

PETROLEUM DEVELOPMENT CORP Weld County CO

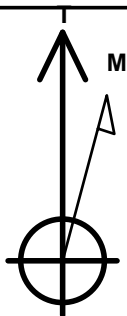
Well Name: **Wiedeman Trust 29O-432**

Surface Location: Wiedeman Trust 29O-HZ Pad Sec.29-T4N-R66W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 4763.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1346599.06	3194748.50	40.282710	-104.801950	
RKB - 15' WELL @ 4778.0ft (RKB - 15')						

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 2611'FNL & 2515'FWL, Sec.29	1.0	0.0	0.0	Point
BHL 2124'FSL & 580'FEL, Sec.28	7248.0	-559.9	7497.0	Point



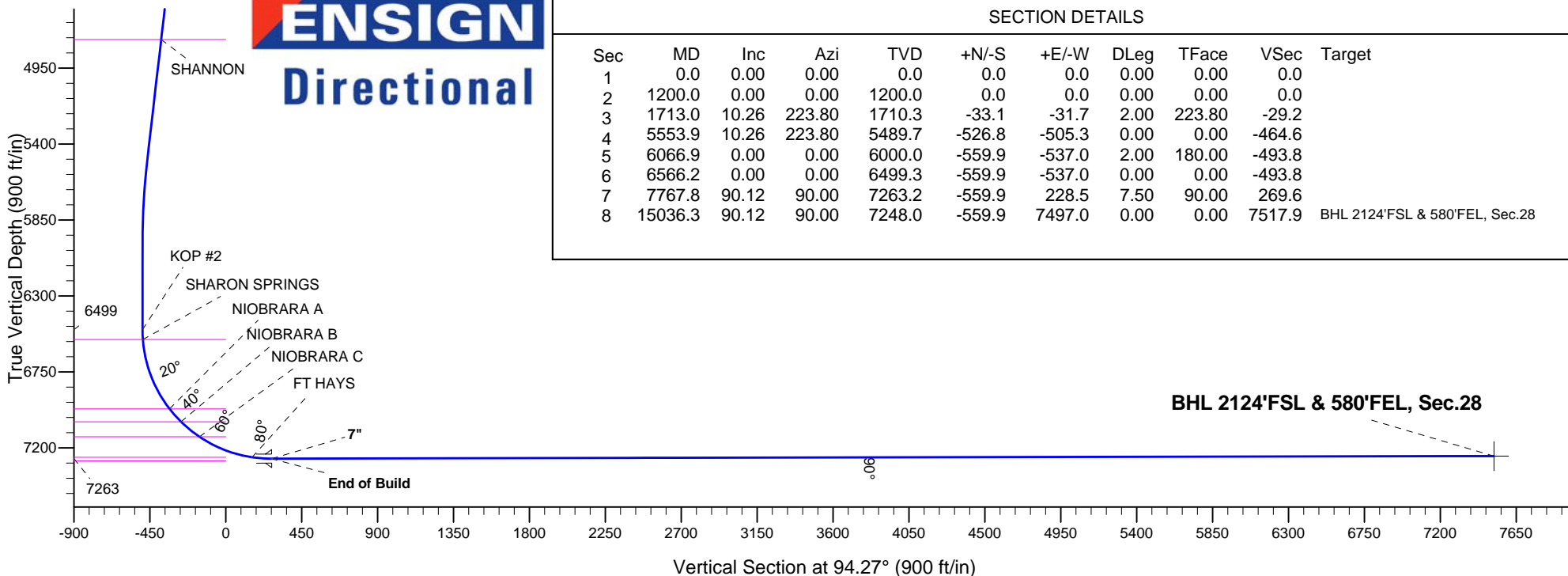
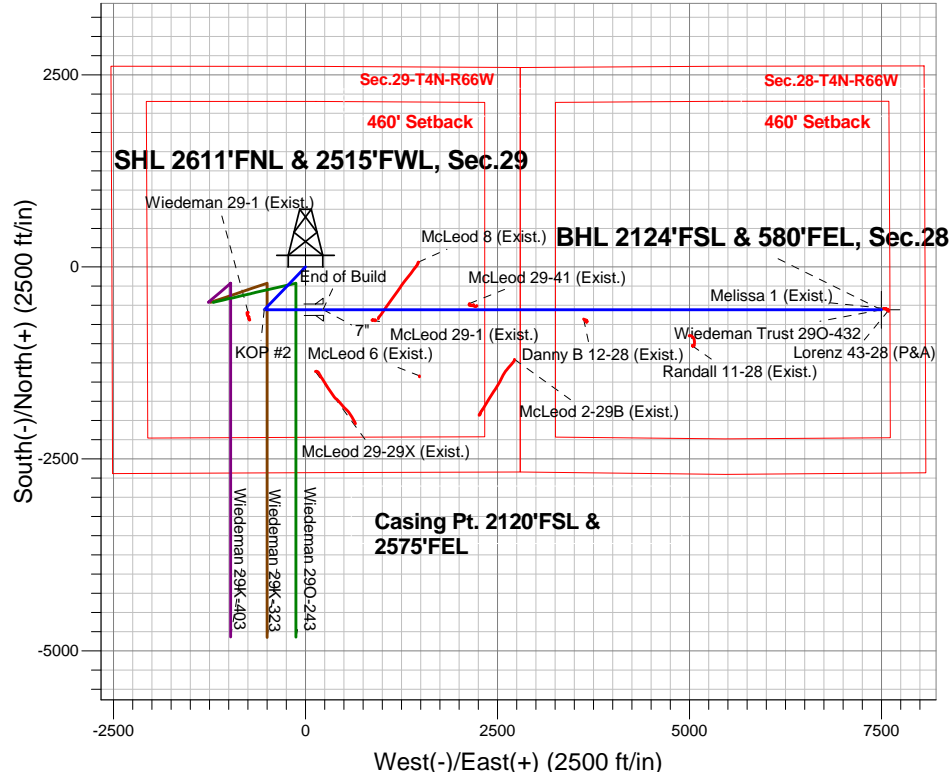
Azimuths to True North
Magnetic North: 8.46°

Magnetic Field
Strength: 52743.5srT
Dip Angle: 66.84°
Date: 7/9/2014
Model: IGRF2010

ANNOTATIONS

TVD	MD	Annotation
1200.0	1200.0	KOP #1
6499.3	6566.2	KOP #2
7263.2	7767.8	End of Build

Wiedeman Trust 29O-HZ Pad Sec.29-T4N-R66W
Wiedeman Trust 29O-432
Plan #2 (7-09-14)
13:52, July 09 2014



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1200.0	0.00	0.00	1200.0	0.0	0.0	0.00	0.00	0.0	
3	1713.0	10.26	223.80	1710.3	-33.1	-31.7	2.00	223.80	-29.2	
4	5553.9	10.26	223.80	5489.7	-526.8	-505.3	0.00	0.00	-464.6	
5	6066.9	0.00	0.00	6000.0	-559.9	-537.0	2.00	180.00	-493.8	
6	6566.2	0.00	0.00	6499.3	-559.9	-537.0	0.00	0.00	-493.8	
7	7767.8	90.12	90.00	7263.2	-559.9	228.5	7.50	90.00	269.6	
8	15036.3	90.12	90.00	7248.0	-559.9	7497.0	0.00	0.00	7517.9	BHL 2124'FSL & 580'FEL, Sec.28



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.29-T4N-R66W

Wiedeman Trust 29O-HZ Pad Sec.29-T4N-R66W

Wiedeman Trust 29O-432

Wellbore #1

Plan: Plan #2 (7-09-14)

Standard Planning Report

09 July, 2014

Database:	Landmark	Local Co-ordinate Reference:	Well Wiedeman Trust 29O-432
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4778.0ft (RKB - 15')
Project:	SEC.29-T4N-R66W	MD Reference:	WELL @ 4778.0ft (RKB - 15')
Site:	Wiedeman Trust 29O-HZ Pad Sec.29-T4N-R66W	North Reference:	True
Well:	Wiedeman Trust 29O-432	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (7-09-14)		

Project	SEC.29-T4N-R66W		
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 Trust 29O-HZ Pad Sec.29-T4N-R66W			
Site Position:		Northing:	1,346,577.36 ft	Latitude:	40.282650
From:	Lat/Long	Easting:	3,194,768.20 ft	Longitude:	-104.801880
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.45 °

Well	Wiedeman Trust 29O-432					
Well Position	+N/-S	21.9 ft	Northing:	1,346,599.06 ft	Latitude:	40.282710
	+E/-W	-19.5 ft	Easting:	3,194,748.50 ft	Longitude:	-104.801950
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,763.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/9/2014	8.46	66.84	52,743

Design	Plan #2 (7-09-14)			
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	94.27

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,713.0	10.26	223.80	1,710.3	-33.1	-31.7	2.00	2.00	0.00	223.80	
5,553.9	10.26	223.80	5,489.7	-526.8	-505.3	0.00	0.00	0.00	0.00	
6,066.9	0.00	0.00	6,000.0	-559.9	-537.0	2.00	-2.00	0.00	180.00	
6,566.2	0.00	0.00	6,499.3	-559.9	-537.0	0.00	0.00	0.00	0.00	
7,767.8	90.12	90.00	7,263.2	-559.9	228.5	7.50	7.50	0.00	90.00	
15,036.3	90.12	90.00	7,248.0	-559.9	7,497.0	0.00	0.00	0.00	0.00	BHL 2124'FSL & 5E

