

PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Wiedeman 28G-212**

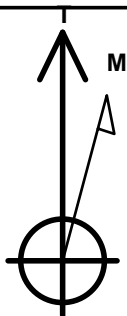
Surface Location: Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W
 North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
 Ground Elevation: 4761.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1348100.91	3198078.91	40.286760	-104.789970	

Original Well Elev WELL @ 4776.0ft (Original Well Elev)

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 1128'FNL & 540'FWL, SEC.28	1.0	0.0	0.0	Point
BHL 2385'FNL & 500'FEL, SEC.28	7047.0	-1241.9	4229.7	Point



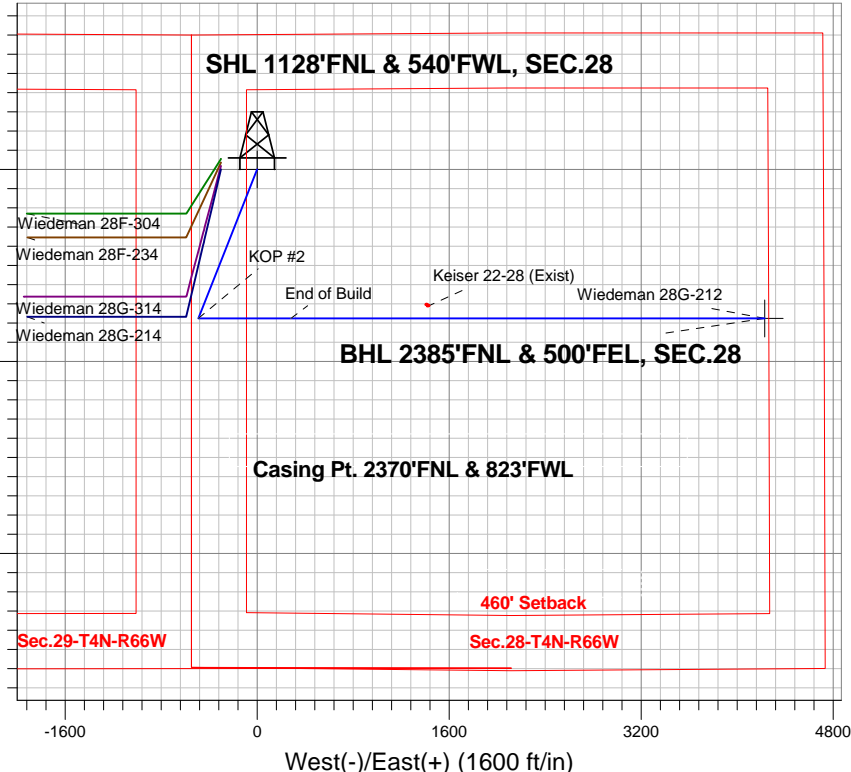
Azimuths to True North
 Magnetic North: 8.45°
 Magnetic Field
 Strength: 52742.3srT
 Dip Angle: 66.85°
 Date: 7/25/2014
 Model: IGRF2010

ANNOTATIONS

TVD	MD	Annotation
200.0	200.0	KOP #1
6329.2	6487.9	KOP #2
7093.2	7696.9	End of Build

Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W
 Wiedeman 28G-212
 Plan #1 (7-25-14)

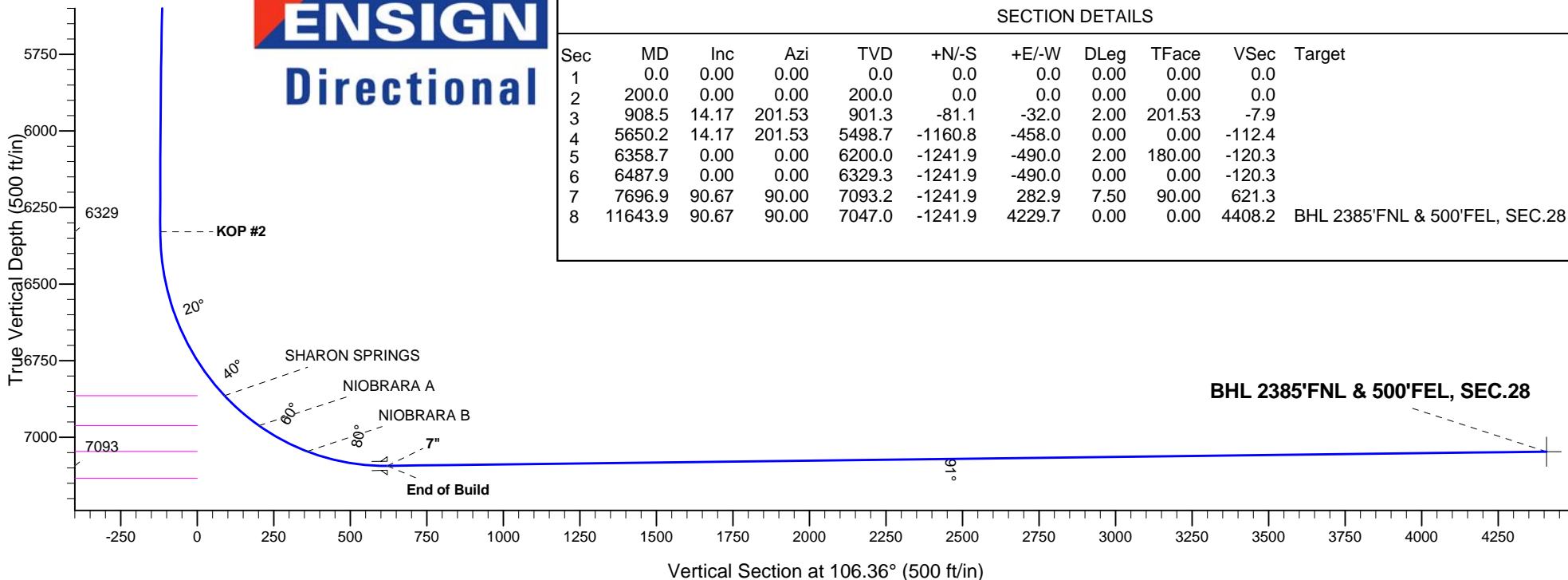
South(-)/North(+) (1600 ft/in)



ENSIGN
 Directional

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	908.5	14.17	201.53	901.3	-81.1	-32.0	2.00	201.53	-7.9	
4	5650.2	14.17	201.53	5498.7	-1160.8	-458.0	0.00	0.00	-112.4	
5	6358.7	0.00	0.00	6200.0	-1241.9	-490.0	2.00	180.00	-120.3	
6	6487.9	0.00	0.00	6329.3	-1241.9	-490.0	0.00	0.00	-120.3	
7	7696.9	90.67	90.00	7093.2	-1241.9	282.9	7.50	90.00	621.3	
8	11643.9	90.67	90.00	7047.0	-1241.9	4229.7	0.00	0.00	4408.2	BHL 2385'FNL & 500'FEL, SEC.28





PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.28-T4N-R66W

Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W

Wiedeman 28G-212

Wellbore #1

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

Standard Planning Report

11 August, 2014

Database:	landmark	Local Co-ordinate Reference:	Well Wiedeman 28G-212
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4776.0ft (Original Well Elev)
Project:	SEC.28-T4N-R66W	MD Reference:	WELL @ 4776.0ft (Original Well Elev)
Site:	Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W	North Reference:	True
Well:	Wiedeman 28G-212	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (7-25-14)		

Project	SEC.28-T4N-R66W, Weld County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site						Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W											
Site Position:						Northing:			1,348,308.56ft			Latitude:			40.287330		
From:			Lat/Long			Easting:			3,198,077.24ft			Longitude:			-104.789970		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			0.46 °		

Well	Wiedeman 28G-212					
Well Position	+N/-S	-207.7 ft	Northing:	1,348,100.91 ft	Latitude:	40.286760
	+E/-W	0.0 ft	Easting:	3,198,078.91 ft	Longitude:	-104.789970
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,761.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/25/2014	8.45	66.85	52,742

Design	Plan #1 (7-25-14)			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	106.36

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
908.5	14.17	201.53	901.3	-81.1	-32.0	2.00	2.00	0.00	201.53	
5,650.2	14.17	201.53	5,498.7	-1,160.8	-458.0	0.00	0.00	0.00	0.00	
6,358.7	0.00	0.00	6,200.0	-1,241.9	-490.0	2.00	-2.00	0.00	180.00	
6,487.9	0.00	0.00	6,329.3	-1,241.9	-490.0	0.00	0.00	0.00	0.00	
7,696.9	90.67	90.00	7,093.2	-1,241.9	282.9	7.50	7.50	0.00	90.00	
11,643.9	90.67	90.00	7,047.0	-1,241.9	4,229.7	0.00	0.00	0.00	0.00	BHL 2385'FNL & 5C

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Project:	SEC.28-T4N-R66W	MD Reference:	WELL @ 4776.0ft (Original Well Elev)
Site:	Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W	North Reference:	True
Well:	Wiedeman 28G-212	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (7-25-14)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP #1									
300.0	2.00	201.53	300.0	-1.6	-0.6	-0.2	2.00	2.00	0.00
400.0	4.00	201.53	399.8	-6.5	-2.6	-0.6	2.00	2.00	0.00
500.0	6.00	201.53	499.5	-14.6	-5.8	-1.4	2.00	2.00	0.00
600.0	8.00	201.53	598.7	-25.9	-10.2	-2.5	2.00	2.00	0.00
700.0	10.00	201.53	697.5	-40.5	-16.0	-3.9	2.00	2.00	0.00
800.0	12.00	201.53	795.6	-58.2	-23.0	-5.6	2.00	2.00	0.00
900.0	14.00	201.53	893.1	-79.2	-31.2	-7.7	2.00	2.00	0.00
908.5	14.17	201.53	901.3	-81.1	-32.0	-7.9	2.00	2.00	0.00
1,000.0	14.17	201.53	990.0	-101.9	-40.2	-9.9	0.00	0.00	0.00
1,100.0	14.17	201.53	1,087.0	-124.7	-49.2	-12.1	0.00	0.00	0.00
1,200.0	14.17	201.53	1,183.9	-147.5	-58.2	-14.3	0.00	0.00	0.00
1,300.0	14.17	201.53	1,280.9	-170.2	-67.2	-16.5	0.00	0.00	0.00
1,400.0	14.17	201.53	1,377.8	-193.0	-76.2	-18.7	0.00	0.00	0.00
1,500.0	14.17	201.53	1,474.8	-215.8	-85.1	-20.9	0.00	0.00	0.00
1,600.0	14.17	201.53	1,571.8	-238.5	-94.1	-23.1	0.00	0.00	0.00
1,700.0	14.17	201.53	1,668.7	-261.3	-103.1	-25.3	0.00	0.00	0.00
1,800.0	14.17	201.53	1,765.7	-284.1	-112.1	-27.5	0.00	0.00	0.00
1,900.0	14.17	201.53	1,862.6	-306.9	-121.1	-29.7	0.00	0.00	0.00
2,000.0	14.17	201.53	1,959.6	-329.6	-130.1	-31.9	0.00	0.00	0.00
2,100.0	14.17	201.53	2,056.5	-352.4	-139.0	-34.1	0.00	0.00	0.00
2,200.0	14.17	201.53	2,153.5	-375.2	-148.0	-36.3	0.00	0.00	0.00
2,300.0	14.17	201.53	2,250.5	-397.9	-157.0	-38.5	0.00	0.00	0.00
2,400.0	14.17	201.53	2,347.4	-420.7	-166.0	-40.7	0.00	0.00	0.00
2,500.0	14.17	201.53	2,444.4	-443.5	-175.0	-43.0	0.00	0.00	0.00
2,600.0	14.17	201.53	2,541.3	-466.3	-184.0	-45.2	0.00	0.00	0.00
2,700.0	14.17	201.53	2,638.3	-489.0	-192.9	-47.4	0.00	0.00	0.00
2,800.0	14.17	201.53	2,735.2	-511.8	-201.9	-49.6	0.00	0.00	0.00
2,900.0	14.17	201.53	2,832.2	-534.6	-210.9	-51.8	0.00	0.00	0.00
3,000.0	14.17	201.53	2,929.2	-557.3	-219.9	-54.0	0.00	0.00	0.00
3,100.0	14.17	201.53	3,026.1	-580.1	-228.9	-56.2	0.00	0.00	0.00
3,200.0	14.17	201.53	3,123.1	-602.9	-237.9	-58.4	0.00	0.00	0.00
3,300.0	14.17	201.53	3,220.0	-625.7	-246.9	-60.6	0.00	0.00	0.00
3,400.0	14.17	201.53	3,317.0	-648.4	-255.8	-62.8	0.00	0.00	0.00
3,500.0	14.17	201.53	3,414.0	-671.2	-264.8	-65.0	0.00	0.00	0.00
3,600.0	14.17	201.53	3,510.9	-694.0	-273.8	-67.2	0.00	0.00	0.00
3,700.0	14.17	201.53	3,607.9	-716.7	-282.8	-69.4	0.00	0.00	0.00
3,800.0	14.17	201.53	3,704.8	-739.5	-291.8	-71.6	0.00	0.00	0.00
3,801.2	14.17	201.53	3,706.0	-739.8	-291.9	-71.6	0.00	0.00	0.00
PARKMAN									
3,900.0	14.17	201.53	3,801.8	-762.3	-300.8	-73.8	0.00	0.00	0.00
4,000.0	14.17	201.53	3,898.7	-785.1	-309.7	-76.0	0.00	0.00	0.00
4,100.0	14.17	201.53	3,995.7	-807.8	-318.7	-78.2	0.00	0.00	0.00
4,200.0	14.17	201.53	4,092.7	-830.6	-327.7	-80.4	0.00	0.00	0.00
4,300.0	14.17	201.53	4,189.6	-853.4	-336.7	-82.6	0.00	0.00	0.00
4,400.0	14.17	201.53	4,286.6	-876.1	-345.7	-84.9	0.00	0.00	0.00
4,468.5	14.17	201.53	4,353.0	-891.7	-351.8	-86.4	0.00	0.00	0.00
SUSSEX									
4,500.0	14.17	201.53	4,383.5	-898.9	-354.7	-87.1	0.00	0.00	0.00

