200.0	2,194.9	2,190.1	2,188.4	5.0	3.7	140.96	-412.3	-135.7	495.8	487.3	8.44	58.742	
2,300.0	2,293.9	2,290.3	2,288.1	5.3	3.9	140.82	-417.1	-127.0	507.2	498.3	8.94	56.716	
2,400.0	2,393.0	2,395.9	2,393.2	5.6	4.2	140.61	-422.1	-117.1	518.3	508.8	9.47	54.721	
2,500.0	2,492.0	2,503.5	2,499.7	5.9	4.5	139.99	-427.1	-102.8	527.7	517.6	10.04	52.573	
2,600.0	2,591.1	2,613.0	2,607.3	6.2	4.8	138.90	-432.4	-83.4	535.6	524.9	10.66	50.262	
2,700.0	2,690.1	2,738.5	2,729.8	6.5	5.2	137.31	-435.7	-56.5	540.2	528.8	11.37	47.514	
2,800.0	2,789.1	2,848.6	2,836.8	6.8	5.6	135.86	-435.0	-30.5	541.2	529.2	12.06	44.860	
2,900.0	2,888.2	2,954.0	2,938.7	7.1	6.0	134.30	-433.7	-3.8	541.4	528.6	12.79	42.325	
2,920.0	2,908.0	2,973.4	2,957.4	7.2	6.1	133.99	-433.3	1.3	541.4	528.4	12.94	41.850	
3,000.0	2,987.2	3,050.3	3,031.3	7.5	6.5	132.65	-432.9	22.6	541.8	528.2	13.53	40.049	
3,100.0	3,086.3	3,161.1	3,137.0	7.8	7.0	130.44	-431.7	56.2	541.6	527.2	14.39	37.636	
3,200.0	3,185.3	3,259.1	3,230.4	8.1	7.4	128.54	-429.6	85.5	541.1	525.9	15.17	35.665	
3,267.2	3,251.8	3,325.5	3,293.9	8.3	7.8	127.29	-427.9	105.1	541.0	525.3	15.70	34.456	
3,300.0	3,284.4	3,358.9	3,325.8	8.4	7.9	126.67	-427.1	114.9	541.0	525.0	15.97	33.874	
3,400.0	3,383.4	3,461.6	3,423.7	8.7	8.4	124.69	-424.0	145.7	540.9	524.1	16.84	32.121	
3,418.4	3,401.6	3,479.5	3,440.7	8.8	8.5	124.33	-423.4	151.2	540.9	523.9	17.00	31.824	
3,500.0	3,482.5	3,558.7	3,516.0	9.1	9.0	122.73	-420.9	175.7	541.2	523.5	17.69	30.588	
3,600.0	3,581.5	3,657.1	3,609.3	9.4	9.5	120.68	-418.0	206.7	542.3	523.7	18.59	29.172	
3,700.0	3,680.5	3,762.0	3,708.9	9.7	10.1	118.54	-414.1	239.4	543.3	523.8	19.51	27.845	
3,800.0	3,779.6	3,855.8	3,798.2	10.1	10.6	116.72	-410.2	267.9	544.6	524.3	20.35	26.765	
3,900.0	3,878.6	3,936.4	3,875.4	10.4	11.0	115.33	-408.5	290.9	548.5	527.4	21.09	26.005	
4,000.0	3,977.7	4,020.6	3,956.2	10.7	11.5	113.94	-409.6	314.7	556.3	534.5	21.87	25.441	
4,100.0	4,076.7	4,128.2	4,058.9	11.0	12.1	112.03	-411.0	346.7	564.6	541.8	22.79	24.768	
4,200.0	4,175.8	4,225.0	4,151.7	11.4	12.6	110.48	-411.7	374.3	572.7	549.1	23.63	24.241	
4,300.0	4,274.8	4,324.6	4,247.1	11.7	13.1	108.94	-412.5	402.6	581.4	556.9	24.48	23.747	
4,400.0	4,373.9	4,445.0	4,362.0	12.0	13.9	106.91	-410.7	438.8	588.5	563.0	25.49	23.091	
4,500.0	4,472.9	4,538.0	4,449.8	12.4	14.4	105.12	-407.5	469.1	594.6	568.3	26.36	22.558	
4,600.0	4,571.9	4,637.1	4,543.5	12.7	15.0	103.25	-404.5	501.5	601.9	574.6	27.24	22.095	
4,700.0	4,671.0	4,735.5	4,636.9	13.0	15.6	101.56	-401.6	532.4	609.4	581.3	28.10	21.689	

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 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Jacobucci 43-32 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 1105-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
4,800.0	4,770.0	4,827.5	4,724.4	13.4	16.2	100.10	-399.7	560.4	618.1	589.2	28.89	21.393	
4,900.0	4,869.1	4,918.1	4,811.0	13.7	16.7	98.85	-399.2	587.0	628.4	598.7	29.67	21.178	
5,000.0	4,968.1	5,019.6	4,907.2	14.0	17.3	97.22	-398.1	619.6	639.4	608.9	30.54	20.940	
5,100.0	5,067.2	5,116.4	4,997.9	14.4	18.0	95.47	-395.8	653.1	650.6	619.2	31.39	20.725	
5,200.0	5,166.2	5,211.0	5,086.7	14.7	18.6	93.85	-393.9	685.7	662.7	630.5	32.20	20.582	
5,300.0	5,265.3	5,314.1	5,184.0	15.1	19.2	92.28	-392.5	719.7	675.3	642.3	33.01	20.459	
5,400.0	5,364.3	5,416.8	5,282.0	15.4	19.8	91.03	-391.4	750.5	687.3	653.5	33.79	20.340	
5,500.0	5,463.3	5,520.4	5,380.6	15.7	20.5	89.74	-389.3	782.1	698.9	664.3	34.58	20.212	
5,600.0	5,562.5	5,637.4	5,491.1	16.0	21.2	88.07	-383.1	820.2	709.1	673.6	35.42	20.020	
5,700.0	5,661.9	5,734.3	5,583.0	16.3	21.8	86.68	-377.3	850.3	718.5	682.5	36.03	19.941	
5,800.0	5,761.7	5,820.9	5,665.3	16.5	22.3	85.35	-373.4	876.9	729.9	693.4	36.54	19.973	
5,900.0	5,861.7	5,922.8	5,761.9	16.6	23.0	83.52	-368.8	908.8	742.7	705.7	37.02	20.062	
6,000.0	5,961.7	6,016.4	5,851.4	16.8	23.5	145.53	-365.0	936.4	756.1	718.7	37.38	20.229	
6,100.0	6,061.7	6,119.1	5,949.3	16.9	24.1	143.45	-360.8	967.1	770.6	732.9	37.74	20.419	
6,200.0	6,161.7	6,220.0	6,045.8	17.1	24.7	141.50	-355.6	996.0	784.5	746.4	38.08	20.603	
6,300.0	6,261.7	6,303.7	6,126.2	17.3	25.1	140.07	-353.0	1,019.2	800.0	761.6	38.37	20.849	
6,400.0	6,361.7	6,399.2	6,218.0	17.5	25.6	138.58	-351.5	1,045.3	817.0	778.3	38.68	21.123	
6,500.0	6,461.7	6,506.5	6,321.6	17.6	26.2	137.08	-350.4	1,073.1	834.0	795.1	38.99	21.391	
6,600.0	6,561.7	6,656.6	6,468.0	17.8	26.9	135.28	-347.0	1,105.9	847.8	808.5	39.35	21.548	
6,700.0	6,661.7	6,789.9	6,599.6	18.0	27.3	134.09	-342.5	1,126.5	856.5	816.8	39.67	21.592	
6,800.0	6,761.7	6,902.4	6,711.4	18.2	27.6	133.33	-339.0	1,139.4	862.6	822.7	39.96	21.585	
6,900.0	6,861.7	7,019.3	6,827.7	18.3	27.9	132.69	-335.3	1,149.6	866.9	826.6	40.27	21.527	
7,000.0	6,961.7	7,122.4	6,930.5	18.5	28.1	132.26	-332.9	1,156.5	870.2	829.6	40.57	21.451	
7,100.0	7,061.7	7,222.2	7,030.1	18.7	28.3	-48.12	-330.7	1,162.8	873.5	832.6	40.86	21.376	
7,200.0	7,161.4	7,321.5	7,129.2	18.8	28.5	-48.88	-328.6	1,169.1	872.4	831.4	40.98	21.287	
7,300.0	7,259.4	7,418.9	7,226.3	18.9	28.7	-50.75	-326.5	1,175.3	863.0	822.6	40.43	21.348	
7,400.0	7,354.0	7,512.6	7,319.8	19.0	28.9	-53.73	-324.4	1,181.2	846.3	806.9	39.35	21.506	
7,500.0	7,443.6	7,601.0	7,408.1	19.0	29.1	-57.78	-322.5	1,186.8	823.5	785.5	37.99	21.674	
7,600.0	7,526.6	7,682.7	7,489.5	19.0	29.2	-62.77	-320.7	1,192.0	796.5	759.8	36.68	21.713	
7,700.0	7,601.7	7,756.2	7,562.9	19.0	29.4	-68.41	-319.1	1,196.6	767.7	732.0	35.73	21.484	
7,800.0	7,667.6	7,820.2	7,626.8	19.1	29.5	-74.21	-317.7	1,200.7	740.1	704.8	35.32	20.955	
7,900.0	7,723.0	7,873.8	7,680.2	19.2	29.6	-79.55	-316.6	1,204.1	717.1	681.7	35.38	20.264	
8,000.0	7,767.2	7,915.8	7,722.2	19.5	29.7	-83.80	-315.7	1,206.8	701.8	666.0	35.77	19.621	
8,087.5	7,795.9	7,942.7	7,749.0	19.9	29.7	-86.25	-315.1	1,208.5	697.2	660.9	36.28	19.214	
8,100.0	7,799.3	7,945.8	7,752.1	20.0	29.7	-86.48	-315.0	1,208.7	697.3	660.9	36.36	19.176	
8,200.0	7,818.7	7,963.1	7,769.3	20.6	29.8	-87.27	-314.6	1,209.8	705.3	668.2	37.16	18.980 SF	
8,300.0	7,825.2	7,967.4	7,773.6	21.5	29.8	-86.11	-314.5	1,210.0	726.4	688.2	38.18	19.025	
8,400.0	7,825.7	7,965.7	7,772.0	22.5	29.8	-85.97	-314.6	1,209.9	759.8	720.5	39.24	19.361	
8,500.0	7,826.3	7,964.1	7,770.4	23.6	29.8	-85.84	-314.6	1,209.8	804.3	763.9	40.42	19.899	
8,600.0	7,826.9	7,962.5	7,768.8	24.8	29.8	-85.71	-314.6	1,209.7	858.2	816.5	41.69	20.585	
8,700.0	7,827.4	7,960.9	7,767.2	26.1	29.8	-85.58	-314.7	1,209.6	919.8	876.8	43.04	21.371	
8,800.0	7,828.0	7,959.3	7,765.6	27.5	29.8	-85.44	-314.7	1,209.5	987.8	943.3	44.46	22.216	
8,900.0	7,828.5	7,957.7	7,763.9	28.9	29.8	-85.31	-314.8	1,209.4	1,060.8	1,014.9	45.94	23.090	
9,000.0	7,829.1	7,956.1	7,762.3	30.4	29.8	-85.18	-314.8	1,209.3	1,137.9	1,090.5	47.47	23.972	
9,100.0	7,829.7	7,954.4	7,760.7	31.9	29.8	-85.05	-314.8	1,209.2	1,218.4	1,169.3	49.04	24.846	
9,200.0	7,830.2	7,952.8	7,759.1	33.5	29.8	-84.91	-314.9	1,209.1	1,301.6	1,250.9	50.64	25.701	
9,300.0	7,830.8	7,951.2	7,757.5	35.1	29.7	-84.78	-314.9	1,209.0	1,386.9	1,334.7	52.28	26.530	
9,400.0	7,831.3	7,949.6	7,755.9	36.7	29.7	-84.65	-314.9	1,208.9	1,474.2	1,420.2	53.94	27.330	
9,500.0	7,831.9	7,948.0	7,754.3	38.4	29.7	-84.52	-315.0	1,208.8	1,562.9	1,507.3	55.62	28.099	
9,600.0	7,832.4	7,946.4	7,752.7	40.1	29.7	-84.38	-315.0	1,208.7	1,653.0	1,595.6	57.33	28.834	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Jacobucci 43-32 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 1105-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	7,833.0	7,944.7	7,751.0	41.8	29.7	-84.25	-315.0	1,208.6	1,744.1	1,685.0	59.05	29.538	
9,800.0	7,833.6	7,943.1	7,749.4	43.5	29.7	-84.12	-315.1	1,208.5	1,836.1	1,775.4	60.78	30.209	
9,900.0	7,834.1	7,941.5	7,747.8	45.2	29.7	-83.99	-315.1	1,208.4	1,929.0	1,866.4	62.53	30.850	
10,000.0	7,834.7	7,939.9	7,746.2	47.0	29.7	-83.86	-315.1	1,208.3	2,022.5	1,958.2	64.29	31.460	
10,100.0	7,835.2	7,938.3	7,744.6	48.7	29.7	-83.72	-315.2	1,208.2	2,116.6	2,050.5	66.06	32.043	
10,200.0	7,835.8	7,936.7	7,743.0	50.5	29.7	-83.59	-315.2	1,208.1	2,211.2	2,143.4	67.83	32.598	
10,300.0	7,836.4	7,935.1	7,741.4	52.3	29.7	-83.46	-315.2	1,208.0	2,306.3	2,236.7	69.62	33.128	
10,400.0	7,836.9	7,933.4	7,739.8	54.1	29.7	-83.33	-315.3	1,207.9	2,401.8	2,330.4	71.41	33.634	
10,500.0	7,837.5	7,931.8	7,738.2	55.9	29.7	-83.20	-315.3	1,207.8	2,497.6	2,424.4	73.21	34.118	
10,600.0	7,838.0	7,930.2	7,736.5	57.7	29.7	-83.06	-315.3	1,207.7	2,593.8	2,518.8	75.01	34.580	
10,700.0	7,838.6	7,928.6	7,734.9	59.5	29.7	-82.93	-315.4	1,207.6	2,690.2	2,613.4	76.82	35.021	
10,800.0	7,839.1	7,927.0	7,733.3	61.3	29.7	-82.80	-315.4	1,207.5	2,786.9	2,708.2	78.63	35.444	
10,900.0	7,839.7	7,925.4	7,731.7	63.1	29.7	-82.67	-315.5	1,207.4	2,883.8	2,803.3	80.44	35.849	
11,000.0	7,840.3	7,923.7	7,730.1	65.0	29.7	-82.54	-315.5	1,207.3	2,980.9	2,898.6	82.26	36.237	
11,100.0	7,840.8	7,922.1	7,728.5	66.8	29.7	-82.40	-315.5	1,207.2	3,078.2	2,994.1	84.08	36.610	
11,200.0	7,841.4	7,920.5	7,726.9	68.7	29.7	-82.27	-315.6	1,207.1	3,175.6	3,089.7	85.90	36.967	
11,300.0	7,841.9	7,918.9	7,725.3	70.5	29.7	-82.14	-315.6	1,207.0	3,273.2	3,185.5	87.73	37.311	
11,400.0	7,842.5	7,917.3	7,723.6	72.3	29.7	-82.01	-315.6	1,206.9	3,371.0	3,281.4	89.55	37.641	
11,500.0	7,843.1	7,915.7	7,722.0	74.2	29.7	-81.88	-315.7	1,206.7	3,468.9	3,377.5	91.38	37.959	
11,600.0	7,843.6	7,914.1	7,720.4	76.0	29.7	-81.75	-315.7	1,206.6	3,566.8	3,473.6	93.21	38.266	
11,700.0	7,844.2	7,912.4	7,718.8	77.9	29.7	-81.61	-315.7	1,206.5	3,664.9	3,569.9	95.04	38.561	
11,800.0	7,844.7	7,910.8	7,717.2	79.8	29.7	-81.48	-315.8	1,206.4	3,763.1	3,666.3	96.87	38.845	
11,900.0	7,845.3	7,909.2	7,715.6	81.6	29.7	-81.35	-315.8	1,206.3	3,861.4	3,762.7	98.71	39.120	
12,000.0	7,845.8	7,907.6	7,714.0	83.5	29.7	-81.22	-315.8	1,206.2	3,959.8	3,859.3	100.54	39.386	
12,100.0	7,846.4	7,906.0	7,712.4	85.4	29.7	-81.09	-315.9	1,206.1	4,058.3	3,955.9	102.37	39.642	
12,200.0	7,847.0	7,904.4	7,710.8	87.2	29.7	-80.96	-315.9	1,206.0	4,156.8	4,052.6	104.21	39.890	
12,300.0	7,847.5	7,902.7	7,709.1	89.1	29.7	-80.83	-315.9	1,205.9	4,255.4	4,149.4	106.04	40.131	
12,400.0	7,848.1	7,901.1	7,707.5	91.0	29.6	-80.69	-316.0	1,205.8	4,354.1	4,246.2	107.87	40.363	
12,500.0	7,848.6	7,899.5	7,705.9	92.8	29.6	-80.56	-316.0	1,205.7	4,452.8	4,343.1	109.71	40.589	
12,600.0	7,849.2	7,897.9	7,704.3	94.7	29.6	-80.43	-316.1	1,205.6	4,551.6	4,440.0	111.54	40.807	
12,700.0	7,849.8	7,896.3	7,702.7	96.6	29.6	-80.30	-316.1	1,205.5	4,650.4	4,537.0	113.37	41.020	
12,800.0	7,850.3	7,894.7	7,701.1	98.5	29.6	-80.17	-316.1	1,205.4	4,749.3	4,634.1	115.20	41.226	
12,900.0	7,850.9	7,893.1	7,699.5	100.4	29.6	-80.04	-316.2	1,205.3	4,848.2	4,731.1	117.03	41.426	
13,000.0	7,851.4	7,891.4	7,697.9	102.2	29.6	-79.91	-316.2	1,205.2	4,947.1	4,828.3	118.86	41.620	
13,100.0	7,852.0	7,889.8	7,696.2	104.1	29.6	-79.78	-316.2	1,205.1	5,046.1	4,925.5	120.69	41.810	
13,200.0	7,852.6	7,888.2	7,694.6	106.0	29.6	-79.65	-316.3	1,205.0	5,145.2	5,022.7	122.52	41.994	
13,300.0	7,853.1	7,886.6	7,693.0	107.9	29.6	-79.52	-316.3	1,204.9	5,244.3	5,119.9	124.35	42.173	
13,400.0	7,853.7	7,885.0	7,691.4	109.8	29.6	-79.39	-316.3	1,204.8	5,343.4	5,217.2	126.18	42.348	
13,500.0	7,854.2	7,883.4	7,689.8	111.7	29.6	-79.26	-316.4	1,204.7	5,442.5	5,314.5	128.00	42.519	
13,600.0	7,854.8	7,881.7	7,688.2	113.6	29.6	-79.13	-316.4	1,204.6	5,541.7	5,411.9	129.83	42.685	
13,700.0	7,855.3	7,880.1	7,686.6	115.4	29.6	-79.00	-316.4	1,204.5	5,640.9	5,509.2	131.65	42.847	
13,800.0	7,855.9	7,878.5	7,685.0	117.3	29.6	-78.87	-316.5	1,204.4	5,740.1	5,606.7	133.47	43.006	
13,900.0	7,856.5	7,876.9	7,683.4	119.2	29.6	-78.74	-316.5	1,204.3	5,839.4	5,704.1	135.29	43.160	
14,000.0	7,857.0	7,875.3	7,681.7	121.1	29.6	-78.61	-316.5	1,204.2	5,938.7	5,801.5	137.11	43.312	
14,100.0	7,857.6	7,873.7	7,680.1	123.0	29.6	-78.48	-316.6	1,204.1	6,038.0	5,899.0	138.93	43.460	
14,200.0	7,858.1	7,872.1	7,678.5	124.9	29.6	-78.35	-316.6	1,204.0	6,137.3	5,996.5	140.75	43.604	
14,300.0	7,858.7	7,870.4	7,676.9	126.8	29.6	-78.22	-316.6	1,203.9	6,236.6	6,094.1	142.57	43.746	
14,400.0	7,859.3	7,868.8	7,675.3	128.7	29.6	-78.09	-316.7	1,203.8	6,336.0	6,191.6	144.38	43.884	
14,500.0	7,859.8	7,867.2	7,673.7	130.6	29.6	-77.96	-316.7	1,203.7	6,435.4	6,289.2	146.19	44.020	
14,600.0	7,860.4	7,865.6	7,672.1	132.5	29.6	-77.83	-316.8	1,203.6	6,534.8	6,386.8	148.00	44.153	
14,700.0	7,860.9	7,864.0	7,670.5	134.4	29.6	-77.70	-316.8	1,203.5	6,634.2	6,484.4	149.81	44.284	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Jacobucci 43-32 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 1105-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
14,712.8	7,861.0	7,863.8	7,670.3	134.6	29.6	-77.68	-316.8	1,203.5	6,646.9	6,496.9	150.00	44.314	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Jacobucci Jean 1 (SI) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 8062-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	19.0	19.0	0.0	0.4	163.04	-1,672.0	509.9	1,748.1	1,747.7	0.38	4,597.751	
100.0	100.0	119.0	119.0	0.1	2.4	163.04	-1,672.0	509.9	1,748.1	1,745.6	2.49	701.307	
200.0	200.0	219.0	219.0	0.3	4.4	163.04	-1,672.0	509.9	1,748.1	1,743.3	4.72	370.561	
300.0	300.0	319.0	319.0	0.6	6.4	163.04	-1,672.0	509.9	1,748.1	1,741.1	6.94	251.806	
400.0	400.0	419.0	419.0	0.8	8.4	163.04	-1,672.0	509.9	1,748.1	1,738.9	9.17	190.693	
500.0	500.0	519.0	519.0	1.0	10.4	163.04	-1,672.0	509.9	1,748.1	1,736.7	11.39	153.451	
600.0	600.0	619.0	619.0	1.2	12.4	163.04	-1,672.0	509.9	1,748.1	1,734.4	13.62	128.379	
700.0	700.0	719.0	719.0	1.5	14.4	163.04	-1,672.0	509.9	1,748.1	1,732.2	15.84	110.349	
800.0	800.0	819.0	819.0	1.7	16.4	163.04	-1,672.0	509.9	1,748.1	1,730.0	18.07	96.760	
900.0	900.0	919.0	919.0	1.9	18.4	163.04	-1,672.0	509.9	1,748.1	1,727.8	20.29	86.151	
1,000.0	1,000.0	1,019.0	1,019.0	2.1	20.4	163.04	-1,672.0	509.9	1,748.1	1,725.5	22.52	77.638	
1,100.0	1,100.0	1,119.0	1,119.0	2.4	22.4	163.04	-1,672.0	509.9	1,748.1	1,723.3	24.74	70.657	
1,200.0	1,200.0	1,219.0	1,219.0	2.6	24.4	163.04	-1,672.0	509.9	1,748.1	1,721.1	26.96	64.827	
1,300.0	1,300.0	1,319.0	1,319.0	2.8	26.4	163.04	-1,672.0	509.9	1,748.1	1,718.9	29.19	59.886	
1,400.0	1,400.0	1,419.0	1,419.0	3.0	28.4	163.04	-1,672.0	509.9	1,748.1	1,716.6	31.41	55.645	
1,500.0	1,500.0	1,519.0	1,519.0	3.3	30.4	99.26	-1,672.0	509.9	1,748.3	1,714.7	33.63	51.986	
1,600.0	1,599.8	1,618.8	1,618.8	3.5	32.4	99.42	-1,672.0	509.9	1,749.2	1,713.4	35.84	48.805	
1,700.0	1,699.5	1,718.5	1,718.5	3.7	34.4	99.67	-1,672.0	509.9	1,750.6	1,712.6	38.05	46.006	
1,800.0	1,798.7	1,817.7	1,817.7	3.9	36.4	100.02	-1,672.0	509.9	1,752.7	1,712.5	40.27	43.525	
1,900.0	1,897.7	1,916.7	1,916.7	4.2	38.3	100.46	-1,672.0	509.9	1,755.2	1,712.7	42.50	41.296	
2,000.0	1,996.8	2,015.8	2,015.8	4.4	40.3	100.89	-1,672.0	509.9	1,757.8	1,713.0	44.75	39.282	
2,100.0	2,095.8	2,114.8	2,114.8	4.7	42.3	101.33	-1,672.0	509.9	1,760.5	1,713.5	47.00	37.455	
2,200.0	2,194.9	2,213.9	2,213.9	5.0	44.3	101.77	-1,672.0	509.9	1,763.3	1,714.0	49.26	35.792	
2,300.0	2,293.9	2,312.9	2,312.9	5.3	46.3	102.20	-1,672.0	509.9	1,766.2	1,714.6	51.53	34.273	
2,400.0	2,393.0	2,412.0	2,412.0	5.6	48.2	102.63	-1,672.0	509.9	1,769.1	1,715.3	53.80	32.881	
2,500.0	2,492.0	2,511.0	2,511.0	5.9	50.2	103.06	-1,672.0	509.9	1,772.2	1,716.2	56.08	31.601	
2,600.0	2,591.1	2,610.1	2,610.1	6.2	52.2	103.49	-1,672.0	509.9	1,775.4	1,717.1	58.36	30.421	
2,700.0	2,690.1	2,709.1	2,709.1	6.5	54.2	103.92	-1,672.0	509.9	1,778.7	1,718.1	60.65	29.330	
2,800.0	2,789.1	2,808.1	2,808.1	6.8	56.2	104.35	-1,672.0	509.9	1,782.1	1,719.2	62.93	28.318	
2,900.0	2,888.2	2,907.2	2,907.2	7.1	58.1	104.77	-1,672.0	509.9	1,785.6	1,720.4	65.22	27.379	
3,000.0	2,987.2	3,006.2	3,006.2	7.5	60.1	105.20	-1,672.0	509.9	1,789.2	1,721.7	67.51	26.504	
3,100.0	3,086.3	3,105.3	3,105.3	7.8	62.1	105.62	-1,672.0	509.9	1,792.9	1,723.1	69.80	25.687	
3,200.0	3,185.3	3,204.3	3,204.3	8.1	64.1	106.04	-1,672.0	509.9	1,796.7	1,724.6	72.09	24.923	
3,300.0	3,284.4	3,303.4	3,303.4	8.4	66.1	106.46	-1,672.0	509.9	1,800.6	1,726.2	74.38	24.207	
3,400.0	3,383.4	3,402.4	3,402.4	8.7	68.0	106.87	-1,672.0	509.9	1,804.6	1,727.9	76.68	23.535	
3,500.0	3,482.5	3,501.5	3,501.5	9.1	70.0	107.29	-1,672.0	509.9	1,808.7	1,729.7	78.97	22.904	
3,600.0	3,581.5	3,600.5	3,600.5	9.4	72.0	107.70	-1,672.0	509.9	1,812.9	1,731.6	81.26	22.309	
3,700.0	3,680.5	3,699.5	3,699.5	9.7	74.0	108.11	-1,672.0	509.9	1,817.2	1,733.6	83.56	21.748	
3,800.0	3,779.6	3,798.6	3,798.6	10.1	76.0	108.52	-1,672.0	509.9	1,821.5	1,735.7	85.85	21.218	
3,900.0	3,878.6	3,897.6	3,897.6	10.4	78.0	108.93	-1,672.0	509.9	1,826.0	1,737.9	88.14	20.716	
4,000.0	3,977.7	3,996.7	3,996.7	10.7	79.9	109.33	-1,672.0	509.9	1,830.6	1,740.1	90.44	20.241	
4,100.0	4,076.7	4,095.7	4,095.7	11.0	81.9	109.73	-1,672.0	509.9	1,835.2	1,742.5	92.73	19.791	
4,200.0	4,175.8	4,194.8	4,194.8	11.4	83.9	110.13	-1,672.0	509.9	1,839.9	1,744.9	95.02	19.363	
4,300.0	4,274.8	4,293.8	4,293.8	11.7	85.9	110.53	-1,672.0	509.9	1,844.8	1,747.5	97.31	18.957	
4,400.0	4,373.9	4,392.9	4,392.9	12.0	87.9	110.93	-1,672.0	509.9	1,849.7	1,750.1	99.61	18.570	
4,500.0	4,472.9	4,491.9	4,491.9	12.4	89.8	111.33	-1,672.0	509.9	1,854.7	1,752.8	101.90	18.202	
4,600.0	4,571.9	4,590.9	4,590.9	12.7	91.8	111.72	-1,672.0	509.9	1,859.8	1,755.6	104.19	17.851	
4,700.0	4,671.0	4,690.0	4,690.0	13.0	93.8	112.11	-1,672.0	509.9	1,865.0	1,758.5	106.48	17.516	
4,800.0	4,770.0	4,789.0	4,789.0	13.4	95.8	112.50	-1,672.0	509.9	1,870.3	1,761.5	108.77	17.196	
4,900.0	4,869.1	4,888.1	4,888.1	13.7	97.8	112.88	-1,672.0	509.9	1,875.6	1,764.6	111.05	16.890	
5,000.0	4,968.1	4,987.1	4,987.1	14.0	99.7	113.27	-1,672.0	509.9	1,881.1	1,767.8	113.34	16.597	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Jacobucci Jean 1 (SI) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 8062-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	5,067.2	5,086.2	5,086.2	14.4	101.7	113.65	-1,672.0	509.9	1,886.6	1,771.0	115.63	16.316	
5,200.0	5,166.2	5,185.2	5,185.2	14.7	103.7	114.03	-1,672.0	509.9	1,892.3	1,774.3	117.91	16.048	
5,300.0	5,265.3	5,284.3	5,284.3	15.1	105.7	114.40	-1,672.0	509.9	1,898.0	1,777.8	120.20	15.790	
5,400.0	5,364.3	5,383.3	5,383.3	15.4	107.7	114.78	-1,672.0	509.9	1,903.7	1,781.3	122.48	15.543	
5,500.0	5,463.3	5,482.3	5,482.3	15.7	109.6	115.15	-1,672.0	509.9	1,909.6	1,784.8	124.77	15.306	
5,600.0	5,562.5	5,581.5	5,581.5	16.0	111.6	115.57	-1,672.0	509.9	1,915.3	1,788.2	127.07	15.072	
5,700.0	5,661.9	5,680.9	5,680.9	16.3	113.6	115.91	-1,672.0	509.9	1,919.7	1,790.3	129.34	14.842	
5,800.0	5,761.7	5,780.7	5,780.7	16.5	115.6	116.14	-1,672.0	509.9	1,922.6	1,791.0	131.56	14.614	
5,900.0	5,861.7	5,880.7	5,880.7	16.6	117.6	116.25	-1,672.0	509.9	1,923.9	1,790.2	133.74	14.386	
6,000.0	5,961.7	5,980.7	5,980.7	16.8	119.6	-179.91	-1,672.0	509.9	1,924.0	1,788.2	135.89	14.159	
6,100.0	6,061.7	6,080.7	6,080.7	16.9	121.6	-179.91	-1,672.0	509.9	1,924.0	1,786.0	138.07	13.935	
6,200.0	6,161.7	6,180.7	6,180.7	17.1	123.6	-179.91	-1,672.0	509.9	1,924.0	1,783.8	140.25	13.719	
6,300.0	6,261.7	6,280.7	6,280.7	17.3	125.6	-179.91	-1,672.0	509.9	1,924.0	1,781.6	142.42	13.509	
6,400.0	6,361.7	6,380.7	6,380.7	17.5	127.6	-179.91	-1,672.0	509.9	1,924.0	1,779.4	144.60	13.306	
6,500.0	6,461.7	6,480.7	6,480.7	17.6	129.6	-179.91	-1,672.0	509.9	1,924.0	1,777.3	146.78	13.108	
6,600.0	6,561.7	6,580.7	6,580.7	17.8	131.6	-179.91	-1,672.0	509.9	1,924.0	1,775.1	148.96	12.916	
6,700.0	6,661.7	6,680.7	6,680.7	18.0	133.6	-179.91	-1,672.0	509.9	1,924.0	1,772.9	151.15	12.730	
6,800.0	6,761.7	6,780.7	6,780.7	18.2	135.6	-179.91	-1,672.0	509.9	1,924.0	1,770.7	153.33	12.548	
6,900.0	6,861.7	6,880.7	6,880.7	18.3	137.6	-179.91	-1,672.0	509.9	1,924.0	1,768.5	155.51	12.372	
7,000.0	6,961.7	6,980.7	6,980.7	18.5	139.6	-179.91	-1,672.0	509.9	1,924.0	1,766.4	157.70	12.201	
7,100.0	7,061.7	7,080.7	7,080.7	18.7	141.6	0.09	-1,672.0	509.9	1,924.0	1,764.2	159.88	12.034	
7,200.0	7,161.4	7,180.4	7,180.4	18.8	143.6	0.09	-1,672.0	509.9	1,917.5	1,756.9	160.60	11.939	
7,300.0	7,259.4	7,278.4	7,278.4	18.9	145.6	0.09	-1,672.0	509.9	1,897.9	1,739.4	158.51	11.973	
7,400.0	7,354.0	7,373.0	7,373.0	19.0	147.5	0.10	-1,672.0	509.9	1,865.7	1,712.1	153.58	12.148	
7,500.0	7,443.6	7,462.6	7,462.6	19.0	149.3	0.11	-1,672.0	509.9	1,821.5	1,675.7	145.81	12.492	
7,600.0	7,526.6	7,545.6	7,545.6	19.0	150.9	0.12	-1,672.0	509.9	1,765.9	1,630.6	135.31	13.051	
7,700.0	7,601.7	7,620.7	7,620.7	19.0	152.4	0.14	-1,672.0	509.9	1,700.0	1,577.7	122.25	13.906	
7,800.0	7,667.6	7,686.6	7,686.6	19.1	153.7	0.17	-1,672.0	509.9	1,624.8	1,517.9	106.89	15.201	
7,900.0	7,723.0	7,742.0	7,742.0	19.2	154.8	0.22	-1,672.0	509.9	1,541.7	1,452.1	89.57	17.212	
8,000.0	7,767.2	7,786.2	7,786.2	19.5	155.7	0.30	-1,672.0	509.9	1,452.0	1,381.3	70.73	20.530	
8,100.0	7,799.3	7,818.3	7,818.3	20.0	156.4	0.48	-1,672.0	509.9	1,357.4	1,306.5	50.87	26.684	
8,200.0	7,818.7	7,837.7	7,837.7	20.6	156.8	1.02	-1,672.0	509.9	1,259.4	1,228.7	30.66	41.071	
8,300.0	7,825.2	7,844.2	7,844.2	21.5	156.9	24.19	-1,672.0	509.9	1,159.7	1,083.9	75.77	15.305	
8,400.0	7,825.7	7,844.7	7,844.7	22.5	156.9	26.18	-1,672.0	509.9	1,059.7	978.1	81.52	13.000	
8,500.0	7,826.3	7,845.3	7,845.3	23.6	156.9	28.50	-1,672.0	509.9	959.7	871.5	88.16	10.886	
8,600.0	7,826.9	7,845.9	7,845.9	24.8	156.9	31.22	-1,672.0	509.9	859.7	763.8	95.85	8.968	
8,700.0	7,827.4	7,846.4	7,846.4	26.1	156.9	34.45	-1,672.0	509.9	759.7	654.9	104.79	7.250	
8,800.0	7,828.0	7,847.0	7,847.0	27.5	156.9	38.30	-1,672.0	509.9	659.7	544.5	115.13	5.730	
8,900.0	7,828.5	7,847.5	7,847.5	28.9	157.0	42.95	-1,672.0	509.9	559.7	432.7	127.02	4.406	
9,000.0	7,829.1	7,848.1	7,848.1	30.4	157.0	48.58	-1,672.0	509.9	459.7	319.3	140.41	3.274	
9,100.0	7,829.7	7,848.7	7,848.7	31.9	157.0	55.38	-1,672.0	509.9	359.7	204.7	154.95	2.321	
9,200.0	7,830.2	7,849.2	7,849.2	33.5	157.0	63.51	-1,672.0	509.9	259.7	90.1	169.63	1.531	
9,300.0	7,830.8	7,849.8	7,849.8	35.1	157.0	72.96	-1,672.0	509.9	159.7	-22.9	182.64	0.874	Level 1
9,400.0	7,831.3	7,850.3	7,850.3	36.7	157.0	83.47	-1,672.0	509.9	59.7	-131.8	191.51	0.312	Level 1
9,459.7	7,831.7	7,850.7	7,850.7	37.7	157.0	90.00	-1,672.0	509.9	2.9	-191.0	193.93	0.015	Level 1, CC, ES, SF
9,500.0	7,831.9	7,850.9	7,850.9	38.4	157.0	94.43	-1,672.0	509.9	40.4	-153.8	194.20	0.208	Level 1
9,600.0	7,832.4	7,851.4	7,851.4	40.1	157.0	105.07	-1,672.0	509.9	140.4	-49.9	190.29	0.738	Level 1
9,700.0	7,833.0	7,852.0	7,852.0	41.8	157.0	114.76	-1,672.0	509.9	240.3	59.0	181.31	1.326	Level 3
9,800.0	7,833.6	7,852.6	7,852.6	43.5	157.1	123.15	-1,672.0	509.9	340.3	170.7	169.58	2.007	
9,900.0	7,834.1	7,853.1	7,853.1	45.2	157.1	130.20	-1,672.0	509.9	440.3	283.2	157.15	2.802	