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Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4778.0ft (RKB - 15')
Project:	SEC.29-T4N-R66W	MD Reference:	WELL @ 4778.0ft (RKB - 15')
Site:	Wiedeman Trust 29O-HZ Pad Sec.29-T4N-R66W	North Reference:	True
Well:	Wiedeman Trust 29O-432	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (7-09-14)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
1.0	0.00	0.00	1.0	0.0	0.0	0.0	0.00	0.00	0.00
SHL 2611'FNL & 2515'FWL, Sec.29									
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP #1									
1,300.0	2.00	223.80	1,300.0	-1.3	-1.2	-1.1	2.00	2.00	0.00
1,400.0	4.00	223.80	1,399.8	-5.0	-4.8	-4.4	2.00	2.00	0.00
1,500.0	6.00	223.80	1,499.5	-11.3	-10.9	-10.0	2.00	2.00	0.00
1,600.0	8.00	223.80	1,598.7	-20.1	-19.3	-17.7	2.00	2.00	0.00
1,700.0	10.00	223.80	1,697.5	-31.4	-30.1	-27.7	2.00	2.00	0.00
1,713.0	10.26	223.80	1,710.3	-33.1	-31.7	-29.2	2.00	2.00	0.00
1,800.0	10.26	223.80	1,795.9	-44.2	-42.4	-39.0	0.00	0.00	0.00
1,900.0	10.26	223.80	1,894.3	-57.1	-54.8	-50.4	0.00	0.00	0.00
2,000.0	10.26	223.80	1,992.7	-70.0	-67.1	-61.7	0.00	0.00	0.00
2,100.0	10.26	223.80	2,091.1	-82.8	-79.4	-73.0	0.00	0.00	0.00
2,200.0	10.26	223.80	2,189.5	-95.7	-91.8	-84.4	0.00	0.00	0.00
2,300.0	10.26	223.80	2,287.9	-108.5	-104.1	-95.7	0.00	0.00	0.00
2,400.0	10.26	223.80	2,386.3	-121.4	-116.4	-107.1	0.00	0.00	0.00
2,500.0	10.26	223.80	2,484.7	-134.2	-128.7	-118.4	0.00	0.00	0.00
2,600.0	10.26	223.80	2,583.1	-147.1	-141.1	-129.7	0.00	0.00	0.00
2,700.0	10.26	223.80	2,681.5	-159.9	-153.4	-141.1	0.00	0.00	0.00
2,800.0	10.26	223.80	2,779.9	-172.8	-165.7	-152.4	0.00	0.00	0.00
2,900.0	10.26	223.80	2,878.3	-185.7	-178.1	-163.7	0.00	0.00	0.00
3,000.0	10.26	223.80	2,976.7	-198.5	-190.4	-175.1	0.00	0.00	0.00
3,100.0	10.26	223.80	3,075.1	-211.4	-202.7	-186.4	0.00	0.00	0.00
3,200.0	10.26	223.80	3,173.5	-224.2	-215.1	-197.8	0.00	0.00	0.00
3,300.0	10.26	223.80	3,271.9	-237.1	-227.4	-209.1	0.00	0.00	0.00
3,400.0	10.26	223.80	3,370.3	-249.9	-239.7	-220.4	0.00	0.00	0.00
3,500.0	10.26	223.80	3,468.7	-262.8	-252.0	-231.8	0.00	0.00	0.00
3,600.0	10.26	223.80	3,567.1	-275.6	-264.4	-243.1	0.00	0.00	0.00
3,700.0	10.26	223.80	3,665.5	-288.5	-276.7	-254.5	0.00	0.00	0.00
3,714.8	10.26	223.80	3,680.0	-290.4	-278.5	-256.1	0.00	0.00	0.00
PARKMAN									
3,800.0	10.26	223.80	3,763.9	-301.4	-289.0	-265.8	0.00	0.00	0.00
3,900.0	10.26	223.80	3,862.3	-314.2	-301.4	-277.1	0.00	0.00	0.00
4,000.0	10.26	223.80	3,960.7	-327.1	-313.7	-288.5	0.00	0.00	0.00
4,100.0	10.26	223.80	4,059.1	-339.9	-326.0	-299.8	0.00	0.00	0.00
4,200.0	10.26	223.80	4,157.5	-352.8	-338.4	-311.1	0.00	0.00	0.00
4,294.0	10.26	223.80	4,250.0	-364.9	-349.9	-321.8	0.00	0.00	0.00
SUSSEX									
4,300.0	10.26	223.80	4,255.9	-365.6	-350.7	-322.5	0.00	0.00	0.00

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Project:	SEC.29-T4N-R66W	MD Reference:	WELL @ 4778.0ft (RKB - 15')
Site:	Wiedeman Trust 29O-HZ Pad Sec.29-T4N-R66W	North Reference:	True
Well:	Wiedeman Trust 29O-432	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (7-09-14)		

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)
4,400.0	10.26	223.80	4,354.3	-378.5	-363.0	-333.8	0.00	0.00	0.00
4,500.0	10.26	223.80	4,452.7	-391.4	-375.3	-345.2	0.00	0.00	0.00
4,600.0	10.26	223.80	4,551.1	-404.2	-387.7	-356.5	0.00	0.00	0.00
4,700.0	10.26	223.80	4,649.5	-417.1	-400.0	-367.8	0.00	0.00	0.00
4,800.0	10.26	223.80	4,747.9	-429.9	-412.3	-379.2	0.00	0.00	0.00
4,832.6	10.26	223.80	4,780.0	-434.1	-416.4	-382.9	0.00	0.00	0.00
SHANNON									
4,900.0	10.26	223.80	4,846.3	-442.8	-424.7	-390.5	0.00	0.00	0.00
5,000.0	10.26	223.80	4,944.7	-455.6	-437.0	-401.8	0.00	0.00	0.00
5,100.0	10.26	223.80	5,043.1	-468.5	-449.3	-413.2	0.00	0.00	0.00
5,200.0	10.26	223.80	5,141.5	-481.3	-461.7	-424.5	0.00	0.00	0.00
5,300.0	10.26	223.80	5,239.9	-494.2	-474.0	-435.9	0.00	0.00	0.00
5,400.0	10.26	223.80	5,338.3	-507.1	-486.3	-447.2	0.00	0.00	0.00
5,500.0	10.26	223.80	5,436.7	-519.9	-498.6	-458.5	0.00	0.00	0.00
5,553.9	10.26	223.80	5,489.7	-526.8	-505.3	-464.6	0.00	0.00	0.00
5,600.0	9.34	223.80	5,535.2	-532.5	-510.7	-469.6	2.00	-2.00	0.00
5,700.0	7.34	223.80	5,634.1	-543.0	-520.8	-478.9	2.00	-2.00	0.00
5,800.0	5.34	223.80	5,733.5	-550.9	-528.4	-485.9	2.00	-2.00	0.00
5,900.0	3.34	223.80	5,833.2	-556.4	-533.6	-490.7	2.00	-2.00	0.00
6,000.0	1.34	223.80	5,933.1	-559.3	-536.5	-493.3	2.00	-2.00	0.00
6,066.9	0.00	0.00	6,000.0	-559.9	-537.0	-493.8	2.00	-2.00	0.00
6,100.0	0.00	0.00	6,033.1	-559.9	-537.0	-493.8	0.00	0.00	0.00
6,200.0	0.00	0.00	6,133.1	-559.9	-537.0	-493.8	0.00	0.00	0.00
6,300.0	0.00	0.00	6,233.1	-559.9	-537.0	-493.8	0.00	0.00	0.00
6,400.0	0.00	0.00	6,333.1	-559.9	-537.0	-493.8	0.00	0.00	0.00
6,500.0	0.00	0.00	6,433.1	-559.9	-537.0	-493.8	0.00	0.00	0.00
6,566.2	0.00	0.00	6,499.3	-559.9	-537.0	-493.8	0.00	0.00	0.00
KOP #2									
6,600.0	2.54	90.00	6,533.1	-559.9	-536.3	-493.1	7.50	7.50	0.00
6,625.0	4.41	90.00	6,558.0	-559.9	-534.7	-491.6	7.50	7.50	0.00
SHARON SPRINGS									
6,700.0	10.04	90.00	6,632.4	-559.9	-525.3	-482.2	7.50	7.50	0.00
6,800.0	17.54	90.00	6,729.5	-559.9	-501.5	-458.4	7.50	7.50	0.00
6,900.0	25.04	90.00	6,822.6	-559.9	-465.2	-422.2	7.50	7.50	0.00
7,000.0	32.54	90.00	6,910.2	-559.9	-417.1	-374.2	7.50	7.50	0.00
7,070.8	37.85	90.00	6,968.0	-559.9	-376.3	-333.6	7.50	7.50	0.00
NIOBRARA A									
7,100.0	40.04	90.00	6,990.7	-559.9	-358.0	-315.3	7.50	7.50	0.00
7,174.0	45.59	90.00	7,045.0	-559.9	-307.7	-265.1	7.50	7.50	0.00
NIOBRARA B									
7,200.0	47.54	90.00	7,062.8	-559.9	-288.8	-246.3	7.50	7.50	0.00
7,300.0	55.04	90.00	7,125.3	-559.9	-210.8	-168.6	7.50	7.50	0.00
7,315.3	56.19	90.00	7,134.0	-559.9	-198.2	-155.9	7.50	7.50	0.00
NIOBRARA C									
7,400.0	62.54	90.00	7,177.1	-559.9	-125.4	-83.3	7.50	7.50	0.00
7,500.0	70.04	90.00	7,217.3	-559.9	-33.9	7.9	7.50	7.50	0.00
7,600.0	77.54	90.00	7,245.2	-559.9	62.1	103.6	7.50	7.50	0.00
7,654.0	81.58	90.00	7,255.0	-559.9	115.1	156.5	7.50	7.50	0.00
FT HAYS									
7,700.0	85.04	90.00	7,260.4	-559.9	160.8	202.1	7.50	7.50	0.00
7,767.8	90.12	90.00	7,263.2	-559.9	228.6	269.6	7.50	7.50	0.00

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Well:	Wiedeman Trust 29O-432	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (7-09-14)		