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Site:	Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W	North Reference:	True
Well:	Wiedeman 28G-212	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (7-25-14)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,600.0	14.17	201.53	4,480.5	-921.7	-363.7	-89.3	0.00	0.00	0.00
4,700.0	14.17	201.53	4,577.4	-944.5	-372.6	-91.5	0.00	0.00	0.00
4,800.0	14.17	201.53	4,674.4	-967.2	-381.6	-93.7	0.00	0.00	0.00
4,900.0	14.17	201.53	4,771.4	-990.0	-390.6	-95.9	0.00	0.00	0.00
4,913.0	14.17	201.53	4,784.0	-993.0	-391.8	-96.2	0.00	0.00	0.00
SHANNON									
5,000.0	14.17	201.53	4,868.3	-1,012.8	-399.6	-98.1	0.00	0.00	0.00
5,100.0	14.17	201.53	4,965.3	-1,035.5	-408.6	-100.3	0.00	0.00	0.00
5,200.0	14.17	201.53	5,062.2	-1,058.3	-417.6	-102.5	0.00	0.00	0.00
5,300.0	14.17	201.53	5,159.2	-1,081.1	-426.5	-104.7	0.00	0.00	0.00
5,400.0	14.17	201.53	5,256.1	-1,103.9	-435.5	-106.9	0.00	0.00	0.00
5,500.0	14.17	201.53	5,353.1	-1,126.6	-444.5	-109.1	0.00	0.00	0.00
5,600.0	14.17	201.53	5,450.1	-1,149.4	-453.5	-111.3	0.00	0.00	0.00
5,650.2	14.17	201.53	5,498.7	-1,160.8	-458.0	-112.4	0.00	0.00	0.00
5,700.0	13.17	201.53	5,547.1	-1,171.8	-462.3	-113.5	2.00	-2.00	0.00
5,800.0	11.17	201.53	5,644.9	-1,191.4	-470.1	-115.4	2.00	-2.00	0.00
5,900.0	9.17	201.53	5,743.3	-1,207.8	-476.6	-117.0	2.00	-2.00	0.00
6,000.0	7.17	201.53	5,842.3	-1,221.1	-481.8	-118.3	2.00	-2.00	0.00
6,100.0	5.17	201.53	5,941.7	-1,231.1	-485.7	-119.2	2.00	-2.00	0.00
6,200.0	3.17	201.53	6,041.4	-1,237.8	-488.4	-119.9	2.00	-2.00	0.00
6,300.0	1.17	201.53	6,141.3	-1,241.4	-489.8	-120.2	2.00	-2.00	0.00
6,358.7	0.00	0.00	6,200.0	-1,241.9	-490.0	-120.3	2.00	-2.00	0.00
6,400.0	0.00	0.00	6,241.3	-1,241.9	-490.0	-120.3	0.00	0.00	0.00
6,487.9	0.00	0.00	6,329.2	-1,241.9	-490.0	-120.3	0.00	0.00	0.00
KOP #2									
6,500.0	0.91	90.00	6,341.3	-1,241.9	-489.9	-120.2	7.48	7.48	0.00
6,600.0	8.41	90.00	6,440.9	-1,241.9	-481.8	-112.4	7.50	7.50	0.00
6,700.0	15.91	90.00	6,538.6	-1,241.9	-460.8	-92.2	7.50	7.50	0.00
6,800.0	23.41	90.00	6,632.7	-1,241.9	-427.1	-60.0	7.50	7.50	0.00
6,900.0	30.91	90.00	6,721.6	-1,241.9	-381.5	-16.2	7.50	7.50	0.00
7,000.0	38.41	90.00	6,803.8	-1,241.9	-324.7	38.3	7.50	7.50	0.00
7,080.3	44.42	90.00	6,864.0	-1,241.9	-271.6	89.2	7.50	7.50	0.00
SHARON SPRINGS									
7,100.0	45.91	90.00	6,877.9	-1,241.9	-257.6	102.7	7.50	7.50	0.00
7,200.0	53.41	90.00	6,942.6	-1,241.9	-181.5	175.7	7.50	7.50	0.00
7,233.5	55.92	90.00	6,962.0	-1,241.9	-154.1	202.0	7.50	7.50	0.00
NIOBRARA A									
7,300.0	60.90	90.00	6,996.8	-1,241.9	-97.5	256.3	7.50	7.50	0.00
7,400.0	68.40	90.00	7,039.6	-1,241.9	-7.2	342.9	7.50	7.50	0.00
7,418.0	69.75	90.00	7,046.0	-1,241.9	9.6	359.1	7.50	7.50	0.00
NIOBRARA B									
7,500.0	75.90	90.00	7,070.2	-1,241.9	87.9	434.2	7.50	7.50	0.00
7,600.0	83.40	90.00	7,088.2	-1,241.9	186.2	528.5	7.50	7.50	0.00
7,696.9	90.67	90.00	7,093.2	-1,241.9	282.9	621.3	7.50	7.50	0.00
End of Build - 7"									
7,700.0	90.67	90.00	7,093.1	-1,241.9	286.0	624.3	0.00	0.00	0.00
7,800.0	90.67	90.00	7,091.9	-1,241.9	386.0	720.2	0.00	0.00	0.00
7,900.0	90.67	90.00	7,090.8	-1,241.9	486.0	816.2	0.00	0.00	0.00
8,000.0	90.67	90.00	7,089.6	-1,241.9	586.0	912.1	0.00	0.00	0.00
8,100.0	90.67	90.00	7,088.4	-1,241.9	686.0	1,008.1	0.00	0.00	0.00
8,200.0	90.67	90.00	7,087.3	-1,241.9	786.0	1,104.0	0.00	0.00	0.00

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Site:	Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W	North Reference:	True
Well:	Wiedeman 28G-212	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (7-25-14)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,300.0	90.67	90.00	7,086.1	-1,241.9	886.0	1,200.0	0.00	0.00	0.00
8,400.0	90.67	90.00	7,084.9	-1,241.9	986.0	1,295.9	0.00	0.00	0.00
8,500.0	90.67	90.00	7,083.8	-1,241.9	1,086.0	1,391.8	0.00	0.00	0.00
8,600.0	90.67	90.00	7,082.6	-1,241.9	1,185.9	1,487.8	0.00	0.00	0.00
8,700.0	90.67	90.00	7,081.4	-1,241.9	1,285.9	1,583.7	0.00	0.00	0.00
8,800.0	90.67	90.00	7,080.3	-1,241.9	1,385.9	1,679.7	0.00	0.00	0.00
8,900.0	90.67	90.00	7,079.1	-1,241.9	1,485.9	1,775.6	0.00	0.00	0.00
9,000.0	90.67	90.00	7,077.9	-1,241.9	1,585.9	1,871.6	0.00	0.00	0.00
9,100.0	90.67	90.00	7,076.7	-1,241.9	1,685.9	1,967.5	0.00	0.00	0.00
9,200.0	90.67	90.00	7,075.6	-1,241.9	1,785.9	2,063.4	0.00	0.00	0.00
9,300.0	90.67	90.00	7,074.4	-1,241.9	1,885.9	2,159.4	0.00	0.00	0.00
9,400.0	90.67	90.00	7,073.2	-1,241.9	1,985.9	2,255.3	0.00	0.00	0.00
9,500.0	90.67	90.00	7,072.1	-1,241.9	2,085.9	2,351.3	0.00	0.00	0.00
9,600.0	90.67	90.00	7,070.9	-1,241.9	2,185.9	2,447.2	0.00	0.00	0.00
9,700.0	90.67	90.00	7,069.7	-1,241.9	2,285.9	2,543.2	0.00	0.00	0.00
9,800.0	90.67	90.00	7,068.6	-1,241.9	2,385.9	2,639.1	0.00	0.00	0.00
9,900.0	90.67	90.00	7,067.4	-1,241.9	2,485.9	2,735.0	0.00	0.00	0.00
10,000.0	90.67	90.00	7,066.2	-1,241.9	2,585.9	2,831.0	0.00	0.00	0.00
10,100.0	90.67	90.00	7,065.1	-1,241.9	2,685.8	2,926.9	0.00	0.00	0.00
10,200.0	90.67	90.00	7,063.9	-1,241.9	2,785.8	3,022.9	0.00	0.00	0.00
10,300.0	90.67	90.00	7,062.7	-1,241.9	2,885.8	3,118.8	0.00	0.00	0.00
10,400.0	90.67	90.00	7,061.5	-1,241.9	2,985.8	3,214.8	0.00	0.00	0.00
10,500.0	90.67	90.00	7,060.4	-1,241.9	3,085.8	3,310.7	0.00	0.00	0.00
10,600.0	90.67	90.00	7,059.2	-1,241.9	3,185.8	3,406.6	0.00	0.00	0.00
10,700.0	90.67	90.00	7,058.0	-1,241.9	3,285.8	3,502.6	0.00	0.00	0.00
10,800.0	90.67	90.00	7,056.9	-1,241.9	3,385.8	3,598.5	0.00	0.00	0.00
10,900.0	90.67	90.00	7,055.7	-1,241.9	3,485.8	3,694.5	0.00	0.00	0.00
11,000.0	90.67	90.00	7,054.5	-1,241.9	3,585.8	3,790.4	0.00	0.00	0.00
11,100.0	90.67	90.00	7,053.4	-1,241.9	3,685.8	3,886.4	0.00	0.00	0.00
11,200.0	90.67	90.00	7,052.2	-1,241.9	3,785.8	3,982.3	0.00	0.00	0.00
11,300.0	90.67	90.00	7,051.0	-1,241.9	3,885.8	4,078.2	0.00	0.00	0.00
11,400.0	90.67	90.00	7,049.9	-1,241.9	3,985.8	4,174.2	0.00	0.00	0.00
11,500.0	90.67	90.00	7,048.7	-1,241.9	4,085.8	4,270.1	0.00	0.00	0.00
11,600.0	90.67	90.00	7,047.5	-1,241.9	4,185.7	4,366.1	0.00	0.00	0.00
11,643.9	90.67	90.00	7,047.0	-1,241.9	4,229.7	4,408.2	0.00	0.00	0.00

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,696.9	7,093.2	7"	7	7-1/2

Database:	landmark	Local Co-ordinate Reference:	Well Wiedeman 28G-212
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4776.0ft (Original Well Elev)
Project:	SEC.28-T4N-R66W	MD Reference:	WELL @ 4776.0ft (Original Well Elev)
Site:	Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W	North Reference:	True
Well:	Wiedeman 28G-212	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (7-25-14)		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,801.2	3,706.0	PARKMAN				
4,468.5	4,353.0	SUSSEX				
4,913.0	4,784.0	SHANNON				
7,080.3	6,864.0	SHARON SPRINGS				
7,233.5	6,962.0	NIOBRARA A				
7,418.0	7,046.0	NIOBRARA B				
	7,134.0	NIOBRARA C				
	7,253.0	FT. HAYS				
	7,275.0	CODELL				

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
200.0	200.0	0.0	0.0	KOP #1
6,487.9	6,329.2	-1,241.9	-490.0	KOP #2
7,696.9	7,093.2	-1,241.9	282.9	End of Build



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.28-T4N-R66W

Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W

Wiedeman 28G-212

Wellbore #1

Plan #1 (7-25-14)

Anticollision Report

11 August, 2014



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28G-212
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4776.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4776.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28G-212	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (7-25-14)	Offset TVD Reference:	Offset Datum

Reference	Plan #1 (7-25-14)		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0ft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,000.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date 8/10/2014			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	11,643.9	Plan #1 (7-25-14) (Wellbore #1)	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Existing Wells Sec.28-T4N-R66W						
Keiser 22-28 (Exist) - Wellbore #1 - Wellbore #1	8,836.5	7,056.0	102.3	40.3	1.649	CC, ES, SF
Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W						
Wiedeman 28E-432 - Wellbore #1 - Plan #1 (7-25-14)	200.0	201.0	178.5	177.8	263.854	CC, ES
Wiedeman 28E-432 - Wellbore #1 - Plan #1 (7-25-14)	3,200.0	3,028.0	989.7	973.3	60.392	SF
Wiedeman 28F-202 - Wellbore #1 - Plan #1 (8-07-14)	200.0	201.0	87.4	86.8	129.235	CC, ES
Wiedeman 28F-202 - Wellbore #1 - Plan #1 (8-07-14)	11,643.9	11,506.3	987.3	735.8	3.926	SF
Wiedeman 28G-312 - Wellbore #1 - Plan #1 (7-25-14)	200.0	200.0	29.1	28.5	43.222	CC
Wiedeman 28G-312 - Wellbore #1 - Plan #1 (7-25-14)	11,643.9	11,683.9	267.7	21.9	1.089	Level 2, ES, SF
Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W						
Wiedeman 28F-234 - Wellbore #1 - Plan #1 (8-07-14)	757.0	754.3	302.0	298.6	89.611	CC
Wiedeman 28F-234 - Wellbore #1 - Plan #1 (8-07-14)	800.0	796.6	302.1	298.4	83.538	ES
Wiedeman 28F-234 - Wellbore #1 - Plan #1 (8-07-14)	6,400.0	6,288.4	682.3	638.5	15.572	SF
Wiedeman 28F-304 - Wellbore #1 - Plan #1 (8-07-14)	609.7	610.3	312.4	309.8	121.488	CC
Wiedeman 28F-304 - Wellbore #1 - Plan #1 (8-07-14)	700.0	699.5	312.7	309.6	101.725	ES
Wiedeman 28F-304 - Wellbore #1 - Plan #1 (8-07-14)	6,400.0	6,284.7	879.1	837.2	20.981	SF
Wiedeman 28G-214 - Wellbore #1 - Plan #1 (8-07-14)	6,384.3	6,370.2	101.7	46.2	1.833	CC, ES, SF
Wiedeman 28G-314 - Wellbore #1 - Plan #1 (8-07-14)	6,400.0	6,359.7	207.8	164.4	4.786	CC
Wiedeman 28G-314 - Wellbore #1 - Plan #1 (8-07-14)	6,500.0	6,459.7	207.9	162.5	4.577	ES, SF

Offset Design	Existing Wells Sec.28-T4N-R66W - Keiser 22-28 (Exist) - Wellbore #1 - Wellbore #1										Offset Site Error:	0.0 ft
Survey Program:	100-NS-GYRO-MS										Offset Well Error:	0.0 ft
Reference	Offset	Semi Major Axis		Distance		Minimum Separation		Warning				
Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Separation Factor			
7,900.0	7,090.8	7,095.7	7,094.0	29.7	12.4	-112.04	-1,140.2	1,421.3	941.3	902.8	38.54	24.425
8,000.0	7,089.6	7,091.0	7,089.3	31.3	12.4	-109.71	-1,140.1	1,421.4	842.1	801.2	40.84	20.616
8,100.0	7,088.4	7,086.4	7,084.7	33.2	12.4	-107.38	-1,140.1	1,421.6	743.0	699.7	43.25	17.177
8,200.0	7,087.3	7,081.9	7,080.3	35.3	12.4	-105.06	-1,140.0	1,421.7	644.2	598.4	45.74	14.083
8,300.0	7,086.1	7,077.6	7,075.9	37.6	12.4	-102.74	-1,139.9	1,421.8	545.7	497.5	48.28	11.303
8,400.0	7,084.9	7,073.3	7,071.7	39.9	12.3	-100.45	-1,139.9	1,422.0	448.0	397.1	50.86	8.809

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28G-212
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4776.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4776.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28G-212	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (7-25-14)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.28-T4N-R66W - Keiser 22-28 (Exist) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
8,500.0	7,083.8	7,069.2	7,067.5	42.3	12.3	-98.18	-1,139.8	1,422.1	351.4	298.0	53.44	6.576		
8,600.0	7,082.6	7,065.2	7,063.5	44.8	12.3	-95.95	-1,139.7	1,422.2	257.5	201.5	56.02	4.596	1.649 CC, ES, SF	
8,700.0	7,081.4	7,061.2	7,059.5	47.3	12.3	-93.75	-1,139.7	1,422.3	170.5	111.9	58.59	2.910		
8,800.0	7,080.3	7,057.4	7,055.7	49.8	12.3	-91.60	-1,139.6	1,422.4	108.6	47.5	61.12	1.777		
8,836.5	7,079.8	7,056.0	7,054.3	50.8	12.3	-90.83	-1,139.6	1,422.4	102.3	40.3	62.04			
8,900.0	7,079.1	7,053.6	7,051.9	52.4	12.3	-89.49	-1,139.6	1,422.5	120.4	56.8	63.61	1.893		
9,000.0	7,077.9	7,049.9	7,048.3	55.0	12.3	-87.44	-1,139.5	1,422.6	192.8	126.7	66.06	2.919		
9,100.0	7,076.7	7,046.3	7,044.7	57.6	12.3	-85.45	-1,139.5	1,422.7	282.5	214.1	68.44	4.128		
9,200.0	7,075.6	7,042.8	7,041.2	60.2	12.3	-83.51	-1,139.4	1,422.8	377.4	306.6	70.77	5.333		
9,300.0	7,074.4	7,039.4	7,037.7	62.8	12.3	-81.63	-1,139.4	1,422.8	474.4	401.3	73.04	6.495		
9,400.0	7,073.2	7,036.1	7,034.4	65.5	12.3	-79.81	-1,139.3	1,422.9	572.4	497.1	75.24	7.607		
9,500.0	7,072.1	7,032.8	7,031.1	68.1	12.3	-78.05	-1,139.3	1,423.0	670.9	593.6	77.38	8.670		
9,600.0	7,070.9	7,029.6	7,027.9	70.8	12.3	-76.36	-1,139.2	1,423.1	769.9	690.4	79.46	9.689		
9,700.0	7,069.7	7,026.4	7,024.8	73.5	12.3	-74.72	-1,139.2	1,423.1	869.0	787.5	81.47	10.667		
9,800.0	7,068.6	7,023.4	7,021.7	76.2	12.3	-73.15	-1,139.2	1,423.2	968.3	884.9	83.42	11.608		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28G-212
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4776.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4776.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28G-212	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (7-25-14)	Offset TVD Reference:	Offset Datum