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 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Jacobucci Jean 1 (SI) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 8062-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
10,000.0	7,834.7	7,853.7	7,853.7	47.0	157.1	136.04	-1,672.0	509.9	540.3	395.1	145.26	3.720	
10,100.0	7,835.2	7,854.2	7,854.2	48.7	157.1	140.86	-1,672.0	509.9	640.3	505.8	134.49	4.761	
10,200.0	7,835.8	7,854.8	7,854.8	50.5	157.1	144.86	-1,672.0	509.9	740.3	615.3	125.02	5.921	
10,300.0	7,836.4	7,855.4	7,855.4	52.3	157.1	148.20	-1,672.0	509.9	840.3	723.5	116.82	7.194	
10,400.0	7,836.9	7,855.9	7,855.9	54.1	157.1	151.01	-1,672.0	509.9	940.3	830.6	109.75	8.568	
10,500.0	7,837.5	7,856.5	7,856.5	55.9	157.1	153.40	-1,672.0	509.9	1,040.3	936.6	103.67	10.035	
10,600.0	7,838.0	7,857.0	7,857.0	57.7	157.1	155.44	-1,672.0	509.9	1,140.3	1,041.9	98.45	11.583	
10,700.0	7,838.6	7,857.6	7,857.6	59.5	157.2	157.21	-1,672.0	509.9	1,240.3	1,146.4	93.94	13.203	
10,800.0	7,839.1	7,858.1	7,858.1	61.3	157.2	158.76	-1,672.0	509.9	1,340.3	1,250.3	90.06	14.883	
10,900.0	7,839.7	7,858.7	7,858.7	63.1	157.2	160.11	-1,672.0	509.9	1,440.3	1,353.6	86.69	16.614	
11,000.0	7,840.3	7,859.3	7,859.3	65.0	157.2	161.31	-1,672.0	509.9	1,540.3	1,456.5	83.77	18.387	
11,100.0	7,840.8	7,859.8	7,859.8	66.8	157.2	162.38	-1,672.0	509.9	1,640.3	1,559.1	81.23	20.194	
11,200.0	7,841.4	7,860.4	7,860.4	68.7	157.2	163.33	-1,672.0	509.9	1,740.3	1,661.3	79.02	22.025	
11,300.0	7,841.9	7,860.9	7,860.9	70.5	157.2	164.19	-1,672.0	509.9	1,840.3	1,763.2	77.09	23.873	
11,400.0	7,842.5	7,861.5	7,861.5	72.3	157.2	164.97	-1,672.0	509.9	1,940.3	1,864.9	75.40	25.732	
11,500.0	7,843.1	7,862.1	7,862.1	74.2	157.2	165.67	-1,672.0	509.9	2,040.3	1,966.4	73.94	27.595	
11,600.0	7,843.6	7,862.6	7,862.6	76.0	157.3	166.32	-1,672.0	509.9	2,140.3	2,067.6	72.66	29.458	
11,700.0	7,844.2	7,863.2	7,863.2	77.9	157.3	166.91	-1,672.0	509.9	2,240.3	2,168.8	71.54	31.314	
11,800.0	7,844.7	7,863.7	7,863.7	79.8	157.3	167.45	-1,672.0	509.9	2,340.3	2,269.7	70.58	33.160	
11,900.0	7,845.3	7,864.3	7,864.3	81.6	157.3	167.95	-1,672.0	509.9	2,440.3	2,370.6	69.74	34.992	
12,000.0	7,845.8	7,864.8	7,864.8	83.5	157.3	168.41	-1,672.0	509.9	2,540.3	2,471.3	69.02	36.806	
12,100.0	7,846.4	7,865.4	7,865.4	85.4	157.3	168.84	-1,672.0	509.9	2,640.3	2,571.9	68.40	38.599	
12,200.0	7,847.0	7,866.0	7,866.0	87.2	157.3	169.23	-1,672.0	509.9	2,740.3	2,672.4	67.88	40.369	
12,300.0	7,847.5	7,866.5	7,866.5	89.1	157.3	169.61	-1,672.0	509.9	2,840.3	2,772.8	67.44	42.113	
12,400.0	7,848.1	7,867.1	7,867.1	91.0	157.3	169.95	-1,672.0	509.9	2,940.3	2,873.2	67.08	43.831	
12,500.0	7,848.6	7,867.6	7,867.6	92.8	157.4	170.28	-1,672.0	509.9	3,040.3	2,973.5	66.79	45.520	
12,600.0	7,849.2	7,868.2	7,868.2	94.7	157.4	170.58	-1,672.0	509.9	3,140.3	3,073.7	66.56	47.179	
12,700.0	7,849.8	7,868.8	7,868.8	96.6	157.4	170.87	-1,672.0	509.9	3,240.3	3,173.9	66.39	48.807	
12,800.0	7,850.3	7,869.3	7,869.3	98.5	157.4	171.13	-1,672.0	509.9	3,340.3	3,274.0	66.27	50.404	
12,900.0	7,850.9	7,869.9	7,869.9	100.4	157.4	171.39	-1,672.0	509.9	3,440.3	3,374.1	66.20	51.969	
13,000.0	7,851.4	7,870.4	7,870.4	102.2	157.4	171.63	-1,672.0	509.9	3,540.3	3,474.1	66.17	53.502	
13,100.0	7,852.0	7,871.0	7,871.0	104.1	157.4	171.85	-1,672.0	509.9	3,640.3	3,574.1	66.19	55.001	
13,200.0	7,852.6	7,871.6	7,871.6	106.0	157.4	172.07	-1,672.0	509.9	3,740.3	3,674.0	66.24	56.469	
13,300.0	7,853.1	7,872.1	7,872.1	107.9	157.4	172.27	-1,672.0	509.9	3,840.3	3,773.9	66.32	57.903	
13,400.0	7,853.7	7,872.7	7,872.7	109.8	157.5	172.47	-1,672.0	509.9	3,940.3	3,873.8	66.44	59.305	
13,500.0	7,854.2	7,873.2	7,873.2	111.7	157.5	172.65	-1,672.0	509.9	4,040.3	3,973.7	66.59	60.675	
13,600.0	7,854.8	7,873.8	7,873.8	113.6	157.5	172.83	-1,672.0	509.9	4,140.3	4,073.5	66.76	62.013	
13,700.0	7,855.3	7,874.3	7,874.3	115.4	157.5	172.99	-1,672.0	509.9	4,240.3	4,173.3	66.97	63.320	
13,800.0	7,855.9	7,874.9	7,874.9	117.3	157.5	173.15	-1,672.0	509.9	4,340.3	4,273.1	67.19	64.595	
13,900.0	7,856.5	7,875.5	7,875.5	119.2	157.5	173.31	-1,672.0	509.9	4,440.3	4,372.8	67.44	65.841	
14,000.0	7,857.0	7,876.0	7,876.0	121.1	157.5	173.45	-1,672.0	509.9	4,540.3	4,472.5	67.71	67.056	
14,100.0	7,857.6	7,876.6	7,876.6	123.0	157.5	173.59	-1,672.0	509.9	4,640.3	4,572.3	68.00	68.241	
14,200.0	7,858.1	7,877.1	7,877.1	124.9	157.5	173.73	-1,672.0	509.9	4,740.3	4,671.9	68.31	69.398	
14,300.0	7,858.7	7,877.7	7,877.7	126.8	157.6	173.86	-1,672.0	509.9	4,840.3	4,771.6	68.63	70.527	
14,400.0	7,859.3	7,878.3	7,878.3	128.7	157.6	173.98	-1,672.0	509.9	4,940.3	4,871.3	68.97	71.628	
14,500.0	7,859.8	7,878.8	7,878.8	130.6	157.6	174.10	-1,672.0	509.9	5,040.2	4,970.9	69.33	72.702	
14,600.0	7,860.4	7,879.4	7,879.4	132.5	157.6	174.21	-1,672.0	509.9	5,140.2	5,070.5	69.70	73.749	
14,700.0	7,860.9	7,879.9	7,879.9	134.4	157.6	174.32	-1,672.0	509.9	5,240.2	5,170.2	70.08	74.771	
14,712.8	7,861.0	7,880.0	7,880.0	134.6	157.6	174.34	-1,672.0	509.9	5,253.0	5,182.9	70.09	74.949	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Mark Degenhart 11 (P&A) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 5151-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	48.0	48.0	0.0	1.0	176.69	-4,291.6	248.5	4,298.8	4,297.9	0.96	4,477.014	
100.0	100.0	148.0	148.0	0.1	3.0	176.69	-4,291.6	248.5	4,298.8	4,295.7	3.07	1,399.093	
200.0	200.0	248.0	248.0	0.3	5.0	176.69	-4,291.6	248.5	4,298.8	4,293.5	5.30	811.506	
300.0	300.0	348.0	348.0	0.6	7.0	176.69	-4,291.6	248.5	4,298.8	4,291.3	7.52	571.492	
400.0	400.0	448.0	448.0	0.8	9.0	176.69	-4,291.6	248.5	4,298.8	4,289.1	9.75	441.047	
500.0	500.0	548.0	548.0	1.0	11.0	176.69	-4,291.6	248.5	4,298.8	4,286.8	11.97	359.084	
600.0	600.0	648.0	648.0	1.2	13.0	176.69	-4,291.6	248.5	4,298.8	4,284.6	14.20	302.811	
700.0	700.0	748.0	748.0	1.5	15.0	176.69	-4,291.6	248.5	4,298.8	4,282.4	16.42	261.786	
800.0	800.0	848.0	848.0	1.7	17.0	176.69	-4,291.6	248.5	4,298.8	4,280.2	18.65	230.550	
900.0	900.0	948.0	948.0	1.9	19.0	176.69	-4,291.6	248.5	4,298.8	4,278.0	20.87	205.974	
1,000.0	1,000.0	1,048.0	1,048.0	2.1	21.0	176.69	-4,291.6	248.5	4,298.8	4,275.7	23.10	186.133	
1,100.0	1,100.0	1,148.0	1,148.0	2.4	23.0	176.69	-4,291.6	248.5	4,298.8	4,273.5	25.32	169.778	
1,200.0	1,200.0	1,248.0	1,248.0	2.6	25.0	176.69	-4,291.6	248.5	4,298.8	4,271.3	27.54	156.066	
1,300.0	1,300.0	1,348.0	1,348.0	2.8	27.0	176.69	-4,291.6	248.5	4,298.8	4,269.1	29.77	144.402	
1,400.0	1,400.0	1,448.0	1,448.0	3.0	29.0	176.69	-4,291.6	248.5	4,298.8	4,266.8	31.99	134.361	
1,500.0	1,500.0	1,548.0	1,548.0	3.3	31.0	112.87	-4,291.6	248.5	4,299.5	4,265.3	34.21	125.684	
1,600.0	1,599.8	1,647.8	1,647.8	3.5	33.0	112.89	-4,291.6	248.5	4,301.5	4,265.1	36.41	118.141	
1,700.0	1,699.5	1,747.5	1,747.5	3.7	34.9	112.94	-4,291.6	248.5	4,304.9	4,266.3	38.61	111.507	
1,800.0	1,798.7	1,846.7	1,846.7	3.9	36.9	113.00	-4,291.6	248.5	4,309.7	4,268.9	40.80	105.624	
1,900.0	1,897.7	1,945.7	1,945.7	4.2	38.9	113.17	-4,291.6	248.5	4,315.2	4,272.1	43.03	100.281	
2,000.0	1,996.8	2,044.8	2,044.8	4.4	40.9	113.33	-4,291.6	248.5	4,320.7	4,275.4	45.27	95.442	
2,100.0	2,095.8	2,143.8	2,143.8	4.7	42.9	113.50	-4,291.6	248.5	4,326.2	4,278.7	47.52	91.045	
2,200.0	2,194.9	2,242.9	2,242.9	5.0	44.9	113.67	-4,291.6	248.5	4,331.8	4,282.0	49.77	87.033	
2,300.0	2,293.9	2,341.9	2,341.9	5.3	46.8	113.83	-4,291.6	248.5	4,337.4	4,285.3	52.03	83.360	
2,400.0	2,393.0	2,441.0	2,441.0	5.6	48.8	114.00	-4,291.6	248.5	4,343.0	4,288.7	54.30	79.987	
2,500.0	2,492.0	2,540.0	2,540.0	5.9	50.8	114.16	-4,291.6	248.5	4,348.7	4,292.1	56.57	76.879	
2,600.0	2,591.1	2,639.1	2,639.1	6.2	52.8	114.33	-4,291.6	248.5	4,354.4	4,295.5	58.84	74.007	
2,700.0	2,690.1	2,738.1	2,738.1	6.5	54.8	114.49	-4,291.6	248.5	4,360.1	4,299.0	61.11	71.346	
2,800.0	2,789.1	2,837.1	2,837.1	6.8	56.7	114.65	-4,291.6	248.5	4,365.9	4,302.5	63.39	68.874	
2,900.0	2,888.2	2,936.2	2,936.2	7.1	58.7	114.82	-4,291.6	248.5	4,371.7	4,306.0	65.67	66.571	
3,000.0	2,987.2	3,035.2	3,035.2	7.5	60.7	114.98	-4,291.6	248.5	4,377.6	4,309.6	67.95	64.423	
3,100.0	3,086.3	3,134.3	3,134.3	7.8	62.7	115.14	-4,291.6	248.5	4,383.5	4,313.2	70.23	62.413	
3,200.0	3,185.3	3,233.3	3,233.3	8.1	64.7	115.30	-4,291.6	248.5	4,389.4	4,316.9	72.52	60.528	
3,300.0	3,284.4	3,332.4	3,332.4	8.4	66.6	115.46	-4,291.6	248.5	4,395.3	4,320.5	74.80	58.759	
3,400.0	3,383.4	3,431.4	3,431.4	8.7	68.6	115.62	-4,291.6	248.5	4,401.3	4,324.2	77.09	57.095	
3,500.0	3,482.5	3,530.5	3,530.5	9.1	70.6	115.78	-4,291.6	248.5	4,407.4	4,328.0	79.38	55.526	
3,600.0	3,581.5	3,629.5	3,629.5	9.4	72.6	115.94	-4,291.6	248.5	4,413.4	4,331.8	81.66	54.045	
3,700.0	3,680.5	3,728.5	3,728.5	9.7	74.6	116.10	-4,291.6	248.5	4,419.5	4,335.6	83.95	52.645	
3,800.0	3,779.6	3,827.6	3,827.6	10.1	76.6	116.26	-4,291.6	248.5	4,425.7	4,339.4	86.24	51.319	
3,900.0	3,878.6	3,926.6	3,926.6	10.4	78.5	116.42	-4,291.6	248.5	4,431.8	4,343.3	88.53	50.062	
4,000.0	3,977.7	4,025.7	4,025.7	10.7	80.5	116.58	-4,291.6	248.5	4,438.0	4,347.2	90.82	48.869	
4,100.0	4,076.7	4,124.7	4,124.7	11.0	82.5	116.74	-4,291.6	248.5	4,444.3	4,351.2	93.10	47.734	
4,200.0	4,175.8	4,223.8	4,223.8	11.4	84.5	116.90	-4,291.6	248.5	4,450.5	4,355.1	95.39	46.654	
4,300.0	4,274.8	4,322.8	4,322.8	11.7	86.5	117.05	-4,291.6	248.5	4,456.8	4,359.2	97.68	45.626	
4,400.0	4,373.9	4,421.9	4,421.9	12.0	88.4	117.21	-4,291.6	248.5	4,463.2	4,363.2	99.97	44.644	
4,500.0	4,472.9	4,520.9	4,520.9	12.4	90.4	117.36	-4,291.6	248.5	4,469.5	4,367.3	102.26	43.707	
4,600.0	4,571.9	4,619.9	4,619.9	12.7	92.4	117.52	-4,291.6	248.5	4,475.9	4,371.4	104.55	42.811	
4,700.0	4,671.0	4,719.0	4,719.0	13.0	94.4	117.68	-4,291.6	248.5	4,482.4	4,375.5	106.84	41.954	
4,800.0	4,770.0	4,818.0	4,818.0	13.4	96.4	117.83	-4,291.6	248.5	4,488.9	4,379.7	109.13	41.134	
4,900.0	4,869.1	4,917.1	4,917.1	13.7	98.3	117.98	-4,291.6	248.5	4,495.4	4,383.9	111.42	40.347	
5,000.0	4,968.1	5,016.1	5,016.1	14.0	100.3	118.14	-4,291.6	248.5	4,501.9	4,388.2	113.71	39.592	