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)	
End of Build										
7,770.7	90.12	90.00	7,263.2	-559.9	231.5	272.5	0.00	0.00	0.00	
7"										
7,800.0	90.12	90.00	7,263.2	-559.9	260.8	301.7	0.00	0.00	0.00	
7,900.0	90.12	90.00	7,262.9	-559.9	360.8	401.5	0.00	0.00	0.00	
8,000.0	90.12	90.00	7,262.7	-559.9	460.8	501.2	0.00	0.00	0.00	
8,100.0	90.12	90.00	7,262.5	-559.9	560.8	600.9	0.00	0.00	0.00	
8,200.0	90.12	90.00	7,262.3	-559.9	660.8	700.6	0.00	0.00	0.00	
8,300.0	90.12	90.00	7,262.1	-559.9	760.8	800.3	0.00	0.00	0.00	
8,400.0	90.12	90.00	7,261.9	-559.9	860.8	900.1	0.00	0.00	0.00	
8,500.0	90.12	90.00	7,261.7	-559.9	960.8	999.8	0.00	0.00	0.00	
8,600.0	90.12	90.00	7,261.5	-559.9	1,060.8	1,099.5	0.00	0.00	0.00	
8,700.0	90.12	90.00	7,261.3	-559.9	1,160.8	1,199.2	0.00	0.00	0.00	
8,800.0	90.12	90.00	7,261.1	-559.9	1,260.8	1,299.0	0.00	0.00	0.00	
8,900.0	90.12	90.00	7,260.9	-559.9	1,360.8	1,398.7	0.00	0.00	0.00	
9,000.0	90.12	90.00	7,260.6	-559.9	1,460.8	1,498.4	0.00	0.00	0.00	
9,100.0	90.12	90.00	7,260.4	-559.9	1,560.8	1,598.1	0.00	0.00	0.00	
9,200.0	90.12	90.00	7,260.2	-559.9	1,660.8	1,697.8	0.00	0.00	0.00	
9,300.0	90.12	90.00	7,260.0	-559.9	1,760.8	1,797.6	0.00	0.00	0.00	
9,400.0	90.12	90.00	7,259.8	-559.9	1,860.8	1,897.3	0.00	0.00	0.00	
9,500.0	90.12	90.00	7,259.6	-559.9	1,960.8	1,997.0	0.00	0.00	0.00	
9,600.0	90.12	90.00	7,259.4	-559.9	2,060.8	2,096.7	0.00	0.00	0.00	
9,700.0	90.12	90.00	7,259.2	-559.9	2,160.8	2,196.5	0.00	0.00	0.00	
9,800.0	90.12	90.00	7,259.0	-559.9	2,260.8	2,296.2	0.00	0.00	0.00	
9,900.0	90.12	90.00	7,258.8	-559.9	2,360.8	2,395.9	0.00	0.00	0.00	
10,000.0	90.12	90.00	7,258.5	-559.9	2,460.8	2,495.6	0.00	0.00	0.00	
10,100.0	90.12	90.00	7,258.3	-559.9	2,560.8	2,595.3	0.00	0.00	0.00	
10,200.0	90.12	90.00	7,258.1	-559.9	2,660.8	2,695.1	0.00	0.00	0.00	
10,300.0	90.12	90.00	7,257.9	-559.9	2,760.8	2,794.8	0.00	0.00	0.00	
10,400.0	90.12	90.00	7,257.7	-559.9	2,860.8	2,894.5	0.00	0.00	0.00	
10,500.0	90.12	90.00	7,257.5	-559.9	2,960.8	2,994.2	0.00	0.00	0.00	
10,600.0	90.12	90.00	7,257.3	-559.9	3,060.8	3,094.0	0.00	0.00	0.00	
10,700.0	90.12	90.00	7,257.1	-559.9	3,160.8	3,193.7	0.00	0.00	0.00	
10,800.0	90.12	90.00	7,256.9	-559.9	3,260.8	3,293.4	0.00	0.00	0.00	
10,900.0	90.12	90.00	7,256.7	-559.9	3,360.8	3,393.1	0.00	0.00	0.00	
11,000.0	90.12	90.00	7,256.5	-559.9	3,460.8	3,492.8	0.00	0.00	0.00	
11,100.0	90.12	90.00	7,256.2	-559.9	3,560.8	3,592.6	0.00	0.00	0.00	
11,200.0	90.12	90.00	7,256.0	-559.9	3,660.8	3,692.3	0.00	0.00	0.00	
11,300.0	90.12	90.00	7,255.8	-559.9	3,760.8	3,792.0	0.00	0.00	0.00	
11,400.0	90.12	90.00	7,255.6	-559.9	3,860.8	3,891.7	0.00	0.00	0.00	
11,500.0	90.12	90.00	7,255.4	-559.9	3,960.8	3,991.5	0.00	0.00	0.00	
11,600.0	90.12	90.00	7,255.2	-559.9	4,060.8	4,091.2	0.00	0.00	0.00	
11,700.0	90.12	90.00	7,255.0	-559.9	4,160.8	4,190.9	0.00	0.00	0.00	
11,800.0	90.12	90.00	7,254.8	-559.9	4,260.8	4,290.6	0.00	0.00	0.00	
11,900.0	90.12	90.00	7,254.6	-559.9	4,360.8	4,390.3	0.00	0.00	0.00	
12,000.0	90.12	90.00	7,254.4	-559.9	4,460.8	4,490.1	0.00	0.00	0.00	
12,100.0	90.12	90.00	7,254.1	-559.9	4,560.8	4,589.8	0.00	0.00	0.00	
12,200.0	90.12	90.00	7,253.9	-559.9	4,660.8	4,689.5	0.00	0.00	0.00	
12,300.0	90.12	90.00	7,253.7	-559.9	4,760.8	4,789.2	0.00	0.00	0.00	
12,400.0	90.12	90.00	7,253.5	-559.9	4,860.8	4,889.0	0.00	0.00	0.00	
12,500.0	90.12	90.00	7,253.3	-559.9	4,960.8	4,988.7	0.00	0.00	0.00	
12,600.0	90.12	90.00	7,253.1	-559.9	5,060.8	5,088.4	0.00	0.00	0.00	

Database:	Landmark	Local Co-ordinate Reference:	Well Wiedeman Trust 29O-432
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4778.0ft (RKB - 15')
Project:	SEC.29-T4N-R66W	MD Reference:	WELL @ 4778.0ft (RKB - 15')
Site:	Wiedeman Trust 29O-HZ Pad Sec.29-T4N-R66W	North Reference:	True
Well:	Wiedeman Trust 29O-432	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (7-09-14)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
12,700.0	90.12	90.00	7,252.9	-559.9	5,160.8	5,188.1	0.00	0.00	0.00
12,800.0	90.12	90.00	7,252.7	-559.9	5,260.8	5,287.8	0.00	0.00	0.00
12,900.0	90.12	90.00	7,252.5	-559.9	5,360.8	5,387.6	0.00	0.00	0.00
13,000.0	90.12	90.00	7,252.3	-559.9	5,460.8	5,487.3	0.00	0.00	0.00
13,100.0	90.12	90.00	7,252.1	-559.9	5,560.8	5,587.0	0.00	0.00	0.00
13,200.0	90.12	90.00	7,251.8	-559.9	5,660.7	5,686.7	0.00	0.00	0.00
13,300.0	90.12	90.00	7,251.6	-559.9	5,760.7	5,786.4	0.00	0.00	0.00
13,400.0	90.12	90.00	7,251.4	-559.9	5,860.7	5,886.2	0.00	0.00	0.00
13,500.0	90.12	90.00	7,251.2	-559.9	5,960.7	5,985.9	0.00	0.00	0.00
13,600.0	90.12	90.00	7,251.0	-559.9	6,060.7	6,085.6	0.00	0.00	0.00
13,700.0	90.12	90.00	7,250.8	-559.9	6,160.7	6,185.3	0.00	0.00	0.00
13,800.0	90.12	90.00	7,250.6	-559.9	6,260.7	6,285.1	0.00	0.00	0.00
13,900.0	90.12	90.00	7,250.4	-559.9	6,360.7	6,384.8	0.00	0.00	0.00
14,000.0	90.12	90.00	7,250.2	-559.9	6,460.7	6,484.5	0.00	0.00	0.00
14,100.0	90.12	90.00	7,250.0	-559.9	6,560.7	6,584.2	0.00	0.00	0.00
14,200.0	90.12	90.00	7,249.8	-559.9	6,660.7	6,683.9	0.00	0.00	0.00
14,300.0	90.12	90.00	7,249.5	-559.9	6,760.7	6,783.7	0.00	0.00	0.00
14,400.0	90.12	90.00	7,249.3	-559.9	6,860.7	6,883.4	0.00	0.00	0.00
14,500.0	90.12	90.00	7,249.1	-559.9	6,960.7	6,983.1	0.00	0.00	0.00
14,600.0	90.12	90.00	7,248.9	-559.9	7,060.7	7,082.8	0.00	0.00	0.00
14,700.0	90.12	90.00	7,248.7	-559.9	7,160.7	7,182.6	0.00	0.00	0.00
14,800.0	90.12	90.00	7,248.5	-559.9	7,260.7	7,282.3	0.00	0.00	0.00
14,900.0	90.12	90.00	7,248.3	-559.9	7,360.7	7,382.0	0.00	0.00	0.00
15,000.0	90.12	90.00	7,248.1	-559.9	7,460.7	7,481.7	0.00	0.00	0.00
15,036.3	90.12	90.00	7,248.0	-559.9	7,497.0	7,517.9	0.00	0.00	0.00

BHL 2124'FSL & 580'FEL, Sec.28

Targets

Target Name

- hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
BHL 2124'FSL & 580'FEL - plan hits target center - Point	0.00	0.00	7,248.0	-559.9	7,497.0	1,346,098.23	3,202,249.36	40.281170	-104.775080
SHL 2611'FNL & 251'FEL - plan hits target center - Point	0.00	0.00	1.0	0.0	0.0	1,346,599.06	3,194,748.50	40.282710	-104.801950

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,770.7	7,263.2	7"	7	7-1/2

Database:	Landmark	Local Co-ordinate Reference:	Well Wiedeman Trust 29O-432
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4778.0ft (RKB - 15')
Project:	SEC.29-T4N-R66W	MD Reference:	WELL @ 4778.0ft (RKB - 15')
Site:	Wiedeman Trust 29O-HZ Pad Sec.29-T4N-R66W	North Reference:	True
Well:	Wiedeman Trust 29O-432	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (7-09-14)		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,714.8	3,680.0	PARKMAN		0.00		
4,294.0	4,250.0	SUSSEX		0.00		
4,832.6	4,780.0	SHANNON		0.00		
6,625.0	6,558.0	SHARON SPRINGS		0.00		
7,070.8	6,968.0	NIOBRARA A		0.00		
7,174.0	7,045.0	NIOBRARA B		0.00		
7,315.3	7,134.0	NIOBRARA C		0.00		
7,654.0	7,255.0	FT HAYS		0.00		
	7,277.0	CODELL		0.00		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,200.0	1,200.0	0.0	0.0	KOP #1
6,566.2	6,499.3	-559.9	-537.0	KOP #2
7,767.8	7,263.2	-559.9	228.6	End of Build



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.29-T4N-R66W

Wiedeman Trust 29O-HZ Pad Sec.29-T4N-R66W

Wiedeman Trust 29O-432

Wellbore #1

Plan #2 (7-09-14)

Anticollision Report

09 July, 2014



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman Trust 29O-432
Project:	SEC.29-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (RKB - 15')
Reference Site:	Wiedeman Trust 29O-HZ Pad Sec.29-T4N-R66W	MD Reference:	WELL @ 4778.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman Trust 29O-432	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (7-09-14)	Offset TVD Reference:	Offset Datum