Offset Design Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W - Wiedeman 28E-432 - Wellbore #1 - Plan #1 (7-25-14)														Offset Site Error:	0.0 ft
Survey Program: 0-MWD														Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning		
0.0	0.0	1.0	1.0	0.0	0.0	0.00	178.5	0.0	178.5						
100.0	100.0	101.0	101.0	0.1	0.1	0.00	178.5	0.0	178.5	178.3	0.23	786.338			
200.0	200.0	201.0	201.0	0.3	0.3	0.00	178.5	0.0	178.5	177.8	0.68	263.854 CC, ES			
300.0	300.0	301.0	301.0	0.5	0.6	158.66	178.5	0.0	180.1	179.0	1.11	162.283			
400.0	399.8	400.8	400.8	0.8	0.8	159.21	178.5	0.0	185.0	183.5	1.54	119.755			
500.0	499.5	500.5	500.5	1.0	1.0	160.08	178.5	0.0	193.2	191.2	1.99	96.847			
600.0	598.7	599.7	599.7	1.3	1.2	161.16	178.5	0.0	204.7	202.2	2.45	83.412			
700.0	697.5	698.5	698.5	1.6	1.5	162.39	178.5	0.0	219.6	216.7	2.92	75.191			
800.0	795.6	796.6	796.6	2.0	1.7	163.67	178.5	0.0	237.9	234.5	3.39	70.128			
900.0	893.1	894.1	894.1	2.5	1.9	164.95	178.5	0.0	259.6	255.7	3.87	67.098			
1,000.0	990.0	991.0	991.0	2.9	2.1	166.22	178.5	0.0	283.3	279.0	4.35	65.198			
1,100.0	1,087.0	1,088.0	1,088.0	3.4	2.3	167.31	178.5	0.0	307.2	302.3	4.83	63.648			
1,200.0	1,183.9	1,184.9	1,184.9	3.9	2.6	168.24	178.5	0.0	331.1	325.8	5.31	62.371			
1,300.0	1,280.9	1,275.9	1,275.9	4.4	2.8	168.87	179.3	-0.6	355.8	350.1	5.78	61.528			
1,400.0	1,377.8	1,365.1	1,365.0	4.9	3.0	169.07	182.2	-3.1	382.5	376.2	6.26	61.066			
1,500.0	1,474.8	1,453.2	1,452.9	5.5	3.2	168.94	187.1	-7.2	411.0	404.2	6.75	60.890			
1,600.0	1,571.8	1,540.2	1,539.4	6.0	3.4	168.55	194.0	-13.0	441.3	434.1	7.24	60.919			
1,700.0	1,668.7	1,626.0	1,624.4	6.5	3.6	167.95	202.7	-20.3	473.6	465.8	7.75	61.094			
1,800.0	1,765.7	1,715.2	1,712.5	7.0	3.8	167.19	213.6	-29.4	507.4	499.2	8.28	61.258			
1,900.0	1,862.6	1,809.0	1,805.0	7.5	4.1	166.46	225.3	-39.2	541.6	532.8	8.83	61.336			
2,000.0	1,959.6	1,902.8	1,897.6	8.0	4.4	165.82	237.0	-49.0	575.9	566.5	9.39	61.354			
2,100.0	2,056.5	1,996.5	1,990.1	8.6	4.7	165.24	248.7	-58.8	610.2	600.2	9.95	61.327			
2,200.0	2,153.5	2,090.3	2,082.6	9.1	5.0	164.73	260.4	-68.6	644.6	634.0	10.52	61.275			
2,300.0	2,250.5	2,184.1	2,175.1	9.6	5.3	164.28	272.1	-78.4	679.0	667.9	11.09	61.205			
2,400.0	2,347.4	2,277.8	2,267.6	10.1	5.6	163.86	283.8	-88.2	713.4	701.7	11.67	61.123			
2,500.0	2,444.4	2,371.6	2,360.1	10.6	5.9	163.49	295.5	-97.9	747.8	735.6	12.25	61.035			
2,600.0	2,541.3	2,465.4	2,452.7	11.1	6.2	163.14	307.2	-107.7	782.3	769.5	12.84	60.942			
2,700.0	2,638.3	2,559.1	2,545.2	11.7	6.5	162.83	318.9	-117.5	816.8	803.4	13.42	60.848			
2,800.0	2,735.2	2,652.9	2,637.7	12.2	6.9	162.54	330.6	-127.3	851.4	837.4	14.01	60.754			
2,900.0	2,832.2	2,746.7	2,730.2	12.7	7.2	162.27	342.2	-137.1	885.9	871.3	14.60	60.660			
3,000.0	2,929.2	2,840.4	2,822.7	13.2	7.5	162.03	353.9	-146.9	920.5	905.3	15.20	60.568			
3,100.0	3,026.1	2,934.2	2,915.3	13.7	7.9	161.80	365.6	-156.7	955.1	939.3	15.79	60.479			
3,200.0	3,123.1	3,028.0	3,007.8	14.3	8.2	161.58	377.3	-166.5	989.7	973.3	16.39	60.392 SF			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28G-212
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4776.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4776.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28G-212	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (7-25-14)	Offset TVD Reference:	Offset Datum

Offset Design		Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W - Wiedeman 28F-202 - Wellbore #1 - Plan #1 (8-										Offset Site Error:		0.0 ft
Survey Program:		0-MWD										Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	1.0	1.0	0.0	0.0	0.00	87.4	0.0	87.4	87.4	0.00	N/A		
100.0	100.0	101.0	101.0	0.1	0.1	0.00	87.4	0.0	87.4	87.2	0.23	385.145		
200.0	200.0	201.0	201.0	0.3	0.3	0.00	87.4	0.0	87.4	86.8	0.68	129.235	CC, ES	
300.0	300.0	301.0	301.0	0.5	0.6	158.87	87.4	0.0	89.1	87.9	1.11	80.232		
400.0	399.8	400.8	400.8	0.8	0.8	159.99	87.4	0.0	94.0	92.4	1.55	60.813		
500.0	499.5	500.5	500.5	1.0	1.0	161.61	87.4	0.0	102.2	100.2	1.99	51.235		
600.0	598.7	599.7	599.7	1.3	1.2	163.47	87.4	0.0	113.8	111.4	2.45	46.416		
700.0	697.5	698.5	698.5	1.6	1.5	165.37	87.4	0.0	128.9	126.0	2.92	44.220		
800.0	795.6	796.6	796.6	2.0	1.7	167.16	87.4	0.0	147.5	144.1	3.38	43.610		
900.0	893.1	894.1	894.1	2.5	1.9	168.76	87.4	0.0	169.5	165.6	3.85	44.010		
1,000.0	990.0	991.0	991.0	2.9	2.1	170.16	87.4	0.0	193.6	189.3	4.32	44.793		
1,100.0	1,087.0	1,088.0	1,088.0	3.4	2.3	171.26	87.4	0.0	217.8	213.0	4.80	45.394		
1,200.0	1,183.9	1,184.9	1,184.9	3.9	2.6	172.14	87.4	0.0	242.0	236.7	5.28	45.870		
1,300.0	1,280.9	1,288.1	1,288.1	4.4	2.8	172.71	86.7	-1.1	265.3	259.6	5.75	46.149		
1,400.0	1,377.8	1,393.6	1,393.5	4.9	3.0	172.69	83.7	-5.4	286.0	279.8	6.21	46.033		
1,500.0	1,474.8	1,500.3	1,499.8	5.5	3.2	172.18	78.4	-12.9	303.9	297.2	6.70	45.385		
1,600.0	1,571.8	1,606.7	1,605.4	6.0	3.4	171.26	70.9	-23.6	319.1	311.9	7.20	44.288		
1,700.0	1,668.7	1,705.6	1,703.3	6.5	3.7	170.31	63.2	-34.8	333.3	325.6	7.73	43.134		
1,800.0	1,765.7	1,804.4	1,801.2	7.0	3.9	169.44	55.4	-45.9	347.6	339.3	8.26	42.061		
1,900.0	1,862.6	1,903.3	1,899.1	7.5	4.2	168.64	47.6	-57.1	361.9	353.1	8.81	41.066		
2,000.0	1,959.6	2,002.1	1,997.0	8.0	4.5	167.90	39.8	-68.2	376.4	367.0	9.37	40.146		
2,100.0	2,056.5	2,101.0	2,094.9	8.6	4.8	167.22	32.0	-79.3	390.8	380.9	9.95	39.295		
2,200.0	2,153.5	2,199.8	2,192.8	9.1	5.1	166.58	24.3	-90.5	405.4	394.8	10.53	38.509		
2,300.0	2,250.5	2,298.6	2,290.7	9.6	5.4	165.99	16.5	-101.6	419.9	408.8	11.12	37.781		
2,400.0	2,347.4	2,397.5	2,388.6	10.1	5.7	165.44	8.7	-112.8	434.6	422.9	11.71	37.107		
2,500.0	2,444.4	2,496.3	2,486.5	10.6	6.0	164.92	0.9	-123.9	449.2	436.9	12.31	36.483		
2,600.0	2,541.3	2,595.2	2,584.4	11.1	6.3	164.43	-6.9	-135.1	463.9	451.0	12.92	35.903		
2,700.0	2,638.3	2,694.0	2,682.3	11.7	6.6	163.98	-14.6	-146.2	478.6	465.1	13.53	35.365		
2,800.0	2,735.2	2,792.8	2,780.2	12.2	6.9	163.55	-22.4	-157.4	493.4	479.2	14.15	34.863		
2,900.0	2,832.2	2,891.7	2,878.1	12.7	7.3	163.15	-30.2	-168.5	508.1	493.4	14.77	34.396		
3,000.0	2,929.2	2,990.5	2,976.0	13.2	7.6	162.77	-38.0	-179.7	522.9	507.5	15.40	33.959		
3,100.0	3,026.1	3,089.4	3,073.9	13.7	7.9	162.41	-45.8	-190.8	537.7	521.7	16.03	33.551		
3,200.0	3,123.1	3,188.2	3,171.8	14.3	8.3	162.07	-53.5	-201.9	552.6	535.9	16.66	33.168		
3,300.0	3,220.0	3,287.1	3,269.7	14.8	8.6	161.75	-61.3	-213.1	567.4	550.1	17.29	32.809		
3,400.0	3,317.0	3,385.9	3,367.6	15.3	8.9	161.45	-69.1	-224.2	582.3	564.4	17.93	32.472		
3,500.0	3,414.0	3,484.7	3,465.5	15.8	9.2	161.16	-76.9	-235.4	597.2	578.6	18.57	32.154		
3,600.0	3,510.9	3,583.6	3,563.4	16.3	9.6	160.88	-84.7	-246.5	612.1	592.9	19.21	31.855		
3,700.0	3,607.9	3,682.4	3,661.3	16.9	9.9	160.62	-92.5	-257.7	627.0	607.1	19.86	31.572		
3,800.0	3,704.8	3,781.3	3,759.2	17.4	10.3	160.37	-100.2	-268.8	641.9	621.4	20.51	31.305		
3,900.0	3,801.8	3,880.1	3,857.1	17.9	10.6	160.13	-108.0	-280.0	656.9	635.7	21.15	31.052		
4,000.0	3,898.7	3,979.0	3,955.1	18.4	10.9	159.90	-115.8	-291.1	671.8	650.0	21.80	30.813		
4,100.0	3,995.7	4,077.8	4,053.0	18.9	11.3	159.68	-123.6	-302.3	686.8	664.3	22.45	30.585		
4,200.0	4,092.7	4,176.6	4,150.9	19.5	11.6	159.47	-131.4	-313.4	701.7	678.6	23.11	30.369		
4,300.0	4,189.6	4,275.5	4,248.8	20.0	11.9	159.27	-139.1	-324.5	716.7	692.9	23.76	30.164		
4,400.0	4,286.6	4,374.3	4,346.7	20.5	12.3	159.08	-146.9	-335.7	731.7	707.3	24.42	29.968		
4,500.0	4,383.5	4,473.2	4,444.6	21.0	12.6	158.89	-154.7	-346.8	746.7	721.6	25.07	29.782		
4,600.0	4,480.5	4,572.0	4,542.5	21.5	13.0	158.71	-162.5	-358.0	761.7	735.9	25.73	29.604		
4,700.0	4,577.4	4,670.8	4,640.4	22.1	13.3	158.54	-170.3	-369.1	776.7	750.3	26.39	29.434		
4,800.0	4,674.4	4,769.7	4,738.3	22.6	13.6	158.38	-178.0	-380.3	791.7	764.6	27.05	29.272		
4,900.0	4,771.4	4,868.5	4,836.2	23.1	14.0	158.22	-185.8	-391.4	806.7	779.0	27.71	29.117		
5,000.0	4,868.3	4,967.4	4,934.1	23.6	14.3	158.07	-193.6	-402.6	821.7	793.4	28.37	28.968		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28G-212
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4776.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4776.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28G-212	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (7-25-14)	Offset TVD Reference:	Offset Datum