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 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Mark Degenhart 11 (P&A) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 5151-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	5,067.2	5,115.2	5,115.2	14.4	102.3	118.29	-4,291.6	248.5	4,508.5	4,392.5	115.99	38.868	
5,200.0	5,166.2	5,151.0	5,151.0	14.7	103.0	118.35	-4,291.6	248.5	4,515.5	4,398.5	117.03	38.585	
5,300.0	5,265.3	5,151.0	5,151.0	15.1	103.0	118.35	-4,291.6	248.5	4,524.6	4,407.3	117.35	38.558	
5,400.0	5,364.3	5,151.0	5,151.0	15.4	103.0	118.35	-4,291.6	248.5	4,535.9	4,418.2	117.67	38.549	SF
5,500.0	5,463.3	5,151.0	5,151.0	15.7	103.0	118.35	-4,291.6	248.5	4,549.4	4,431.4	117.99	38.559	
5,600.0	5,562.5	5,151.0	5,151.0	16.0	103.0	118.51	-4,291.6	248.5	4,564.7	4,446.4	118.33	38.575	
5,700.0	5,661.9	5,151.0	5,151.0	16.3	103.0	118.79	-4,291.6	248.5	4,580.7	4,462.1	118.62	38.618	
5,800.0	5,761.7	5,151.0	5,151.0	16.5	103.0	119.08	-4,291.6	248.5	4,597.1	4,478.3	118.84	38.682	
5,900.0	5,861.7	5,151.0	5,151.0	16.6	103.0	119.38	-4,291.6	248.5	4,614.0	4,495.0	119.02	38.768	
6,000.0	5,961.7	5,151.0	5,151.0	16.8	103.0	-176.67	-4,291.6	248.5	4,631.6	4,512.4	119.16	38.867	
6,100.0	6,061.7	5,151.0	5,151.0	16.9	103.0	-176.67	-4,291.6	248.5	4,651.2	4,531.8	119.34	38.974	
6,200.0	6,161.7	5,151.0	5,151.0	17.1	103.0	-176.67	-4,291.6	248.5	4,672.8	4,553.3	119.52	39.097	
6,300.0	6,261.7	5,151.0	5,151.0	17.3	103.0	-176.67	-4,291.6	248.5	4,696.5	4,576.8	119.70	39.236	
6,400.0	6,361.7	5,151.0	5,151.0	17.5	103.0	-176.67	-4,291.6	248.5	4,722.1	4,602.3	119.88	39.391	
6,500.0	6,461.7	5,151.0	5,151.0	17.6	103.0	-176.67	-4,291.6	248.5	4,749.8	4,629.7	120.06	39.561	
6,600.0	6,561.7	5,151.0	5,151.0	17.8	103.0	-176.67	-4,291.6	248.5	4,779.3	4,659.1	120.24	39.747	
6,700.0	6,661.7	5,151.0	5,151.0	18.0	103.0	-176.67	-4,291.6	248.5	4,810.8	4,690.4	120.43	39.948	
6,800.0	6,761.7	5,151.0	5,151.0	18.2	103.0	-176.67	-4,291.6	248.5	4,844.1	4,723.5	120.61	40.163	
6,900.0	6,861.7	5,151.0	5,151.0	18.3	103.0	-176.67	-4,291.6	248.5	4,879.3	4,758.5	120.80	40.392	
7,000.0	6,961.7	5,151.0	5,151.0	18.5	103.0	-176.67	-4,291.6	248.5	4,916.2	4,795.2	120.98	40.635	
7,100.0	7,061.7	5,151.0	5,151.0	18.7	103.0	3.33	-4,291.6	248.5	4,954.9	4,833.7	121.17	40.892	
7,200.0	7,161.4	5,151.0	5,151.0	18.8	103.0	3.17	-4,291.6	248.5	4,989.1	4,868.9	120.25	41.489	
7,300.0	7,259.4	5,151.0	5,151.0	18.9	103.0	3.07	-4,291.6	248.5	5,012.7	4,895.4	117.32	42.725	
7,400.0	7,354.0	5,151.0	5,151.0	19.0	103.0	3.02	-4,291.6	248.5	5,025.4	4,913.0	112.45	44.688	
7,500.0	7,443.6	5,151.0	5,151.0	19.0	103.0	3.02	-4,291.6	248.5	5,027.0	4,921.3	105.74	47.541	
7,600.0	7,526.6	5,151.0	5,151.0	19.0	103.0	3.05	-4,291.6	248.5	5,017.6	4,920.3	97.33	51.554	
7,700.0	7,601.7	5,151.0	5,151.0	19.0	103.0	3.14	-4,291.6	248.5	4,997.2	4,909.8	87.39	57.181	
7,800.0	7,667.6	5,151.0	5,151.0	19.1	103.0	3.28	-4,291.6	248.5	4,966.1	4,889.9	76.17	65.199	
7,900.0	7,723.0	5,151.0	5,151.0	19.2	103.0	3.48	-4,291.6	248.5	4,924.5	4,860.6	63.93	77.027	
8,000.0	7,767.2	5,151.0	5,151.0	19.5	103.0	3.76	-4,291.6	248.5	4,873.0	4,821.9	51.04	95.469	
8,100.0	7,799.3	5,151.0	5,151.0	20.0	103.0	4.16	-4,291.6	248.5	4,812.1	4,774.1	37.99	126.651	
8,200.0	7,818.7	5,151.0	5,151.0	20.6	103.0	4.73	-4,291.6	248.5	4,742.5	4,716.6	25.86	183.397	
8,300.0	7,825.2	5,151.0	5,151.0	21.5	103.0	5.50	-4,291.6	248.5	4,665.1	4,645.1	20.01	233.168	
8,400.0	7,825.7	5,151.0	5,151.0	22.5	103.0	5.50	-4,291.6	248.5	4,584.8	4,564.4	20.38	224.978	
8,500.0	7,826.3	5,151.0	5,151.0	23.6	103.0	5.50	-4,291.6	248.5	4,505.2	4,484.4	20.79	216.708	
8,600.0	7,826.9	5,151.0	5,151.0	24.8	103.0	5.50	-4,291.6	248.5	4,426.6	4,405.3	21.24	208.452	
8,700.0	7,827.4	5,151.0	5,151.0	26.1	103.0	5.50	-4,291.6	248.5	4,348.7	4,327.0	21.71	200.289	
8,800.0	7,828.0	5,151.0	5,151.0	27.5	103.0	5.50	-4,291.6	248.5	4,271.9	4,249.6	22.22	192.280	
8,900.0	7,828.5	5,151.0	5,151.0	28.9	103.0	5.50	-4,291.6	248.5	4,195.9	4,173.2	22.75	184.472	
9,000.0	7,829.1	5,151.0	5,151.0	30.4	103.0	5.50	-4,291.6	248.5	4,121.1	4,097.8	23.30	176.901	
9,100.0	7,829.7	5,151.0	5,151.0	31.9	103.0	5.50	-4,291.6	248.5	4,047.3	4,023.4	23.87	169.590	
9,200.0	7,830.2	5,151.0	5,151.0	33.5	103.0	5.50	-4,291.6	248.5	3,974.6	3,950.2	24.45	162.556	
9,300.0	7,830.8	5,151.0	5,151.0	35.1	103.0	5.50	-4,291.6	248.5	3,903.2	3,878.1	25.05	155.808	
9,400.0	7,831.3	5,151.0	5,151.0	36.7	103.0	5.50	-4,291.6	248.5	3,833.0	3,807.4	25.66	149.349	
9,500.0	7,831.9	5,151.0	5,151.0	38.4	103.0	5.50	-4,291.6	248.5	3,764.2	3,737.9	26.29	143.181	
9,600.0	7,832.4	5,151.0	5,151.0	40.1	103.0	5.50	-4,291.6	248.5	3,696.8	3,669.9	26.93	137.299	
9,700.0	7,833.0	5,151.0	5,151.0	41.8	103.0	5.50	-4,291.6	248.5	3,630.9	3,603.4	27.57	131.699	
9,800.0	7,833.6	5,151.0	5,151.0	43.5	103.0	5.50	-4,291.6	248.5	3,566.6	3,538.4	28.22	126.374	
9,900.0	7,834.1	5,151.0	5,151.0	45.2	103.0	5.50	-4,291.6	248.5	3,504.0	3,475.1	28.88	121.317	
10,000.0	7,834.7	5,151.0	5,151.0	47.0	103.0	5.50	-4,291.6	248.5	3,443.1	3,413.6	29.55	116.520	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Mark Degenhart 11 (P&A) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 5151-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
10,100.0	7,835.2	5,151.0	5,151.0	48.7	103.0	5.50	-4,291.6	248.5	3,384.1	3,353.9	30.22	111.974	
10,200.0	7,835.8	5,151.0	5,151.0	50.5	103.0	5.50	-4,291.6	248.5	3,327.1	3,296.2	30.90	107.670	
10,300.0	7,836.4	5,151.0	5,151.0	52.3	103.0	5.50	-4,291.6	248.5	3,272.1	3,240.6	31.58	103.601	
10,400.0	7,836.9	5,151.0	5,151.0	54.1	103.0	5.50	-4,291.6	248.5	3,219.3	3,187.1	32.27	99.757	
10,500.0	7,837.5	5,151.0	5,151.0	55.9	103.0	5.50	-4,291.6	248.5	3,168.8	3,135.8	32.96	96.131	
10,600.0	7,838.0	5,151.0	5,151.0	57.7	103.0	5.50	-4,291.6	248.5	3,120.7	3,087.0	33.66	92.715	
10,700.0	7,838.6	5,151.0	5,151.0	59.5	103.0	5.50	-4,291.6	248.5	3,075.0	3,040.7	34.36	89.501	
10,800.0	7,839.1	5,151.0	5,151.0	61.3	103.0	5.50	-4,291.6	248.5	3,032.0	2,996.9	35.06	86.482	
10,900.0	7,839.7	5,151.0	5,151.0	63.1	103.0	5.50	-4,291.6	248.5	2,991.7	2,955.9	35.76	83.651	
11,000.0	7,840.3	5,151.0	5,151.0	65.0	103.0	5.50	-4,291.6	248.5	2,954.2	2,917.7	36.47	81.001	
11,100.0	7,840.8	5,151.0	5,151.0	66.8	103.0	5.50	-4,291.6	248.5	2,919.7	2,882.5	37.18	78.526	
11,200.0	7,841.4	5,151.0	5,151.0	68.7	103.0	5.50	-4,291.6	248.5	2,888.2	2,850.3	37.89	76.220	
11,300.0	7,841.9	5,151.0	5,151.0	70.5	103.0	5.50	-4,291.6	248.5	2,859.9	2,821.3	38.61	74.077	
11,400.0	7,842.5	5,151.0	5,151.0	72.3	103.0	5.50	-4,291.6	248.5	2,834.8	2,795.5	39.32	72.091	
11,500.0	7,843.1	5,151.0	5,151.0	74.2	103.0	5.50	-4,291.6	248.5	2,813.1	2,773.0	40.04	70.256	
11,600.0	7,843.6	5,151.0	5,151.0	76.0	103.0	5.50	-4,291.6	248.5	2,794.7	2,754.0	40.76	68.566	
11,700.0	7,844.2	5,151.0	5,151.0	77.9	103.0	5.50	-4,291.6	248.5	2,779.9	2,738.4	41.48	67.016	
11,800.0	7,844.7	5,151.0	5,151.0	79.8	103.0	5.50	-4,291.6	248.5	2,768.6	2,726.4	42.20	65.601	
11,900.0	7,845.3	5,151.0	5,151.0	81.6	103.0	5.50	-4,291.6	248.5	2,760.8	2,717.9	42.93	64.315	
12,000.0	7,845.8	5,151.0	5,151.0	83.5	103.0	5.50	-4,291.6	248.5	2,756.7	2,713.0	43.65	63.152	
12,064.0	7,846.2	5,151.0	5,151.0	84.7	103.0	5.50	-4,291.6	248.5	2,755.9	2,711.8	44.12	62.470	CC
12,100.0	7,846.4	5,151.0	5,151.0	85.4	103.0	5.50	-4,291.6	248.5	2,756.2	2,711.8	44.38	62.107	ES
12,200.0	7,847.0	5,151.0	5,151.0	87.2	103.0	5.50	-4,291.6	248.5	2,759.3	2,714.2	45.11	61.175	
12,300.0	7,847.5	5,151.0	5,151.0	89.1	103.0	5.50	-4,291.6	248.5	2,766.0	2,720.2	45.83	60.350	
12,400.0	7,848.1	5,151.0	5,151.0	91.0	103.0	5.50	-4,291.6	248.5	2,776.4	2,729.8	46.56	59.626	
12,500.0	7,848.6	5,151.0	5,151.0	92.8	103.0	5.50	-4,291.6	248.5	2,790.2	2,742.9	47.29	58.999	
12,600.0	7,849.2	5,151.0	5,151.0	94.7	103.0	5.50	-4,291.6	248.5	2,807.6	2,759.6	48.02	58.462	
12,700.0	7,849.8	5,151.0	5,151.0	96.6	103.0	5.50	-4,291.6	248.5	2,828.4	2,779.6	48.76	58.011	
12,800.0	7,850.3	5,151.0	5,151.0	98.5	103.0	5.50	-4,291.6	248.5	2,852.5	2,803.1	49.49	57.641	
12,900.0	7,850.9	5,151.0	5,151.0	100.4	103.0	5.50	-4,291.6	248.5	2,880.0	2,829.7	50.22	57.345	
13,000.0	7,851.4	5,151.0	5,151.0	102.2	103.0	5.50	-4,291.6	248.5	2,910.6	2,859.6	50.96	57.119	
13,100.0	7,852.0	5,151.0	5,151.0	104.1	103.0	5.50	-4,291.6	248.5	2,944.2	2,892.6	51.69	56.959	
13,200.0	7,852.6	5,151.0	5,151.0	106.0	103.0	5.50	-4,291.6	248.5	2,980.9	2,928.5	52.43	56.860	
13,300.0	7,853.1	5,151.0	5,151.0	107.9	103.0	5.50	-4,291.6	248.5	3,020.4	2,967.3	53.16	56.816	
13,400.0	7,853.7	5,151.0	5,151.0	109.8	103.0	5.50	-4,291.6	248.5	3,062.7	3,008.8	53.90	56.824	
13,500.0	7,854.2	5,151.0	5,151.0	111.7	103.0	5.50	-4,291.6	248.5	3,107.6	3,053.0	54.64	56.880	
13,600.0	7,854.8	5,151.0	5,151.0	113.6	103.0	5.50	-4,291.6	248.5	3,155.1	3,099.7	55.37	56.979	
13,700.0	7,855.3	5,151.0	5,151.0	115.4	103.0	5.50	-4,291.6	248.5	3,205.0	3,148.9	56.11	57.119	
13,800.0	7,855.9	5,151.0	5,151.0	117.3	103.0	5.50	-4,291.6	248.5	3,257.2	3,200.3	56.85	57.295	
13,900.0	7,856.5	5,151.0	5,151.0	119.2	103.0	5.50	-4,291.6	248.5	3,311.5	3,253.9	57.59	57.504	
14,000.0	7,857.0	5,151.0	5,151.0	121.1	103.0	5.50	-4,291.6	248.5	3,368.0	3,309.7	58.33	57.743	
14,100.0	7,857.6	5,151.0	5,151.0	123.0	103.0	5.50	-4,291.6	248.5	3,426.5	3,367.4	59.07	58.010	
14,200.0	7,858.1	5,151.0	5,151.0	124.9	103.0	5.50	-4,291.6	248.5	3,486.8	3,427.0	59.81	58.301	
14,300.0	7,858.7	5,151.0	5,151.0	126.8	103.0	5.50	-4,291.6	248.5	3,549.0	3,488.4	60.55	58.614	
14,400.0	7,859.3	5,151.0	5,151.0	128.7	103.0	5.50	-4,291.6	248.5	3,612.8	3,551.5	61.29	58.947	
14,500.0	7,859.8	5,151.0	5,151.0	130.6	103.0	5.50	-4,291.6	248.5	3,678.2	3,616.2	62.03	59.298	
14,600.0	7,860.4	5,151.0	5,151.0	132.5	103.0	5.50	-4,291.6	248.5	3,745.2	3,682.4	62.77	59.665	
14,700.0	7,860.9	5,151.0	5,151.0	134.4	103.0	5.50	-4,291.6	248.5	3,813.6	3,750.1	63.51	60.045	
14,712.8	7,861.0	5,151.0	5,151.0	134.6	103.0	5.50	-4,291.6	248.5	3,822.5	3,758.9	63.56	60.138	