Reference	Plan #2 (7-09-14)
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria
Interpolation Method:	Stations
Depth Range:	Unlimited
Results Limited by:	Maximum center-center distance of 1,000.0ft
Warning Levels Evaluated at:	2.00 Sigma
Error Model:	ISCWSA
Scan Method:	Closest Approach 3D
Error Surface:	Elliptical Conic

Survey Tool Program		Date	7/9/2014		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	15,036.3	Plan #2 (7-09-14) (Wellbore #1)	MWD	MWD - Standard	

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Existing Wells Pad Sec.29-T4-R66W						
Danny B 12-28 (Exist.) - Wellbore #1 - Wellbore #1	11,161.1	7,234.7	122.5	-1.0	0.992	Level 1, CC, ES, SF
Lorenz 43-28 (P&A) - Wellbore #1 - Wellbore #1	15,036.3	7,214.0	95.1	-267.6	0.262	Level 1, CC, ES, SF
McLeod 2-29B (Exist.) - Wellbore #1 - Wellbore #1	10,260.0	7,333.4	649.3	545.5	6.257	CC, ES
McLeod 2-29B (Exist.) - Wellbore #1 - Wellbore #1	10,400.0	7,333.2	664.2	556.6	6.172	SF
McLeod 29-1 (Exist.) - Wellbore #1 - Wellbore #1	8,405.0	7,255.2	134.8	83.5	2.625	CC, ES, SF
McLeod 29-29X (Exist.) - Wellbore #1 - Wellbore #1	7,674.6	7,329.2	801.4	764.2	21.522	CC, ES
McLeod 29-29X (Exist.) - Wellbore #1 - Wellbore #1	8,100.0	7,324.7	907.0	861.6	20.003	SF
McLeod 29-41 (Exist.) - Wellbore #1 - Wellbore #1	9,673.8	7,247.6	78.0	-7.0	0.917	Level 1, CC, ES, SF
McLeod 6 (Exist.) - Wellbore #1 - Wellbore #1	9,020.8	7,251.6	860.8	663.6	4.365	CC, ES
McLeod 6 (Exist.) - Wellbore #1 - Wellbore #1	9,100.0	7,251.4	864.5	665.2	4.337	SF
McLeod 8 (Exist.) - Wellbore #1 - Wellbore #1	9,007.9	7,377.1	621.7	553.4	9.096	CC, ES
McLeod 8 (Exist.) - Wellbore #1 - Wellbore #1	9,200.0	7,377.5	650.7	577.3	8.861	SF
Melissa 1 (Exist.) - Wellbore #1 - Wellbore #1	15,036.3	7,218.8	36.7	-195.7	0.158	Level 1, CC, ES, SF
Randall 11-28 (Exist.) - Wellbore #1 - Wellbore #1	12,577.4	7,234.7	470.1	306.8	2.880	CC
Randall 11-28 (Exist.) - Wellbore #1 - Wellbore #1	12,600.0	7,234.6	470.6	306.8	2.872	ES, SF
Wiedeman 29-1 (Exist.) - Wellbore #1 - Wellbore #1	6,566.2	6,486.8	210.5	178.5	6.572	ES, SF
Wiedeman 29-1 (Exist.) - Wellbore #1 - Wellbore #1	6,571.0	6,491.5	210.5	180.0	6.903	CC
Wiedeman 29K-HZ Pad Sec.29-T4N-R66W						
Wiedeman 29K-323 - Wellbore #1 - Plan #3 (4-24-14)	7,000.0	7,142.5	143.9	109.0	4.122	SF
Wiedeman 29K-323 - Wellbore #1 - Plan #3 (4-24-14)	7,038.6	7,166.0	139.4	106.4	4.215	CC, ES
Wiedeman 29K-403 - Wellbore #1 - Plan #2 (4-24-14)	6,566.2	6,516.6	557.9	528.6	19.042	CC
Wiedeman 29K-403 - Wellbore #1 - Plan #2 (4-24-14)	6,600.0	6,557.4	558.4	522.4	15.475	ES, SF
Wiedeman 29O-243 - Wellbore #1 - Plan #2 (4-24-18)	4,364.6	4,405.0	108.1	76.8	3.461	CC, ES
Wiedeman 29O-243 - Wellbore #1 - Plan #2 (4-24-18)	4,400.0	4,438.0	108.8	77.3	3.452	SF
Wiedeman Trust 29O-HZ Pad Sec.29-T4N-R66W						
Wiedeman Trust 29O-332 - Wellbore #1 - Plan #1 (6-17-	1,200.0	1,200.0	32.1	27.0	6.213	CC
Wiedeman Trust 29O-332 - Wellbore #1 - Plan #1 (6-17-	15,036.3	14,956.7	293.9	-95.6	0.755	Level 1, ES, SF
Wiedeman Trust 29P-212 - Wellbore #1 - Plan #16-17-14	200.0	200.0	29.3	28.6	43.471	CC, ES
Wiedeman Trust 29P-212 - Wellbore #1 - Plan #16-17-14	15,036.3	14,864.6	427.0	44.8	1.117	Level 2, SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman Trust 29O-432
Project:	SEC.29-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (RKB - 15')
Reference Site:	Wiedeman Trust 29O-HZ Pad Sec.29-T4N-R66W	MD Reference:	WELL @ 4778.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman Trust 29O-432	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (7-09-14)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Pad Sec.29-T4-R66W - Danny B 12-28 (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	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)		
10,200.0	7,258.1	7,253.8	7,252.9	84.1	13.0	99.67	-682.1	3,621.5	968.7	873.0	95.64	10.128	
10,300.0	7,257.9	7,251.8	7,251.0	86.9	13.0	98.76	-682.2	3,621.5	869.6	771.0	98.60	8.820	
10,400.0	7,257.7	7,249.8	7,249.0	89.6	13.0	97.85	-682.2	3,621.6	770.7	669.2	101.54	7.590	
10,500.0	7,257.5	7,247.8	7,247.0	92.4	13.0	96.94	-682.2	3,621.6	672.2	567.7	104.48	6.434	
10,600.0	7,257.3	7,245.9	7,245.0	95.1	13.0	96.02	-682.3	3,621.6	574.2	466.8	107.41	5.346	
10,700.0	7,257.1	7,243.9	7,243.0	97.9	13.0	95.10	-682.3	3,621.7	477.0	366.7	110.33	4.323	
10,800.0	7,256.9	7,241.9	7,241.1	100.6	13.0	94.18	-682.3	3,621.7	381.2	268.0	113.23	3.367	
10,900.0	7,256.7	7,239.9	7,239.1	103.4	13.0	93.26	-682.4	3,621.7	288.4	172.3	116.11	2.484	
11,000.0	7,256.5	7,237.9	7,237.1	106.2	13.0	92.33	-682.4	3,621.8	202.4	83.4	118.97	1.701	
11,100.0	7,256.2	7,236.0	7,235.1	108.9	13.0	91.41	-682.4	3,621.8	136.9	15.1	121.80	1.124 Level 2	
11,161.1	7,256.1	7,234.7	7,233.9	110.6	13.0	90.85	-682.4	3,621.8	122.5	-1.0	123.52	0.992 Level 1, CC, ES, SF	
11,200.0	7,256.0	7,234.0	7,233.2	111.7	13.0	90.48	-682.4	3,621.8	128.6	4.0	124.61	1.032 Level 2	
11,300.0	7,255.8	7,232.0	7,231.2	114.5	13.0	89.56	-682.5	3,621.9	185.2	57.8	127.40	1.454 Level 3	
11,400.0	7,255.6	7,230.0	7,229.2	117.2	13.0	88.64	-682.5	3,621.9	268.5	138.3	130.15	2.063	
11,500.0	7,255.4	7,228.0	7,227.2	120.0	13.0	87.71	-682.5	3,621.9	360.3	227.5	132.87	2.712	
11,600.0	7,255.2	7,226.1	7,225.2	122.8	13.0	86.79	-682.6	3,622.0	455.6	320.1	135.56	3.361	
11,700.0	7,255.0	7,224.1	7,223.3	125.6	13.0	85.87	-682.6	3,622.0	552.6	414.4	138.22	3.998	
11,800.0	7,254.8	7,222.1	7,221.3	128.3	13.0	84.95	-682.6	3,622.1	650.5	509.6	140.83	4.619	
11,900.0	7,254.6	7,220.1	7,219.3	131.1	13.0	84.04	-682.6	3,622.1	748.9	605.5	143.41	5.222	
12,000.0	7,254.4	7,218.1	7,217.3	133.9	13.0	83.13	-682.7	3,622.1	847.7	701.7	145.95	5.808	
12,100.0	7,254.1	7,216.2	7,215.3	136.7	13.0	82.22	-682.7	3,622.2	946.7	798.3	148.44	6.378	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman Trust 29O-432
Project:	SEC.29-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (RKB - 15')
Reference Site:	Wiedeman Trust 29O-HZ Pad Sec.29-T4N-R66W	MD Reference:	WELL @ 4778.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman Trust 29O-432	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (7-09-14)	Offset TVD Reference:	Offset Datum

Offset Design		Existing Wells Pad Sec.29-T4-R66W - Lorenz 43-28 (P&A) - Wellbore #1 - Wellbore #1											Offset Site Error:		0.0 ft	
Survey Program: 7340-UNKNOWN														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				
14,200.0	7,249.8	7,215.8	7,215.8	195.3	144.3	105.02	-567.2	7,591.9	931.2	602.9	328.23	2.837				
14,300.0	7,249.5	7,215.5	7,215.5	198.1	144.3	103.47	-567.2	7,591.9	831.2	498.0	333.13	2.495				
14,400.0	7,249.3	7,215.3	7,215.3	200.8	144.3	101.90	-567.2	7,591.9	731.2	393.3	337.86	2.164				
14,500.0	7,249.1	7,215.1	7,215.1	203.6	144.3	100.31	-567.2	7,591.9	631.2	288.8	342.39	1.843				
14,600.0	7,248.9	7,214.9	7,214.9	206.4	144.3	98.70	-567.2	7,591.9	531.2	184.5	346.71	1.532				
14,700.0	7,248.7	7,214.7	7,214.7	209.2	144.3	97.08	-567.2	7,591.9	431.2	80.4	350.81	1.229 Level 2				
14,800.0	7,248.5	7,214.5	7,214.5	212.0	144.3	95.45	-567.2	7,591.9	331.2	-23.4	354.66	0.934 Level 1				
14,900.0	7,248.3	7,214.3	7,214.3	214.8	144.3	93.81	-567.2	7,591.9	231.3	-127.0	358.26	0.646 Level 1				
15,000.0	7,248.1	7,214.1	7,214.1	217.6	144.3	92.16	-567.2	7,591.9	131.3	-230.2	361.58	0.363 Level 1				
15,036.3	7,248.0	7,214.0	7,214.0	218.6	144.3	91.57	-567.2	7,591.9	95.1	-267.6	362.72	0.262 Level 1, CC, ES, SF				