Offset Design				Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W - Wiedeman 28F-202 - Wellbore #1 - Plan #1 (8-								Offset Site Error:		0.0 ft
Survey Program: 0-MWD												Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
5,100.0	4,965.3	5,066.2	5,032.0	24.1	14.7	157.92	-201.4	-413.7	836.8	807.7	29.03	28.826		
5,200.0	5,062.2	5,165.1	5,129.9	24.7	15.0	157.78	-209.2	-424.9	851.8	822.1	29.69	28.689		
5,300.0	5,159.2	5,263.9	5,227.8	25.2	15.3	157.64	-216.9	-436.0	866.8	836.5	30.35	28.558		
5,400.0	5,256.1	5,362.7	5,325.7	25.7	15.7	157.51	-224.7	-447.2	881.9	850.9	31.02	28.432		
5,500.0	5,353.1	5,461.6	5,423.6	26.2	16.0	157.38	-232.5	-458.3	896.9	865.2	31.68	28.310		
5,600.0	5,450.1	5,558.1	5,519.2	26.7	16.4	157.27	-240.1	-469.2	912.0	879.7	32.33	28.207		
5,700.0	5,547.1	5,641.7	5,602.2	27.2	16.6	157.30	-245.8	-477.3	927.7	894.8	32.87	28.220		
5,800.0	5,644.9	5,725.3	5,685.5	27.5	16.7	157.45	-250.0	-483.4	942.3	909.0	33.31	28.286		
5,900.0	5,743.3	5,808.9	5,768.9	27.8	16.9	157.64	-252.9	-487.5	955.3	921.6	33.68	28.361		
6,000.0	5,842.3	5,900.0	5,860.0	28.1	17.0	157.88	-254.5	-489.8	966.7	932.8	33.99	28.443		
6,100.0	5,941.7	5,982.7	5,942.7	28.3	17.2	158.14	-254.6	-490.0	976.4	942.2	34.23	28.527		
6,200.0	6,041.4	6,082.4	6,042.4	28.4	17.3	158.34	-254.6	-490.0	983.2	948.7	34.46	28.532		
6,300.0	6,141.3	6,182.4	6,142.3	28.6	17.5	158.45	-254.6	-490.0	986.7	952.0	34.67	28.460		
6,400.0	6,241.3	6,282.4	6,242.3	28.7	17.6	0.00	-254.6	-490.0	987.3	944.6	42.62	23.163		
6,452.5	6,293.8	6,334.9	6,294.8	28.7	17.7	-90.01	-254.6	-490.0	987.3	952.2	35.08	28.144		
6,500.0	6,341.3	6,382.4	6,342.3	28.7	17.8	-89.97	-254.6	-489.5	987.3	952.1	35.20	28.046		
6,600.0	6,440.9	6,482.1	6,441.5	28.8	17.8	-89.85	-254.6	-479.2	987.3	952.0	35.32	27.956		
6,700.0	6,538.6	6,581.6	6,538.2	28.8	17.8	-89.72	-254.6	-456.2	987.3	952.0	35.25	28.007		
6,800.0	6,632.7	6,680.8	6,630.9	28.7	17.8	-89.60	-254.6	-420.9	987.3	952.2	35.06	28.161		
6,900.0	6,721.6	6,779.8	6,718.0	28.6	17.7	-89.49	-254.6	-374.1	987.3	952.5	34.82	28.356		
7,000.0	6,803.8	6,878.5	6,798.1	28.5	17.6	-89.39	-254.6	-316.5	987.3	952.7	34.65	28.498		
7,100.0	6,877.9	6,977.0	6,870.0	28.4	17.5	-89.29	-254.6	-249.3	987.3	952.7	34.69	28.465		
7,200.0	6,942.6	7,075.4	6,932.6	28.2	17.5	-89.21	-254.6	-173.5	987.4	952.3	35.11	28.125		
7,300.0	6,996.8	7,173.5	6,984.8	28.1	17.8	-89.14	-254.6	-90.5	987.4	951.3	36.05	27.387		
7,400.0	7,039.6	7,271.6	7,025.9	28.0	18.4	-89.09	-254.6	-1.6	987.4	949.8	37.63	26.242		
7,500.0	7,070.2	7,369.5	7,055.3	27.9	19.5	-89.05	-254.6	91.8	987.4	947.6	39.84	24.781		
7,600.0	7,088.2	7,467.4	7,072.5	27.9	20.9	-89.03	-254.6	188.1	987.4	944.8	42.65	23.153		
7,700.0	7,093.1	7,565.4	7,077.3	28.1	22.6	-89.02	-254.6	285.9	987.4	941.5	45.91	21.508		
7,800.0	7,091.9	7,665.4	7,076.5	28.6	24.5	-89.05	-254.6	385.9	987.4	937.8	49.62	19.900		
7,900.0	7,090.8	7,765.4	7,075.7	29.7	26.5	-89.07	-254.6	485.9	987.4	933.8	53.64	18.408		
8,000.0	7,089.6	7,865.4	7,075.0	31.3	28.7	-89.09	-254.6	585.9	987.4	929.5	57.93	17.046		
8,100.0	7,088.4	7,965.4	7,074.2	33.2	31.0	-89.12	-254.6	685.9	987.4	925.0	62.43	15.817		
8,200.0	7,087.3	8,065.4	7,073.4	35.3	33.4	-89.14	-254.6	785.9	987.4	920.3	67.09	14.717		
8,300.0	7,086.1	8,165.4	7,072.7	37.6	35.8	-89.16	-254.6	885.9	987.4	915.5	71.90	13.733		
8,400.0	7,084.9	8,265.4	7,071.9	39.9	38.3	-89.18	-254.6	985.9	987.4	910.6	76.81	12.855		
8,500.0	7,083.8	8,365.4	7,071.1	42.3	40.8	-89.21	-254.6	1,085.9	987.4	905.5	81.81	12.068		
8,600.0	7,082.6	8,465.4	7,070.4	44.8	43.4	-89.23	-254.6	1,185.8	987.4	900.5	86.89	11.363		
8,700.0	7,081.4	8,565.3	7,069.6	47.3	46.0	-89.25	-254.6	1,285.8	987.3	895.3	92.03	10.728		
8,800.0	7,080.3	8,665.3	7,068.8	49.8	48.6	-89.28	-254.6	1,385.8	987.3	890.1	97.23	10.155		
8,900.0	7,079.1	8,765.3	7,068.0	52.4	51.2	-89.30	-254.6	1,485.8	987.3	884.9	102.47	9.636		
9,000.0	7,077.9	8,865.3	7,067.3	55.0	53.9	-89.32	-254.6	1,585.8	987.3	879.6	107.74	9.164		
9,100.0	7,076.7	8,965.3	7,066.5	57.6	56.6	-89.35	-254.6	1,685.8	987.3	874.3	113.05	8.733		
9,200.0	7,075.6	9,065.3	7,065.7	60.2	59.2	-89.37	-254.6	1,785.8	987.3	868.9	118.39	8.340		
9,300.0	7,074.4	9,165.3	7,065.0	62.8	61.9	-89.39	-254.6	1,885.8	987.3	863.6	123.75	7.978		
9,400.0	7,073.2	9,265.3	7,064.2	65.5	64.6	-89.42	-254.6	1,985.8	987.3	858.2	129.13	7.646		
9,500.0	7,072.1	9,365.3	7,063.4	68.1	67.3	-89.44	-254.6	2,085.8	987.3	852.8	134.54	7.339		
9,600.0	7,070.9	9,465.3	7,062.7	70.8	70.0	-89.46	-254.6	2,185.8	987.3	847.4	139.96	7.054		
9,700.0	7,069.7	9,565.3	7,061.9	73.5	72.8	-89.49	-254.6	2,285.8	987.3	841.9	145.39	6.791		
9,800.0	7,068.6	9,665.3	7,061.1	76.2	75.5	-89.51	-254.6	2,385.8	987.3	836.5	150.84	6.545		
9,900.0	7,067.4	9,765.3	7,060.4	78.9	78.2	-89.53	-254.6	2,485.8	987.3	831.0	156.30	6.317		

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

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Reference Well:	Wiedeman 28G-212	Survey Calculation Method:	Minimum Curvature
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Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (7-25-14)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
10,000.0	7,066.2	9,865.3	7,059.6	81.6	81.0	-89.56	-254.6	2,585.8	987.3	825.5	161.77	6.103		
10,100.0	7,065.1	9,965.3	7,058.8	84.3	83.7	-89.58	-254.6	2,685.8	987.3	820.0	167.25	5.903		
10,200.0	7,063.9	10,065.3	7,058.1	87.0	86.5	-89.60	-254.6	2,785.8	987.3	814.6	172.74	5.716		
10,300.0	7,062.7	10,165.3	7,057.3	89.8	89.2	-89.63	-254.6	2,885.8	987.3	809.1	178.23	5.539		
10,400.0	7,061.5	10,265.3	7,056.5	92.5	92.0	-89.65	-254.6	2,985.8	987.3	803.5	183.74	5.373		
10,500.0	7,060.4	10,365.3	7,055.8	95.2	94.7	-89.67	-254.6	3,085.8	987.3	798.0	189.25	5.217		
10,600.0	7,059.2	10,465.3	7,055.0	98.0	97.5	-89.70	-254.6	3,185.8	987.3	792.5	194.76	5.069		
10,700.0	7,058.0	10,565.3	7,054.2	100.7	100.3	-89.72	-254.6	3,285.8	987.3	787.0	200.29	4.929		
10,800.0	7,056.9	10,665.3	7,053.5	103.5	103.0	-89.74	-254.6	3,385.8	987.3	781.5	205.81	4.797		
10,900.0	7,055.7	10,765.3	7,052.7	106.2	105.8	-89.77	-254.6	3,485.8	987.3	775.9	211.34	4.671		
11,000.0	7,054.5	10,865.3	7,051.9	109.0	108.6	-89.79	-254.6	3,585.8	987.3	770.4	216.88	4.552		
11,100.0	7,053.4	10,965.3	7,051.2	111.7	111.3	-89.81	-254.6	3,685.8	987.3	764.9	222.42	4.439		
11,200.0	7,052.2	11,065.3	7,050.4	114.5	114.1	-89.84	-254.6	3,785.7	987.3	759.3	227.96	4.331		
11,300.0	7,051.0	11,165.3	7,049.6	117.2	116.9	-89.86	-254.6	3,885.7	987.3	753.8	233.51	4.228		
11,400.0	7,049.9	11,265.3	7,048.9	120.0	119.7	-89.88	-254.6	3,985.7	987.3	748.2	239.06	4.130		
11,500.0	7,048.7	11,365.3	7,048.1	122.7	122.4	-89.91	-254.6	4,085.7	987.3	742.7	244.61	4.036		
11,600.0	7,047.5	11,465.3	7,047.3	125.5	124.6	-89.93	-254.6	4,185.7	987.3	737.8	249.51	3.957		
11,633.3	7,047.1	11,498.6	7,047.1	126.4	125.2	-89.94	-254.6	4,219.0	987.3	736.2	251.03	3.933		
11,643.9	7,047.0	11,506.3	7,047.0	126.7	125.3	-89.94	-254.6	4,226.7	987.3	735.8	251.46	3.926 SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28G-212
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4776.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4776.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28G-212	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (7-25-14)	Offset TVD Reference:	Offset Datum

Offset Design		Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W - Wiedeman 28G-312 - Wellbore #1 - Plan #1 (7-										Offset Site Error:		0.0 ft		
Survey Program: 0-MWD														Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
0.0	0.0	0.0	0.0	0.0	0.0	0.00	29.1	0.0	29.1							
100.0	100.0	100.0	100.0	0.1	0.1	0.00	29.1	0.0	29.1	28.9	0.22	129.665				
200.0	200.0	200.0	200.0	0.3	0.3	0.00	29.1	0.0	29.1	28.5	0.67	43.222	CC			
300.0	300.0	300.0	300.0	0.5	0.6	159.65	29.1	0.0	30.8	29.7	1.11	27.778				
400.0	399.8	399.8	399.8	0.8	0.8	162.54	29.1	0.0	35.7	34.2	1.54	23.154				
500.0	499.5	500.9	500.9	1.0	1.0	165.19	27.5	-0.8	42.5	40.5	1.96	21.627				
600.0	598.7	602.2	602.0	1.3	1.2	166.80	22.7	-3.1	49.3	46.9	2.38	20.740				
700.0	697.5	703.7	703.2	1.6	1.4	167.74	14.7	-7.0	56.2	53.4	2.81	19.965				
800.0	795.6	805.5	804.2	2.0	1.7	168.22	3.4	-12.5	63.1	59.8	3.27	19.271				
900.0	893.1	907.6	904.9	2.5	2.0	168.38	-11.2	-19.5	69.9	66.2	3.76	18.621				
1,000.0	990.0	1,009.6	1,005.1	2.9	2.4	168.10	-29.0	-28.1	75.4	71.1	4.28	17.635				
1,100.0	1,087.0	1,109.6	1,102.8	3.4	2.8	167.58	-47.7	-37.2	79.5	74.7	4.82	16.504				
1,200.0	1,183.9	1,209.5	1,200.5	3.9	3.2	167.11	-66.4	-46.2	83.6	78.3	5.38	15.560				
1,300.0	1,280.9	1,309.4	1,298.3	4.4	3.6	166.68	-85.0	-55.3	87.8	81.8	5.94	14.767				
1,400.0	1,377.8	1,409.3	1,396.0	4.9	4.0	166.30	-103.7	-64.3	91.9	85.4	6.52	14.097				
1,500.0	1,474.8	1,509.2	1,493.7	5.5	4.5	165.94	-122.4	-73.3	96.0	88.9	7.10	13.522				
1,600.0	1,571.8	1,609.1	1,591.5	6.0	4.9	165.62	-141.1	-82.4	100.2	92.5	7.69	13.025				
1,700.0	1,668.7	1,709.0	1,689.2	6.5	5.4	165.32	-159.7	-91.4	104.3	96.0	8.28	12.592				
1,800.0	1,765.7	1,809.0	1,786.9	7.0	5.8	165.04	-178.4	-100.5	108.4	99.6	8.88	12.211				
1,900.0	1,862.6	1,908.9	1,884.7	7.5	6.3	164.78	-197.1	-109.5	112.6	103.1	9.48	11.874				
2,000.0	1,959.6	2,008.8	1,982.4	8.0	6.7	164.55	-215.8	-118.5	116.7	106.6	10.08	11.573				
2,100.0	2,056.5	2,108.7	2,080.2	8.6	7.2	164.33	-234.4	-127.6	120.9	110.2	10.69	11.304				
2,200.0	2,153.5	2,208.6	2,177.9	9.1	7.6	164.12	-253.1	-136.6	125.0	113.7	11.30	11.062				
2,300.0	2,250.5	2,308.5	2,275.6	9.6	8.1	163.92	-271.8	-145.6	129.2	117.2	11.91	10.843				
2,400.0	2,347.4	2,408.4	2,373.4	10.1	8.5	163.74	-290.4	-154.7	133.3	120.8	12.53	10.643				
2,500.0	2,444.4	2,508.3	2,471.1	10.6	9.0	163.57	-309.1	-163.7	137.5	124.3	13.14	10.461				
2,600.0	2,541.3	2,608.3	2,568.8	11.1	9.4	163.41	-327.8	-172.8	141.6	127.9	13.76	10.294				
2,700.0	2,638.3	2,708.2	2,666.6	11.7	9.9	163.26	-346.5	-181.8	145.8	131.4	14.37	10.141				
2,800.0	2,735.2	2,808.1	2,764.3	12.2	10.3	163.12	-365.1	-190.8	149.9	134.9	14.99	9.999				
2,900.0	2,832.2	2,908.0	2,862.0	12.7	10.8	162.98	-383.8	-199.9	154.1	138.5	15.61	9.868				
3,000.0	2,929.2	3,007.9	2,959.8	13.2	11.3	162.85	-402.5	-208.9	158.2	142.0	16.23	9.746				
3,100.0	3,026.1	3,107.8	3,057.5	13.7	11.7	162.73	-421.2	-218.0	162.4	145.5	16.86	9.633				
3,200.0	3,123.1	3,207.7	3,155.2	14.3	12.2	162.62	-439.8	-227.0	166.5	149.1	17.48	9.528				
3,300.0	3,220.0	3,307.6	3,253.0	14.8	12.6	162.51	-458.5	-236.0	170.7	152.6	18.10	9.429				
3,400.0	3,317.0	3,407.6	3,350.7	15.3	13.1	162.40	-477.2	-245.1	174.9	156.1	18.73	9.336				
3,500.0	3,414.0	3,507.5	3,448.4	15.8	13.5	162.30	-495.9	-254.1	179.0	159.7	19.35	9.249				
3,600.0	3,510.9	3,607.4	3,546.2	16.3	14.0	162.21	-514.5	-263.1	183.2	163.2	19.98	9.168				
3,700.0	3,607.9	3,707.3	3,643.9	16.9	14.5	162.11	-533.2	-272.2	187.3	166.7	20.61	9.091				
3,800.0	3,704.8	3,807.2	3,741.7	17.4	14.9	162.03	-551.9	-281.2	191.5	170.3	21.23	9.018				
3,900.0	3,801.8	3,907.1	3,839.4	17.9	15.4	161.94	-570.6	-290.3	195.7	173.8	21.86	8.950				
4,000.0	3,898.7	4,007.0	3,937.1	18.4	15.8	161.86	-589.2	-299.3	199.8	177.3	22.49	8.885				
4,100.0	3,995.7	4,107.0	4,034.9	18.9	16.3	161.79	-607.9	-308.3	204.0	180.9	23.12	8.823				
4,200.0	4,092.7	4,206.9	4,132.6	19.5	16.7	161.71	-626.6	-317.4	208.1	184.4	23.75	8.764				
4,300.0	4,189.6	4,306.8	4,230.3	20.0	17.2	161.64	-645.3	-326.4	212.3	187.9	24.38	8.709				
4,400.0	4,286.6	4,406.7	4,328.1	20.5	17.7	161.57	-663.9	-335.4	216.5	191.5	25.01	8.656				
4,500.0	4,383.5	4,506.6	4,425.8	21.0	18.1	161.51	-682.6	-344.5	220.6	195.0	25.64	8.605				
4,600.0	4,480.5	4,606.5	4,523.5	21.5	18.6	161.45	-701.3	-353.5	224.8	198.5	26.27	8.557				
4,700.0	4,577.4	4,706.4	4,621.3	22.1	19.0	161.38	-720.0	-362.6	229.0	202.1	26.90	8.511				
4,800.0	4,674.4	4,806.3	4,719.0	22.6	19.5	161.33	-738.6	-371.6	233.1	205.6	27.53	8.467				
4,900.0	4,771.4	4,906.3	4,816.7	23.1	19.9	161.27	-757.3	-380.6	237.3	209.1	28.16	8.425				
5,000.0	4,868.3	5,006.2	4,914.5	23.6	20.4	161.22	-776.0	-389.7	241.5	212.7	28.80	8.385				

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28G-212
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4776.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4776.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28G-212	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (7-25-14)	Offset TVD Reference:	Offset Datum