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 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Stonehocker 32-8 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 8664-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	106.0	106.0	0.0	2.1	178.73	-9,542.1	211.3	9,544.4	9,542.3	2.12	4,501.672	
100.0	100.0	206.0	206.0	0.1	4.1	178.73	-9,542.1	211.3	9,544.4	9,540.2	4.23	2,254.993	
200.0	200.0	306.0	306.0	0.3	6.1	178.73	-9,542.1	211.3	9,544.4	9,538.0	6.46	1,478.075	
300.0	300.0	406.0	406.0	0.6	8.1	178.73	-9,542.1	211.3	9,544.4	9,535.8	8.68	1,099.322	
400.0	400.0	506.0	506.0	0.8	10.1	178.73	-9,542.1	211.3	9,544.4	9,533.5	10.91	875.085	
500.0	500.0	606.0	606.0	1.0	12.1	178.73	-9,542.1	211.3	9,544.4	9,531.3	13.13	726.828	
600.0	600.0	706.0	706.0	1.2	14.1	178.73	-9,542.1	211.3	9,544.4	9,529.1	15.36	621.528	
700.0	700.0	806.0	806.0	1.5	16.1	178.73	-9,542.1	211.3	9,544.4	9,526.9	17.58	542.878	
800.0	800.0	906.0	906.0	1.7	18.1	178.73	-9,542.1	211.3	9,544.4	9,524.6	19.81	481.898	
900.0	900.0	1,006.0	1,006.0	1.9	20.1	178.73	-9,542.1	211.3	9,544.4	9,522.4	22.03	433.234	
1,000.0	1,000.0	1,106.0	1,106.0	2.1	22.1	178.73	-9,542.1	211.3	9,544.4	9,520.2	24.26	393.496	
1,100.0	1,100.0	1,206.0	1,206.0	2.4	24.1	178.73	-9,542.1	211.3	9,544.4	9,518.0	26.48	360.436	
1,200.0	1,200.0	1,306.0	1,306.0	2.6	26.1	178.73	-9,542.1	211.3	9,544.4	9,515.7	28.70	332.501	
1,300.0	1,300.0	1,406.0	1,406.0	2.8	28.1	178.73	-9,542.1	211.3	9,544.4	9,513.5	30.93	308.584	
1,400.0	1,400.0	1,506.0	1,506.0	3.0	30.1	178.73	-9,542.1	211.3	9,544.4	9,511.3	33.15	287.877	
1,500.0	1,500.0	1,606.0	1,606.0	3.3	32.1	114.90	-9,542.1	211.3	9,545.2	9,509.8	35.37	269.881	
1,600.0	1,599.8	1,705.8	1,705.8	3.5	34.1	114.89	-9,542.1	211.3	9,547.4	9,509.8	37.57	254.140	
1,700.0	1,699.5	1,805.5	1,805.5	3.7	36.1	114.87	-9,542.1	211.3	9,551.1	9,511.3	39.76	240.213	
1,800.0	1,798.7	1,904.7	1,904.7	3.9	38.1	114.84	-9,542.1	211.3	9,556.2	9,514.3	41.95	227.795	
1,900.0	1,897.7	2,003.7	2,003.7	4.2	40.1	114.92	-9,542.1	211.3	9,562.1	9,517.9	44.18	216.439	
2,000.0	1,996.8	2,102.8	2,102.8	4.4	42.1	114.99	-9,542.1	211.3	9,567.9	9,521.5	46.42	206.129	
2,100.0	2,095.8	2,201.8	2,201.8	4.7	44.0	115.07	-9,542.1	211.3	9,573.8	9,525.1	48.66	196.734	
2,200.0	2,194.9	2,300.9	2,300.9	5.0	46.0	115.14	-9,542.1	211.3	9,579.7	9,528.8	50.92	188.142	
2,300.0	2,293.9	2,399.9	2,399.9	5.3	48.0	115.21	-9,542.1	211.3	9,585.6	9,532.4	53.18	180.260	
2,400.0	2,393.0	2,499.0	2,499.0	5.6	50.0	115.29	-9,542.1	211.3	9,591.5	9,536.1	55.44	173.005	
2,500.0	2,492.0	2,598.0	2,598.0	5.9	52.0	115.36	-9,542.1	211.3	9,597.5	9,539.8	57.71	166.307	
2,600.0	2,591.1	2,697.1	2,697.1	6.2	53.9	115.44	-9,542.1	211.3	9,603.5	9,543.5	59.98	160.107	
2,700.0	2,690.1	2,796.1	2,796.1	6.5	55.9	115.51	-9,542.1	211.3	9,609.4	9,547.2	62.26	154.352	
2,800.0	2,789.1	2,895.1	2,895.1	6.8	57.9	115.58	-9,542.1	211.3	9,615.4	9,550.9	64.53	148.998	
2,900.0	2,888.2	2,994.2	2,994.2	7.1	59.9	115.66	-9,542.1	211.3	9,621.4	9,554.6	66.81	144.004	
3,000.0	2,987.2	3,093.2	3,093.2	7.5	61.9	115.73	-9,542.1	211.3	9,627.5	9,558.4	69.10	139.335	
3,100.0	3,086.3	3,192.3	3,192.3	7.8	63.8	115.80	-9,542.1	211.3	9,633.5	9,562.1	71.38	134.963	
3,200.0	3,185.3	3,291.3	3,291.3	8.1	65.8	115.88	-9,542.1	211.3	9,639.6	9,565.9	73.66	130.859	
3,300.0	3,284.4	3,390.4	3,390.4	8.4	67.8	115.95	-9,542.1	211.3	9,645.6	9,569.7	75.95	127.000	
3,400.0	3,383.4	3,489.4	3,489.4	8.7	69.8	116.02	-9,542.1	211.3	9,651.7	9,573.5	78.24	123.365	
3,500.0	3,482.5	3,588.5	3,588.5	9.1	71.8	116.10	-9,542.1	211.3	9,657.8	9,577.3	80.53	119.935	
3,600.0	3,581.5	3,687.5	3,687.5	9.4	73.8	116.17	-9,542.1	211.3	9,664.0	9,581.1	82.81	116.694	
3,700.0	3,680.5	3,786.5	3,786.5	9.7	75.7	116.24	-9,542.1	211.3	9,670.1	9,585.0	85.10	113.626	
3,800.0	3,779.6	3,885.6	3,885.6	10.1	77.7	116.31	-9,542.1	211.3	9,676.2	9,588.9	87.39	110.719	
3,900.0	3,878.6	3,984.6	3,984.6	10.4	79.7	116.39	-9,542.1	211.3	9,682.4	9,592.7	89.69	107.959	
4,000.0	3,977.7	4,083.7	4,083.7	10.7	81.7	116.46	-9,542.1	211.3	9,688.6	9,596.6	91.98	105.337	
4,100.0	4,076.7	4,182.7	4,182.7	11.0	83.7	116.53	-9,542.1	211.3	9,694.8	9,600.5	94.27	102.842	
4,200.0	4,175.8	4,281.8	4,281.8	11.4	85.6	116.60	-9,542.1	211.3	9,701.0	9,604.5	96.56	100.465	
4,300.0	4,274.8	4,380.8	4,380.8	11.7	87.6	116.68	-9,542.1	211.3	9,707.3	9,608.4	98.85	98.198	
4,400.0	4,373.9	4,479.9	4,479.9	12.0	89.6	116.75	-9,542.1	211.3	9,713.5	9,612.4	101.15	96.033	
4,500.0	4,472.9	4,578.9	4,578.9	12.4	91.6	116.82	-9,542.1	211.3	9,719.8	9,616.3	103.44	93.965	
4,600.0	4,571.9	4,677.9	4,677.9	12.7	93.6	116.89	-9,542.1	211.3	9,726.0	9,620.3	105.73	91.986	
4,700.0	4,671.0	4,777.0	4,777.0	13.0	95.5	116.96	-9,542.1	211.3	9,732.3	9,624.3	108.03	90.092	
4,800.0	4,770.0	4,876.0	4,876.0	13.4	97.5	117.04	-9,542.1	211.3	9,738.6	9,628.3	110.32	88.276	
4,900.0	4,869.1	4,975.1	4,975.1	13.7	99.5	117.11	-9,542.1	211.3	9,745.0	9,632.4	112.61	86.534	
5,000.0	4,968.1	5,074.1	5,074.1	14.0	101.5	117.18	-9,542.1	211.3	9,751.3	9,636.4	114.91	84.861	

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 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Stonehocker 32-8 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 8664-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	5,067.2	5,173.2	5,173.2	14.4	103.5	117.25	-9,542.1	211.3	9,757.7	9,640.5	117.20	83.255	
5,200.0	5,166.2	5,272.2	5,272.2	14.7	105.4	117.32	-9,542.1	211.3	9,764.0	9,644.5	119.50	81.710	
5,300.0	5,265.3	5,371.3	5,371.3	15.1	107.4	117.39	-9,542.1	211.3	9,770.4	9,648.6	121.79	80.223	
5,400.0	5,364.3	5,470.3	5,470.3	15.4	109.4	117.47	-9,542.1	211.3	9,776.8	9,652.7	124.08	78.791	
5,500.0	5,463.3	5,569.3	5,569.3	15.7	111.4	117.54	-9,542.1	211.3	9,783.2	9,656.9	126.38	77.412	
5,600.0	5,562.5	5,668.5	5,668.5	16.0	113.4	117.67	-9,542.1	211.3	9,789.4	9,660.7	128.71	76.059	
5,700.0	5,661.9	5,767.9	5,767.9	16.3	115.4	117.80	-9,542.1	211.3	9,794.1	9,663.1	130.99	74.769	
5,800.0	5,761.7	5,867.7	5,867.7	16.5	117.4	117.89	-9,542.1	211.3	9,797.2	9,663.9	133.23	73.537	
5,900.0	5,861.7	5,967.7	5,967.7	16.6	119.4	117.93	-9,542.1	211.3	9,798.6	9,663.2	135.41	72.362	
6,000.0	5,961.7	6,067.7	6,067.7	16.8	121.4	-178.24	-9,542.1	211.3	9,798.7	9,661.2	137.56	71.230	
6,100.0	6,061.7	6,167.7	6,167.7	16.9	123.4	-178.24	-9,542.1	211.3	9,798.7	9,659.0	139.74	70.121	
6,200.0	6,161.7	6,267.7	6,267.7	17.1	125.4	-178.24	-9,542.1	211.3	9,798.7	9,656.8	141.92	69.045	
6,300.0	6,261.7	6,367.7	6,367.7	17.3	127.4	-178.24	-9,542.1	211.3	9,798.7	9,654.6	144.10	68.001	
6,400.0	6,361.7	6,467.7	6,467.7	17.5	129.4	-178.24	-9,542.1	211.3	9,798.7	9,652.5	146.28	66.987	
6,500.0	6,461.7	6,567.7	6,567.7	17.6	131.4	-178.24	-9,542.1	211.3	9,798.7	9,650.3	148.46	66.003	
6,600.0	6,561.7	6,667.7	6,667.7	17.8	133.4	-178.24	-9,542.1	211.3	9,798.7	9,648.1	150.64	65.047	
6,700.0	6,661.7	6,767.7	6,767.7	18.0	135.4	-178.24	-9,542.1	211.3	9,798.7	9,645.9	152.82	64.118	
6,800.0	6,761.7	6,867.7	6,867.7	18.2	137.4	-178.24	-9,542.1	211.3	9,798.7	9,643.7	155.01	63.215	
6,900.0	6,861.7	6,967.7	6,967.7	18.3	139.4	-178.24	-9,542.1	211.3	9,798.7	9,641.5	157.19	62.336	
7,000.0	6,961.7	7,067.7	7,067.7	18.5	141.4	-178.24	-9,542.1	211.3	9,798.7	9,639.4	159.38	61.481	
7,100.0	7,061.7	7,167.7	7,167.7	18.7	143.4	1.76	-9,542.1	211.3	9,798.7	9,637.2	161.56	60.650	
7,200.0	7,161.4	7,267.4	7,267.4	18.8	145.3	1.78	-9,542.1	211.3	9,792.1	9,629.9	162.27	60.346	
7,300.0	7,259.4	7,365.4	7,365.4	18.9	147.3	1.83	-9,542.1	211.3	9,772.6	9,612.5	160.14	61.026	
7,400.0	7,354.0	7,460.0	7,460.0	19.0	149.2	1.92	-9,542.1	211.3	9,740.4	9,585.3	155.14	62.786	
7,500.0	7,443.6	7,549.6	7,549.6	19.0	151.0	2.06	-9,542.1	211.3	9,696.2	9,548.9	147.29	65.831	
7,600.0	7,526.6	7,632.6	7,632.6	19.0	152.7	2.26	-9,542.1	211.3	9,640.7	9,504.0	136.69	70.528	
7,700.0	7,601.7	7,707.7	7,707.7	19.0	154.2	2.55	-9,542.1	211.3	9,574.8	9,451.2	123.54	77.504	
7,800.0	7,667.6	7,773.6	7,773.6	19.1	155.5	2.99	-9,542.1	211.3	9,499.6	9,391.5	108.12	87.861	
7,900.0	7,723.0	7,829.0	7,829.0	19.2	156.6	3.67	-9,542.1	211.3	9,416.6	9,325.7	90.88	103.614	
8,000.0	7,767.2	7,873.2	7,873.2	19.5	157.5	4.84	-9,542.1	211.3	9,327.0	9,254.4	72.60	128.478	
8,100.0	7,799.3	7,905.3	7,905.3	20.0	158.1	7.21	-9,542.1	211.3	9,232.4	9,176.8	55.57	166.143	
8,200.0	7,818.7	7,924.7	7,924.7	20.6	158.5	14.26	-9,542.1	211.3	9,134.4	9,080.2	54.24	168.402	
8,300.0	7,825.2	7,931.2	7,931.2	21.5	158.6	80.50	-9,542.1	211.3	9,034.7	8,858.6	176.10	51.304	
8,400.0	7,825.7	7,931.7	7,931.7	22.5	158.6	80.61	-9,542.1	211.3	8,934.8	8,757.6	177.21	50.420	
8,500.0	7,826.3	7,932.3	7,932.3	23.6	158.6	80.71	-9,542.1	211.3	8,834.9	8,656.4	178.43	49.516	
8,600.0	7,826.9	7,932.9	7,932.9	24.8	158.7	80.81	-9,542.1	211.3	8,734.9	8,555.2	179.74	48.597	
8,700.0	7,827.4	7,933.4	7,933.4	26.1	158.7	80.92	-9,542.1	211.3	8,635.0	8,453.8	181.14	47.669	
8,800.0	7,828.0	7,934.0	7,934.0	27.5	158.7	81.02	-9,542.1	211.3	8,535.0	8,352.4	182.61	46.738	
8,900.0	7,828.5	7,934.5	7,934.5	28.9	158.7	81.12	-9,542.1	211.3	8,435.1	8,251.0	184.14	45.808	
9,000.0	7,829.1	7,935.1	7,935.1	30.4	158.7	81.23	-9,542.1	211.3	8,335.2	8,149.4	185.72	44.880	
9,100.0	7,829.7	7,935.7	7,935.7	31.9	158.7	81.33	-9,542.1	211.3	8,235.2	8,047.9	187.34	43.958	
9,200.0	7,830.2	7,936.2	7,936.2	33.5	158.7	81.44	-9,542.1	211.3	8,135.3	7,946.3	189.00	43.043	
9,300.0	7,830.8	7,936.8	7,936.8	35.1	158.7	81.54	-9,542.1	211.3	8,035.4	7,844.7	190.69	42.137	
9,400.0	7,831.3	7,937.3	7,937.3	36.7	158.7	81.64	-9,542.1	211.3	7,935.4	7,743.0	192.41	41.242	
9,500.0	7,831.9	7,937.9	7,937.9	38.4	158.8	81.75	-9,542.1	211.3	7,835.5	7,641.4	194.15	40.357	
9,600.0	7,832.4	7,938.4	7,938.4	40.1	158.8	81.85	-9,542.1	211.3	7,735.6	7,539.7	195.92	39.484	
9,700.0	7,833.0	7,939.0	7,939.0	41.8	158.8	81.96	-9,542.1	211.3	7,635.7	7,438.0	197.70	38.623	
9,800.0	7,833.6	7,939.6	7,939.6	43.5	158.8	82.06	-9,542.1	211.3	7,535.8	7,336.3	199.49	37.775	
9,900.0	7,834.1	7,940.1	7,940.1	45.2	158.8	82.16	-9,542.1	211.3	7,435.8	7,234.5	201.30	36.939	
10,000.0	7,834.7	7,940.7	7,940.7	47.0	158.8	82.27	-9,542.1	211.3	7,335.9	7,132.8	203.12	36.116	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Stonehocker 32-8 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 8664-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
10,100.0	7,835.2	7,941.2	7,941.2	48.7	158.8	82.37	-9,542.1	211.3	7,236.0	7,031.1	204.96	35.305	
10,200.0	7,835.8	7,941.8	7,941.8	50.5	158.8	82.48	-9,542.1	211.3	7,136.1	6,929.3	206.80	34.508	
10,300.0	7,836.4	7,942.4	7,942.4	52.3	158.8	82.58	-9,542.1	211.3	7,036.2	6,827.5	208.65	33.723	
10,400.0	7,836.9	7,942.9	7,942.9	54.1	158.9	82.68	-9,542.1	211.3	6,936.3	6,725.8	210.51	32.950	
10,500.0	7,837.5	7,943.5	7,943.5	55.9	158.9	82.79	-9,542.1	211.3	6,836.4	6,624.0	212.38	32.190	
10,600.0	7,838.0	7,944.0	7,944.0	57.7	158.9	82.89	-9,542.1	211.3	6,736.5	6,522.2	214.25	31.443	
10,700.0	7,838.6	7,944.6	7,944.6	59.5	158.9	83.00	-9,542.1	211.3	6,636.6	6,420.5	216.13	30.707	
10,800.0	7,839.1	7,945.1	7,945.1	61.3	158.9	83.10	-9,542.1	211.3	6,536.7	6,318.7	218.01	29.983	
10,900.0	7,839.7	7,945.7	7,945.7	63.1	158.9	83.21	-9,542.1	211.3	6,436.8	6,216.9	219.90	29.272	
11,000.0	7,840.3	7,946.3	7,946.3	65.0	158.9	83.31	-9,542.1	211.3	6,336.9	6,115.1	221.79	28.572	
11,100.0	7,840.8	7,946.8	7,946.8	66.8	158.9	83.42	-9,542.1	211.3	6,237.0	6,013.3	223.69	27.883	
11,200.0	7,841.4	7,947.4	7,947.4	68.7	158.9	83.52	-9,542.1	211.3	6,137.2	5,911.6	225.59	27.205	
11,300.0	7,841.9	7,947.9	7,947.9	70.5	159.0	83.63	-9,542.1	211.3	6,037.3	5,809.8	227.49	26.538	
11,400.0	7,842.5	7,948.5	7,948.5	72.3	159.0	83.73	-9,542.1	211.3	5,937.4	5,708.0	229.40	25.882	
11,500.0	7,843.1	7,949.1	7,949.1	74.2	159.0	83.84	-9,542.1	211.3	5,837.5	5,606.2	231.31	25.237	
11,600.0	7,843.6	7,949.6	7,949.6	76.0	159.0	83.94	-9,542.1	211.3	5,737.7	5,504.5	233.22	24.602	
11,700.0	7,844.2	7,950.2	7,950.2	77.9	159.0	84.05	-9,542.1	211.3	5,637.8	5,402.7	235.14	23.977	
11,800.0	7,844.7	7,950.7	7,950.7	79.8	159.0	84.15	-9,542.1	211.3	5,538.0	5,300.9	237.05	23.362	
11,900.0	7,845.3	7,951.3	7,951.3	81.6	159.0	84.26	-9,542.1	211.3	5,438.1	5,199.1	238.97	22.756	
12,000.0	7,845.8	7,951.8	7,951.8	83.5	159.0	84.36	-9,542.1	211.3	5,338.3	5,097.4	240.89	22.160	
12,100.0	7,846.4	7,952.4	7,952.4	85.4	159.0	84.47	-9,542.1	211.3	5,238.4	4,995.6	242.81	21.574	
12,200.0	7,847.0	7,953.0	7,953.0	87.2	159.1	84.57	-9,542.1	211.3	5,138.6	4,893.9	244.74	20.996	
12,300.0	7,847.5	7,953.5	7,953.5	89.1	159.1	84.68	-9,542.1	211.3	5,038.8	4,792.1	246.66	20.428	
12,400.0	7,848.1	7,954.1	7,954.1	91.0	159.1	84.78	-9,542.1	211.3	4,939.0	4,690.4	248.59	19.868	
12,500.0	7,848.6	7,954.6	7,954.6	92.8	159.1	84.89	-9,542.1	211.3	4,839.2	4,588.6	250.52	19.317	
12,600.0	7,849.2	7,955.2	7,955.2	94.7	159.1	84.99	-9,542.1	211.3	4,739.4	4,486.9	252.45	18.774	
12,700.0	7,849.8	7,955.8	7,955.8	96.6	159.1	85.10	-9,542.1	211.3	4,639.6	4,385.2	254.38	18.239	
12,800.0	7,850.3	7,956.3	7,956.3	98.5	159.1	85.20	-9,542.1	211.3	4,539.8	4,283.5	256.31	17.712	
12,900.0	7,850.9	7,956.9	7,956.9	100.4	159.1	85.31	-9,542.1	211.3	4,440.0	4,181.8	258.24	17.193	
13,000.0	7,851.4	7,957.4	7,957.4	102.2	159.1	85.41	-9,542.1	211.3	4,340.3	4,080.1	260.17	16.682	
13,100.0	7,852.0	7,958.0	7,958.0	104.1	159.2	85.52	-9,542.1	211.3	4,240.5	3,978.4	262.11	16.179	
13,200.0	7,852.6	7,958.6	7,958.6	106.0	159.2	85.63	-9,542.1	211.3	4,140.8	3,876.7	264.04	15.682	
13,300.0	7,853.1	7,959.1	7,959.1	107.9	159.2	85.73	-9,542.1	211.3	4,041.0	3,775.1	265.97	15.193	
13,400.0	7,853.7	7,959.7	7,959.7	109.8	159.2	85.84	-9,542.1	211.3	3,941.3	3,673.4	267.91	14.711	
13,500.0	7,854.2	7,960.2	7,960.2	111.7	159.2	85.94	-9,542.1	211.3	3,841.6	3,571.8	269.84	14.237	
13,600.0	7,854.8	7,960.8	7,960.8	113.6	159.2	86.05	-9,542.1	211.3	3,741.9	3,470.2	271.78	13.768	
13,700.0	7,855.3	7,961.3	7,961.3	115.4	159.2	86.15	-9,542.1	211.3	3,642.3	3,368.6	273.71	13.307	
13,800.0	7,855.9	7,961.9	7,961.9	117.3	159.2	86.26	-9,542.1	211.3	3,542.6	3,267.0	275.65	12.852	
13,900.0	7,856.5	7,962.5	7,962.5	119.2	159.2	86.36	-9,542.1	211.3	3,443.0	3,165.4	277.59	12.403	
14,000.0	7,857.0	7,963.0	7,963.0	121.1	159.3	86.47	-9,542.1	211.3	3,343.4	3,063.9	279.52	11.961	
14,100.0	7,857.6	7,963.6	7,963.6	123.0	159.3	86.58	-9,542.1	211.3	3,243.8	2,962.4	281.46	11.525	
14,200.0	7,858.1	7,964.1	7,964.1	124.9	159.3	86.68	-9,542.1	211.3	3,144.3	2,860.9	283.40	11.095	
14,300.0	7,858.7	7,964.7	7,964.7	126.8	159.3	86.79	-9,542.1	211.3	3,044.8	2,759.4	285.33	10.671	
14,400.0	7,859.3	7,965.3	7,965.3	128.7	159.3	86.89	-9,542.1	211.3	2,945.3	2,658.0	287.27	10.253	
14,500.0	7,859.8	7,965.8	7,965.8	130.6	159.3	87.00	-9,542.1	211.3	2,845.8	2,556.6	289.21	9.840	
14,600.0	7,860.4	7,966.4	7,966.4	132.5	159.3	87.11	-9,542.1	211.3	2,746.4	2,455.3	291.14	9.433	
14,700.0	7,860.9	7,966.9	7,966.9	134.4	159.3	87.21	-9,542.1	211.3	2,647.0	2,353.9	293.08	9.032	
14,712.8	7,861.0	7,967.0	7,967.0	134.6	159.3	87.22	-9,542.1	211.3	2,634.4	2,341.1	293.28	8.982	CC, ES, SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Jacobucci 1N67W32S Pad Sec.32-T1N-R67W - Jacobucci 32S-203 - Wellbore #1 - Plan #2 (10-8-14)