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman Trust 29O-432
Project:	SEC.29-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (RKB - 15')
Reference Site:	Wiedeman Trust 29O-HZ Pad Sec.29-T4N-R66W	MD Reference:	WELL @ 4778.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman Trust 29O-432	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (7-09-14)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Pad Sec.29-T4-R66W - McLeod 2-29B (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	
9,500.0	7,259.6	7,334.2	7,256.6	65.1	19.0	91.02	-1,209.1	2,720.8	999.6	916.5	83.07	12.032	
9,600.0	7,259.4	7,334.1	7,256.5	67.8	19.0	91.01	-1,209.1	2,720.8	925.8	840.1	85.77	10.794	
9,700.0	7,259.2	7,334.0	7,256.4	70.5	19.0	91.00	-1,209.1	2,720.8	857.4	768.9	88.48	9.690	
9,800.0	7,259.0	7,333.9	7,256.3	73.2	19.0	90.99	-1,209.1	2,720.8	795.7	704.5	91.20	8.725	
9,900.0	7,258.8	7,333.8	7,256.2	75.9	19.0	90.98	-1,209.1	2,720.8	742.4	648.5	93.92	7.904	
10,000.0	7,258.5	7,333.7	7,256.0	78.7	19.0	90.97	-1,209.1	2,720.8	699.4	602.7	96.65	7.236	
10,100.0	7,258.3	7,333.6	7,255.9	81.4	19.0	90.96	-1,209.1	2,720.8	668.7	569.3	99.39	6.728	
10,200.0	7,258.1	7,333.4	7,255.8	84.1	19.0	90.95	-1,209.1	2,720.8	652.0	549.9	102.13	6.385	
10,260.0	7,258.0	7,333.4	7,255.7	85.8	19.0	90.95	-1,209.1	2,720.8	649.3	545.5	103.77	6.257 CC, ES	
10,300.0	7,257.9	7,333.3	7,255.7	86.9	19.0	90.94	-1,209.1	2,720.8	650.5	545.6	104.87	6.203	
10,400.0	7,257.7	7,333.2	7,255.6	89.6	19.0	90.93	-1,209.1	2,720.8	664.2	556.6	107.62	6.172 SF	
10,500.0	7,257.5	7,333.1	7,255.5	92.4	19.0	90.92	-1,209.1	2,720.8	692.2	581.8	110.37	6.272	
10,600.0	7,257.3	7,333.0	7,255.4	95.1	19.0	90.91	-1,209.1	2,720.8	732.9	619.8	113.13	6.479	
10,700.0	7,257.1	7,332.9	7,255.3	97.9	19.0	90.90	-1,209.1	2,720.8	784.3	668.4	115.88	6.768	
10,800.0	7,256.9	7,332.8	7,255.1	100.6	19.0	90.90	-1,209.1	2,720.8	844.5	725.8	118.64	7.118	
10,900.0	7,256.7	7,332.7	7,255.0	103.4	19.0	90.89	-1,209.1	2,720.8	911.7	790.3	121.41	7.509	
11,000.0	7,256.5	7,332.5	7,254.9	106.2	19.0	90.88	-1,209.1	2,720.8	984.5	860.3	124.17	7.928	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman Trust 29O-432
Project:	SEC.29-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (RKB - 15')
Reference Site:	Wiedeman Trust 29O-HZ Pad Sec.29-T4N-R66W	MD Reference:	WELL @ 4778.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman Trust 29O-432	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (7-09-14)	Offset TVD Reference:	Offset Datum

Offset Design		Existing Wells Pad Sec.29-T4-R66W - McLeod 29-1 (Exist.) - Wellbore #1 - Wellbore #1											Offset Site Error:		0.0 ft
Survey Program:		100-NS-GYRO-MS											Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance								
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)				
7,450.0	7,198.7	7,200.1	7,199.7	19.7	14.8	19.84	-694.7	866.3	956.1	935.4	20.74	46.093			
7,500.0	7,217.3	7,218.3	7,217.9	19.8	14.8	24.18	-694.7	866.1	910.1	888.8	21.28	42.762			
7,550.0	7,232.8	7,233.4	7,233.0	20.0	14.8	30.25	-694.7	866.0	863.0	840.1	22.85	37.772			
7,600.0	7,245.2	7,245.4	7,244.9	20.4	14.9	38.92	-694.7	865.9	815.1	789.3	25.78	31.610			
7,650.0	7,254.4	7,254.2	7,253.7	20.9	14.9	51.28	-694.7	865.8	766.6	736.5	30.11	25.460			
7,700.0	7,260.4	7,259.7	7,259.2	21.6	14.9	67.76	-694.7	865.8	717.7	683.0	34.73	20.665			
7,750.0	7,263.1	7,262.0	7,261.5	22.4	14.9	86.43	-694.7	865.7	668.7	631.4	37.34	17.910			
7,767.8	7,263.2	7,262.0	7,261.5	22.7	14.9	92.82	-694.7	865.7	651.3	613.8	37.50	17.369			
7,800.0	7,263.2	7,261.6	7,261.2	23.3	14.9	92.68	-694.7	865.7	619.8	581.8	38.07	16.283			
7,900.0	7,262.9	7,260.6	7,260.1	25.1	14.9	92.23	-694.7	865.8	522.7	482.7	39.95	13.082			
8,000.0	7,262.7	7,259.5	7,259.1	27.2	14.9	91.78	-694.7	865.8	426.9	384.9	42.00	10.163			
8,100.0	7,262.5	7,258.5	7,258.0	29.4	14.9	91.33	-694.7	865.8	333.5	289.3	44.18	7.548			
8,200.0	7,262.3	7,257.4	7,256.9	31.7	14.9	90.88	-694.7	865.8	245.4	198.9	46.46	5.282			
8,300.0	7,262.1	7,256.3	7,255.9	34.0	14.9	90.43	-694.7	865.8	170.9	122.1	48.81	3.501			
8,400.0	7,261.9	7,255.3	7,254.8	36.4	14.9	89.97	-694.7	865.8	134.9	83.7	51.23	2.633			
8,405.0	7,261.9	7,255.2	7,254.8	36.6	14.9	89.95	-694.7	865.8	134.8	83.5	51.35	2.625 CC, ES, SF			
8,500.0	7,261.7	7,254.2	7,253.8	38.9	14.9	89.52	-694.7	865.8	164.9	111.2	53.70	3.071			
8,600.0	7,261.5	7,253.1	7,252.7	41.4	14.9	89.07	-694.7	865.8	237.0	180.8	56.21	4.217			
8,700.0	7,261.3	7,252.1	7,251.6	44.0	14.9	88.62	-694.7	865.8	324.3	265.5	58.75	5.520			
8,800.0	7,261.1	7,251.0	7,250.6	46.5	14.9	88.17	-694.7	865.8	417.3	356.0	61.32	6.806			
8,900.0	7,260.9	7,250.0	7,249.5	49.1	14.9	87.72	-694.7	865.8	513.0	449.1	63.91	8.027			
9,000.0	7,260.6	7,248.9	7,248.5	51.8	14.9	87.27	-694.7	865.9	610.0	543.5	66.51	9.171			
9,100.0	7,260.4	7,247.8	7,247.4	54.4	14.9	86.82	-694.7	865.9	707.9	638.7	69.13	10.240			
9,200.0	7,260.2	7,246.8	7,246.3	57.1	14.9	86.37	-694.7	865.9	806.3	734.5	71.76	11.236			
9,300.0	7,260.0	7,245.7	7,245.3	59.7	14.9	85.92	-694.7	865.9	905.0	830.6	74.39	12.165			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman Trust 29O-432
Project:	SEC.29-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (RKB - 15')
Reference Site:	Wiedeman Trust 29O-HZ Pad Sec.29-T4N-R66W	MD Reference:	WELL @ 4778.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman Trust 29O-432	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (7-09-14)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Pad Sec.29-T4-R66W - McLeod 29-29X (Exist.) - Wellbore #1 - Wellbore #1														Offset Site Error: 0.0 ft
Survey Program: 635-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		
6,950.0	6,867.2	6,968.7	6,883.7	20.2	16.3	57.83	-1,360.7	146.2	994.3	961.3	32.96	30.167		
7,000.0	6,910.2	7,009.5	6,924.5	20.1	16.4	60.06	-1,360.5	144.7	978.3	945.6	32.73	29.889		
7,050.0	6,951.4	7,048.7	6,963.6	20.0	16.5	62.51	-1,360.3	143.5	961.4	928.9	32.57	29.523		
7,100.0	6,990.7	7,084.4	6,999.3	19.9	16.6	65.08	-1,360.1	142.4	943.9	911.4	32.47	29.073		
7,150.0	7,027.9	7,117.4	7,032.3	19.9	16.6	67.77	-1,360.0	141.4	926.0	893.6	32.45	28.535		
7,200.0	7,062.8	7,148.5	7,063.4	19.8	16.7	70.53	-1,360.1	140.5	908.1	875.6	32.54	27.911		
7,250.0	7,095.4	7,177.3	7,092.2	19.7	16.7	73.32	-1,360.2	139.8	890.5	857.8	32.72	27.219		
7,300.0	7,125.3	7,203.9	7,118.8	19.7	16.8	76.07	-1,360.4	139.1	873.6	840.6	32.99	26.480		
7,350.0	7,152.6	7,229.2	7,144.0	19.6	16.8	78.77	-1,360.6	138.5	857.7	824.3	33.35	25.715		
7,400.0	7,177.1	7,253.0	7,167.9	19.6	16.9	81.36	-1,360.8	137.9	843.1	809.3	33.79	24.947		
7,450.0	7,198.7	7,273.9	7,188.8	19.7	16.9	83.70	-1,361.0	137.4	830.1	795.8	34.30	24.204		
7,500.0	7,217.3	7,291.8	7,206.6	19.8	16.9	85.72	-1,361.1	137.0	819.2	784.3	34.86	23.503		
7,550.0	7,232.8	7,306.5	7,221.4	20.0	16.9	87.38	-1,361.2	136.7	810.7	775.2	35.47	22.856		
7,600.0	7,245.2	7,318.1	7,232.9	20.4	17.0	88.62	-1,361.3	136.4	804.8	768.7	36.14	22.271		
7,650.0	7,254.4	7,326.4	7,241.2	20.9	17.0	89.43	-1,361.3	136.2	801.8	764.9	36.86	21.755		
7,674.6	7,257.7	7,329.2	7,244.1	21.3	17.0	89.66	-1,361.3	136.2	801.4	764.2	37.24	21.522 CC, ES		
7,700.0	7,260.4	7,331.4	7,246.2	21.6	17.0	89.79	-1,361.3	136.1	801.8	764.2	37.63	21.309		
7,750.0	7,263.1	7,333.0	7,247.9	22.4	17.0	89.67	-1,361.3	136.1	804.9	766.5	38.44	20.938		
7,767.8	7,263.2	7,332.8	7,247.6	22.7	17.0	89.52	-1,361.3	136.1	806.8	768.0	38.74	20.823		
7,800.0	7,263.2	7,332.0	7,246.9	23.3	17.0	89.46	-1,361.3	136.1	811.1	771.8	39.30	20.637		
7,900.0	7,262.9	7,329.6	7,244.4	25.1	17.0	89.29	-1,361.3	136.2	832.4	791.2	41.17	20.219		
8,000.0	7,262.7	7,327.1	7,242.0	27.2	17.0	89.11	-1,361.3	136.2	864.7	821.5	43.19	20.020		
8,100.0	7,262.5	7,324.7	7,239.5	29.4	17.0	88.94	-1,361.3	136.3	907.0	861.6	45.34	20.003 SF		
8,200.0	7,262.3	7,322.2	7,237.0	31.7	17.0	88.76	-1,361.3	136.3	957.9	910.3	47.60	20.125		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman Trust 29O-432
Project:	SEC.29-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (RKB - 15')
Reference Site:	Wiedeman Trust 29O-HZ Pad Sec.29-T4N-R66W	MD Reference:	WELL @ 4778.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman Trust 29O-432	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (7-09-14)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Pad Sec.29-T4-R66W - McLeod 29-41 (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		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
							+N/-S (ft)	+E/-W (ft)					
8,700.0	7,261.3	7,244.9	7,243.1	44.0	15.4	-86.93	-482.0	2,134.5	976.9	917.8	59.06	16.541	
8,800.0	7,261.1	7,245.2	7,243.3	46.5	15.4	-87.13	-482.0	2,134.5	877.2	815.6	61.64	14.231	
8,900.0	7,260.9	7,245.5	7,243.6	49.1	15.4	-87.33	-482.0	2,134.5	777.7	713.4	64.25	12.103	
9,000.0	7,260.6	7,245.7	7,243.9	51.8	15.4	-87.53	-482.0	2,134.5	678.3	611.4	66.89	10.140	
9,100.0	7,260.4	7,246.0	7,244.1	54.4	15.4	-87.72	-482.0	2,134.5	579.0	509.5	69.54	8.327	
9,200.0	7,260.2	7,246.3	7,244.4	57.1	15.4	-87.92	-482.0	2,134.5	480.1	407.9	72.21	6.650	
9,300.0	7,260.0	7,246.5	7,244.7	59.7	15.4	-88.12	-482.0	2,134.5	381.8	306.9	74.89	5.099	
9,400.0	7,259.8	7,246.8	7,244.9	62.4	15.4	-88.32	-482.0	2,134.5	284.7	207.1	77.58	3.669	
9,500.0	7,259.6	7,247.1	7,245.2	65.1	15.4	-88.52	-482.0	2,134.5	190.5	110.2	80.28	2.372	
9,600.0	7,259.4	7,247.4	7,245.5	67.8	15.4	-88.72	-481.9	2,134.5	107.3	24.3	82.99	1.293 Level 3	
9,673.8	7,259.2	7,247.6	7,245.7	69.8	15.4	-88.86	-481.9	2,134.5	78.0	-7.0	85.00	0.917 Level 1, CC, ES, SF	
9,700.0	7,259.2	7,247.6	7,245.8	70.5	15.4	-88.91	-481.9	2,134.5	82.3	-3.5	85.71	0.960 Level 1	
9,800.0	7,259.0	7,247.9	7,246.0	73.2	15.4	-89.11	-481.9	2,134.5	148.4	59.9	88.44	1.678	
9,900.0	7,258.8	7,248.2	7,246.3	75.9	15.4	-89.31	-481.9	2,134.5	239.3	148.1	91.17	2.625	
10,000.0	7,258.5	7,248.4	7,246.6	78.7	15.4	-89.51	-481.9	2,134.5	335.4	241.5	93.91	3.572	
10,100.0	7,258.3	7,248.7	7,246.8	81.4	15.4	-89.71	-481.9	2,134.5	433.3	336.7	96.65	4.483	
10,200.0	7,258.1	7,249.0	7,247.1	84.1	15.4	-89.91	-481.9	2,134.5	532.0	432.6	99.39	5.352	
10,300.0	7,257.9	7,249.2	7,247.4	86.9	15.4	-90.11	-481.9	2,134.5	631.1	528.9	102.14	6.178	
10,400.0	7,257.7	7,249.5	7,247.6	89.6	15.4	-90.30	-481.9	2,134.5	730.4	625.5	104.89	6.963	
10,500.0	7,257.5	7,249.8	7,247.9	92.4	15.4	-90.50	-481.9	2,134.5	829.9	722.3	107.64	7.710	
10,600.0	7,257.3	7,250.1	7,248.2	95.1	15.4	-90.70	-481.9	2,134.5	929.5	819.1	110.40	8.419	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman Trust 29O-432
Project:	SEC.29-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (RKB - 15')
Reference Site:	Wiedeman Trust 29O-HZ Pad Sec.29-T4N-R66W	MD Reference:	WELL @ 4778.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman Trust 29O-432	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (7-09-14)	Offset TVD Reference:	Offset Datum