Offset Design		Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W - Wiedeman 28G-312 - Wellbore #1 - Plan #1 (7-										Offset Site Error:		0.0 ft
Survey Program:		0-MWD										Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,100.0	4,965.3	5,106.1	5,012.2	24.1	20.9	161.16	-794.7	-398.7	245.6	216.2	29.43	8.346		
5,200.0	5,062.2	5,206.0	5,109.9	24.7	21.3	161.11	-813.3	-407.8	249.8	219.7	30.06	8.309		
5,300.0	5,159.2	5,305.9	5,207.7	25.2	21.8	161.06	-832.0	-416.8	254.0	223.3	30.69	8.274		
5,400.0	5,256.1	5,405.8	5,305.4	25.7	22.2	161.01	-850.7	-425.8	258.1	226.8	31.33	8.239		
5,500.0	5,353.1	5,505.7	5,403.2	26.2	22.7	160.97	-869.4	-434.9	262.3	230.3	31.96	8.206		
5,600.0	5,450.1	5,605.6	5,500.9	26.7	23.2	160.92	-888.0	-443.9	266.4	233.9	32.59	8.175		
5,700.0	5,547.1	5,705.6	5,598.6	27.2	23.6	160.86	-906.7	-452.9	270.2	237.0	33.23	8.132		
5,800.0	5,644.9	5,805.6	5,696.4	27.5	24.1	160.58	-925.4	-462.0	271.1	237.2	33.86	8.005		
5,900.0	5,743.3	5,900.0	5,789.1	27.8	24.4	160.18	-941.9	-470.0	269.9	235.5	34.44	7.836		
6,000.0	5,842.3	5,990.4	5,878.2	28.1	24.7	159.81	-955.2	-476.4	268.4	233.5	34.92	7.686		
6,100.0	5,941.7	6,082.5	5,969.6	28.3	24.9	159.46	-966.0	-481.7	266.5	231.2	35.33	7.542		
6,200.0	6,041.4	6,174.7	6,061.3	28.4	25.1	159.12	-974.3	-485.7	264.3	228.6	35.69	7.406		
6,300.0	6,141.3	6,267.0	6,153.4	28.6	25.2	158.79	-979.9	-488.4	261.8	225.8	35.98	7.276		
6,400.0	6,241.3	6,359.4	6,245.7	28.7	25.3	0.05	-982.8	-489.8	259.2	207.9	51.21	5.060		
6,480.6	6,321.9	6,435.6	6,321.9	28.7	25.4	-90.11	-983.3	-490.0	258.7	222.1	36.54	7.078		
6,500.0	6,341.3	6,455.0	6,341.3	28.7	25.4	-90.02	-983.3	-490.0	258.7	222.1	36.57	7.073		
6,600.0	6,440.9	6,554.9	6,441.2	28.8	25.5	-91.70	-983.3	-489.5	258.8	221.4	37.35	6.929		
6,700.0	6,538.6	6,656.0	6,541.8	28.8	25.6	-94.13	-983.3	-479.3	259.3	221.1	38.20	6.789		
6,800.0	6,632.7	6,758.7	6,641.5	28.7	25.6	-96.48	-983.3	-455.4	260.3	221.6	38.77	6.716		
6,900.0	6,721.6	6,862.9	6,738.6	28.6	25.5	-98.73	-983.3	-417.7	261.7	222.7	39.02	6.708		
7,000.0	6,803.8	6,968.6	6,830.9	28.5	25.4	-100.81	-983.3	-366.3	263.4	224.4	38.98	6.756		
7,100.0	6,877.9	7,075.8	6,916.3	28.4	25.2	-102.69	-983.3	-301.7	265.2	226.4	38.78	6.838		
7,200.0	6,942.6	7,184.4	6,992.8	28.2	25.1	-104.34	-983.3	-224.8	267.0	228.4	38.62	6.914		
7,300.0	6,996.8	7,294.2	7,058.3	28.1	24.9	-105.71	-983.3	-136.7	268.7	230.0	38.76	6.933		
7,400.0	7,039.6	7,405.0	7,110.9	28.0	24.7	-106.80	-983.3	-39.3	270.2	230.7	39.51	6.838		
7,500.0	7,070.2	7,516.7	7,149.1	27.9	24.6	-107.58	-983.3	65.5	271.3	230.2	41.09	6.603		
7,600.0	7,088.2	7,628.9	7,171.7	27.9	24.6	-108.03	-983.3	175.3	272.0	228.5	43.57	6.244		
7,700.0	7,093.1	7,741.2	7,177.9	28.1	24.9	-108.16	-983.3	287.3	272.2	225.4	46.83	5.813		
7,800.0	7,091.9	7,841.2	7,176.4	28.6	26.0	-108.08	-983.3	387.3	272.1	221.8	50.29	5.410		
7,900.0	7,090.8	7,941.2	7,174.8	29.7	27.9	-108.00	-983.3	487.3	272.0	217.9	54.05	5.031		
8,000.0	7,089.6	8,041.2	7,173.2	31.3	29.9	-107.91	-983.3	587.3	271.8	213.8	58.07	4.681		
8,100.0	7,088.4	8,141.2	7,171.6	33.2	32.1	-107.83	-983.3	687.3	271.7	209.4	62.29	4.362		
8,200.0	7,087.3	8,241.2	7,170.1	35.3	34.4	-107.75	-983.3	787.3	271.6	204.9	66.68	4.073		
8,300.0	7,086.1	8,341.2	7,168.5	37.6	36.8	-107.67	-983.3	887.3	271.5	200.3	71.21	3.812		
8,400.0	7,084.9	8,441.2	7,166.9	39.9	39.2	-107.59	-983.3	987.3	271.3	195.5	75.86	3.577		
8,500.0	7,083.8	8,541.2	7,165.4	42.3	41.7	-107.51	-983.3	1,087.2	271.2	190.6	80.60	3.365		
8,600.0	7,082.6	8,641.2	7,163.8	44.8	44.2	-107.43	-983.3	1,187.2	271.1	185.7	85.42	3.174		
8,700.0	7,081.4	8,741.2	7,162.2	47.3	46.7	-107.35	-983.3	1,287.2	271.0	180.7	90.31	3.001		
8,800.0	7,080.3	8,841.2	7,160.7	49.8	49.3	-107.27	-983.3	1,387.2	270.9	175.6	95.26	2.843		
8,900.0	7,079.1	8,941.2	7,159.1	52.4	51.9	-107.19	-983.3	1,487.2	270.7	170.5	100.26	2.700		
9,000.0	7,077.9	9,041.2	7,157.5	55.0	54.5	-107.11	-983.3	1,587.2	270.6	165.3	105.31	2.570		
9,100.0	7,076.7	9,141.2	7,155.9	57.6	57.1	-107.02	-983.3	1,687.2	270.5	160.1	110.39	2.451		
9,200.0	7,075.6	9,241.2	7,154.4	60.2	59.8	-106.94	-983.3	1,787.1	270.4	154.9	115.51	2.341		
9,300.0	7,074.4	9,341.2	7,152.8	62.8	62.5	-106.86	-983.3	1,887.1	270.3	149.6	120.65	2.240		
9,400.0	7,073.2	9,441.2	7,151.2	65.5	65.1	-106.78	-983.3	1,987.1	270.2	144.3	125.83	2.147		
9,500.0	7,072.1	9,541.2	7,149.7	68.1	67.8	-106.70	-983.3	2,087.1	270.0	139.0	131.02	2.061		
9,600.0	7,070.9	9,641.2	7,148.1	70.8	70.5	-106.62	-983.3	2,187.1	269.9	133.7	136.25	1.981		
9,700.0	7,069.7	9,741.2	7,146.5	73.5	73.2	-106.54	-983.3	2,287.1	269.8	128.3	141.49	1.907		
9,800.0	7,068.6	9,841.2	7,144.9	76.2	75.9	-106.45	-983.3	2,387.1	269.7	123.0	146.74	1.838		
9,900.0	7,067.4	9,941.2	7,143.4	78.9	78.6	-106.37	-983.3	2,487.1	269.6	117.6	152.02	1.773		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28G-212
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4776.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4776.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28G-212	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (7-25-14)	Offset TVD Reference:	Offset Datum

Offset Design				Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W - Wiedeman 28G-312 - Wellbore #1 - Plan #1 (7-										Offset Site Error:	0.0 ft
Survey Program: 0-MWD														Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
10,000.0	7,066.2	10,041.2	7,141.8	81.6	81.3	-106.29	-983.3	2,587.0	269.5	112.2	157.31	1.713			
10,100.0	7,065.1	10,141.2	7,140.2	84.3	84.1	-106.21	-983.3	2,687.0	269.4	106.7	162.62	1.656			
10,200.0	7,063.9	10,241.2	7,138.7	87.0	86.8	-106.13	-983.3	2,787.0	269.3	101.3	167.94	1.603			
10,300.0	7,062.7	10,341.2	7,137.1	89.8	89.5	-106.04	-983.3	2,887.0	269.1	95.9	173.27	1.553			
10,400.0	7,061.5	10,441.2	7,135.5	92.5	92.3	-105.96	-983.3	2,987.0	269.0	90.4	178.61	1.506			
10,500.0	7,060.4	10,541.2	7,134.0	95.2	95.0	-105.88	-983.3	3,087.0	268.9	85.0	183.96	1.462	Level 3		
10,600.0	7,059.2	10,641.2	7,132.4	98.0	97.7	-105.80	-983.3	3,187.0	268.8	79.5	189.33	1.420	Level 3		
10,700.0	7,058.0	10,741.2	7,130.8	100.7	100.5	-105.72	-983.3	3,286.9	268.7	74.0	194.70	1.380	Level 3		
10,800.0	7,056.9	10,841.1	7,129.2	103.5	103.3	-105.63	-983.3	3,386.9	268.6	68.5	200.09	1.342	Level 3		
10,900.0	7,055.7	10,941.1	7,127.7	106.2	106.0	-105.55	-983.3	3,486.9	268.5	63.0	205.48	1.307	Level 3		
11,000.0	7,054.5	11,041.1	7,126.1	109.0	108.8	-105.47	-983.3	3,586.9	268.4	57.5	210.88	1.273	Level 3		
11,100.0	7,053.4	11,141.1	7,124.5	111.7	111.5	-105.39	-983.3	3,686.9	268.3	52.0	216.29	1.240	Level 2		
11,200.0	7,052.2	11,241.1	7,123.0	114.5	114.3	-105.30	-983.3	3,786.9	268.2	46.5	221.71	1.210	Level 2		
11,300.0	7,051.0	11,341.1	7,121.4	117.2	117.0	-105.22	-983.3	3,886.9	268.1	40.9	227.13	1.180	Level 2		
11,400.0	7,049.9	11,441.1	7,119.8	120.0	119.8	-105.14	-983.3	3,986.9	268.0	35.4	232.56	1.152	Level 2		
11,500.0	7,048.7	11,541.1	7,118.2	122.7	122.6	-105.05	-983.3	4,086.8	267.8	29.8	238.00	1.125	Level 2		
11,600.0	7,047.5	11,641.1	7,116.7	125.5	125.4	-104.97	-983.3	4,186.8	267.7	24.3	243.45	1.100	Level 2		
11,633.7	7,047.1	11,674.9	7,116.1	126.4	126.3	-104.94	-983.3	4,220.5	267.7	22.4	245.28	1.091	Level 2		
11,643.9	7,047.0	11,683.9	7,116.0	126.7	126.5	-104.94	-983.3	4,229.6	267.7	21.9	245.81	1.089	Level 2, ES, SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28G-212
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4776.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4776.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28G-212	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (7-25-14)	Offset TVD Reference:	Offset Datum

Offset Design		Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W - Wiedeman 28F-234 - Wellbore #1 - Plan #1 (8)										Offset Site Error:		0.0 ft		
Survey Program: 0-MWD														Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
							+N/-S (ft)	+E/-W (ft)								
0.0	0.0	2.0	2.0	0.0	0.0	-79.05	58.3	-301.3	306.9							
100.0	100.0	102.0	102.0	0.1	0.1	-79.05	58.3	-301.3	306.9	306.7	0.23	1,338.617				
200.0	200.0	202.0	202.0	0.3	0.3	-79.05	58.3	-301.3	306.9	306.2	0.68	452.116				
300.0	300.0	302.0	302.0	0.5	0.6	79.74	58.3	-301.3	306.6	305.5	1.11	277.328				
400.0	399.8	401.8	401.8	0.8	0.8	80.73	58.3	-301.3	305.7	304.2	1.54	198.741				
500.0	499.5	501.5	501.5	1.0	1.0	82.36	58.3	-301.3	304.4	302.4	2.01	151.697				
600.0	598.7	600.0	600.0	1.3	1.2	84.64	58.3	-301.3	303.0	300.5	2.51	120.491				
700.0	697.5	698.4	698.4	1.6	1.4	87.25	56.8	-302.0	302.1	299.1	3.05	99.218				
757.0	753.5	754.3	754.2	1.8	1.5	88.74	54.5	-303.1	302.0	298.6	3.37	89.611 CC				
800.0	795.6	796.6	796.4	2.0	1.6	89.86	52.2	-304.1	302.1	298.4	3.62	83.538 ES				
900.0	893.1	895.2	894.7	2.5	1.8	92.47	44.5	-307.7	302.9	298.6	4.27	70.965				
1,000.0	990.0	994.4	993.2	2.9	2.1	94.83	33.7	-312.7	304.4	299.4	4.98	61.070				
1,100.0	1,087.0	1,093.8	1,091.6	3.4	2.3	96.92	21.7	-318.2	306.3	300.6	5.74	53.380				
1,200.0	1,183.9	1,193.1	1,190.1	3.9	2.6	98.98	9.6	-323.8	308.6	302.1	6.51	47.414				
1,300.0	1,280.9	1,292.5	1,288.6	4.4	2.9	101.01	-2.4	-329.4	311.4	304.1	7.29	42.717				
1,400.0	1,377.8	1,391.8	1,387.0	4.9	3.2	103.00	-14.4	-335.0	314.5	306.4	8.07	38.965				
1,500.0	1,474.8	1,491.2	1,485.5	5.5	3.5	104.95	-26.5	-340.5	318.0	309.2	8.85	35.928				
1,600.0	1,571.8	1,590.5	1,584.0	6.0	3.8	106.85	-38.5	-346.1	321.9	312.3	9.63	33.440				
1,700.0	1,668.7	1,689.9	1,682.4	6.5	4.2	108.71	-50.6	-351.7	326.1	315.7	10.39	31.380				
1,800.0	1,765.7	1,789.2	1,780.9	7.0	4.5	110.52	-62.6	-357.2	330.6	319.5	11.15	29.659				
1,900.0	1,862.6	1,888.6	1,879.4	7.5	4.8	112.28	-74.6	-362.8	335.5	323.6	11.89	28.210				
2,000.0	1,959.6	1,987.9	1,977.8	8.0	5.1	113.99	-86.7	-368.4	340.7	328.1	12.63	26.981				
2,100.0	2,056.5	2,087.3	2,076.3	8.6	5.5	115.64	-98.7	-373.9	346.2	332.8	13.35	25.933				
2,200.0	2,153.5	2,186.7	2,174.7	9.1	5.8	117.24	-110.7	-379.5	352.0	337.9	14.06	25.035				
2,300.0	2,250.5	2,286.0	2,273.2	9.6	6.1	118.79	-122.8	-385.1	358.0	343.2	14.76	24.262				
2,400.0	2,347.4	2,385.4	2,371.7	10.1	6.5	120.29	-134.8	-390.6	364.3	348.8	15.44	23.594				
2,500.0	2,444.4	2,484.7	2,470.1	10.6	6.8	121.74	-146.8	-396.2	370.8	354.7	16.11	23.016				
2,600.0	2,541.3	2,584.1	2,568.6	11.1	7.1	123.14	-158.9	-401.8	377.6	360.8	16.77	22.513				
2,700.0	2,638.3	2,683.4	2,667.1	11.7	7.5	124.48	-170.9	-407.3	384.5	367.1	17.42	22.075				
2,800.0	2,735.2	2,782.8	2,765.5	12.2	7.8	125.78	-183.0	-412.9	391.7	373.7	18.06	21.693				
2,900.0	2,832.2	2,882.1	2,864.0	12.7	8.1	127.03	-195.0	-418.5	399.1	380.4	18.69	21.359				
3,000.0	2,929.2	2,981.5	2,962.4	13.2	8.5	128.24	-207.0	-424.0	406.7	387.4	19.30	21.067				
3,100.0	3,026.1	3,080.8	3,060.9	13.7	8.8	129.40	-219.1	-429.6	414.4	394.5	19.91	20.812				
3,200.0	3,123.1	3,180.2	3,159.4	14.3	9.1	130.52	-231.1	-435.2	422.3	401.8	20.51	20.589				
3,300.0	3,220.0	3,279.5	3,257.8	14.8	9.5	131.60	-243.1	-440.7	430.3	409.2	21.10	20.393				
3,400.0	3,317.0	3,378.9	3,356.3	15.3	9.8	132.64	-255.2	-446.3	438.5	416.9	21.69	20.222				
3,500.0	3,414.0	3,478.2	3,454.8	15.8	10.2	133.64	-267.2	-451.9	446.9	424.6	22.26	20.073				
3,600.0	3,510.9	3,577.6	3,553.2	16.3	10.5	134.60	-279.2	-457.4	455.4	432.5	22.83	19.942				
3,700.0	3,607.9	3,676.9	3,651.7	16.9	10.8	135.53	-291.3	-463.0	463.9	440.5	23.40	19.828				
3,800.0	3,704.8	3,776.3	3,750.1	17.4	11.2	136.42	-303.3	-468.6	472.7	448.7	23.96	19.730				
3,900.0	3,801.8	3,875.6	3,848.6	17.9	11.5	137.29	-315.4	-474.2	481.5	457.0	24.51	19.644				
4,000.0	3,898.7	3,975.0	3,947.1	18.4	11.9	138.12	-327.4	-479.7	490.4	465.3	25.06	19.570				
4,100.0	3,995.7	4,074.3	4,045.5	18.9	12.2	138.92	-339.4	-485.3	499.4	473.8	25.60	19.507				
4,200.0	4,092.7	4,173.7	4,144.0	19.5	12.5	139.69	-351.5	-490.9	508.5	482.4	26.14	19.452				
4,300.0	4,189.6	4,273.0	4,242.5	20.0	12.9	140.44	-363.5	-496.4	517.8	491.1	26.68	19.406				
4,400.0	4,286.6	4,372.4	4,340.9	20.5	13.2	141.15	-375.5	-502.0	527.0	499.8	27.21	19.367				
4,500.0	4,383.5	4,471.7	4,439.4	21.0	13.6	141.85	-387.6	-507.6	536.4	508.7	27.74	19.335				
4,600.0	4,480.5	4,571.1	4,537.9	21.5	13.9	142.52	-399.6	-513.1	545.9	517.6	28.27	19.308				
4,700.0	4,577.4	4,670.5	4,636.3	22.1	14.2	143.17	-411.7	-518.7	555.4	526.6	28.80	19.287				
4,800.0	4,674.4	4,769.8	4,734.8	22.6	14.6	143.79	-423.7	-524.3	565.0	535.7	29.32	19.270				
4,900.0	4,771.4	4,869.2	4,833.2	23.1	14.9	144.40	-435.7	-529.8	574.6	544.8	29.84	19.258				