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	-89.96	0.0	-28.0	28.0				
100.0	100.0	100.0	100.0	0.1	0.1	-89.96	0.0	-28.0	28.0	27.8	0.22	124.635	
200.0	200.0	200.0	200.0	0.3	0.3	-89.96	0.0	-28.0	28.0	27.3	0.67	41.545	
300.0	300.0	300.0	300.0	0.6	0.6	-89.96	0.0	-28.0	28.0	26.9	1.12	24.927	
400.0	400.0	400.0	400.0	0.8	0.8	-89.96	0.0	-28.0	28.0	26.4	1.57	17.805	
500.0	500.0	500.0	500.0	1.0	1.0	-89.96	0.0	-28.0	28.0	26.0	2.02	13.848	
600.0	600.0	600.0	600.0	1.2	1.2	-89.96	0.0	-28.0	28.0	25.5	2.47	11.330	
700.0	700.0	700.0	700.0	1.5	1.5	-89.96	0.0	-28.0	28.0	25.1	2.92	9.587	
800.0	800.0	800.0	800.0	1.7	1.7	-89.96	0.0	-28.0	28.0	24.6	3.37	8.309	
900.0	900.0	900.0	900.0	1.9	1.9	-89.96	0.0	-28.0	28.0	24.2	3.82	7.331	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-89.96	0.0	-28.0	28.0	23.7	4.27	6.560	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	-89.96	0.0	-28.0	28.0	23.3	4.72	5.935	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	-89.96	0.0	-28.0	28.0	22.8	5.17	5.419	
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	-89.96	0.0	-28.0	28.0	22.4	5.62	4.985	
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	-89.96	0.0	-28.0	28.0	21.9	6.07	4.616	CC, ES
1,500.0	1,500.0	1,500.0	1,500.0	3.3	3.3	-155.27	0.0	-28.0	29.6	23.1	6.51	4.547	
1,600.0	1,599.8	1,599.8	1,599.8	3.5	3.5	-158.88	0.0	-28.0	34.4	27.5	6.94	4.962	
1,700.0	1,699.5	1,699.5	1,699.5	3.7	3.7	-163.05	0.0	-28.0	42.7	35.3	7.36	5.799	
1,800.0	1,798.7	1,798.7	1,798.7	3.9	3.9	-166.74	0.0	-28.0	54.4	46.7	7.77	7.005	
1,900.0	1,897.7	1,897.7	1,897.7	4.2	4.2	-169.41	0.0	-28.0	67.9	59.7	8.21	8.277	
2,000.0	1,996.8	1,996.8	1,996.8	4.4	4.4	-171.19	0.0	-28.0	81.5	72.9	8.65	9.427	
2,100.0	2,095.8	2,097.6	2,097.6	4.7	4.6	-171.63	1.6	-27.6	94.3	85.2	9.09	10.369	
2,200.0	2,194.9	2,198.9	2,198.7	5.0	4.8	-170.33	6.7	-26.2	105.2	95.6	9.54	11.023	
2,300.0	2,293.9	2,300.3	2,299.7	5.3	5.1	-167.73	15.2	-24.0	114.4	104.4	10.00	11.440	
2,400.0	2,393.0	2,400.9	2,399.7	5.6	5.3	-164.14	26.9	-20.8	122.3	111.8	10.47	11.684	
2,500.0	2,492.0	2,500.3	2,498.2	5.9	5.5	-160.75	39.1	-17.6	130.4	119.4	10.95	11.904	
2,600.0	2,591.1	2,599.7	2,596.8	6.2	5.8	-157.76	51.3	-14.3	138.8	127.4	11.45	12.124	
2,700.0	2,690.1	2,699.1	2,695.4	6.5	6.0	-155.11	63.5	-11.1	147.6	135.7	11.96	12.339	
2,800.0	2,789.1	2,798.5	2,794.0	6.8	6.3	-152.77	75.7	-7.8	156.7	144.2	12.49	12.546	
2,900.0	2,888.2	2,897.9	2,892.6	7.1	6.6	-150.68	87.9	-4.6	166.0	153.0	13.03	12.744	
3,000.0	2,987.2	2,997.3	2,991.2	7.5	6.8	-148.82	100.2	-1.3	175.5	162.0	13.57	12.931	
3,100.0	3,086.3	3,096.7	3,089.8	7.8	7.1	-147.15	112.4	2.0	185.2	171.1	14.13	13.107	
3,200.0	3,185.3	3,196.1	3,188.3	8.1	7.4	-145.65	124.6	5.2	195.0	180.3	14.69	13.273	
3,300.0	3,284.4	3,295.5	3,286.9	8.4	7.7	-144.29	136.8	8.5	204.9	189.7	15.26	13.428	
3,400.0	3,383.4	3,394.9	3,385.5	8.7	7.9	-143.06	149.0	11.7	215.0	199.1	15.84	13.575	
3,500.0	3,482.5	3,494.3	3,484.1	9.1	8.2	-141.93	161.2	15.0	225.1	208.7	16.42	13.712	
3,600.0	3,581.5	3,593.7	3,582.7	9.4	8.5	-140.91	173.4	18.3	235.3	218.3	17.00	13.841	
3,700.0	3,680.5	3,693.0	3,681.3	9.7	8.8	-139.97	185.6	21.5	245.6	228.0	17.59	13.962	
3,800.0	3,779.6	3,792.4	3,779.9	10.1	9.1	-139.10	197.9	24.8	255.9	237.7	18.18	14.077	
3,900.0	3,878.6	3,891.8	3,878.5	10.4	9.4	-138.31	210.1	28.0	266.3	247.5	18.77	14.184	
4,000.0	3,977.7	3,991.2	3,977.0	10.7	9.7	-137.57	222.3	31.3	276.7	257.4	19.37	14.286	
4,100.0	4,076.7	4,090.7	4,075.8	11.0	10.0	-136.94	234.2	34.5	287.2	267.2	19.96	14.392	
4,200.0	4,175.8	4,190.5	4,175.1	11.4	10.2	-136.91	243.5	37.0	297.6	277.1	20.46	14.545	
4,300.0	4,274.8	4,290.2	4,274.6	11.7	10.4	-137.53	249.4	38.5	307.9	287.0	20.92	14.718	
4,400.0	4,373.9	4,389.5	4,373.9	12.0	10.6	-138.73	251.9	39.2	318.3	296.9	21.33	14.917	
4,500.0	4,472.9	4,488.6	4,472.9	12.4	10.8	-140.29	252.0	39.2	328.8	307.1	21.73	15.131	
4,600.0	4,571.9	4,587.6	4,571.9	12.7	10.9	-141.77	252.0	39.2	339.5	317.4	22.14	15.334	
4,700.0	4,671.0	4,686.6	4,671.0	13.0	11.1	-143.16	252.0	39.2	350.5	328.0	22.56	15.538	
4,800.0	4,770.0	4,785.7	4,770.0	13.4	11.3	-144.47	252.0	39.2	361.7	338.7	22.98	15.742	
4,900.0	4,869.1	4,884.7	4,869.1	13.7	11.5	-145.69	252.0	39.2	373.0	349.6	23.39	15.946	
5,000.0	4,968.1	4,983.8	4,968.1	14.0	11.8	-146.85	252.0	39.2	384.5	360.7	23.81	16.150	

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 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Jacobucci 1N67W32S Pad Sec.32-T1N-R67W - Jacobucci 32S-203 - Wellbore #1 - Plan #2 (10-8-14)

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	5,067.2	5,082.8	5,067.2	14.4	12.0	-147.94	252.0	39.2	396.2	372.0	24.23	16.351	
5,200.0	5,166.2	5,181.9	5,166.2	14.7	12.2	-148.96	252.0	39.2	408.0	383.3	24.65	16.550	
5,300.0	5,265.3	5,280.9	5,265.3	15.1	12.4	-149.93	252.0	39.2	419.9	394.8	25.07	16.746	
5,400.0	5,364.3	5,380.0	5,364.3	15.4	12.6	-150.84	252.0	39.2	431.9	406.4	25.50	16.940	
5,500.0	5,463.3	5,479.0	5,463.3	15.7	12.8	-151.71	252.0	39.2	444.0	418.1	25.92	17.130	
5,600.0	5,562.5	5,578.1	5,562.5	16.0	13.0	-152.56	252.0	39.2	455.7	429.4	26.35	17.292	
5,700.0	5,661.9	5,677.6	5,661.9	16.3	13.2	-153.21	252.0	39.2	464.7	437.9	26.76	17.367	
5,800.0	5,761.7	5,777.4	5,761.7	16.5	13.4	-153.62	252.0	39.2	470.6	443.4	27.14	17.338	
5,900.0	5,861.7	5,877.3	5,861.7	16.6	13.6	-153.81	252.0	39.2	473.3	445.8	27.50	17.211	
6,000.0	5,961.7	5,977.3	5,961.7	16.8	13.8	-90.00	252.0	39.2	473.6	445.7	27.88	16.987	
6,100.0	6,061.7	6,077.3	6,061.7	16.9	14.0	-90.00	252.0	39.2	473.6	445.3	28.28	16.743	
6,200.0	6,161.7	6,177.3	6,161.7	17.1	14.2	-90.00	252.0	39.2	473.6	444.9	28.69	16.504	
6,300.0	6,261.7	6,277.3	6,261.7	17.3	14.4	-90.00	252.0	39.2	473.6	444.5	29.10	16.272	
6,400.0	6,361.7	6,377.3	6,361.7	17.5	14.7	-90.00	252.0	39.2	473.6	444.0	29.51	16.046	
6,500.0	6,461.7	6,477.3	6,461.7	17.6	14.9	-90.00	252.0	39.2	473.6	443.6	29.92	15.825	
6,600.0	6,561.7	6,577.3	6,561.7	17.8	15.1	-90.00	252.0	39.2	473.6	443.2	30.34	15.610	
6,700.0	6,661.7	6,677.3	6,661.7	18.0	15.3	-90.00	252.0	39.2	473.6	442.8	30.75	15.400	
6,800.0	6,761.7	6,777.3	6,761.7	18.2	15.5	-90.00	252.0	39.2	473.6	442.4	31.17	15.195	
6,862.2	6,823.9	6,839.5	6,823.9	18.3	15.6	-90.00	252.0	39.2	473.6	442.1	31.42	15.070	
6,900.0	6,861.7	6,877.3	6,861.7	18.3	15.7	-90.05	251.6	39.2	473.6	442.0	31.57	15.001	
7,000.0	6,961.7	6,976.2	6,960.0	18.5	15.8	-91.21	242.0	39.2	473.7	441.8	31.85	14.874	
7,100.0	7,061.7	7,071.2	7,052.5	18.7	15.9	86.24	220.9	39.2	474.7	442.7	32.01	14.829	
7,200.0	7,161.4	7,161.8	7,137.7	18.8	15.9	83.04	190.2	39.2	477.4	445.3	32.07	14.887	
7,300.0	7,259.4	7,250.0	7,216.6	18.9	16.0	79.99	150.8	39.2	481.4	449.3	32.07	15.012	
7,400.0	7,354.0	7,335.6	7,288.3	19.0	16.0	77.17	104.2	39.2	486.4	454.3	32.05	15.177	
7,500.0	7,443.6	7,419.5	7,353.2	19.0	16.0	74.59	50.9	39.2	492.1	460.0	32.04	15.360	
7,600.0	7,526.6	7,500.0	7,409.5	19.0	16.1	72.32	-6.5	39.2	498.1	466.0	32.04	15.542	
7,700.0	7,601.7	7,582.9	7,460.8	19.0	16.4	70.26	-71.5	39.2	504.0	471.9	32.12	15.690	
7,800.0	7,667.6	7,662.8	7,503.4	19.1	16.7	68.54	-139.1	39.2	509.6	477.3	32.29	15.781	
7,900.0	7,723.0	7,741.8	7,538.3	19.2	17.1	67.13	-209.9	39.2	514.5	481.9	32.60	15.782	
8,000.0	7,767.2	7,820.1	7,565.5	19.5	17.6	66.03	-283.3	39.2	518.6	485.5	33.10	15.665	
8,100.0	7,799.3	7,900.0	7,585.4	20.0	18.2	65.24	-360.7	39.2	521.6	487.8	33.85	15.411	
8,200.0	7,818.7	7,975.3	7,596.7	20.6	18.8	64.78	-435.1	39.2	523.5	488.7	34.83	15.030	
8,300.0	7,825.2	8,053.2	7,600.6	21.5	19.6	64.62	-512.9	39.2	524.1	488.0	36.10	14.517	
8,400.0	7,825.7	8,153.2	7,600.8	22.5	20.7	64.59	-612.9	39.2	524.3	486.2	38.06	13.776	
8,500.0	7,826.3	8,253.2	7,601.0	23.6	21.9	64.55	-712.9	39.2	524.4	484.2	40.21	13.043	
8,600.0	7,826.9	8,353.2	7,601.2	24.8	23.2	64.52	-812.9	39.2	524.6	482.0	42.54	12.332	
8,700.0	7,827.4	8,453.2	7,601.4	26.1	24.6	64.49	-912.9	39.2	524.7	479.7	45.02	11.656	
8,800.0	7,828.0	8,553.2	7,601.6	27.5	26.1	64.45	-1,012.9	39.2	524.9	477.2	47.63	11.020	
8,900.0	7,828.5	8,653.2	7,601.8	28.9	27.6	64.42	-1,112.9	39.2	525.0	474.7	50.35	10.429	
9,000.0	7,829.1	8,753.2	7,602.0	30.4	29.1	64.38	-1,212.9	39.2	525.2	472.0	53.15	9.881	
9,100.0	7,829.7	8,853.2	7,602.2	31.9	30.7	64.35	-1,312.9	39.2	525.3	469.3	56.04	9.375	
9,200.0	7,830.2	8,953.2	7,602.4	33.5	32.4	64.31	-1,412.9	39.2	525.5	466.5	58.99	8.908	
9,300.0	7,830.8	9,053.2	7,602.7	35.1	34.0	64.28	-1,512.9	39.2	525.6	463.6	61.99	8.479	
9,400.0	7,831.3	9,153.2	7,602.9	36.7	35.7	64.25	-1,612.9	39.2	525.8	460.7	65.04	8.083	
9,500.0	7,831.9	9,253.2	7,603.1	38.4	37.4	64.21	-1,712.9	39.2	525.9	457.8	68.14	7.719	
9,600.0	7,832.4	9,353.2	7,603.3	40.1	39.1	64.18	-1,812.9	39.2	526.1	454.8	71.27	7.382	
9,700.0	7,833.0	9,453.2	7,603.5	41.8	40.9	64.14	-1,912.9	39.2	526.2	451.8	74.43	7.071	
9,800.0	7,833.6	9,553.2	7,603.7	43.5	42.6	64.11	-2,012.9	39.2	526.4	448.8	77.61	6.782	
9,900.0	7,834.1	9,653.2	7,603.9	45.2	44.4	64.07	-2,112.9	39.2	526.5	445.7	80.82	6.515	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Jacobucci 1N67W32S Pad Sec.32-T1N-R67W - Jacobucci 32S-203 - Wellbore #1 - Plan #2 (10-8-14)

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	7,834.7	9,753.2	7,604.1	47.0	46.2	64.04	-2,212.8	39.2	526.7	442.6	84.05	6.266	
10,100.0	7,835.2	9,853.2	7,604.3	48.7	48.0	64.01	-2,312.8	39.2	526.8	439.5	87.30	6.035	
10,200.0	7,835.8	9,953.2	7,604.5	50.5	49.8	63.97	-2,412.8	39.2	527.0	436.4	90.57	5.819	
10,300.0	7,836.4	10,053.2	7,604.8	52.3	51.6	63.94	-2,512.8	39.2	527.2	433.3	93.84	5.617	
10,400.0	7,836.9	10,153.2	7,605.0	54.1	53.4	63.90	-2,612.8	39.2	527.3	430.2	97.13	5.429	
10,500.0	7,837.5	10,253.2	7,605.2	55.9	55.3	63.87	-2,712.8	39.2	527.5	427.0	100.43	5.252	
10,600.0	7,838.0	10,353.2	7,605.4	57.7	57.1	63.84	-2,812.8	39.2	527.6	423.9	103.75	5.086	
10,700.0	7,838.6	10,453.2	7,605.6	59.5	58.9	63.80	-2,912.8	39.2	527.8	420.7	107.06	4.929	
10,800.0	7,839.1	10,553.2	7,605.8	61.3	60.8	63.77	-3,012.8	39.2	527.9	417.5	110.39	4.782	
10,900.0	7,839.7	10,653.2	7,606.0	63.1	62.6	63.73	-3,112.8	39.2	528.1	414.4	113.73	4.643	
11,000.0	7,840.3	10,753.2	7,606.2	65.0	64.5	63.70	-3,212.8	39.2	528.2	411.2	117.07	4.512	
11,100.0	7,840.8	10,853.2	7,606.4	66.8	66.3	63.67	-3,312.8	39.2	528.4	408.0	120.41	4.388	
11,200.0	7,841.4	10,953.2	7,606.6	68.7	68.2	63.63	-3,412.8	39.2	528.5	404.8	123.76	4.271	
11,300.0	7,841.9	11,053.2	7,606.8	70.5	70.0	63.60	-3,512.8	39.2	528.7	401.6	127.12	4.159	
11,400.0	7,842.5	11,153.2	7,607.1	72.3	71.9	63.56	-3,612.8	39.2	528.9	398.4	130.48	4.053	
11,500.0	7,843.1	11,253.2	7,607.3	74.2	73.8	63.53	-3,712.8	39.2	529.0	395.2	133.84	3.953	
11,600.0	7,843.6	11,353.2	7,607.5	76.0	75.6	63.50	-3,812.8	39.2	529.2	392.0	137.21	3.857	
11,700.0	7,844.2	11,453.2	7,607.7	77.9	77.5	63.46	-3,912.8	39.2	529.3	388.7	140.57	3.765	
11,800.0	7,844.7	11,553.2	7,607.9	79.8	79.4	63.43	-4,012.8	39.2	529.5	385.5	143.95	3.678	
11,900.0	7,845.3	11,653.2	7,608.1	81.6	81.2	63.40	-4,112.8	39.2	529.6	382.3	147.32	3.595	
12,000.0	7,845.8	11,753.2	7,608.3	83.5	83.1	63.36	-4,212.8	39.2	529.8	379.1	150.69	3.516	
12,100.0	7,846.4	11,853.2	7,608.5	85.4	85.0	63.33	-4,312.8	39.2	529.9	375.9	154.07	3.440	
12,200.0	7,847.0	11,953.2	7,608.7	87.2	86.9	63.29	-4,412.8	39.2	530.1	372.7	157.45	3.367	
12,300.0	7,847.5	12,053.2	7,608.9	89.1	88.8	63.26	-4,512.8	39.2	530.3	369.4	160.83	3.297	
12,400.0	7,848.1	12,153.2	7,609.1	91.0	90.6	63.23	-4,612.8	39.2	530.4	366.2	164.21	3.230	
12,500.0	7,848.6	12,253.2	7,609.4	92.8	92.5	63.19	-4,712.8	39.2	530.6	363.0	167.59	3.166	
12,600.0	7,849.2	12,353.2	7,609.6	94.7	94.4	63.16	-4,812.8	39.2	530.7	359.8	170.97	3.104	
12,700.0	7,849.8	12,453.2	7,609.8	96.6	96.3	63.13	-4,912.8	39.2	530.9	356.5	174.35	3.045	
12,800.0	7,850.3	12,553.2	7,610.0	98.5	98.2	63.09	-5,012.8	39.2	531.0	353.3	177.73	2.988	
12,900.0	7,850.9	12,653.2	7,610.2	100.4	100.1	63.06	-5,112.8	39.2	531.2	350.1	181.12	2.933	
13,000.0	7,851.4	12,753.2	7,610.4	102.2	102.0	63.03	-5,212.8	39.2	531.4	346.9	184.50	2.880	
13,100.0	7,852.0	12,853.2	7,610.6	104.1	103.8	62.99	-5,312.8	39.2	531.5	343.6	187.88	2.829	
13,200.0	7,852.6	12,953.2	7,610.8	106.0	105.7	62.96	-5,412.8	39.2	531.7	340.4	191.27	2.780	
13,300.0	7,853.1	13,053.2	7,611.0	107.9	107.6	62.92	-5,512.8	39.2	531.8	337.2	194.65	2.732	
13,400.0	7,853.7	13,153.2	7,611.2	109.8	109.5	62.89	-5,612.8	39.2	532.0	334.0	198.03	2.686	
13,500.0	7,854.2	13,253.2	7,611.5	111.7	111.4	62.86	-5,712.8	39.2	532.2	330.7	201.42	2.642	
13,600.0	7,854.8	13,353.2	7,611.7	113.6	113.3	62.82	-5,812.8	39.2	532.3	327.5	204.80	2.599	
13,700.0	7,855.3	13,453.2	7,611.9	115.4	115.2	62.79	-5,912.8	39.2	532.5	324.3	208.18	2.558	
13,800.0	7,855.9	13,553.2	7,612.1	117.3	117.1	62.76	-6,012.8	39.2	532.6	321.1	211.56	2.518	
13,900.0	7,856.5	13,653.2	7,612.3	119.2	119.0	62.72	-6,112.8	39.2	532.8	317.9	214.94	2.479	
14,000.0	7,857.0	13,753.2	7,612.5	121.1	120.9	62.69	-6,212.8	39.2	533.0	314.6	218.32	2.441	
14,100.0	7,857.6	13,853.2	7,612.7	123.0	122.8	62.66	-6,312.8	39.2	533.1	311.4	221.70	2.405	
14,200.0	7,858.1	13,953.2	7,612.9	124.9	124.7	62.62	-6,412.8	39.2	533.3	308.2	225.08	2.369	
14,300.0	7,858.7	14,053.2	7,613.1	126.8	126.6	62.59	-6,512.8	39.2	533.4	305.0	228.46	2.335	
14,400.0	7,859.3	14,153.2	7,613.3	128.7	128.5	62.56	-6,612.8	39.2	533.6	301.8	231.84	2.302	
14,500.0	7,859.8	14,253.2	7,613.5	130.6	130.4	62.52	-6,712.8	39.2	533.8	298.5	235.21	2.269	
14,600.0	7,860.4	14,353.2	7,613.8	132.5	132.3	62.49	-6,812.8	39.2	533.9	295.3	238.59	2.238	
14,700.0	7,860.9	14,453.2	7,614.0	134.4	134.2	62.46	-6,912.8	39.2	534.1	292.1	241.96	2.207	
14,712.8	7,861.0	14,465.9	7,614.0	134.6	134.4	62.45	-6,925.6	39.2	534.1	291.8	242.35	2.204 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Jacobucci 1N67W32S Pad Sec.32-T1N-R67W - Jacobucci 32S-303 - Wellbore #1 - Plan #1 (10-8-14)