Offset Design		Existing Wells Pad Sec.29-T4-R66W - McLeod 6 (Exist.) - Wellbore #1 - Wellbore #1										Offset Site Error:		0.0 ft		
Survey Program: 7450-UNKNOWN														Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth 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				
8,600.0	7,261.5	7,252.5	7,252.5	41.4	145.0	90.06	-1,420.7	1,481.6	958.2	771.9	186.35	5.142				
8,700.0	7,261.3	7,252.3	7,252.3	44.0	145.0	90.04	-1,420.7	1,481.6	918.7	729.8	188.89	4.864				
8,800.0	7,261.1	7,252.1	7,252.1	46.5	145.0	90.03	-1,420.7	1,481.6	888.7	697.3	191.46	4.642				
8,900.0	7,260.9	7,251.9	7,251.9	49.1	145.0	90.02	-1,420.7	1,481.6	869.3	675.2	194.06	4.480				
9,000.0	7,260.6	7,251.6	7,251.6	51.8	145.0	90.00	-1,420.7	1,481.6	861.1	664.4	196.67	4.378				
9,020.8	7,260.6	7,251.6	7,251.6	52.3	145.0	90.00	-1,420.7	1,481.6	860.8	663.6	197.22	4.365 CC, ES				
9,100.0	7,260.4	7,251.4	7,251.4	54.4	145.0	89.99	-1,420.7	1,481.6	864.5	665.2	199.31	4.337 SF				
9,200.0	7,260.2	7,251.2	7,251.2	57.1	145.0	89.98	-1,420.7	1,481.6	879.3	677.3	201.96	4.354				
9,300.0	7,260.0	7,251.0	7,251.0	59.7	145.0	89.96	-1,420.7	1,481.6	905.0	700.4	204.63	4.423				
9,400.0	7,259.8	7,250.8	7,250.8	62.4	145.0	89.95	-1,420.7	1,481.6	940.6	733.3	207.30	4.538				
9,500.0	7,259.6	7,250.6	7,250.6	65.1	145.0	89.93	-1,420.7	1,481.6	985.2	775.2	209.99	4.692				