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28G-212
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4776.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4776.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28G-212	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (7-25-14)	Offset TVD Reference:	Offset Datum

Offset Design Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W - Wiedeman 28F-234 - Wellbore #1 - Plan #1 (8)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
5,000.0	4,868.3	4,968.5	4,931.7	23.6	15.2	144.98	-447.8	-535.4	584.3	554.0	30.36	19.249		
5,100.0	4,965.3	5,067.9	5,030.2	24.1	15.6	145.55	-459.8	-541.0	594.1	563.2	30.87	19.243		
5,200.0	5,062.2	5,167.2	5,128.6	24.7	15.9	146.10	-471.8	-546.5	603.9	572.6	31.39	19.240		
5,300.0	5,159.2	5,266.6	5,227.1	25.2	16.3	146.63	-483.9	-552.1	613.8	581.9	31.90	19.240		
5,400.0	5,256.1	5,365.9	5,325.6	25.7	16.6	147.14	-495.9	-557.7	623.8	591.3	32.42	19.242		
5,500.0	5,353.1	5,465.3	5,424.0	26.2	16.9	147.64	-507.9	-563.2	633.7	600.8	32.93	19.246		
5,600.0	5,450.1	5,564.6	5,522.5	26.7	17.3	148.12	-520.0	-568.8	643.8	610.3	33.44	19.252		
5,700.0	5,547.1	5,664.0	5,621.0	27.2	17.6	148.62	-532.0	-574.4	653.5	619.5	33.93	19.257		
5,800.0	5,644.9	5,761.5	5,717.6	27.5	18.0	148.98	-543.8	-579.8	660.6	626.2	34.38	19.215		
5,900.0	5,743.3	5,847.1	5,802.6	27.8	18.2	149.22	-553.1	-584.1	666.0	631.3	34.74	19.174		
6,000.0	5,842.3	5,930.8	5,885.9	28.1	18.3	149.44	-559.8	-587.2	670.9	635.8	35.03	19.150		
6,100.0	5,941.7	6,014.3	5,969.3	28.3	18.5	149.63	-564.4	-589.4	675.2	639.9	35.28	19.137		
6,200.0	6,041.4	6,100.0	6,055.0	28.4	18.6	149.81	-566.8	-590.5	678.9	643.4	35.48	19.133		
6,300.0	6,141.3	6,188.4	6,143.3	28.6	18.7	149.96	-567.1	-590.6	681.7	646.1	35.65	19.121		
6,400.0	6,241.3	6,288.4	6,243.3	28.7	18.9	-8.48	-567.1	-590.6	682.3	638.5	43.81	15.572 SF		
6,438.2	6,279.6	6,326.6	6,281.6	28.7	18.9	-98.49	-567.1	-590.6	682.3	646.3	36.00	18.955		
6,500.0	6,341.3	6,382.6	6,337.6	28.7	19.0	-98.58	-567.1	-591.8	682.5	646.3	36.21	18.849		
6,600.0	6,440.9	6,468.2	6,422.6	28.8	19.2	-99.70	-567.1	-601.4	685.6	648.8	36.84	18.614		
6,700.0	6,538.6	6,544.8	6,497.3	28.8	19.4	-101.67	-567.1	-618.1	694.3	656.7	37.55	18.488		
6,800.0	6,632.7	6,608.1	6,557.6	28.7	19.6	-103.52	-567.1	-637.4	711.0	673.0	38.02	18.701		
6,900.0	6,721.6	6,650.0	6,596.5	28.6	19.8	-103.94	-567.1	-652.9	738.4	700.5	37.87	19.499		
7,000.0	6,803.8	6,691.6	6,634.2	28.5	19.9	-103.68	-567.1	-670.4	777.4	739.9	37.51	20.723		
7,100.0	6,877.9	6,714.0	6,654.1	28.4	20.0	-101.08	-567.1	-680.6	827.8	791.1	36.75	22.524		
7,200.0	6,942.6	6,726.1	6,664.7	28.2	20.1	-96.45	-567.1	-686.4	888.1	852.1	35.99	24.673		
7,300.0	6,996.8	6,729.6	6,667.8	28.1	20.1	-89.83	-567.1	-688.1	955.9	920.5	35.38	27.015		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28G-212
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4776.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4776.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28G-212	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (7-25-14)	Offset TVD Reference:	Offset Datum

Offset Design Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W - Wiedeman 28F-304 - Wellbore #1 - Plan #1 (8)														Offset Site Error:	0.0 ft
Survey Program: 0-MWD														Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning		
0.0	0.0	2.0	2.0	0.0	0.0	-73.82	87.4	-301.3	313.7						
100.0	100.0	102.0	102.0	0.1	0.1	-73.82	87.4	-301.3	313.7	313.5	0.23	1,368.464			
200.0	200.0	202.0	202.0	0.3	0.3	-73.82	87.4	-301.3	313.7	313.1	0.68	462.197			
300.0	300.0	302.0	302.0	0.5	0.6	84.97	87.4	-301.3	313.6	312.5	1.11	283.698			
400.0	399.8	401.8	401.8	0.8	0.8	85.93	87.4	-301.3	313.2	311.6	1.54	203.615			
500.0	499.5	501.5	501.5	1.0	1.0	87.53	87.4	-301.3	312.7	310.7	2.01	155.791			
600.0	598.7	600.7	600.7	1.3	1.2	89.75	87.4	-301.3	312.4	309.9	2.52	124.102			
609.7	608.3	610.3	610.3	1.3	1.3	90.00	87.4	-301.3	312.4	309.8	2.57	121.488 CC			
700.0	697.5	699.5	699.5	1.6	1.5	92.58	87.4	-301.3	312.7	309.6	3.07	101.725 ES			
800.0	795.6	797.6	797.6	2.0	1.7	95.96	87.4	-301.3	314.1	310.5	3.68	85.365			
900.0	893.1	895.1	895.1	2.5	1.9	99.84	87.4	-301.3	317.3	313.0	4.34	73.186			
1,000.0	990.0	992.0	992.0	2.9	2.1	104.00	87.4	-301.3	322.5	317.5	5.01	64.364			
1,100.0	1,087.0	1,089.0	1,089.0	3.4	2.3	108.02	87.4	-301.3	329.5	323.8	5.68	58.005			
1,200.0	1,183.9	1,185.9	1,185.9	3.9	2.6	111.86	87.4	-301.3	338.1	331.7	6.33	53.371			
1,300.0	1,280.9	1,282.9	1,282.9	4.4	2.8	115.51	87.4	-301.3	348.2	341.2	6.97	49.957			
1,400.0	1,377.8	1,379.8	1,379.8	4.9	3.0	118.95	87.4	-301.3	359.6	352.1	7.58	47.422			
1,500.0	1,474.8	1,480.7	1,480.7	5.5	3.2	122.14	86.5	-301.9	372.0	363.8	8.17	45.552			
1,600.0	1,571.8	1,584.1	1,583.9	6.0	3.4	124.71	82.4	-304.5	383.9	375.2	8.72	44.006			
1,700.0	1,668.7	1,688.8	1,688.3	6.5	3.6	126.65	75.2	-309.1	394.9	385.6	9.29	42.493			
1,800.0	1,765.7	1,794.6	1,793.3	7.0	3.8	128.02	64.5	-315.8	404.6	394.7	9.89	40.899			
1,900.0	1,862.6	1,898.4	1,895.9	7.5	4.0	128.86	51.1	-324.3	412.9	402.3	10.53	39.225			
2,000.0	1,959.6	1,997.9	1,994.2	8.0	4.3	129.55	37.7	-332.8	420.9	409.7	11.17	37.674			
2,100.0	2,056.5	2,097.5	2,092.5	8.6	4.6	130.22	24.3	-341.4	428.9	417.1	11.83	36.268			
2,200.0	2,153.5	2,197.0	2,190.7	9.1	4.9	130.86	10.9	-349.9	437.1	424.6	12.49	34.994			
2,300.0	2,250.5	2,296.6	2,289.0	9.6	5.2	131.48	-2.5	-358.4	445.2	432.1	13.16	33.839			
2,400.0	2,347.4	2,396.1	2,387.3	10.1	5.5	132.08	-15.9	-366.9	453.5	439.6	13.83	32.790			
2,500.0	2,444.4	2,495.7	2,485.6	10.6	5.8	132.65	-29.4	-375.4	461.7	447.2	14.50	31.836			
2,600.0	2,541.3	2,595.2	2,583.8	11.1	6.1	133.21	-42.8	-383.9	470.1	454.9	15.18	30.967			
2,700.0	2,638.3	2,694.8	2,682.1	11.7	6.4	133.74	-56.2	-392.4	478.4	462.6	15.86	30.173			
2,800.0	2,735.2	2,794.3	2,780.4	12.2	6.8	134.26	-69.6	-400.9	486.8	470.3	16.53	29.447			
2,900.0	2,832.2	2,893.9	2,878.7	12.7	7.1	134.76	-83.0	-409.5	495.3	478.1	17.21	28.781			
3,000.0	2,929.2	2,993.4	2,976.9	13.2	7.5	135.24	-96.5	-418.0	503.7	485.8	17.88	28.168			
3,100.0	3,026.1	3,093.0	3,075.2	13.7	7.8	135.71	-109.9	-426.5	512.2	493.7	18.56	27.603			
3,200.0	3,123.1	3,192.5	3,173.5	14.3	8.2	136.16	-123.3	-435.0	520.8	501.6	19.23	27.081			
3,300.0	3,220.0	3,292.1	3,271.8	14.8	8.5	136.60	-136.7	-443.5	529.4	509.5	19.90	26.598			
3,400.0	3,317.0	3,391.6	3,370.0	15.3	8.9	137.02	-150.1	-452.0	538.0	517.4	20.57	26.150			
3,500.0	3,414.0	3,491.2	3,468.3	15.8	9.2	137.43	-163.5	-460.5	546.6	525.3	21.24	25.733			
3,600.0	3,510.9	3,590.8	3,566.6	16.3	9.6	137.83	-177.0	-469.0	555.2	533.3	21.91	25.344			
3,700.0	3,607.9	3,690.3	3,664.9	16.9	10.0	138.21	-190.4	-477.6	563.9	541.4	22.57	24.982			
3,800.0	3,704.8	3,789.9	3,763.1	17.4	10.3	138.59	-203.8	-486.1	572.6	549.4	23.24	24.643			
3,900.0	3,801.8	3,889.4	3,861.4	17.9	10.7	138.95	-217.2	-494.6	581.4	557.5	23.90	24.326			
4,000.0	3,898.7	3,989.0	3,959.7	18.4	11.0	139.30	-230.6	-503.1	590.1	565.6	24.56	24.028			
4,100.0	3,995.7	4,088.5	4,058.0	18.9	11.4	139.64	-244.1	-511.6	598.9	573.7	25.22	23.748			
4,200.0	4,092.7	4,188.1	4,156.2	19.5	11.8	139.97	-257.5	-520.1	607.7	581.8	25.88	23.485			
4,300.0	4,189.6	4,287.6	4,254.5	20.0	12.2	140.29	-270.9	-528.6	616.5	590.0	26.53	23.237			
4,400.0	4,286.6	4,387.2	4,352.8	20.5	12.5	140.61	-284.3	-537.2	625.3	598.2	27.19	23.003			
4,500.0	4,383.5	4,486.7	4,451.1	21.0	12.9	140.91	-297.7	-545.7	634.2	606.4	27.84	22.782			
4,600.0	4,480.5	4,586.3	4,549.3	21.5	13.3	141.21	-311.1	-554.2	643.1	614.6	28.49	22.572			
4,700.0	4,577.4	4,685.8	4,647.6	22.1	13.6	141.49	-324.6	-562.7	651.9	622.8	29.14	22.374			
4,800.0	4,674.4	4,784.9	4,745.5	22.6	14.0	141.77	-337.9	-571.2	660.9	631.1	29.79	22.187			
4,900.0	4,771.4	4,871.1	4,830.7	23.1	14.2	142.10	-348.4	-577.8	670.8	640.5	30.32	22.128			

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28G-212
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4776.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4776.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28G-212	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (7-25-14)	Offset TVD Reference:	Offset Datum