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	89.94	0.0	30.8	30.8				
100.0	100.0	100.0	100.0	0.1	0.1	89.94	0.0	30.8	30.8	30.6	0.22	137.098	
200.0	200.0	200.0	200.0	0.3	0.3	89.94	0.0	30.8	30.8	30.1	0.67	45.699	
300.0	300.0	300.0	300.0	0.6	0.6	89.94	0.0	30.8	30.8	29.7	1.12	27.420	
400.0	400.0	400.0	400.0	0.8	0.8	89.94	0.0	30.8	30.8	29.2	1.57	19.585	
500.0	500.0	500.0	500.0	1.0	1.0	89.94	0.0	30.8	30.8	28.8	2.02	15.233	
600.0	600.0	600.0	600.0	1.2	1.2	89.94	0.0	30.8	30.8	28.3	2.47	12.463	
700.0	700.0	700.0	700.0	1.5	1.5	89.94	0.0	30.8	30.8	27.9	2.92	10.546	
800.0	800.0	800.0	800.0	1.7	1.7	89.94	0.0	30.8	30.8	27.4	3.37	9.140	
900.0	900.0	900.0	900.0	1.9	1.9	89.94	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	89.94	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	89.94	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	89.94	0.0	30.8	30.8	25.6	5.17	5.961	CC, ES
1,300.0	1,300.0	1,299.0	1,298.9	2.8	2.8	88.88	0.6	32.4	32.4	26.8	5.61	5.784	
1,400.0	1,400.0	1,397.7	1,397.5	3.0	3.0	86.28	2.4	37.2	37.4	31.3	6.04	6.182	
1,500.0	1,500.0	1,496.1	1,495.6	3.3	3.2	20.07	5.4	45.1	44.0	37.6	6.46	6.814	
1,600.0	1,599.8	1,594.3	1,593.0	3.5	3.5	18.71	9.5	56.2	50.8	43.9	6.88	7.389	
1,700.0	1,699.5	1,692.2	1,689.8	3.7	3.7	17.99	14.8	70.3	57.6	50.3	7.29	7.906	
1,800.0	1,798.7	1,792.0	1,788.1	3.9	4.0	18.02	20.8	86.5	63.0	55.3	7.70	8.175	
1,900.0	1,897.7	1,891.9	1,886.5	4.2	4.3	18.50	26.9	102.7	66.8	58.7	8.15	8.196	
2,000.0	1,996.8	1,991.8	1,984.9	4.4	4.6	18.93	32.9	118.9	70.7	62.1	8.61	8.208	
2,100.0	2,095.8	2,091.7	2,083.3	4.7	5.0	19.32	39.0	135.1	74.5	65.5	9.08	8.212	
2,200.0	2,194.9	2,191.7	2,181.7	5.0	5.3	19.66	45.0	151.3	78.4	68.8	9.55	8.210	
2,300.0	2,293.9	2,291.6	2,280.1	5.3	5.7	19.98	51.1	167.6	82.2	72.2	10.02	8.204	
2,400.0	2,393.0	2,391.5	2,378.5	5.6	6.0	20.26	57.1	183.8	86.1	75.6	10.51	8.195	
2,500.0	2,492.0	2,491.4	2,477.0	5.9	6.4	20.52	63.2	200.0	90.0	79.0	10.99	8.184	
2,600.0	2,591.1	2,591.4	2,575.4	6.2	6.7	20.76	69.2	216.2	93.8	82.3	11.48	8.170	
2,700.0	2,690.1	2,691.3	2,673.8	6.5	7.1	20.98	75.3	232.4	97.7	85.7	11.98	8.156	
2,800.0	2,789.1	2,791.2	2,772.2	6.8	7.5	21.19	81.3	248.6	101.6	89.1	12.47	8.141	
2,900.0	2,888.2	2,891.1	2,870.6	7.1	7.8	21.38	87.4	264.8	105.4	92.4	12.98	8.125	
3,000.0	2,987.2	2,991.1	2,969.0	7.5	8.2	21.55	93.4	281.0	109.3	95.8	13.48	8.109	
3,100.0	3,086.3	3,091.0	3,067.5	7.8	8.6	21.72	99.4	297.2	113.2	99.2	13.98	8.092	
3,200.0	3,185.3	3,190.9	3,165.9	8.1	9.0	21.87	105.5	313.4	117.0	102.5	14.49	8.076	
3,300.0	3,284.4	3,290.8	3,264.3	8.4	9.4	22.01	111.5	329.6	120.9	105.9	15.00	8.060	
3,400.0	3,383.4	3,390.8	3,362.7	8.7	9.7	22.15	117.6	345.9	124.8	109.3	15.51	8.044	
3,500.0	3,482.5	3,490.7	3,461.1	9.1	10.1	22.27	123.6	362.1	128.6	112.6	16.02	8.028	
3,600.0	3,581.5	3,590.6	3,559.5	9.4	10.5	22.39	129.7	378.3	132.5	116.0	16.54	8.013	
3,700.0	3,680.5	3,690.5	3,657.9	9.7	10.9	22.50	135.7	394.5	136.4	119.3	17.05	7.998	
3,800.0	3,779.6	3,790.5	3,756.4	10.1	11.3	22.61	141.8	410.7	140.3	122.7	17.57	7.983	
3,900.0	3,878.6	3,890.4	3,854.8	10.4	11.7	22.71	147.8	426.9	144.1	126.0	18.09	7.969	
4,000.0	3,977.7	3,990.3	3,953.2	10.7	12.0	22.80	153.9	443.1	148.0	129.4	18.61	7.954	
4,100.0	4,076.7	4,090.2	4,051.6	11.0	12.4	22.89	159.9	459.3	151.9	132.8	19.13	7.941	
4,200.0	4,175.8	4,190.2	4,150.0	11.4	12.8	22.98	166.0	475.5	155.8	136.1	19.65	7.927	
4,300.0	4,274.8	4,290.1	4,248.4	11.7	13.2	23.06	172.0	491.7	159.6	139.5	20.17	7.915	
4,400.0	4,373.9	4,390.0	4,346.9	12.0	13.6	23.14	178.1	508.0	163.5	142.8	20.69	7.902	
4,500.0	4,472.9	4,489.9	4,445.3	12.4	14.0	23.21	184.1	524.2	167.4	146.2	21.22	7.890	
4,600.0	4,571.9	4,589.9	4,543.7	12.7	14.4	23.28	190.2	540.4	171.3	149.5	21.74	7.878	
4,700.0	4,671.0	4,689.8	4,642.1	13.0	14.8	23.35	196.2	556.6	175.1	152.9	22.26	7.866	
4,800.0	4,770.0	4,789.7	4,740.5	13.4	15.2	23.42	202.3	572.8	179.0	156.2	22.79	7.855	
4,900.0	4,869.1	4,889.6	4,838.9	13.7	15.5	23.48	208.3	589.0	182.9	159.6	23.32	7.844	
5,000.0	4,968.1	4,989.6	4,937.3	14.0	15.9	23.54	214.4	605.2	186.8	162.9	23.84	7.834	

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 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Jacobucci 1N67W32S Pad Sec.32-T1N-R67W - Jacobucci 32S-303 - Wellbore #1 - Plan #1 (10-8-14)

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	5,067.2	5,089.5	5,035.8	14.4	16.3	23.59	220.4	621.4	190.7	166.3	24.37	7.824	
5,200.0	5,166.2	5,189.4	5,134.2	14.7	16.7	23.65	226.5	637.6	194.5	169.6	24.90	7.814	
5,300.0	5,265.3	5,289.3	5,232.6	15.1	17.1	23.70	232.5	653.8	198.4	173.0	25.42	7.804	
5,400.0	5,364.3	5,391.2	5,333.0	15.4	17.5	23.77	238.6	670.2	202.2	176.2	25.95	7.789	
5,500.0	5,463.3	5,498.4	5,439.0	15.7	17.8	24.09	244.1	684.7	203.3	176.8	26.47	7.679	
5,600.0	5,562.5	5,605.6	5,545.5	16.0	18.0	24.69	248.1	695.5	201.4	174.4	26.99	7.462	
5,700.0	5,661.9	5,712.6	5,652.3	16.3	18.3	25.26	250.7	702.6	198.9	171.5	27.44	7.250	
5,800.0	5,761.7	5,819.4	5,759.1	16.5	18.4	25.77	251.9	705.9	196.1	168.3	27.83	7.046	
5,900.0	5,861.7	5,922.0	5,861.7	16.6	18.6	26.13	252.0	706.1	193.6	165.4	28.17	6.871	
5,959.0	5,920.7	5,981.1	5,920.7	16.7	18.7	26.20	252.0	706.1	193.1	164.7	28.38	6.803	
6,000.0	5,961.7	6,022.0	5,961.7	16.8	18.7	89.99	252.0	706.1	193.3	164.8	28.52	6.780	
6,100.0	6,061.7	6,122.0	6,061.7	16.9	18.9	89.99	252.0	706.1	193.3	164.4	28.90	6.689	
6,200.0	6,161.7	6,222.0	6,161.7	17.1	19.0	89.99	252.0	706.1	193.3	164.0	29.29	6.601	
6,300.0	6,261.7	6,322.0	6,261.7	17.3	19.2	89.99	252.0	706.1	193.3	163.7	29.68	6.514	
6,400.0	6,361.7	6,422.0	6,361.7	17.5	19.3	89.99	252.0	706.1	193.3	163.3	30.07	6.430	
6,500.0	6,461.7	6,522.0	6,461.7	17.6	19.5	89.99	252.0	706.1	193.3	162.9	30.46	6.347	
6,600.0	6,561.7	6,622.0	6,561.7	17.8	19.7	89.99	252.0	706.1	193.3	162.5	30.86	6.266	
6,700.0	6,661.7	6,722.0	6,661.7	18.0	19.8	89.99	252.0	706.1	193.3	162.1	31.25	6.186	
6,800.0	6,761.7	6,822.0	6,761.7	18.2	20.0	89.99	252.0	706.1	193.3	161.7	31.65	6.109	
6,900.0	6,861.7	6,922.0	6,861.7	18.3	20.1	89.99	252.0	706.1	193.3	161.3	32.05	6.033	
6,960.8	6,922.5	6,982.8	6,922.5	18.5	20.2	89.99	252.0	706.1	193.3	161.0	32.29	5.987	
7,000.0	6,961.7	7,022.0	6,961.6	18.5	20.3	90.18	251.4	706.1	193.3	160.9	32.45	5.958	
7,100.0	7,061.7	7,120.8	7,059.8	18.7	20.4	-86.73	240.9	706.1	193.7	160.6	33.07	5.856	
7,200.0	7,161.4	7,216.9	7,153.2	18.8	20.4	-81.90	218.7	706.1	195.3	161.6	33.78	5.782	
7,300.0	7,259.4	7,311.2	7,241.5	18.9	20.5	-77.34	185.7	706.1	198.3	164.0	34.31	5.778	
7,400.0	7,354.0	7,403.7	7,323.5	19.0	20.5	-73.16	142.9	706.1	202.2	167.6	34.58	5.847	
7,500.0	7,443.6	7,494.8	7,398.6	19.0	20.5	-69.40	91.5	706.1	206.8	172.2	34.56	5.984	
7,600.0	7,526.6	7,584.6	7,466.1	19.0	20.5	-66.12	32.4	706.1	211.7	177.4	34.28	6.176	
7,700.0	7,601.7	7,673.2	7,525.5	19.0	20.6	-63.31	-33.3	706.1	216.6	182.8	33.88	6.395	
7,800.0	7,667.6	7,760.9	7,576.4	19.1	20.7	-60.98	-104.7	706.1	221.3	187.9	33.44	6.619	
7,900.0	7,723.0	7,850.0	7,619.4	19.2	20.8	-59.07	-182.6	706.1	225.5	192.3	33.20	6.792	
8,000.0	7,767.2	7,934.1	7,651.4	19.5	21.1	-57.67	-260.4	706.1	228.9	195.6	33.34	6.866	
8,100.0	7,799.3	8,020.0	7,675.1	20.0	21.5	-56.65	-342.8	706.1	231.5	197.5	34.01	6.806	
8,200.0	7,818.7	8,105.5	7,689.3	20.6	22.0	-56.05	-427.1	706.1	233.1	197.8	35.29	6.604	
8,300.0	7,825.2	8,191.1	7,694.0	21.5	22.6	-55.85	-512.6	706.1	233.6	196.5	37.16	6.287	
8,400.0	7,825.7	8,291.1	7,694.2	22.5	23.5	-55.77	-612.6	706.1	233.9	194.9	39.00	5.997	
8,500.0	7,826.3	8,391.1	7,694.3	23.6	24.6	-55.68	-712.6	706.1	234.1	193.1	41.00	5.709	
8,600.0	7,826.9	8,491.1	7,694.5	24.8	25.7	-55.60	-812.6	706.1	234.3	191.2	43.16	5.429	
8,700.0	7,827.4	8,591.1	7,694.6	26.1	26.9	-55.51	-912.6	706.1	234.6	189.1	45.44	5.162	
8,800.0	7,828.0	8,691.1	7,694.7	27.5	28.3	-55.43	-1,012.6	706.1	234.8	187.0	47.84	4.908	
8,900.0	7,828.5	8,791.1	7,694.9	28.9	29.7	-55.34	-1,112.6	706.1	235.0	184.7	50.32	4.671	
9,000.0	7,829.1	8,891.1	7,695.0	30.4	31.1	-55.26	-1,212.6	706.1	235.3	182.4	52.88	4.449	
9,100.0	7,829.7	8,991.1	7,695.2	31.9	32.6	-55.18	-1,312.6	706.1	235.5	180.0	55.51	4.243	
9,200.0	7,830.2	9,091.1	7,695.3	33.5	34.1	-55.09	-1,412.6	706.1	235.8	177.6	58.19	4.052	
9,300.0	7,830.8	9,191.1	7,695.4	35.1	35.7	-55.01	-1,512.6	706.1	236.0	175.1	60.92	3.874	
9,400.0	7,831.3	9,291.1	7,695.6	36.7	37.3	-54.93	-1,612.6	706.1	236.2	172.5	63.69	3.709	
9,500.0	7,831.9	9,391.1	7,695.7	38.4	38.9	-54.84	-1,712.6	706.1	236.5	170.0	66.50	3.556	
9,600.0	7,832.4	9,491.1	7,695.9	40.1	40.6	-54.76	-1,812.6	706.1	236.7	167.4	69.33	3.414	
9,700.0	7,833.0	9,591.1	7,696.0	41.8	42.3	-54.68	-1,912.6	706.1	237.0	164.8	72.19	3.282	
9,800.0	7,833.6	9,691.1	7,696.1	43.5	44.0	-54.60	-2,012.6	706.1	237.2	162.1	75.08	3.159	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Jacobucci 1N67W32S Pad Sec.32-T1N-R67W - Jacobucci 32S-303 - Wellbore #1 - Plan #1 (10-8-14)

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	7,834.1	9,791.1	7,696.3	45.2	45.7	-54.51	-2,112.6	706.1	237.4	159.5	77.98	3.045	
10,000.0	7,834.7	9,891.1	7,696.4	47.0	47.4	-54.43	-2,212.6	706.1	237.7	156.8	80.90	2.938	
10,100.0	7,835.2	9,991.1	7,696.6	48.7	49.2	-54.35	-2,312.6	706.1	237.9	154.1	83.84	2.838	
10,200.0	7,835.8	10,091.1	7,696.7	50.5	50.9	-54.27	-2,412.6	706.1	238.2	151.4	86.78	2.745	
10,300.0	7,836.4	10,191.1	7,696.8	52.3	52.7	-54.19	-2,512.6	706.1	238.4	148.7	89.74	2.657	
10,400.0	7,836.9	10,291.1	7,697.0	54.1	54.5	-54.10	-2,612.6	706.1	238.7	146.0	92.70	2.575	
10,500.0	7,837.5	10,391.1	7,697.1	55.9	56.3	-54.02	-2,712.6	706.1	238.9	143.2	95.67	2.497	
10,600.0	7,838.0	10,491.1	7,697.3	57.7	58.0	-53.94	-2,812.6	706.1	239.2	140.5	98.65	2.424	
10,700.0	7,838.6	10,591.1	7,697.4	59.5	59.9	-53.86	-2,912.6	706.1	239.4	137.8	101.64	2.355	
10,800.0	7,839.1	10,691.1	7,697.5	61.3	61.7	-53.78	-3,012.6	706.1	239.7	135.0	104.63	2.291	
10,900.0	7,839.7	10,791.1	7,697.7	63.1	63.5	-53.70	-3,112.6	706.1	239.9	132.3	107.62	2.229	
11,000.0	7,840.3	10,891.1	7,697.8	65.0	65.3	-53.62	-3,212.5	706.1	240.1	129.5	110.61	2.171	
11,100.0	7,840.8	10,991.1	7,698.0	66.8	67.1	-53.54	-3,312.5	706.1	240.4	126.8	113.61	2.116	
11,200.0	7,841.4	11,091.1	7,698.1	68.7	69.0	-53.46	-3,412.5	706.1	240.6	124.0	116.61	2.064	
11,300.0	7,841.9	11,191.1	7,698.2	70.5	70.8	-53.38	-3,512.5	706.1	240.9	121.3	119.61	2.014	
11,400.0	7,842.5	11,291.1	7,698.4	72.3	72.6	-53.30	-3,612.5	706.1	241.1	118.5	122.61	1.967	
11,500.0	7,843.1	11,391.1	7,698.5	74.2	74.5	-53.22	-3,712.5	706.1	241.4	115.8	125.61	1.922	
11,600.0	7,843.6	11,491.1	7,698.7	76.0	76.3	-53.14	-3,812.5	706.1	241.6	113.0	128.61	1.879	
11,700.0	7,844.2	11,591.1	7,698.8	77.9	78.2	-53.06	-3,912.5	706.1	241.9	110.3	131.61	1.838	
11,800.0	7,844.7	11,691.1	7,698.9	79.8	80.0	-52.98	-4,012.5	706.1	242.2	107.5	134.61	1.799	
11,900.0	7,845.3	11,791.1	7,699.1	81.6	81.9	-52.90	-4,112.5	706.1	242.4	104.8	137.60	1.762	
12,000.0	7,845.8	11,891.1	7,699.2	83.5	83.7	-52.82	-4,212.5	706.1	242.7	102.1	140.60	1.726	
12,100.0	7,846.4	11,991.1	7,699.4	85.4	85.6	-52.74	-4,312.5	706.1	242.9	99.3	143.59	1.692	
12,200.0	7,847.0	12,091.1	7,699.5	87.2	87.5	-52.66	-4,412.5	706.1	243.2	96.6	146.59	1.659	
12,300.0	7,847.5	12,191.1	7,699.6	89.1	89.3	-52.59	-4,512.5	706.1	243.4	93.8	149.58	1.627	
12,400.0	7,848.1	12,291.1	7,699.8	91.0	91.2	-52.51	-4,612.5	706.1	243.7	91.1	152.57	1.597	
12,500.0	7,848.6	12,391.1	7,699.9	92.8	93.1	-52.43	-4,712.5	706.1	243.9	88.4	155.55	1.568	
12,600.0	7,849.2	12,491.1	7,700.1	94.7	94.9	-52.35	-4,812.5	706.1	244.2	85.6	158.53	1.540	
12,700.0	7,849.8	12,591.1	7,700.2	96.6	96.8	-52.27	-4,912.5	706.1	244.4	82.9	161.51	1.513	
12,800.0	7,850.3	12,691.1	7,700.3	98.5	98.7	-52.20	-5,012.5	706.1	244.7	80.2	164.49	1.488	Level 3
12,900.0	7,850.9	12,791.1	7,700.5	100.4	100.6	-52.12	-5,112.5	706.1	245.0	77.5	167.47	1.463	Level 3
13,000.0	7,851.4	12,891.1	7,700.6	102.2	102.4	-52.04	-5,212.5	706.1	245.2	74.8	170.44	1.439	Level 3
13,100.0	7,852.0	12,991.1	7,700.7	104.1	104.3	-51.97	-5,312.5	706.1	245.5	72.1	173.41	1.416	Level 3
13,200.0	7,852.6	13,091.1	7,700.9	106.0	106.2	-51.89	-5,412.5	706.1	245.7	69.4	176.37	1.393	Level 3
13,300.0	7,853.1	13,191.1	7,701.0	107.9	108.1	-51.81	-5,512.5	706.1	246.0	66.7	179.33	1.372	Level 3
13,400.0	7,853.7	13,291.1	7,701.2	109.8	110.0	-51.73	-5,612.5	706.1	246.2	64.0	182.29	1.351	Level 3
13,500.0	7,854.2	13,391.1	7,701.3	111.7	111.8	-51.66	-5,712.5	706.1	246.5	61.3	185.25	1.331	Level 3
13,600.0	7,854.8	13,491.1	7,701.4	113.6	113.7	-51.58	-5,812.5	706.1	246.8	58.6	188.20	1.311	Level 3
13,700.0	7,855.3	13,591.1	7,701.6	115.4	115.6	-51.51	-5,912.5	706.1	247.0	55.9	191.14	1.292	Level 3
13,800.0	7,855.9	13,691.1	7,701.7	117.3	117.5	-51.43	-6,012.5	706.1	247.3	53.2	194.09	1.274	Level 3
13,900.0	7,856.5	13,791.1	7,701.9	119.2	119.4	-51.35	-6,112.5	706.1	247.5	50.5	197.03	1.256	Level 3
14,000.0	7,857.0	13,891.1	7,702.0	121.1	121.3	-51.28	-6,212.5	706.1	247.8	47.8	199.96	1.239	Level 2
14,100.0	7,857.6	13,991.1	7,702.1	123.0	123.2	-51.20	-6,312.5	706.1	248.1	45.2	202.90	1.223	Level 2
14,200.0	7,858.1	14,091.1	7,702.3	124.9	125.0	-51.13	-6,412.5	706.1	248.3	42.5	205.82	1.207	Level 2
14,300.0	7,858.7	14,191.1	7,702.4	126.8	126.9	-51.05	-6,512.5	706.1	248.6	39.9	208.75	1.191	Level 2
14,400.0	7,859.3	14,291.1	7,702.6	128.7	128.8	-50.98	-6,612.5	706.1	248.9	37.2	211.67	1.176	Level 2
14,500.0	7,859.8	14,391.1	7,702.7	130.6	130.7	-50.90	-6,712.5	706.1	249.1	34.5	214.58	1.161	Level 2
14,600.0	7,860.4	14,491.1	7,702.8	132.5	132.6	-50.83	-6,812.5	706.1	249.4	31.9	217.50	1.147	Level 2
14,700.0	7,860.9	14,591.1	7,703.0	134.4	134.5	-50.75	-6,912.5	706.1	249.7	29.3	220.40	1.133	Level 2
14,712.8	7,861.0	14,603.6	7,703.0	134.6	134.7	-50.74	-6,925.0	706.1	249.7	29.0	220.73	1.131	Level 2, SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Jacobucci 1N67W32S Pad Sec.32-T1N-R67W - Jacobucci 32S-343 - Wellbore #1 - Plan #2 (10-8-14)