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman Trust 29O-432
Project:	SEC.29-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (RKB - 15')
Reference Site:	Wiedeman Trust 29O-HZ Pad Sec.29-T4N-R66W	MD Reference:	WELL @ 4778.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman Trust 29O-432	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (7-09-14)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Pad Sec.29-T4-R66W - McLeod 8 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error: 0.0 ft
Survey Program: 2508-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	
8,300.0	7,262.1	7,375.8	7,243.0	34.0	17.6	-89.11	61.7	1,468.7	942.2	891.8	50.42	18.688	
8,400.0	7,261.9	7,376.0	7,243.2	36.4	17.6	-89.13	61.7	1,468.7	869.5	816.7	52.83	16.461	
8,500.0	7,261.7	7,376.2	7,243.4	38.9	17.6	-89.15	61.7	1,468.7	802.8	747.5	55.29	14.520	
8,600.0	7,261.5	7,376.4	7,243.5	41.4	17.6	-89.16	61.7	1,468.7	743.6	685.8	57.80	12.866	
8,700.0	7,261.3	7,376.6	7,243.7	44.0	17.6	-89.18	61.7	1,468.7	693.8	633.4	60.34	11.498	
8,800.0	7,261.1	7,376.8	7,243.9	46.5	17.6	-89.20	61.7	1,468.7	655.6	592.6	62.91	10.420	
8,900.0	7,260.9	7,376.9	7,244.1	49.1	17.6	-89.21	61.7	1,468.7	631.0	565.5	65.51	9.632	
9,000.0	7,260.6	7,377.1	7,244.3	51.8	17.6	-89.23	61.7	1,468.7	621.8	553.6	68.14	9.125	
9,007.9	7,260.6	7,377.1	7,244.3	52.0	17.6	-89.23	61.7	1,468.7	621.7	553.4	68.35	9.096 CC, ES	
9,100.0	7,260.4	7,377.3	7,244.5	54.4	17.6	-89.25	61.8	1,468.7	628.5	557.7	70.78	8.880	
9,200.0	7,260.2	7,377.5	7,244.7	57.1	17.6	-89.27	61.8	1,468.7	650.7	577.3	73.43	8.861 SF	
9,300.0	7,260.0	7,377.7	7,244.8	59.7	17.6	-89.28	61.8	1,468.7	686.9	610.8	76.10	9.026	
9,400.0	7,259.8	7,377.9	7,245.0	62.4	17.7	-89.30	61.8	1,468.7	735.0	656.2	78.78	9.329	
9,500.0	7,259.6	7,378.1	7,245.2	65.1	17.7	-89.32	61.8	1,468.7	792.9	711.4	81.48	9.731	
9,600.0	7,259.4	7,378.3	7,245.4	67.8	17.7	-89.34	61.8	1,468.7	858.5	774.3	84.18	10.199	
9,700.0	7,259.2	7,378.4	7,245.6	70.5	17.7	-89.35	61.8	1,468.7	930.3	843.4	86.89	10.707	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman Trust 29O-432
Project:	SEC.29-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (RKB - 15')
Reference Site:	Wiedeman Trust 29O-HZ Pad Sec.29-T4N-R66W	MD Reference:	WELL @ 4778.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman Trust 29O-432	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (7-09-14)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Pad Sec.29-T4-R66W - Melissa 1 (Exist.) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)		
14,100.0	7,250.0	7,220.2	7,219.2	192.5	13.8	-93.69	-540.9	7,528.5	967.9	762.0	205.88	4.701	
14,200.0	7,249.8	7,220.1	7,219.0	195.3	13.8	-93.24	-540.9	7,528.5	868.0	659.2	208.76	4.158	
14,300.0	7,249.5	7,219.9	7,218.9	198.1	13.8	-92.79	-540.9	7,528.5	768.0	556.4	211.63	3.629	
14,400.0	7,249.3	7,219.8	7,218.7	200.8	13.8	-92.34	-540.9	7,528.5	668.0	453.5	214.48	3.115	
14,500.0	7,249.1	7,219.6	7,218.6	203.6	13.8	-91.88	-540.9	7,528.5	568.1	350.7	217.33	2.614	
14,600.0	7,248.9	7,219.5	7,218.4	206.4	13.8	-91.43	-540.9	7,528.5	468.1	248.0	220.16	2.126	
14,700.0	7,248.7	7,219.3	7,218.3	209.2	13.8	-90.97	-540.9	7,528.5	368.2	145.2	222.99	1.651	
14,800.0	7,248.5	7,219.2	7,218.1	212.0	13.8	-90.52	-540.9	7,528.5	268.4	42.6	225.80	1.189 Level 2	
14,900.0	7,248.3	7,219.0	7,218.0	214.8	13.8	-90.06	-540.9	7,528.5	168.8	-59.8	228.60	0.738 Level 1	
15,000.0	7,248.1	7,218.9	7,217.8	217.6	13.8	-89.61	-540.9	7,528.5	70.4	-161.0	231.39	0.304 Level 1	
15,036.3	7,248.0	7,218.8	7,217.8	218.6	13.8	-89.44	-540.9	7,528.5	36.7	-195.7	232.39	0.158 Level 1, CC, ES, SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman Trust 29O-432
Project:	SEC.29-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (RKB - 15')
Reference Site:	Wiedeman Trust 29O-HZ Pad Sec.29-T4N-R66W	MD Reference:	WELL @ 4778.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman Trust 29O-432	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (7-09-14)	Offset TVD Reference:	Offset Datum

Offset Design		Existing Wells Pad Sec.29-T4-R66W - Randall 11-28 (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	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor					
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)						
11,700.0	7,255.0	7,239.3	7,233.9	125.6	13.4	90.58	-1,029.9	5,038.2	995.4	856.6	138.78	7.172					
11,800.0	7,254.8	7,238.8	7,233.4	128.3	13.4	90.52	-1,029.9	5,038.2	908.5	766.9	141.56	6.417					
11,900.0	7,254.6	7,238.3	7,232.9	131.1	13.4	90.45	-1,029.9	5,038.2	824.5	680.2	144.34	5.712					
12,000.0	7,254.4	7,237.7	7,232.4	133.9	13.4	90.39	-1,029.9	5,038.2	744.6	597.4	147.13	5.061					
12,100.0	7,254.1	7,237.2	7,231.8	136.7	13.4	90.33	-1,029.9	5,038.2	670.0	520.1	149.91	4.469					
12,200.0	7,253.9	7,236.7	7,231.3	139.5	13.4	90.26	-1,029.9	5,038.2	602.8	450.1	152.70	3.948					
12,300.0	7,253.7	7,236.2	7,230.8	142.3	13.4	90.20	-1,029.9	5,038.2	545.8	390.3	155.48	3.511					
12,400.0	7,253.5	7,235.6	7,230.3	145.0	13.4	90.14	-1,029.9	5,038.2	502.4	344.2	158.27	3.175					
12,500.0	7,253.3	7,235.1	7,229.7	147.8	13.4	90.07	-1,029.9	5,038.2	476.4	315.3	161.05	2.958					
12,577.4	7,253.1	7,234.7	7,229.3	150.0	13.4	90.02	-1,029.9	5,038.2	470.1	306.8	163.21	2.880 CC					
12,600.0	7,253.1	7,234.6	7,229.2	150.6	13.4	90.01	-1,029.9	5,038.2	470.6	306.8	163.84	2.872 ES, SF					
12,700.0	7,252.9	7,234.1	7,228.7	153.4	13.3	89.94	-1,029.9	5,038.2	485.8	319.1	166.63	2.915					
12,800.0	7,252.7	7,233.5	7,228.1	156.2	13.3	89.88	-1,029.9	5,038.2	520.1	350.7	169.42	3.070					
12,900.0	7,252.5	7,233.0	7,227.6	159.0	13.3	89.81	-1,029.9	5,038.2	570.1	397.9	172.21	3.311					
13,000.0	7,252.3	7,232.4	7,227.1	161.8	13.3	89.75	-1,029.9	5,038.2	632.1	457.1	175.00	3.612					
13,100.0	7,252.1	7,231.9	7,226.5	164.5	13.3	89.68	-1,030.0	5,038.2	702.9	525.1	177.79	3.953					
13,200.0	7,251.8	7,231.4	7,226.0	167.3	13.3	89.61	-1,030.0	5,038.2	780.1	599.5	180.58	4.320					
13,300.0	7,251.6	7,230.8	7,225.4	170.1	13.3	89.55	-1,030.0	5,038.2	862.0	678.6	183.37	4.701					
13,400.0	7,251.4	7,230.3	7,224.9	172.9	13.3	89.48	-1,030.0	5,038.2	947.4	761.2	186.16	5.089					

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman Trust 29O-432
Project:	SEC.29-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (RKB - 15')
Reference Site:	Wiedeman Trust 29O-HZ Pad Sec.29-T4N-R66W	MD Reference:	WELL @ 4778.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman Trust 29O-432	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (7-09-14)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Pad Sec.29-T4-R66W - Wiedeman 29-1 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 100-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		
1,400.0	1,399.8	1,386.3	1,386.2	3.0	2.8	2.81	-690.5	-729.9	997.8	992.0	5.76	173.236		
1,500.0	1,499.5	1,484.6	1,484.6	3.2	3.0	2.88	-689.9	-730.2	988.9	982.7	6.14	160.999		
1,600.0	1,598.7	1,582.7	1,582.7	3.4	3.2	2.97	-689.4	-730.6	976.7	970.1	6.52	149.719		
1,700.0	1,697.5	1,683.9	1,683.8	3.6	3.4	3.09	-688.7	-731.1	961.0	954.0	6.91	139.039		
1,713.0	1,710.3	1,697.1	1,697.1	3.7	3.5	3.11	-688.6	-731.2	958.6	951.7	6.96	137.694		
1,800.0	1,795.9	1,782.3	1,782.2	3.9	3.6	3.21	-687.8	-731.6	942.9	935.6	7.32	128.849		
1,900.0	1,894.3	1,881.0	1,881.0	4.2	3.8	3.33	-686.9	-732.1	924.9	917.1	7.74	119.567		
2,000.0	1,992.7	1,981.7	1,981.6	4.5	4.1	3.48	-685.7	-732.7	906.7	898.5	8.16	111.082		
2,100.0	2,091.1	2,080.0	2,079.9	4.9	4.3	3.64	-684.4	-733.1	888.4	879.8	8.59	103.422		
2,200.0	2,189.5	2,177.9	2,177.8	5.2	4.5	3.80	-683.0	-733.7	870.1	861.1	9.02	96.468		
2,300.0	2,287.9	2,275.8	2,275.7	5.6	4.7	3.97	-681.7	-734.2	851.8	842.4	9.45	90.121		
2,400.0	2,386.3	2,373.1	2,373.0	5.9	4.9	4.15	-680.4	-734.9	833.7	823.8	9.89	84.323		
2,500.0	2,484.7	2,470.9	2,470.8	6.3	5.1	4.33	-679.3	-735.5	815.6	805.3	10.33	78.995		
2,600.0	2,583.1	2,570.8	2,570.7	6.7	5.3	4.54	-678.0	-736.2	797.5	786.8	10.77	74.045		
2,700.0	2,681.5	2,670.1	2,670.0	7.1	5.5	4.75	-676.6	-736.8	779.3	768.0	11.22	69.462		
2,800.0	2,779.9	2,766.8	2,766.6	7.4	5.7	4.98	-675.1	-737.4	761.0	749.3	11.66	65.255		
2,900.0	2,878.3	2,866.2	2,866.1	7.8	5.9	5.22	-673.7	-738.2	742.9	730.8	12.11	61.331		
3,000.0	2,976.7	2,964.2	2,964.0	8.2	6.1	5.49	-672.0	-738.9	724.6	712.1	12.56	57.673		
3,100.0	3,075.1	3,061.7	3,061.5	8.6	6.3	5.78	-670.3	-739.9	706.5	693.5	13.02	54.283		
3,200.0	3,173.5	3,161.2	3,161.0	9.0	6.5	6.10	-668.6	-740.8	688.4	674.9	13.47	51.098		
3,300.0	3,271.9	3,263.2	3,263.0	9.4	6.8	6.47	-666.3	-741.8	670.0	656.1	13.94	48.066		
3,400.0	3,370.3	3,364.6	3,364.3	9.8	7.0	6.86	-663.7	-742.2	651.0	636.6	14.41	45.190		
3,500.0	3,468.7	3,466.4	3,466.1	10.2	7.2	7.22	-661.1	-741.9	631.5	616.7	14.87	42.462		
3,600.0	3,567.1	3,568.4	3,568.0	10.6	7.4	7.54	-658.7	-740.6	611.4	596.1	15.34	39.858		
3,700.0	3,665.5	3,665.1	3,664.7	11.0	7.6	7.77	-657.0	-738.5	591.0	575.2	15.80	37.419		
3,800.0	3,763.9	3,759.6	3,759.2	11.4	7.8	7.96	-656.0	-736.6	571.1	554.9	16.24	35.160		
3,900.0	3,862.3	3,856.7	3,856.3	11.8	8.0	8.19	-655.1	-735.1	551.7	535.0	16.70	33.036		
4,000.0	3,960.7	3,951.6	3,951.2	12.2	8.2	8.44	-654.2	-733.8	532.4	515.3	17.16	31.036		
4,100.0	4,059.1	4,044.4	4,044.0	12.6	8.4	8.78	-653.3	-733.6	514.2	496.6	17.61	29.198		
4,200.0	4,157.5	4,138.4	4,138.0	13.0	8.6	9.26	-652.2	-734.8	496.8	478.8	18.07	27.491		
4,300.0	4,255.9	4,234.1	4,233.6	13.4	8.8	10.00	-650.2	-737.6	480.3	461.8	18.55	25.892		
4,400.0	4,354.3	4,332.3	4,331.7	13.8	9.0	10.94	-647.3	-741.4	464.2	445.1	19.05	24.366		
4,500.0	4,452.7	4,431.3	4,430.5	14.2	9.2	12.04	-643.9	-745.4	448.1	428.5	19.56	22.908		
4,600.0	4,551.1	4,531.1	4,530.2	14.6	9.4	13.24	-640.3	-749.4	432.0	411.9	20.09	21.507		
4,700.0	4,649.5	4,633.0	4,631.9	15.0	9.7	14.54	-636.4	-752.9	415.5	394.9	20.63	20.144		
4,800.0	4,747.9	4,735.7	4,734.5	15.4	9.9	15.99	-631.8	-755.4	398.0	376.9	21.19	18.788		
4,900.0	4,846.3	4,834.7	4,833.4	15.8	10.1	17.46	-627.2	-757.1	380.2	358.4	21.75	17.480		
5,000.0	4,944.7	4,932.7	4,931.3	16.3	10.3	19.00	-623.0	-758.5	362.5	340.2	22.32	16.238		
5,100.0	5,043.1	5,031.1	5,029.6	16.7	10.5	20.64	-619.1	-759.7	345.0	322.1	22.92	15.056		
5,200.0	5,141.5	5,130.3	5,128.7	17.1	10.7	22.38	-615.5	-760.5	327.5	304.0	23.53	13.919		
5,300.0	5,239.9	5,228.8	5,227.2	17.5	11.0	24.24	-612.1	-760.8	310.1	286.0	24.17	12.831		
5,400.0	5,338.3	5,327.5	5,325.8	17.9	11.2	26.20	-609.2	-760.8	292.9	268.0	24.83	11.793		
5,500.0	5,436.7	5,425.8	5,424.1	18.3	11.4	28.34	-606.5	-760.4	275.7	250.2	25.53	10.801		
5,553.9	5,489.7	5,478.2	5,476.5	18.5	11.5	29.61	-605.0	-760.2	266.7	240.8	25.92	10.290		
5,600.0	5,535.2	5,523.1	5,521.3	18.7	11.6	30.65	-603.7	-760.2	259.4	233.2	26.25	9.881		
5,700.0	5,634.1	5,620.4	5,618.6	18.9	11.8	32.90	-600.6	-760.4	246.5	219.6	26.94	9.152		
5,800.0	5,733.5	5,718.4	5,716.5	19.2	12.0	34.83	-598.2	-761.2	237.5	210.0	27.56	8.621		
5,900.0	5,833.2	5,820.1	5,818.3	19.4	12.2	36.04	-597.4	-761.4	231.4	203.3	28.08	8.241		
6,000.0	5,933.1	5,922.5	5,920.7	19.5	12.4	36.54	-597.5	-760.3	227.0	198.6	28.49	7.968		
6,066.9	6,000.0	5,990.5	5,988.7	19.6	12.6	-99.65	-597.6	-759.0	225.2	195.0	30.21	7.454		
6,100.0	6,033.1	6,024.2	6,022.4	19.7	12.6	-99.71	-597.7	-758.2	224.5	194.1	30.34	7.399		