Offset Design Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W - Wiedeman 28F-304 - Wellbore #1 - Plan #1 (8)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
Depth (ft)	Depth (ft)	Depth (ft)	Depth (ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
5,000.0	4,868.3	4,956.7	4,915.8	23.6	14.4	142.57	-356.6	-583.0	682.8	652.0	30.79	22.179		
5,100.0	4,965.3	5,041.5	5,000.3	24.1	14.6	143.18	-362.7	-586.9	696.9	665.7	31.20	22.332		
5,200.0	5,062.2	5,125.5	5,084.1	24.7	14.8	143.92	-366.6	-589.4	713.0	681.5	31.57	22.585		
5,300.0	5,159.2	5,208.5	5,167.1	25.2	14.9	144.75	-368.4	-590.5	731.3	699.4	31.89	22.932		
5,400.0	5,256.1	5,299.5	5,258.1	25.7	15.1	145.74	-368.6	-590.6	751.5	719.3	32.17	23.359		
5,500.0	5,353.1	5,396.5	5,355.1	26.2	15.2	146.75	-368.6	-590.6	772.0	739.6	32.44	23.796		
5,600.0	5,450.1	5,493.5	5,452.1	26.7	15.3	147.72	-368.6	-590.6	792.8	760.1	32.72	24.226		
5,700.0	5,547.1	5,590.5	5,549.1	27.2	15.5	148.72	-368.6	-590.6	813.4	780.4	32.99	24.658		
5,800.0	5,644.9	5,688.3	5,646.9	27.5	15.6	149.66	-368.6	-590.6	831.6	798.4	33.20	25.052		
5,900.0	5,743.3	5,786.7	5,745.3	27.8	15.8	150.41	-368.6	-590.6	847.0	813.6	33.41	25.348		
6,000.0	5,842.3	5,885.7	5,844.3	28.1	15.9	151.00	-368.6	-590.6	859.4	825.8	33.64	25.549		
6,100.0	5,941.7	5,985.1	5,943.7	28.3	16.1	151.44	-368.6	-590.6	868.8	835.0	33.86	25.660		
6,200.0	6,041.4	6,084.8	6,043.4	28.4	16.2	151.72	-368.6	-590.6	875.2	841.2	34.08	25.682		
6,300.0	6,141.3	6,184.7	6,143.3	28.6	16.4	151.87	-368.6	-590.6	878.6	844.3	34.30	25.618		
6,400.0	6,241.3	6,284.7	6,243.3	28.7	16.6	-6.57	-368.6	-590.6	879.1	837.2	41.90	20.981 SF		
6,462.1	6,303.4	6,346.8	6,305.4	28.7	16.7	-96.59	-368.6	-590.6	879.2	844.4	34.76	25.294		
6,500.0	6,341.3	6,384.7	6,343.3	28.7	16.7	-96.58	-368.6	-590.6	879.1	844.3	34.87	25.211		
6,600.0	6,440.9	6,478.1	6,436.7	28.8	16.9	-97.05	-368.6	-591.8	880.3	845.0	35.26	24.968		
6,700.0	6,538.6	6,559.6	6,517.6	28.8	17.1	-98.36	-368.6	-600.7	884.8	849.1	35.73	24.760		
6,800.0	6,632.7	6,629.3	6,585.8	28.7	17.3	-99.95	-368.6	-615.2	894.7	858.6	36.14	24.758		
6,900.0	6,721.6	6,684.8	6,639.0	28.6	17.5	-101.06	-368.6	-631.1	912.2	876.0	36.26	25.157		
7,000.0	6,803.8	6,725.9	6,677.5	28.5	17.7	-101.11	-368.6	-645.3	939.1	903.1	36.06	26.043		
7,100.0	6,877.9	6,750.0	6,699.7	28.4	17.8	-99.54	-368.6	-654.6	976.1	940.5	35.60	27.418		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28G-212
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4776.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4776.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28G-212	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (7-25-14)	Offset TVD Reference:	Offset Datum

Offset Design		Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W - Wiedeman 28G-214 - Wellbore #1 - Plan #1 (8)										Offset Site Error:		0.0 ft			
Survey Program: 0-MWD														Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor					
0.0	0.0	1.0	1.0	0.0	0.0	-90.00	0.0	-301.3	301.3								
100.0	100.0	101.0	101.0	0.1	0.1	-90.00	0.0	-301.3	301.3	301.1	0.23	1,327.264					
166.3	166.3	167.3	167.3	0.3	0.3	-90.00	0.0	-301.3	301.3	300.8	0.53	573.713					
200.0	200.0	200.0	200.0	0.3	0.3	-90.00	0.0	-301.3	301.3	300.6	0.67	446.848					
300.0	300.0	298.6	298.6	0.5	0.5	68.46	-1.7	-301.7	301.1	300.0	1.07	280.068					
400.0	399.8	396.3	396.1	0.8	0.7	68.45	-6.5	-302.8	300.3	298.8	1.48	202.318					
500.0	499.5	493.9	493.4	1.0	1.0	68.43	-14.7	-304.8	299.1	297.1	1.96	152.498					
600.0	598.7	591.5	590.3	1.3	1.3	68.41	-26.0	-307.4	297.4	294.8	2.51	118.274					
700.0	697.5	689.2	686.8	1.6	1.6	68.39	-40.5	-310.9	295.1	292.0	3.15	93.573					
800.0	795.6	786.8	782.7	2.0	1.9	68.36	-58.3	-315.1	292.4	288.5	3.89	75.167					
900.0	893.1	884.5	878.0	2.5	2.4	68.32	-79.2	-320.0	289.2	284.5	4.73	61.166					
1,000.0	990.0	984.5	975.2	2.9	2.8	68.31	-102.0	-325.4	285.6	280.0	5.65	50.593					
1,100.0	1,087.0	1,084.4	1,072.3	3.4	3.3	68.30	-124.9	-330.8	282.0	275.4	6.58	42.832					
1,200.0	1,183.9	1,184.3	1,169.5	3.9	3.8	68.29	-147.7	-336.1	278.4	270.9	7.54	36.946					
1,300.0	1,280.9	1,284.3	1,266.6	4.4	4.3	68.27	-170.5	-341.5	274.8	266.3	8.49	32.349					
1,400.0	1,377.8	1,384.2	1,363.7	4.9	4.8	68.26	-193.4	-346.9	271.2	261.7	9.46	28.667					
1,500.0	1,474.8	1,484.1	1,460.9	5.5	5.3	68.24	-216.2	-352.3	267.6	257.2	10.43	25.656					
1,600.0	1,571.8	1,584.1	1,558.0	6.0	5.8	68.23	-239.0	-357.7	264.0	252.6	11.40	23.152					
1,700.0	1,668.7	1,684.0	1,655.2	6.5	6.3	68.21	-261.9	-363.1	260.4	248.0	12.38	21.037					
1,800.0	1,765.7	1,783.9	1,752.3	7.0	6.8	68.20	-284.7	-368.5	256.8	243.4	13.35	19.229					
1,900.0	1,862.6	1,883.9	1,849.5	7.5	7.3	68.18	-307.5	-373.9	253.2	238.8	14.33	17.666					
2,000.0	1,959.6	1,983.8	1,946.6	8.0	7.8	68.16	-330.4	-379.2	249.6	234.3	15.31	16.301					
2,100.0	2,056.5	2,083.7	2,043.7	8.6	8.3	68.15	-353.2	-384.6	246.0	229.7	16.29	15.099					
2,200.0	2,153.5	2,183.7	2,140.9	9.1	8.8	68.13	-376.0	-390.0	242.4	225.1	17.27	14.033					
2,300.0	2,250.5	2,283.6	2,238.0	9.6	9.3	68.11	-398.9	-395.4	238.8	220.5	18.25	13.082					
2,400.0	2,347.4	2,383.6	2,335.2	10.1	9.8	68.09	-421.7	-400.8	235.2	215.9	19.23	12.227					
2,500.0	2,444.4	2,483.5	2,432.3	10.6	10.3	68.07	-444.5	-406.2	231.6	211.3	20.21	11.455					
2,600.0	2,541.3	2,583.4	2,529.5	11.1	10.8	68.05	-467.4	-411.6	228.0	206.8	21.20	10.754					
2,700.0	2,638.3	2,683.4	2,626.6	11.7	11.3	68.03	-490.2	-416.9	224.4	202.2	22.18	10.116					
2,800.0	2,735.2	2,783.3	2,723.7	12.2	11.8	68.01	-513.1	-422.3	220.7	197.6	23.16	9.531					
2,900.0	2,832.2	2,883.2	2,820.9	12.7	12.3	67.98	-535.9	-427.7	217.1	193.0	24.14	8.994					
3,000.0	2,929.2	2,983.2	2,918.0	13.2	12.8	67.96	-558.7	-433.1	213.5	188.4	25.13	8.499					
3,100.0	3,026.1	3,083.1	3,015.2	13.7	13.3	67.94	-581.6	-438.5	209.9	183.8	26.11	8.041					
3,200.0	3,123.1	3,183.0	3,112.3	14.3	13.8	67.91	-604.4	-443.9	206.3	179.2	27.09	7.617					
3,300.0	3,220.0	3,283.0	3,209.4	14.8	14.3	67.89	-627.2	-449.3	202.7	174.7	28.07	7.222					
3,400.0	3,317.0	3,382.9	3,306.6	15.3	14.8	67.86	-650.1	-454.6	199.1	170.1	29.05	6.854					
3,500.0	3,414.0	3,482.8	3,403.7	15.8	15.3	67.83	-672.9	-460.0	195.5	165.5	30.04	6.510					
3,600.0	3,510.9	3,582.8	3,500.9	16.3	15.8	67.80	-695.7	-465.4	191.9	160.9	31.02	6.188					
3,700.0	3,607.9	3,682.7	3,598.0	16.9	16.3	67.78	-718.6	-470.8	188.3	156.3	32.00	5.885					
3,800.0	3,704.8	3,782.6	3,695.2	17.4	16.8	67.74	-741.4	-476.2	184.7	151.7	32.98	5.601					
3,900.0	3,801.8	3,882.6	3,792.3	17.9	17.3	67.71	-764.2	-481.6	181.1	147.2	33.96	5.333					
4,000.0	3,898.7	3,982.5	3,889.4	18.4	17.8	67.68	-787.1	-487.0	177.5	142.6	34.94	5.081					
4,100.0	3,995.7	4,082.4	3,986.6	18.9	18.3	67.64	-809.9	-492.3	173.9	138.0	35.92	4.842					
4,200.0	4,092.7	4,182.4	4,083.7	19.5	18.8	67.61	-832.7	-497.7	170.3	133.4	36.90	4.615					
4,300.0	4,189.6	4,282.3	4,180.9	20.0	19.3	67.57	-855.6	-503.1	166.7	128.8	37.88	4.401					
4,400.0	4,286.6	4,382.3	4,278.0	20.5	19.8	67.53	-878.4	-508.5	163.1	124.2	38.86	4.198					
4,500.0	4,383.5	4,482.2	4,375.2	21.0	20.3	67.49	-901.2	-513.9	159.5	119.7	39.84	4.004					
4,600.0	4,480.5	4,582.1	4,472.3	21.5	20.8	67.45	-924.1	-519.3	155.9	115.1	40.81	3.820					
4,700.0	4,577.4	4,682.1	4,569.4	22.1	21.3	67.40	-946.9	-524.7	152.3	110.5	41.79	3.644					
4,800.0	4,674.4	4,782.0	4,666.6	22.6	21.8	67.35	-969.7	-530.0	148.7	105.9	42.77	3.477					
4,900.0	4,771.4	4,881.9	4,763.7	23.1	22.3	67.30	-992.6	-535.4	145.1	101.4	43.74	3.317					

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28G-212
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4776.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4776.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28G-212	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (7-25-14)	Offset TVD Reference:	Offset Datum

Offset Design Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W - Wiedeman 28G-214 - Wellbore #1 - Plan #1 (8)														Offset Site Error:	0.0 ft
Survey Program: 0-MWD														Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
5,000.0	4,868.3	4,981.9	4,860.9	23.6	22.8	67.25	-1,015.4	-540.8	141.5	96.8	44.72	3.164			
5,100.0	4,965.3	5,081.8	4,958.0	24.1	23.3	67.20	-1,038.2	-546.2	137.9	92.2	45.69	3.018			
5,200.0	5,062.2	5,181.7	5,055.2	24.7	23.8	67.14	-1,061.1	-551.6	134.3	87.6	46.67	2.878			
5,300.0	5,159.2	5,281.7	5,152.3	25.2	24.3	67.08	-1,083.9	-557.0	130.7	83.1	47.64	2.743			
5,400.0	5,256.1	5,381.6	5,249.4	25.7	24.8	67.01	-1,106.7	-562.4	127.1	78.5	48.61	2.615			
5,500.0	5,353.1	5,481.5	5,346.6	26.2	25.3	66.94	-1,129.6	-567.7	123.5	73.9	49.58	2.491			
5,600.0	5,450.1	5,581.7	5,443.9	26.7	25.8	66.90	-1,152.4	-573.1	119.9	69.3	50.54	2.372			
5,700.0	5,547.1	5,682.6	5,542.6	27.2	26.1	67.72	-1,173.2	-578.0	115.8	64.4	51.48	2.250			
5,800.0	5,644.9	5,783.5	5,641.8	27.5	26.4	68.87	-1,190.6	-582.1	112.1	59.9	52.29	2.145			
5,900.0	5,743.3	5,884.2	5,741.5	27.8	26.7	70.19	-1,204.6	-585.4	109.0	55.9	53.05	2.054			
6,000.0	5,842.3	5,984.8	5,841.6	28.1	26.9	71.69	-1,215.1	-587.9	106.3	52.6	53.74	1.979			
6,100.0	5,941.7	6,085.4	5,941.8	28.3	27.0	73.34	-1,222.2	-589.6	104.3	49.9	54.34	1.919			
6,200.0	6,041.4	6,185.8	6,042.2	28.4	27.2	75.13	-1,225.9	-590.5	102.8	47.9	54.86	1.873			
6,300.0	6,141.3	6,286.0	6,142.3	28.6	27.3	76.85	-1,226.5	-590.6	101.9	46.6	55.27	1.844			
6,384.3	6,225.6	6,370.2	6,226.6	28.6	27.3	77.40	-1,226.5	-590.6	101.7	46.2	55.48	1.833 CC, ES, SF			
6,400.0	6,241.3	6,385.9	6,242.3	28.7	27.3	-81.29	-1,226.5	-590.6	101.8	68.5	33.30	3.057			
6,438.9	6,280.2	6,424.8	6,281.2	28.7	27.4	-171.30	-1,226.5	-590.6	101.9	46.4	55.55	1.834			
6,500.0	6,341.3	6,480.3	6,336.7	28.7	27.4	-171.39	-1,226.5	-591.8	103.2	47.6	55.64	1.855			
6,600.0	6,440.9	6,565.9	6,421.7	28.8	27.6	-172.38	-1,226.5	-601.3	122.2	67.1	55.11	2.217			
6,700.0	6,538.6	6,642.6	6,496.5	28.8	27.7	-173.68	-1,226.5	-617.8	163.6	110.0	53.64	3.051			
6,800.0	6,632.7	6,706.0	6,556.9	28.7	27.8	-174.57	-1,226.5	-637.1	224.1	172.8	51.35	4.365			
6,900.0	6,721.6	6,750.0	6,597.8	28.6	27.9	-174.79	-1,226.5	-653.5	299.6	251.3	48.36	6.195			
7,000.0	6,803.8	6,789.5	6,633.6	28.5	28.1	-174.64	-1,226.5	-670.1	385.8	341.0	44.76	8.619			
7,100.0	6,877.9	6,812.0	6,653.6	28.4	28.1	-173.36	-1,226.5	-680.4	479.3	438.4	40.82	11.742			
7,200.0	6,942.6	6,824.1	6,664.3	28.2	28.2	-168.62	-1,226.5	-686.2	577.0	539.8	37.27	15.483			
7,300.0	6,996.8	6,827.7	6,667.4	28.1	28.2	-83.97	-1,226.5	-687.9	676.7	641.1	35.62	18.997			
7,400.0	7,039.6	6,824.4	6,664.5	28.0	28.2	-8.78	-1,226.5	-686.3	776.4	753.2	23.22	33.439			
7,500.0	7,070.2	6,815.4	6,656.6	27.9	28.1	-4.11	-1,226.5	-682.0	874.5	854.4	20.12	43.468			
7,600.0	7,088.2	6,800.0	6,643.0	27.9	28.1	-2.56	-1,226.5	-674.8	969.9	951.9	17.96	54.005			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28G-212
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4776.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4776.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28G-212	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (7-25-14)	Offset TVD Reference:	Offset Datum