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	-56.0	56.0				
100.0	100.0	100.0	100.0	0.1	0.1	-89.98	0.0	-56.0	56.0	55.8	0.22	249.269	
200.0	200.0	200.0	200.0	0.3	0.3	-89.98	0.0	-56.0	56.0	55.4	0.67	83.090	
300.0	300.0	300.0	300.0	0.6	0.6	-89.98	0.0	-56.0	56.0	54.9	1.12	49.854	
400.0	400.0	400.0	400.0	0.8	0.8	-89.98	0.0	-56.0	56.0	54.5	1.57	35.610	
500.0	500.0	500.0	500.0	1.0	1.0	-89.98	0.0	-56.0	56.0	54.0	2.02	27.697	
600.0	600.0	600.0	600.0	1.2	1.2	-89.98	0.0	-56.0	56.0	53.6	2.47	22.661	
700.0	700.0	700.0	700.0	1.5	1.5	-89.98	0.0	-56.0	56.0	53.1	2.92	19.175	
800.0	800.0	800.0	800.0	1.7	1.7	-89.98	0.0	-56.0	56.0	52.7	3.37	16.618	
900.0	900.0	900.0	900.0	1.9	1.9	-89.98	0.0	-56.0	56.0	52.2	3.82	14.663	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-89.98	0.0	-56.0	56.0	51.8	4.27	13.119	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	-89.98	0.0	-56.0	56.0	51.3	4.72	11.870	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	-89.98	0.0	-56.0	56.0	50.9	5.17	10.838	
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	-89.98	0.0	-56.0	56.0	50.4	5.62	9.971	
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	-89.98	0.0	-56.0	56.0	50.0	6.07	9.232	CC, ES
1,500.0	1,500.0	1,500.0	1,500.0	3.3	3.3	-154.56	0.0	-56.0	57.6	51.1	6.51	8.850	
1,600.0	1,599.8	1,599.8	1,599.8	3.5	3.5	-156.59	0.0	-56.0	62.4	55.4	6.94	8.992	
1,700.0	1,699.5	1,697.9	1,697.9	3.7	3.7	-158.25	1.2	-57.2	71.5	64.2	7.35	9.730	
1,800.0	1,798.7	1,795.1	1,795.0	3.9	3.9	-158.54	4.8	-60.7	86.1	78.3	7.76	11.094	
1,900.0	1,897.7	1,891.4	1,890.9	4.2	4.1	-157.73	10.6	-66.4	104.3	96.1	8.20	12.726	
2,000.0	1,996.8	1,988.5	1,987.4	4.4	4.4	-156.21	18.4	-74.0	124.3	115.6	8.64	14.379	
2,100.0	2,095.8	2,086.4	2,084.6	4.7	4.6	-155.04	26.3	-81.8	144.4	135.3	9.09	15.883	
2,200.0	2,194.9	2,184.3	2,181.9	5.0	4.8	-154.15	34.3	-89.6	164.6	155.1	9.55	17.234	
2,300.0	2,293.9	2,282.2	2,279.2	5.3	5.1	-153.46	42.3	-97.4	184.9	174.9	10.02	18.452	
2,400.0	2,393.0	2,380.1	2,376.4	5.6	5.4	-152.90	50.3	-105.2	205.2	194.7	10.49	19.551	
2,500.0	2,492.0	2,478.0	2,473.7	5.9	5.6	-152.45	58.2	-113.0	225.4	214.5	10.97	20.549	
2,600.0	2,591.1	2,575.9	2,571.0	6.2	5.9	-152.07	66.2	-120.8	245.7	234.3	11.45	21.455	
2,700.0	2,690.1	2,673.8	2,668.2	6.5	6.2	-151.75	74.2	-128.6	266.0	254.1	11.94	22.281	
2,800.0	2,789.1	2,771.7	2,765.5	6.8	6.4	-151.47	82.2	-136.4	286.3	273.9	12.43	23.036	
2,900.0	2,888.2	2,869.6	2,862.8	7.1	6.7	-151.23	90.2	-144.2	306.7	293.7	12.92	23.729	
3,000.0	2,987.2	2,967.5	2,960.0	7.5	7.0	-151.02	98.1	-152.0	327.0	313.6	13.42	24.366	
3,100.0	3,086.3	3,065.4	3,057.3	7.8	7.3	-150.83	106.1	-159.8	347.3	333.4	13.92	24.954	
3,200.0	3,185.3	3,163.4	3,154.6	8.1	7.5	-150.67	114.1	-167.7	367.6	353.2	14.42	25.497	
3,300.0	3,284.4	3,261.3	3,251.9	8.4	7.8	-150.52	122.1	-175.5	388.0	373.0	14.92	26.000	
3,400.0	3,383.4	3,359.2	3,349.1	8.7	8.1	-150.39	130.0	-183.3	408.3	392.9	15.43	26.467	
3,500.0	3,482.5	3,457.1	3,446.4	9.1	8.4	-150.27	138.0	-191.1	428.6	412.7	15.93	26.902	
3,600.0	3,581.5	3,555.0	3,543.7	9.4	8.7	-150.16	146.0	-198.9	449.0	432.5	16.44	27.308	
3,700.0	3,680.5	3,652.9	3,640.9	9.7	9.0	-150.06	154.0	-206.7	469.3	452.4	16.95	27.688	
3,800.0	3,779.6	3,750.8	3,738.2	10.1	9.2	-149.96	162.0	-214.5	489.6	472.2	17.46	28.043	
3,900.0	3,878.6	3,848.7	3,835.5	10.4	9.5	-149.88	169.9	-222.3	510.0	492.0	17.97	28.376	
4,000.0	3,977.7	3,946.6	3,932.7	10.7	9.8	-149.80	177.9	-230.1	530.3	511.8	18.48	28.690	
4,100.0	4,076.7	4,044.5	4,030.0	11.0	10.1	-149.73	185.9	-237.9	550.7	531.7	19.00	28.985	
4,200.0	4,175.8	4,142.4	4,127.3	11.4	10.4	-149.66	193.9	-245.7	571.0	551.5	19.51	29.263	
4,300.0	4,274.8	4,240.3	4,224.5	11.7	10.7	-149.60	201.9	-253.5	591.3	571.3	20.03	29.525	
4,400.0	4,373.9	4,338.2	4,321.8	12.0	11.0	-149.54	209.8	-261.3	611.7	591.1	20.54	29.774	
4,500.0	4,472.9	4,436.1	4,419.1	12.4	11.3	-149.49	217.8	-269.1	632.0	611.0	21.06	30.009	
4,600.0	4,571.9	4,534.1	4,516.3	12.7	11.6	-149.44	225.8	-276.9	652.4	630.8	21.58	30.232	
4,700.0	4,671.0	4,632.0	4,613.6	13.0	11.9	-149.39	233.8	-284.8	672.7	650.6	22.10	30.443	
4,800.0	4,770.0	4,738.2	4,719.2	13.4	12.2	-149.36	242.2	-293.0	692.8	670.2	22.61	30.638	
4,900.0	4,869.1	4,858.7	4,839.3	13.7	12.4	-149.55	248.8	-299.5	710.5	687.3	23.11	30.741	
5,000.0	4,968.1	4,980.2	4,960.7	14.0	12.6	-150.00	251.8	-302.4	725.0	701.4	23.59	30.738	

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 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Jacobucci 1N67W32S Pad Sec.32-T1N-R67W - Jacobucci 32S-343 - Wellbore #1 - Plan #2 (10-8-14)

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	5,067.2	5,086.6	5,067.2	14.4	12.8	-150.56	252.0	-302.6	737.2	713.1	24.03	30.675	
5,200.0	5,166.2	5,185.7	5,166.2	14.7	13.0	-151.08	252.0	-302.6	749.2	724.7	24.48	30.600	
5,300.0	5,265.3	5,284.7	5,265.3	15.1	13.2	-151.58	252.0	-302.6	761.4	736.4	24.94	30.528	
5,400.0	5,364.3	5,383.7	5,364.3	15.4	13.4	-152.07	252.0	-302.6	773.5	748.1	25.39	30.461	
5,500.0	5,463.3	5,482.8	5,463.3	15.7	13.6	-152.54	252.0	-302.6	785.8	759.9	25.85	30.398	
5,600.0	5,562.5	5,581.9	5,562.5	16.0	13.8	-153.03	252.0	-302.6	797.5	771.2	26.32	30.298	
5,700.0	5,661.9	5,681.4	5,661.9	16.3	14.0	-153.44	252.0	-302.6	806.5	779.8	26.77	30.132	
5,800.0	5,761.7	5,781.2	5,761.7	16.5	14.1	-153.70	252.0	-302.6	812.4	785.2	27.18	29.890	
5,900.0	5,861.7	5,881.1	5,861.7	16.6	14.3	-153.82	252.0	-302.6	815.2	787.6	27.56	29.575	
6,000.0	5,961.7	5,981.1	5,961.7	16.8	14.5	-90.00	252.0	-302.6	815.4	787.5	27.94	29.182	
6,100.0	6,061.7	6,081.1	6,061.7	16.9	14.7	-90.00	252.0	-302.6	815.4	787.1	28.35	28.767	
6,200.0	6,161.7	6,181.1	6,161.7	17.1	14.9	-90.00	252.0	-302.6	815.4	786.7	28.75	28.362	
6,300.0	6,261.7	6,281.1	6,261.7	17.3	15.1	-90.00	252.0	-302.6	815.4	786.3	29.16	27.967	
6,400.0	6,361.7	6,381.1	6,361.7	17.5	15.3	-90.00	252.0	-302.6	815.4	785.8	29.56	27.582	
6,500.0	6,461.7	6,481.1	6,461.7	17.6	15.5	-90.00	252.0	-302.6	815.4	785.4	29.97	27.206	
6,600.0	6,561.7	6,581.1	6,561.7	17.8	15.8	-90.00	252.0	-302.6	815.4	785.0	30.38	26.839	
6,700.0	6,661.7	6,681.1	6,661.7	18.0	16.0	-90.00	252.0	-302.6	815.4	784.6	30.79	26.481	
6,800.0	6,761.7	6,781.1	6,761.7	18.2	16.2	-90.00	252.0	-302.6	815.4	784.2	31.20	26.132	
6,900.0	6,861.7	6,881.1	6,861.7	18.3	16.4	-90.00	252.0	-302.6	815.4	783.8	31.62	25.791	
6,964.8	6,926.4	6,945.9	6,926.4	18.5	16.5	-90.00	252.0	-302.6	815.4	783.5	31.88	25.574	
7,000.0	6,961.7	6,981.1	6,961.7	18.5	16.6	-90.01	251.9	-302.6	815.4	783.4	32.03	25.461	
7,016.9	6,978.6	6,998.0	6,978.5	18.6	16.6	-90.04	251.4	-302.6	815.4	783.3	32.09	25.410	
7,100.0	7,061.7	7,080.3	7,060.5	18.7	16.7	89.42	243.8	-302.6	815.4	783.1	32.35	25.208	
7,200.0	7,161.4	7,177.3	7,155.2	18.8	16.8	88.42	223.5	-302.6	815.7	783.2	32.55	25.060	
7,300.0	7,259.4	7,272.6	7,245.2	18.9	16.8	87.45	192.1	-302.6	816.2	783.6	32.65	24.996	
7,400.0	7,354.0	7,366.4	7,329.2	19.0	16.8	86.53	150.5	-302.6	816.9	784.2	32.71	24.977	
7,500.0	7,443.6	7,458.9	7,406.3	19.0	16.9	85.67	99.7	-302.6	817.8	785.0	32.76	24.961	
7,600.0	7,526.6	7,550.0	7,475.9	19.0	16.9	84.89	40.9	-302.6	818.7	785.8	32.88	24.903	
7,700.0	7,601.7	7,640.4	7,537.4	19.0	16.9	84.18	-25.2	-302.6	819.7	786.5	33.12	24.751	
7,800.0	7,667.6	7,729.7	7,590.2	19.1	17.0	83.57	-97.3	-302.6	820.6	787.1	33.54	24.465	
7,900.0	7,723.0	7,818.3	7,633.9	19.2	17.3	83.06	-174.3	-302.6	821.4	787.3	34.20	24.022	
8,000.0	7,767.2	7,906.3	7,668.1	19.5	17.8	82.66	-255.3	-302.6	822.2	787.0	35.11	23.415	
8,100.0	7,799.3	7,993.9	7,692.8	20.0	18.4	82.37	-339.3	-302.6	822.7	786.4	36.31	22.657	
8,200.0	7,818.7	8,081.3	7,707.6	20.6	19.1	82.19	-425.3	-302.6	823.0	785.3	37.79	21.782	
8,300.0	7,825.2	8,168.6	7,712.5	21.5	20.0	82.13	-512.5	-302.6	823.2	783.7	39.50	20.839	
8,400.0	7,825.7	8,268.6	7,712.6	22.5	21.1	82.10	-612.5	-302.6	823.2	781.6	41.63	19.775	
8,500.0	7,826.3	8,368.6	7,712.7	23.6	22.3	82.07	-712.5	-302.6	823.3	779.3	43.97	18.724	
8,600.0	7,826.9	8,468.6	7,712.7	24.8	23.6	82.03	-812.5	-302.6	823.4	776.9	46.50	17.706	
8,700.0	7,827.4	8,568.6	7,712.8	26.1	24.9	82.00	-912.5	-302.6	823.4	774.2	49.20	16.737	
8,800.0	7,828.0	8,668.6	7,712.9	27.5	26.4	81.96	-1,012.5	-302.6	823.5	771.5	52.03	15.827	
8,900.0	7,828.5	8,768.6	7,712.9	28.9	27.9	81.93	-1,112.5	-302.6	823.6	768.6	54.98	14.980	
9,000.0	7,829.1	8,868.6	7,713.0	30.4	29.4	81.90	-1,212.5	-302.6	823.6	765.6	58.02	14.194	
9,100.0	7,829.7	8,968.6	7,713.1	31.9	31.0	81.86	-1,312.5	-302.6	823.7	762.5	61.15	13.469	
9,200.0	7,830.2	9,068.6	7,713.1	33.5	32.6	81.83	-1,412.5	-302.6	823.8	759.4	64.36	12.800	
9,300.0	7,830.8	9,168.6	7,713.2	35.1	34.2	81.80	-1,512.5	-302.6	823.8	756.2	67.62	12.184	
9,400.0	7,831.3	9,268.6	7,713.3	36.7	35.9	81.76	-1,612.5	-302.6	823.9	753.0	70.93	11.616	
9,500.0	7,831.9	9,368.6	7,713.4	38.4	37.6	81.73	-1,712.5	-302.6	824.0	749.7	74.29	11.091	
9,600.0	7,832.4	9,468.6	7,713.4	40.1	39.3	81.70	-1,812.5	-302.6	824.0	746.4	77.69	10.607	
9,700.0	7,833.0	9,568.6	7,713.5	41.8	41.1	81.66	-1,912.5	-302.6	824.1	743.0	81.12	10.159	
9,800.0	7,833.6	9,668.6	7,713.6	43.5	42.8	81.63	-2,012.5	-302.6	824.2	739.6	84.58	9.744	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Jacobucci 1N67W32S Pad Sec.32-T1N-R67W - Jacobucci 32S-343 - Wellbore #1 - Plan #2 (10-8-14)

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	7,834.1	9,768.6	7,713.6	45.2	44.6	81.59	-2,112.5	-302.6	824.3	736.2	88.07	9.359	
10,000.0	7,834.7	9,868.6	7,713.7	47.0	46.4	81.56	-2,212.5	-302.6	824.3	732.7	91.58	9.001	
10,100.0	7,835.2	9,968.6	7,713.8	48.7	48.1	81.53	-2,312.4	-302.6	824.4	729.3	95.12	8.667	
10,200.0	7,835.8	10,068.5	7,713.8	50.5	49.9	81.49	-2,412.4	-302.6	824.5	725.8	98.67	8.356	
10,300.0	7,836.4	10,168.5	7,713.9	52.3	51.7	81.46	-2,512.4	-302.6	824.5	722.3	102.24	8.065	
10,400.0	7,836.9	10,268.5	7,714.0	54.1	53.5	81.43	-2,612.4	-302.6	824.6	718.8	105.82	7.793	
10,500.0	7,837.5	10,368.5	7,714.1	55.9	55.4	81.39	-2,712.4	-302.6	824.7	715.3	109.41	7.537	
10,600.0	7,838.0	10,468.5	7,714.1	57.7	57.2	81.36	-2,812.4	-302.6	824.8	711.7	113.02	7.297	
10,700.0	7,838.6	10,568.5	7,714.2	59.5	59.0	81.33	-2,912.4	-302.6	824.8	708.2	116.64	7.072	
10,800.0	7,839.1	10,668.5	7,714.3	61.3	60.9	81.29	-3,012.4	-302.6	824.9	704.6	120.27	6.859	
10,900.0	7,839.7	10,768.5	7,714.3	63.1	62.7	81.26	-3,112.4	-302.6	825.0	701.1	123.90	6.658	
11,000.0	7,840.3	10,868.5	7,714.4	65.0	64.5	81.23	-3,212.4	-302.6	825.1	697.5	127.55	6.469	
11,100.0	7,840.8	10,968.5	7,714.5	66.8	66.4	81.19	-3,312.4	-302.6	825.1	693.9	131.20	6.289	
11,200.0	7,841.4	11,068.5	7,714.5	68.7	68.2	81.16	-3,412.4	-302.6	825.2	690.4	134.86	6.119	
11,300.0	7,841.9	11,168.5	7,714.6	70.5	70.1	81.13	-3,512.4	-302.6	825.3	686.8	138.52	5.958	
11,400.0	7,842.5	11,268.5	7,714.7	72.3	72.0	81.09	-3,612.4	-302.6	825.4	683.2	142.19	5.805	
11,500.0	7,843.1	11,368.5	7,714.8	74.2	73.8	81.06	-3,712.4	-302.6	825.4	679.6	145.87	5.659	
11,600.0	7,843.6	11,468.5	7,714.8	76.0	75.7	81.02	-3,812.4	-302.6	825.5	676.0	149.54	5.520	
11,700.0	7,844.2	11,568.5	7,714.9	77.9	77.5	80.99	-3,912.4	-302.6	825.6	672.4	153.23	5.388	
11,800.0	7,844.7	11,668.5	7,715.0	79.8	79.4	80.96	-4,012.4	-302.6	825.7	668.8	156.91	5.262	
11,900.0	7,845.3	11,768.5	7,715.0	81.6	81.3	80.92	-4,112.4	-302.6	825.7	665.1	160.61	5.141	
12,000.0	7,845.8	11,868.5	7,715.1	83.5	83.2	80.89	-4,212.4	-302.6	825.8	661.5	164.30	5.026	
12,100.0	7,846.4	11,968.5	7,715.2	85.4	85.0	80.86	-4,312.4	-302.6	825.9	657.9	168.00	4.916	
12,200.0	7,847.0	12,068.5	7,715.2	87.2	86.9	80.82	-4,412.4	-302.6	826.0	654.3	171.70	4.811	
12,300.0	7,847.5	12,168.5	7,715.3	89.1	88.8	80.79	-4,512.4	-302.6	826.1	650.7	175.40	4.710	
12,400.0	7,848.1	12,268.5	7,715.4	91.0	90.7	80.76	-4,612.4	-302.6	826.1	647.0	179.10	4.613	
12,500.0	7,848.6	12,368.5	7,715.5	92.8	92.6	80.72	-4,712.4	-302.6	826.2	643.4	182.81	4.520	
12,600.0	7,849.2	12,468.5	7,715.5	94.7	94.4	80.69	-4,812.4	-302.6	826.3	639.8	186.52	4.430	
12,700.0	7,849.8	12,568.5	7,715.6	96.6	96.3	80.66	-4,912.4	-302.6	826.4	636.1	190.23	4.344	
12,800.0	7,850.3	12,668.5	7,715.7	98.5	98.2	80.62	-5,012.4	-302.6	826.5	632.5	193.94	4.261	
12,900.0	7,850.9	12,768.5	7,715.7	100.4	100.1	80.59	-5,112.4	-302.6	826.5	628.9	197.66	4.182	
13,000.0	7,851.4	12,868.5	7,715.8	102.2	102.0	80.56	-5,212.4	-302.6	826.6	625.2	201.37	4.105	
13,100.0	7,852.0	12,968.5	7,715.9	104.1	103.9	80.52	-5,312.4	-302.6	826.7	621.6	205.09	4.031	
13,200.0	7,852.6	13,068.5	7,715.9	106.0	105.8	80.49	-5,412.4	-302.6	826.8	618.0	208.81	3.960	
13,300.0	7,853.1	13,168.5	7,716.0	107.9	107.6	80.46	-5,512.4	-302.6	826.9	614.3	212.52	3.891	
13,400.0	7,853.7	13,268.5	7,716.1	109.8	109.5	80.42	-5,612.4	-302.6	826.9	610.7	216.24	3.824	
13,500.0	7,854.2	13,368.5	7,716.2	111.7	111.4	80.39	-5,712.4	-302.6	827.0	607.0	219.97	3.760	
13,600.0	7,854.8	13,468.5	7,716.2	113.6	113.3	80.36	-5,812.4	-302.6	827.1	603.4	223.69	3.698	
13,700.0	7,855.3	13,568.5	7,716.3	115.4	115.2	80.32	-5,912.4	-302.6	827.2	599.8	227.41	3.637	
13,800.0	7,855.9	13,668.5	7,716.4	117.3	117.1	80.29	-6,012.4	-302.6	827.3	596.1	231.13	3.579	
13,900.0	7,856.5	13,768.5	7,716.4	119.2	119.0	80.26	-6,112.4	-302.6	827.3	592.5	234.86	3.523	
14,000.0	7,857.0	13,868.5	7,716.5	121.1	120.9	80.22	-6,212.4	-302.6	827.4	588.8	238.58	3.468	
14,100.0	7,857.6	13,968.5	7,716.6	123.0	122.8	80.19	-6,312.4	-302.6	827.5	585.2	242.31	3.415	
14,200.0	7,858.1	14,068.5	7,716.6	124.9	124.7	80.16	-6,412.4	-302.6	827.6	581.6	246.03	3.364	
14,300.0	7,858.7	14,168.5	7,716.7	126.8	126.6	80.12	-6,512.4	-302.6	827.7	577.9	249.76	3.314	
14,400.0	7,859.3	14,268.5	7,716.8	128.7	128.5	80.09	-6,612.4	-302.6	827.8	574.3	253.48	3.266	
14,500.0	7,859.8	14,368.5	7,716.8	130.6	130.4	80.06	-6,712.4	-302.6	827.8	570.6	257.21	3.219	
14,600.0	7,860.4	14,468.5	7,716.9	132.5	132.3	80.02	-6,812.4	-302.6	827.9	567.0	260.93	3.173	
14,700.0	7,860.9	14,568.5	7,717.0	134.4	134.2	79.99	-6,912.4	-302.6	828.0	563.4	264.66	3.129	
14,712.8	7,861.0	14,581.2	7,717.0	134.6	134.4	79.98	-6,925.1	-302.6	828.0	562.9	265.09	3.124	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Jacobucci 1N67W32S Pad Sec.32-T1N-R67W - Jacobucci 32S-403 - Wellbore #1 - Plan #1 (10-8-14)

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	58.8	58.8				
100.0	100.0	100.0	100.0	0.1	0.1	89.97	0.0	58.8	58.8	58.6	0.22	261.732	
200.0	200.0	200.0	200.0	0.3	0.3	89.97	0.0	58.8	58.8	58.2	0.67	87.244	
300.0	300.0	300.0	300.0	0.6	0.6	89.97	0.0	58.8	58.8	57.7	1.12	52.346	
400.0	400.0	400.0	400.0	0.8	0.8	89.97	0.0	58.8	58.8	57.3	1.57	37.390	
500.0	500.0	500.0	500.0	1.0	1.0	89.97	0.0	58.8	58.8	56.8	2.02	29.081	
600.0	600.0	600.0	600.0	1.2	1.2	89.97	0.0	58.8	58.8	56.4	2.47	23.794	
700.0	700.0	700.0	700.0	1.5	1.5	89.97	0.0	58.8	58.8	55.9	2.92	20.133	
800.0	800.0	800.0	800.0	1.7	1.7	89.97	0.0	58.8	58.8	55.5	3.37	17.449	
900.0	900.0	900.0	900.0	1.9	1.9	89.97	0.0	58.8	58.8	55.0	3.82	15.396	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	89.97	0.0	58.8	58.8	54.6	4.27	13.775	CC, ES
1,100.0	1,100.0	1,098.0	1,098.0	2.4	2.3	89.58	0.4	60.5	60.5	55.8	4.71	12.853	
1,200.0	1,200.0	1,195.8	1,195.6	2.6	2.6	88.54	1.7	65.3	65.5	60.3	5.14	12.744	
1,300.0	1,300.0	1,293.1	1,292.6	2.8	2.8	87.12	3.7	73.4	73.8	68.2	5.58	13.232	
1,400.0	1,400.0	1,389.8	1,388.6	3.0	3.0	85.60	6.5	84.5	85.5	79.5	6.03	14.174	
1,500.0	1,500.0	1,485.8	1,483.5	3.3	3.3	20.59	10.1	98.7	98.9	92.5	6.43	15.389	
1,600.0	1,599.8	1,581.4	1,577.4	3.5	3.6	20.04	14.4	115.8	112.4	105.6	6.85	16.420	
1,700.0	1,699.5	1,680.1	1,674.0	3.7	3.9	20.00	19.4	135.5	124.7	117.4	7.27	17.148	
1,800.0	1,798.7	1,779.7	1,771.5	3.9	4.3	20.49	24.4	155.4	133.7	126.0	7.70	17.366	
1,900.0	1,897.7	1,879.4	1,869.0	4.2	4.6	21.20	29.4	175.3	141.3	133.1	8.16	17.308	
2,000.0	1,996.8	1,979.1	1,966.6	4.4	5.0	21.85	34.4	195.2	148.9	140.2	8.63	17.241	
2,100.0	2,095.8	2,078.8	2,064.2	4.7	5.4	22.43	39.4	215.1	156.4	147.3	9.11	17.166	
2,200.0	2,194.9	2,178.5	2,161.7	5.0	5.8	22.95	44.4	235.0	164.1	154.4	9.60	17.087	
2,300.0	2,293.9	2,278.2	2,259.3	5.3	6.2	23.43	49.4	254.9	171.7	161.6	10.09	17.006	
2,400.0	2,393.0	2,377.9	2,356.9	5.6	6.7	23.87	54.4	274.8	179.3	168.7	10.59	16.925	
2,500.0	2,492.0	2,477.6	2,454.4	5.9	7.1	24.28	59.5	294.7	186.9	175.8	11.10	16.843	
2,600.0	2,591.1	2,577.3	2,552.0	6.2	7.5	24.65	64.5	314.6	194.6	183.0	11.61	16.763	
2,700.0	2,690.1	2,677.0	2,649.6	6.5	7.9	24.99	69.5	334.5	202.2	190.1	12.12	16.683	
2,800.0	2,789.1	2,776.7	2,747.1	6.8	8.4	25.31	74.5	354.4	209.9	197.2	12.64	16.606	
2,900.0	2,888.2	2,876.4	2,844.7	7.1	8.8	25.61	79.5	374.3	217.5	204.4	13.16	16.531	
3,000.0	2,987.2	2,976.1	2,942.3	7.5	9.2	25.88	84.5	394.2	225.2	211.5	13.68	16.458	
3,100.0	3,086.3	3,075.8	3,039.8	7.8	9.7	26.14	89.5	414.1	232.9	218.7	14.21	16.388	
3,200.0	3,185.3	3,175.5	3,137.4	8.1	10.1	26.38	94.6	434.0	240.6	225.8	14.74	16.320	
3,300.0	3,284.4	3,275.2	3,234.9	8.4	10.5	26.61	99.6	453.9	248.2	233.0	15.27	16.254	
3,400.0	3,383.4	3,374.9	3,332.5	8.7	11.0	26.82	104.6	473.8	255.9	240.1	15.81	16.191	
3,500.0	3,482.5	3,474.6	3,430.1	9.1	11.4	27.02	109.6	493.7	263.6	247.3	16.34	16.130	
3,600.0	3,581.5	3,574.3	3,527.6	9.4	11.9	27.21	114.6	513.7	271.3	254.4	16.88	16.072	
3,700.0	3,680.5	3,674.0	3,625.2	9.7	12.3	27.39	119.6	533.6	279.0	261.6	17.42	16.015	
3,800.0	3,779.6	3,773.7	3,722.8	10.1	12.8	27.56	124.6	553.5	286.7	268.7	17.96	15.961	
3,900.0	3,878.6	3,873.4	3,820.3	10.4	13.2	27.72	129.6	573.4	294.4	275.9	18.51	15.908	
4,000.0	3,977.7	3,973.1	3,917.9	10.7	13.6	27.87	134.7	593.3	302.1	283.1	19.05	15.858	
4,100.0	4,076.7	4,072.8	4,015.5	11.0	14.1	28.01	139.7	613.2	309.8	290.2	19.60	15.809	
4,200.0	4,175.8	4,172.5	4,113.0	11.4	14.5	28.15	144.7	633.1	317.5	297.4	20.14	15.763	
4,300.0	4,274.8	4,272.2	4,210.6	11.7	15.0	28.28	149.7	653.0	325.2	304.5	20.69	15.718	
4,400.0	4,373.9	4,371.9	4,308.2	12.0	15.4	28.41	154.7	672.9	332.9	311.7	21.24	15.674	
4,500.0	4,472.9	4,471.6	4,405.7	12.4	15.9	28.53	159.7	692.8	340.6	318.9	21.79	15.632	
4,600.0	4,571.9	4,571.3	4,503.3	12.7	16.3	28.64	164.7	712.7	348.4	326.0	22.34	15.592	
4,700.0	4,671.0	4,671.0	4,600.9	13.0	16.8	28.75	169.8	732.6	356.1	333.2	22.89	15.553	
4,800.0	4,770.0	4,770.7	4,698.4	13.4	17.2	28.85	174.8	752.5	363.8	340.3	23.45	15.516	
4,900.0	4,869.1	4,870.4	4,796.0	13.7	17.7	28.95	179.8	772.4	371.5	347.5	24.00	15.479	
5,000.0	4,968.1	4,970.1	4,893.5	14.0	18.1	29.05	184.8	792.3	379.2	354.7	24.55	15.444	

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 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Jacobucci 1N67W32S Pad Sec.32-T1N-R67W - Jacobucci 32S-403 - Wellbore #1 - Plan #1 (10-8-14)

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	5,067.2	5,069.8	4,991.1	14.4	18.6	29.14	189.8	812.2	386.9	361.8	25.11	15.410	
5,200.0	5,166.2	5,169.5	5,088.7	14.7	19.0	29.23	194.8	832.1	394.7	369.0	25.66	15.378	
5,300.0	5,265.3	5,269.2	5,186.2	15.1	19.5	29.31	199.8	852.0	402.4	376.2	26.22	15.346	
5,400.0	5,364.3	5,368.9	5,283.8	15.4	19.9	29.40	204.9	871.9	410.1	383.3	26.78	15.315	
5,500.0	5,463.3	5,468.6	5,381.4	15.7	20.4	29.48	209.9	891.8	417.8	390.5	27.33	15.286	
5,600.0	5,562.5	5,568.3	5,478.9	16.0	20.8	29.56	214.9	911.7	426.1	398.2	27.87	15.287	
5,700.0	5,661.9	5,667.6	5,576.1	16.3	21.2	29.50	219.9	931.5	437.0	408.7	28.32	15.432	
5,800.0	5,761.7	5,766.6	5,673.0	16.5	21.7	29.26	224.9	951.3	451.1	422.3	28.71	15.710	
5,900.0	5,861.7	5,865.0	5,769.3	16.6	22.1	28.86	229.8	970.9	468.1	439.1	29.04	16.117	
6,000.0	5,961.7	5,962.9	5,865.1	16.8	22.6	92.07	234.7	990.5	487.7	458.3	29.38	16.597	
6,100.0	6,061.7	6,071.5	5,971.4	16.9	23.0	91.38	240.0	1,011.5	506.9	477.2	29.77	17.029	
6,200.0	6,161.7	6,190.8	6,089.2	17.1	23.4	90.80	244.8	1,030.5	522.8	492.6	30.16	17.335	
6,300.0	6,261.7	6,311.7	6,209.1	17.3	23.7	90.39	248.4	1,044.8	534.6	504.1	30.55	17.501	
6,400.0	6,361.7	6,433.5	6,330.6	17.5	23.9	90.13	250.8	1,054.3	542.4	511.5	30.94	17.531	
6,500.0	6,461.7	6,556.0	6,453.0	17.6	24.1	90.01	251.9	1,058.8	546.1	514.8	31.33	17.428	
6,600.0	6,561.7	6,664.7	6,561.7	17.8	24.2	90.00	252.0	1,059.2	546.4	514.7	31.72	17.227	
6,700.0	6,661.7	6,764.7	6,661.7	18.0	24.4	90.00	252.0	1,059.2	546.4	514.3	32.09	17.025	
6,800.0	6,761.7	6,864.7	6,761.7	18.2	24.5	90.00	252.0	1,059.2	546.4	513.9	32.48	16.825	
6,900.0	6,861.7	6,964.7	6,861.7	18.3	24.6	90.00	252.0	1,059.2	546.4	513.5	32.86	16.628	
7,000.0	6,961.7	7,064.7	6,961.7	18.5	24.8	90.00	252.0	1,059.2	546.4	513.2	33.24	16.436	
7,058.6	7,020.3	7,123.4	7,020.3	18.6	24.8	-90.00	252.0	1,059.2	546.4	512.9	33.47	16.325	
7,100.0	7,061.7	7,164.7	7,061.7	18.7	24.9	-89.98	251.8	1,059.2	546.4	512.8	33.63	16.249	
7,200.0	7,161.4	7,264.5	7,161.0	18.8	25.0	-89.75	243.1	1,059.2	546.4	512.5	33.93	16.103	
7,300.0	7,259.4	7,364.1	7,258.1	18.9	25.0	-89.53	221.5	1,059.2	546.4	512.3	34.12	16.016	
7,400.0	7,354.0	7,463.3	7,351.4	19.0	25.1	-89.31	187.7	1,059.2	546.4	512.2	34.22	15.967	
7,500.0	7,443.6	7,562.3	7,439.2	19.0	25.1	-89.11	142.1	1,059.2	546.5	512.2	34.29	15.935	
7,600.0	7,526.6	7,661.1	7,520.2	19.0	25.1	-88.92	85.8	1,059.2	546.5	512.1	34.39	15.890	
7,700.0	7,601.7	7,759.7	7,593.2	19.0	25.1	-88.75	19.6	1,059.2	546.5	511.9	34.59	15.800	
7,800.0	7,667.6	7,858.0	7,656.9	19.1	25.2	-88.60	-55.2	1,059.2	546.6	511.6	34.97	15.630	
7,900.0	7,723.0	7,956.2	7,710.4	19.2	25.3	-88.47	-137.5	1,059.2	546.6	511.0	35.59	15.356	
8,000.0	7,767.2	8,054.3	7,752.8	19.5	25.5	-88.37	-225.8	1,059.2	546.6	510.1	36.52	14.968	
8,100.0	7,799.3	8,152.2	7,783.6	20.0	25.8	-88.30	-318.8	1,059.2	546.6	508.9	37.77	14.474	
8,200.0	7,818.7	8,250.0	7,802.2	20.6	26.2	-88.26	-414.7	1,059.2	546.7	507.3	39.33	13.898	
8,300.0	7,825.2	8,348.1	7,808.4	21.5	26.7	-88.24	-512.5	1,059.2	546.7	505.5	41.18	13.274	
8,400.0	7,825.7	8,448.1	7,809.2	22.5	27.4	-88.27	-612.5	1,059.2	546.6	503.4	43.27	12.632	
8,500.0	7,826.3	8,548.1	7,810.1	23.6	28.3	-88.30	-712.5	1,059.2	546.6	501.1	45.58	11.994	
8,600.0	7,826.9	8,648.1	7,810.9	24.8	29.2	-88.33	-812.5	1,059.2	546.6	498.6	48.08	11.370	
8,700.0	7,827.4	8,748.1	7,811.7	26.1	30.3	-88.35	-912.5	1,059.2	546.6	495.9	50.74	10.773	
8,800.0	7,828.0	8,848.1	7,812.5	27.5	31.4	-88.38	-1,012.5	1,059.2	546.6	493.1	53.54	10.209	
8,900.0	7,828.5	8,948.1	7,813.3	28.9	32.6	-88.41	-1,112.5	1,059.2	546.6	490.1	56.47	9.680	
9,000.0	7,829.1	9,048.1	7,814.2	30.4	33.9	-88.44	-1,212.5	1,059.2	546.6	487.1	59.50	9.187	
9,100.0	7,829.7	9,148.1	7,815.0	31.9	35.3	-88.46	-1,312.5	1,059.2	546.6	484.0	62.61	8.730	
9,200.0	7,830.2	9,248.1	7,815.8	33.5	36.7	-88.49	-1,412.5	1,059.2	546.6	480.8	65.81	8.306	
9,300.0	7,830.8	9,348.1	7,816.6	35.1	38.2	-88.52	-1,512.5	1,059.2	546.6	477.5	69.06	7.914	
9,400.0	7,831.3	9,448.1	7,817.4	36.7	39.7	-88.54	-1,612.5	1,059.2	546.6	474.2	72.37	7.552	
9,500.0	7,831.9	9,548.1	7,818.3	38.4	41.2	-88.57	-1,712.5	1,059.2	546.6	470.8	75.73	7.217	
9,600.0	7,832.4	9,648.1	7,819.1	40.1	42.8	-88.60	-1,812.5	1,059.2	546.6	467.4	79.14	6.906	
9,700.0	7,833.0	9,748.1	7,819.9	41.8	44.4	-88.63	-1,912.5	1,059.2	546.6	464.0	82.58	6.619	
9,800.0	7,833.6	9,848.1	7,820.7	43.5	46.0	-88.65	-2,012.5	1,059.2	546.6	460.5	86.05	6.351	
9,900.0	7,834.1	9,948.1	7,821.6	45.2	47.6	-88.68	-2,112.5	1,059.2	546.5	457.0	89.55	6.103	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Jacobucci 1N67W32S Pad Sec.32-T1N-R67W - Jacobucci 32S-403 - Wellbore #1 - Plan #1 (10-8-14)

Offset Site Error: 0.0 ft

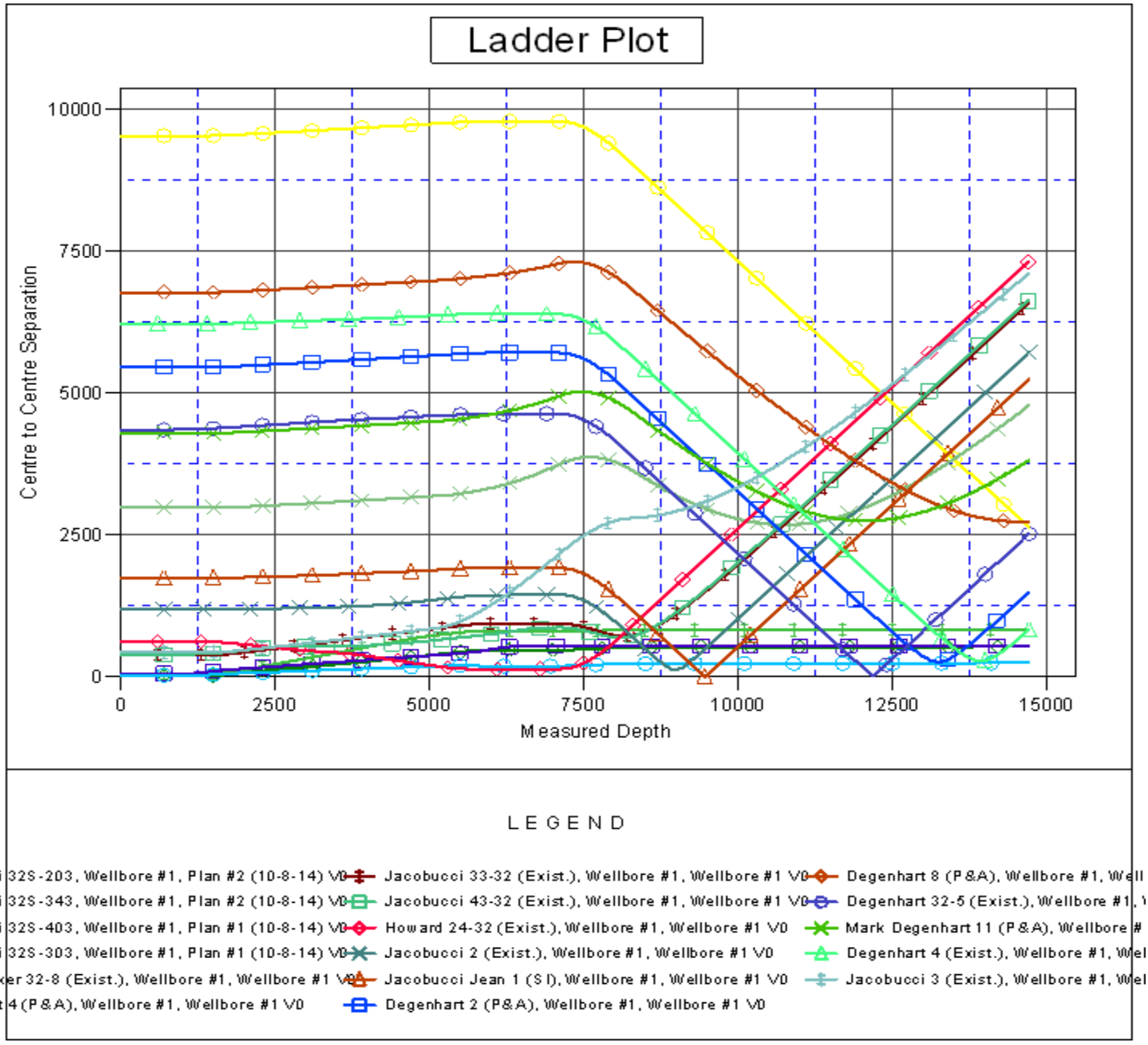
Survey Program: 0-MWD

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	7,834.7	10,048.1	7,822.4	47.0	49.3	-88.71	-2,212.5	1,059.2	546.5	453.5	93.08	5.872	
10,100.0	7,835.2	10,148.1	7,823.2	48.7	51.0	-88.74	-2,312.5	1,059.2	546.5	449.9	96.63	5.656	
10,200.0	7,835.8	10,248.1	7,824.0	50.5	52.7	-88.76	-2,412.5	1,059.2	546.5	446.3	100.21	5.454	
10,300.0	7,836.4	10,348.1	7,824.8	52.3	54.4	-88.79	-2,512.5	1,059.2	546.5	442.7	103.79	5.265	
10,400.0	7,836.9	10,448.1	7,825.7	54.1	56.1	-88.82	-2,612.5	1,059.2	546.5	439.1	107.40	5.089	
10,500.0	7,837.5	10,548.1	7,826.5	55.9	57.8	-88.85	-2,712.4	1,059.2	546.5	435.5	111.02	4.923	
10,600.0	7,838.0	10,648.1	7,827.3	57.7	59.6	-88.87	-2,812.4	1,059.2	546.5	431.8	114.66	4.766	
10,700.0	7,838.6	10,748.1	7,828.1	59.5	61.3	-88.90	-2,912.4	1,059.2	546.5	428.2	118.30	4.619	
10,800.0	7,839.1	10,848.1	7,828.9	61.3	63.1	-88.93	-3,012.4	1,059.2	546.5	424.5	121.96	4.481	
10,900.0	7,839.7	10,948.1	7,829.8	63.1	64.9	-88.96	-3,112.4	1,059.2	546.5	420.9	125.63	4.350	
11,000.0	7,840.3	11,048.1	7,830.6	65.0	66.7	-88.98	-3,212.4	1,059.2	546.5	417.2	129.31	4.226	
11,100.0	7,840.8	11,148.1	7,831.4	66.8	68.4	-89.01	-3,312.4	1,059.2	546.5	413.5	133.00	4.109	
11,200.0	7,841.4	11,248.1	7,832.2	68.7	70.2	-89.04	-3,412.4	1,059.2	546.5	409.8	136.69	3.998	
11,300.0	7,841.9	11,348.1	7,833.0	70.5	72.0	-89.07	-3,512.4	1,059.2	546.5	406.1	140.39	3.893	
11,400.0	7,842.5	11,448.1	7,833.9	72.3	73.9	-89.09	-3,612.4	1,059.2	546.5	402.4	144.10	3.792	
11,500.0	7,843.1	11,548.1	7,834.7	74.2	75.7	-89.12	-3,712.4	1,059.2	546.5	398.7	147.81	3.697	
11,600.0	7,843.6	11,648.1	7,835.5	76.0	77.5	-89.15	-3,812.4	1,059.2	546.5	394.9	151.53	3.606	
11,700.0	7,844.2	11,748.1	7,836.3	77.9	79.3	-89.18	-3,912.4	1,059.2	546.5	391.2	155.26	3.520	
11,800.0	7,844.7	11,848.1	7,837.1	79.8	81.1	-89.20	-4,012.4	1,059.2	546.5	387.5	158.99	3.437	
11,900.0	7,845.3	11,948.1	7,838.0	81.6	83.0	-89.23	-4,112.4	1,059.2	546.5	383.7	162.72	3.358	
12,000.0	7,845.8	12,048.1	7,838.8	83.5	84.8	-89.26	-4,212.4	1,059.2	546.4	380.0	166.46	3.283	
12,100.0	7,846.4	12,148.1	7,839.6	85.4	86.6	-89.29	-4,312.4	1,059.2	546.4	376.2	170.21	3.210	
12,200.0	7,847.0	12,248.1	7,840.4	87.2	88.5	-89.31	-4,412.4	1,059.2	546.4	372.5	173.95	3.141	
12,300.0	7,847.5	12,348.1	7,841.2	89.1	90.3	-89.34	-4,512.4	1,059.2	546.4	368.7	177.70	3.075	
12,400.0	7,848.1	12,448.1	7,842.1	91.0	92.2	-89.37	-4,612.4	1,059.2	546.4	365.0	181.46	3.011	
12,500.0	7,848.6	12,548.1	7,842.9	92.8	94.0	-89.40	-4,712.4	1,059.2	546.4	361.2	185.21	2.950	
12,600.0	7,849.2	12,648.1	7,843.7	94.7	95.9	-89.42	-4,812.4	1,059.2	546.4	357.5	188.97	2.892	
12,700.0	7,849.8	12,748.1	7,844.5	96.6	97.7	-89.45	-4,912.4	1,059.2	546.4	353.7	192.74	2.835	
12,800.0	7,850.3	12,848.1	7,845.3	98.5	99.6	-89.48	-5,012.4	1,059.2	546.4	349.9	196.50	2.781	
12,900.0	7,850.9	12,948.1	7,846.2	100.4	101.4	-89.51	-5,112.4	1,059.2	546.4	346.2	200.27	2.728	
13,000.0	7,851.4	13,048.1	7,847.0	102.2	103.3	-89.53	-5,212.4	1,059.2	546.4	342.4	204.04	2.678	
13,100.0	7,852.0	13,148.1	7,847.8	104.1	105.2	-89.56	-5,312.4	1,059.2	546.4	338.6	207.81	2.629	
13,200.0	7,852.6	13,248.1	7,848.6	106.0	107.0	-89.59	-5,412.3	1,059.2	546.4	334.8	211.58	2.583	
13,300.0	7,853.1	13,348.1	7,849.4	107.9	108.9	-89.62	-5,512.3	1,059.2	546.4	331.1	215.36	2.537	
13,400.0	7,853.7	13,448.1	7,850.3	109.8	110.8	-89.64	-5,612.3	1,059.2	546.4	327.3	219.14	2.493	
13,500.0	7,854.2	13,548.1	7,851.1	111.7	112.6	-89.67	-5,712.3	1,059.2	546.4	323.5	222.92	2.451	
13,600.0	7,854.8	13,648.1	7,851.9	113.6	114.5	-89.70	-5,812.3	1,059.2	546.4	319.7	226.70	2.410	
13,700.0	7,855.3	13,748.1	7,852.7	115.4	116.4	-89.73	-5,912.3	1,059.2	546.4	315.9	230.48	2.371	
13,800.0	7,855.9	13,848.1	7,853.5	117.3	118.3	-89.75	-6,012.3	1,059.2	546.4	312.1	234.26	2.332	
13,900.0	7,856.5	13,948.1	7,854.4	119.2	120.1	-89.78	-6,112.3	1,059.2	546.4	308.4	238.05	2.295	
14,000.0	7,857.0	14,048.1	7,855.2	121.1	122.0	-89.81	-6,212.3	1,059.2	546.4	304.6	241.84	2.259	
14,100.0	7,857.6	14,148.1	7,856.0	123.0	123.9	-89.83	-6,312.3	1,059.2	546.4	300.8	245.62	2.225	
14,200.0	7,858.1	14,248.1	7,856.8	124.9	125.8	-89.86	-6,412.3	1,059.2	546.4	297.0	249.41	2.191	
14,300.0	7,858.7	14,348.1	7,857.6	126.8	127.7	-89.89	-6,512.3	1,059.2	546.4	293.2	253.20	2.158	
14,400.0	7,859.3	14,448.1	7,858.5	128.7	129.5	-89.92	-6,612.3	1,059.2	546.4	289.4	256.99	2.126	
14,500.0	7,859.8	14,548.1	7,859.3	130.6	131.4	-89.94	-6,712.3	1,059.2	546.4	285.6	260.79	2.095	
14,600.0	7,860.4	14,648.1	7,860.1	132.5	133.3	-89.97	-6,812.3	1,059.2	546.4	281.8	264.58	2.065	
14,700.0	7,860.9	14,748.1	7,860.9	134.4	135.2	-90.00	-6,912.3	1,059.2	546.4	278.0	268.37	2.036	
14,701.3	7,860.9	14,749.4	7,860.9	134.4	135.2	-90.00	-6,913.6	1,059.2	546.4	278.0	268.42	2.036	
14,712.8	7,861.0	14,757.2	7,861.0	134.6	135.4	-90.00	-6,921.4	1,059.2	546.4	277.7	268.74	2.033	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 5074.0ft (Original Well Elev) Coordinates are relative to: Jacobucci 32S-423
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°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-423
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-423	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 5074.0ft (Original Well Elev) Coordinates are relative to: Jacobucci 32S-423
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°