Offset Design		Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W - Wiedeman 28G-314 - Wellbore #1 - Plan #1 (8										Offset Site Error:		0.0 ft		
Survey Program: 0-MWD														Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
0.0	0.0	2.0	2.0	0.0	0.0	-84.47	29.1	-301.3	302.7							
100.0	100.0	102.0	102.0	0.1	0.1	-84.47	29.1	-301.3	302.7	302.5	0.23	1,320.385				
200.0	200.0	202.0	202.0	0.3	0.3	-84.47	29.1	-301.3	302.7	302.0	0.68	445.958				
300.0	300.0	302.0	302.0	0.5	0.6	74.32	29.1	-301.3	302.2	301.1	1.11	273.333				
400.0	399.8	401.8	401.8	0.8	0.8	75.30	29.1	-301.3	300.9	299.3	1.54	195.636				
500.0	499.5	500.0	500.0	1.0	1.0	76.60	27.5	-301.8	299.0	297.0	1.98	151.299				
600.0	598.7	598.9	598.7	1.3	1.2	77.92	22.5	-303.1	296.8	294.4	2.45	121.174				
700.0	697.5	697.8	697.2	1.6	1.4	79.26	14.2	-305.3	294.4	291.4	3.00	98.131				
800.0	795.6	796.9	795.6	2.0	1.6	80.63	2.6	-308.4	291.8	288.2	3.64	80.100				
900.0	893.1	896.2	893.7	2.5	2.0	82.03	-12.3	-312.3	288.9	284.5	4.39	65.788				
1,000.0	990.0	995.9	991.6	2.9	2.3	83.11	-30.5	-317.2	286.0	280.8	5.23	54.686				
1,100.0	1,087.0	1,095.8	1,089.2	3.4	2.7	83.76	-51.0	-322.6	283.2	277.0	6.13	46.225				
1,200.0	1,183.9	1,195.7	1,186.8	3.9	3.1	84.41	-71.5	-328.0	280.3	273.3	7.05	39.782				
1,300.0	1,280.9	1,295.6	1,284.5	4.4	3.6	85.07	-92.0	-333.5	277.6	269.6	7.98	34.763				
1,400.0	1,377.8	1,395.5	1,382.1	4.9	4.0	85.75	-112.5	-338.9	274.8	265.9	8.93	30.767				
1,500.0	1,474.8	1,495.4	1,479.7	5.5	4.4	86.44	-133.0	-344.4	272.1	262.3	9.89	27.521				
1,600.0	1,571.8	1,595.3	1,577.3	6.0	4.9	87.14	-153.5	-349.8	269.5	258.6	10.85	24.839				
1,700.0	1,668.7	1,695.2	1,675.0	6.5	5.3	87.85	-174.1	-355.3	266.9	255.1	11.81	22.592				
1,800.0	1,765.7	1,795.1	1,772.6	7.0	5.8	88.58	-194.6	-360.7	264.3	251.5	12.78	20.683				
1,900.0	1,862.6	1,895.0	1,870.2	7.5	6.2	89.33	-215.1	-366.2	261.8	248.0	13.75	19.045				
2,000.0	1,959.6	1,994.9	1,967.9	8.0	6.7	90.09	-235.6	-371.6	259.3	244.6	14.71	17.626				
2,100.0	2,056.5	2,094.9	2,065.5	8.6	7.2	90.86	-256.1	-377.1	256.9	241.2	15.68	16.385				
2,200.0	2,153.5	2,194.8	2,163.1	9.1	7.6	91.65	-276.6	-382.5	254.5	237.8	16.64	15.293				
2,300.0	2,250.5	2,294.7	2,260.8	9.6	8.1	92.45	-297.1	-388.0	252.1	234.5	17.60	14.325				
2,400.0	2,347.4	2,394.6	2,358.4	10.1	8.5	93.27	-317.6	-393.4	249.9	231.3	18.56	13.463				
2,500.0	2,444.4	2,494.5	2,456.0	10.6	9.0	94.10	-338.1	-398.9	247.6	228.1	19.51	12.690				
2,600.0	2,541.3	2,594.4	2,553.6	11.1	9.5	94.95	-358.7	-404.3	245.4	225.0	20.46	11.995				
2,700.0	2,638.3	2,694.3	2,651.3	11.7	9.9	95.81	-379.2	-409.8	243.3	221.9	21.40	11.367				
2,800.0	2,735.2	2,794.2	2,748.9	12.2	10.4	96.69	-399.7	-415.2	241.2	218.9	22.34	10.797				
2,900.0	2,832.2	2,894.1	2,846.5	12.7	10.8	97.58	-420.2	-420.7	239.2	215.9	23.27	10.279				
3,000.0	2,929.2	2,994.0	2,944.2	13.2	11.3	98.49	-440.7	-426.1	237.3	213.1	24.20	9.806				
3,100.0	3,026.1	3,093.9	3,041.8	13.7	11.8	99.41	-461.2	-431.5	235.4	210.3	25.11	9.374				
3,200.0	3,123.1	3,193.9	3,139.4	14.3	12.2	100.35	-481.7	-437.0	233.5	207.5	26.01	8.977				
3,300.0	3,220.0	3,293.8	3,237.1	14.8	12.7	101.30	-502.2	-442.4	231.8	204.9	26.91	8.613				
3,400.0	3,317.0	3,393.7	3,334.7	15.3	13.2	102.26	-522.7	-447.9	230.1	202.3	27.79	8.277				
3,500.0	3,414.0	3,493.6	3,432.3	15.8	13.6	103.24	-543.3	-453.3	228.4	199.8	28.67	7.968				
3,600.0	3,510.9	3,593.5	3,529.9	16.3	14.1	104.24	-563.8	-458.8	226.9	197.3	29.53	7.683				
3,700.0	3,607.9	3,693.4	3,627.6	16.9	14.5	105.24	-584.3	-464.2	225.4	195.0	30.37	7.420				
3,800.0	3,704.8	3,793.3	3,725.2	17.4	15.0	106.26	-604.8	-469.7	223.9	192.7	31.20	7.176				
3,900.0	3,801.8	3,893.2	3,822.8	17.9	15.5	107.30	-625.3	-475.1	222.6	190.5	32.02	6.950				
4,000.0	3,898.7	3,993.1	3,920.5	18.4	15.9	108.34	-645.8	-480.6	221.3	188.5	32.82	6.741				
4,100.0	3,995.7	4,093.0	4,018.1	18.9	16.4	109.40	-666.3	-486.0	220.1	186.5	33.61	6.548				
4,200.0	4,092.7	4,193.0	4,115.7	19.5	16.9	110.47	-686.8	-491.5	218.9	184.6	34.38	6.369				
4,300.0	4,189.6	4,292.9	4,213.4	20.0	17.3	111.55	-707.3	-496.9	217.9	182.8	35.13	6.203				
4,400.0	4,286.6	4,392.8	4,311.0	20.5	17.8	112.64	-727.9	-502.4	216.9	181.0	35.86	6.049				
4,500.0	4,383.5	4,492.7	4,408.6	21.0	18.3	113.74	-748.4	-507.8	216.0	179.4	36.57	5.907				
4,600.0	4,480.5	4,592.6	4,506.2	21.5	18.7	114.84	-768.9	-513.3	215.2	177.9	37.26	5.775				
4,700.0	4,577.4	4,692.5	4,603.9	22.1	19.2	115.96	-789.4	-518.7	214.4	176.5	37.93	5.654				
4,800.0	4,674.4	4,792.4	4,701.5	22.6	19.6	117.08	-809.9	-524.2	213.8	175.2	38.58	5.541				
4,900.0	4,771.4	4,892.3	4,799.1	23.1	20.1	118.21	-830.4	-529.6	213.2	174.0	39.21	5.438				
5,000.0	4,868.3	4,992.2	4,896.8	23.6	20.6	119.35	-850.9	-535.1	212.7	172.9	39.81	5.343				

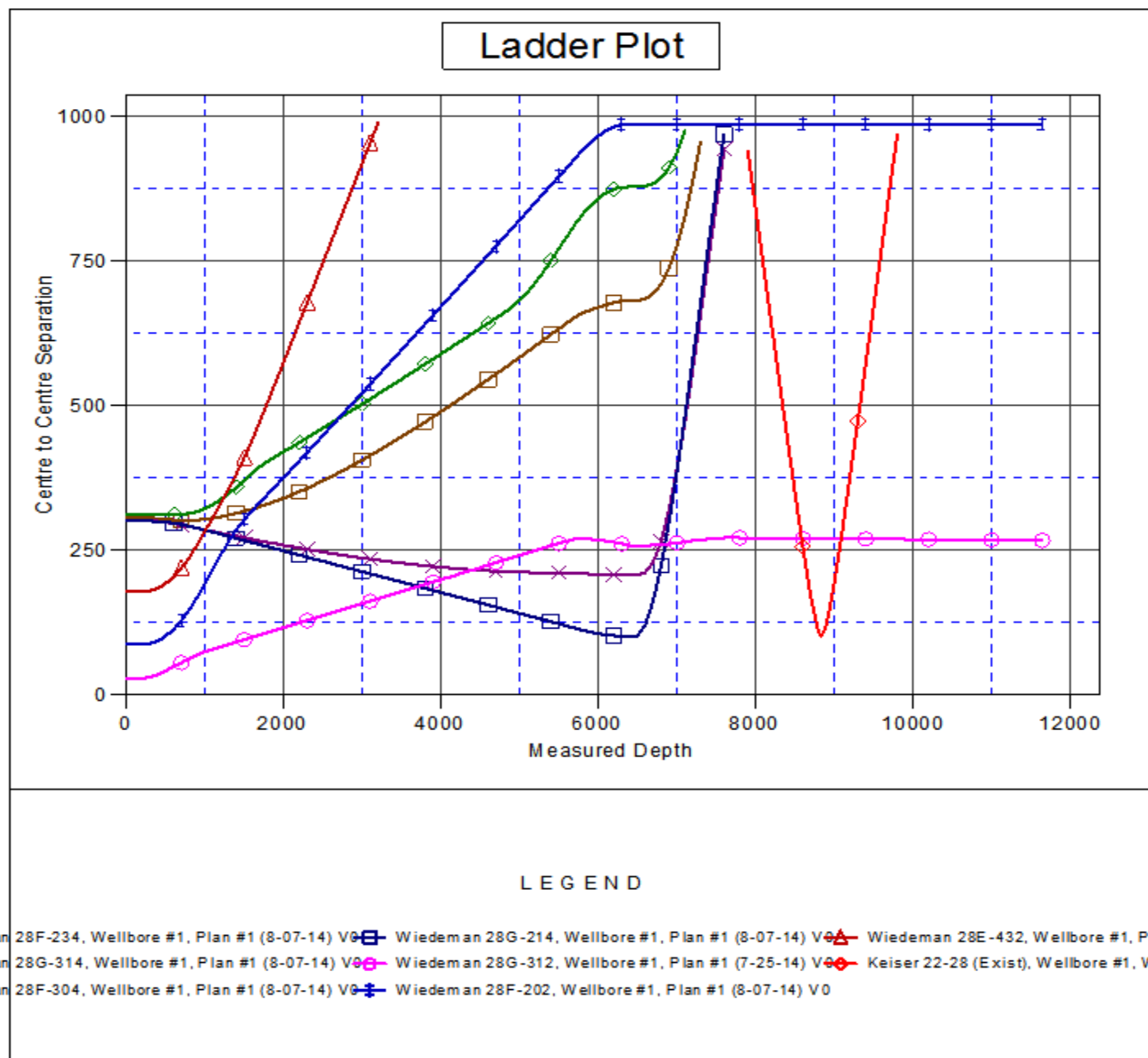
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28G-212
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4776.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4776.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28G-212	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (7-25-14)	Offset TVD Reference:	Offset Datum

Offset Design Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W - Wiedeman 28G-314 - Wellbore #1 - Plan #1 (8)														Offset Site Error:	0.0 ft
Survey Program: 0-MWD														Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis				Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
5,100.0	4,965.3	5,092.1	4,994.4	24.1	21.0	120.49	-871.4	-540.5	212.3	171.9	40.40	5.255			
5,200.0	5,062.2	5,192.1	5,092.0	24.7	21.5	121.63	-891.9	-546.0	212.0	171.0	40.96	5.175			
5,300.0	5,159.2	5,292.0	5,189.6	25.2	22.0	122.78	-912.4	-551.4	211.8	170.2	41.50	5.102			
5,400.0	5,256.1	5,391.9	5,287.3	25.7	22.4	123.93	-933.0	-556.8	211.6	169.6	42.02	5.036			
5,500.0	5,353.1	5,491.8	5,384.9	26.2	22.9	125.08	-953.5	-562.3	211.5	169.0	42.51	4.976			
5,528.2	5,380.4	5,519.9	5,412.4	26.4	23.0	125.40	-959.3	-563.8	211.5	168.9	42.65	4.960			
5,600.0	5,450.1	5,591.7	5,482.5	26.7	23.4	126.23	-974.0	-567.7	211.6	168.6	42.99	4.921			
5,700.0	5,547.1	5,691.6	5,580.2	27.2	23.8	127.28	-994.5	-573.2	211.4	168.0	43.44	4.867			
5,800.0	5,644.9	5,787.3	5,673.9	27.5	24.2	127.89	-1,013.0	-578.1	210.3	166.5	43.82	4.800			
5,900.0	5,743.3	5,882.3	5,767.6	27.8	24.5	128.41	-1,028.3	-582.2	209.5	165.3	44.12	4.747			
6,000.0	5,842.3	5,977.4	5,861.8	28.1	24.7	128.82	-1,040.7	-585.5	208.8	164.4	44.38	4.704			
6,100.0	5,941.7	6,072.4	5,956.4	28.3	24.9	129.15	-1,050.0	-587.9	208.3	163.7	44.61	4.669			
6,200.0	6,041.4	6,167.5	6,051.2	28.4	25.0	129.37	-1,056.3	-589.6	208.0	163.2	44.81	4.641			
6,300.0	6,141.3	6,262.5	6,146.2	28.6	25.2	129.49	-1,059.6	-590.5	207.8	162.9	44.98	4.621			
6,336.1	6,177.4	6,296.8	6,180.4	28.6	25.2	129.53	-1,060.0	-590.6	207.9	162.8	45.04	4.616			
6,400.0	6,241.3	6,359.7	6,243.3	28.7	25.3	-28.95	-1,060.1	-590.6	207.8	164.4	43.43	4.786	CC		
6,462.1	6,303.4	6,421.8	6,305.4	28.7	25.3	-119.02	-1,060.1	-590.6	208.0	162.6	45.35	4.586			
6,500.0	6,341.3	6,459.7	6,343.3	28.7	25.4	-118.97	-1,060.1	-590.6	207.9	162.5	45.42	4.577	ES, SF		
6,600.0	6,440.9	6,550.0	6,433.6	28.8	25.5	-120.55	-1,060.1	-591.7	212.7	166.6	46.09	4.615			
6,700.0	6,538.6	6,634.5	6,517.6	28.8	25.6	-125.21	-1,060.1	-600.7	230.6	183.4	47.28	4.878			
6,800.0	6,632.7	6,700.0	6,581.7	28.7	25.7	-129.61	-1,060.1	-614.1	266.2	218.6	47.58	5.594			
6,900.0	6,721.6	6,759.8	6,639.0	28.6	25.9	-133.18	-1,060.1	-631.1	320.2	273.3	46.86	6.832			
7,000.0	6,803.8	6,800.0	6,676.7	28.5	26.0	-133.20	-1,060.1	-645.0	390.3	345.3	44.94	8.684			
7,100.0	6,877.9	6,828.8	6,703.2	28.4	26.0	-129.60	-1,060.1	-656.2	472.3	429.8	42.56	11.099			
7,200.0	6,942.6	6,850.0	6,722.5	28.2	26.1	-121.16	-1,060.1	-665.0	562.3	522.0	40.34	13.938			
7,300.0	6,996.8	6,850.0	6,722.5	28.1	26.1	-100.75	-1,060.1	-665.0	656.9	618.8	38.02	17.279			
7,400.0	7,039.6	6,850.0	6,722.5	28.0	26.1	-73.30	-1,060.1	-665.0	753.4	719.8	33.60	22.424			
7,500.0	7,070.2	6,850.0	6,722.5	27.9	26.1	-49.41	-1,060.1	-665.0	849.9	822.9	26.98	31.500			
7,600.0	7,088.2	6,834.3	6,708.3	27.9	26.1	-32.79	-1,060.1	-658.4	944.6	923.3	21.26	44.423			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28G-212
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4776.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4776.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28G-212	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (7-25-14)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4776.0ft (Original Well Elev) Coordinates are relative to: Wiedeman 28G-212
 Offset Depths are relative to Offset Datum
 Central Meridian is -105.500000 °
 Coordinate System is US State Plane 1983, Colorado Northern Zone
 Grid Convergence at Surface is: 0.46°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28G-212
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4776.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4776.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28G-212	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
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