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 Trust 29O-432
Project:	SEC.29-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (RKB - 15')
Reference Site:	Wiedeman Trust 29O-HZ Pad Sec.29-T4N-R66W	MD Reference:	WELL @ 4778.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman Trust 29O-432	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (7-09-14)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Pad Sec.29-T4-R66W - Wiedeman 29-1 (Exist.) - Wellbore #1 - Wellbore #1												Offset Site Error: 0.0 ft	
Survey Program: 100-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
6,200.0	6,133.1	6,126.1	6,124.2	19.8	12.9	-99.92	-598.1	-755.3	221.7	191.0	30.72	7.218	
6,300.0	6,233.1	6,228.1	6,226.1	19.9	13.1	-100.21	-598.5	-751.3	218.0	186.9	31.10	7.008	
6,400.0	6,333.1	6,327.2	6,325.1	20.0	13.3	-100.25	-597.9	-747.2	213.7	182.3	31.46	6.794	
6,500.0	6,433.1	6,422.4	6,420.3	20.2	13.5	-100.20	-597.3	-744.8	211.2	179.4	31.80	6.642	
6,566.2	6,499.3	6,486.8	6,484.7	20.3	13.6	-100.17	-597.1	-744.2	210.5	178.5	32.03	6.572 ES, SF	
6,571.0	6,504.1	6,491.5	6,489.4	20.3	13.6	169.83	-597.1	-744.1	210.5	180.0	30.49	6.903 CC	
6,600.0	6,533.1	6,519.7	6,517.6	20.3	13.7	169.87	-597.0	-744.0	211.1	180.5	30.53	6.913	
6,650.0	6,582.9	6,568.3	6,566.2	20.3	13.8	170.03	-596.9	-744.1	214.9	184.3	30.52	7.040	
6,700.0	6,632.4	6,616.8	6,614.7	20.4	13.9	170.27	-596.8	-744.4	222.2	191.8	30.42	7.304	
6,750.0	6,681.3	6,665.7	6,663.6	20.4	14.0	170.60	-596.8	-744.8	232.7	202.5	30.21	7.702	
6,800.0	6,729.5	6,713.8	6,711.7	20.3	14.1	170.99	-596.6	-745.1	246.4	216.5	29.91	8.238	
6,850.0	6,776.6	6,760.7	6,758.6	20.3	14.2	171.41	-596.5	-745.5	263.2	233.7	29.50	8.920	
6,900.0	6,822.6	6,806.4	6,804.3	20.2	14.3	171.82	-596.3	-745.9	283.0	254.0	29.00	9.761	
6,950.0	6,867.2	6,850.1	6,848.0	20.2	14.3	172.21	-596.1	-746.3	305.9	277.5	28.39	10.774	
7,000.0	6,910.2	6,892.1	6,890.0	20.1	14.4	172.56	-595.9	-746.8	331.7	304.0	27.69	11.978	
7,050.0	6,951.4	6,933.9	6,931.8	20.0	14.5	172.90	-595.6	-747.3	360.3	333.4	26.92	13.385	
7,100.0	6,990.7	6,974.4	6,972.3	19.9	14.6	173.19	-595.4	-747.7	391.4	365.3	26.07	15.012	
7,150.0	7,027.9	7,012.6	7,010.5	19.9	14.7	173.42	-595.1	-747.9	424.8	399.6	25.16	16.882	
7,200.0	7,062.8	7,048.0	7,045.8	19.8	14.8	173.57	-594.7	-748.0	460.5	436.3	24.21	19.024	
7,250.0	7,095.4	7,080.9	7,078.8	19.7	14.8	173.66	-594.4	-748.1	498.4	475.2	23.23	21.460	
7,300.0	7,125.3	7,111.7	7,109.6	19.7	14.9	173.67	-594.1	-748.1	538.4	516.1	22.24	24.206	
7,350.0	7,152.6	7,140.6	7,138.4	19.6	15.0	173.59	-593.8	-748.1	580.1	558.9	21.28	27.264	
7,400.0	7,177.1	7,166.7	7,164.5	19.6	15.0	173.40	-593.5	-748.0	623.5	603.2	20.37	30.618	
7,450.0	7,198.7	7,189.9	7,187.8	19.7	15.1	173.05	-593.2	-747.9	668.4	648.9	19.54	34.213	
7,500.0	7,217.3	7,209.5	7,207.3	19.8	15.1	172.44	-593.0	-747.7	714.6	695.8	18.84	37.940	
7,550.0	7,232.8	7,225.3	7,223.1	20.0	15.1	171.44	-592.8	-747.6	762.0	743.6	18.32	41.595	
7,600.0	7,245.2	7,237.9	7,235.8	20.4	15.2	169.74	-592.7	-747.5	810.3	792.2	18.08	44.815	
7,650.0	7,254.4	7,247.5	7,245.3	20.9	15.2	166.57	-592.6	-747.4	859.3	840.9	18.35	46.832	
7,700.0	7,260.4	7,253.8	7,251.7	21.6	15.2	159.20	-592.5	-747.4	908.8	888.8	20.08	45.267	
7,750.0	7,263.1	7,256.9	7,254.8	22.4	15.2	130.66	-592.5	-747.3	958.7	928.8	29.90	32.067	
7,767.8	7,263.2	7,257.2	7,255.1	22.7	15.2	100.09	-592.5	-747.3	976.5	939.3	37.14	26.294	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman Trust 29O-432
Project:	SEC.29-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (RKB - 15')
Reference Site:	Wiedeman Trust 29O-HZ Pad Sec.29-T4N-R66W	MD Reference:	WELL @ 4778.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman Trust 29O-432	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (7-09-14)	Offset TVD Reference:	Offset Datum

Offset Design		Wiedeman 29K-HZ Pad Sec.29-T4N-R66W - Wiedeman 29K-323 - Wellbore #1 - Plan #3 (4-24-14)											Offset Site Error:	0.0 ft
Survey Program: 0-MWWD													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		
2,300.0	2,287.9	2,472.4	2,455.1	5.6	6.7	30.40	-394.2	-1,032.1	986.0	975.6	10.42	94.636		
2,400.0	2,386.3	2,566.6	2,547.8	5.9	7.0	30.98	-388.9	-1,016.6	953.6	942.7	10.92	87.354		
2,500.0	2,484.7	2,660.7	2,640.5	6.3	7.4	31.60	-383.7	-1,001.1	921.3	909.9	11.42	80.651		
2,600.0	2,583.1	2,754.9	2,733.3	6.7	7.8	32.26	-378.4	-985.7	889.2	877.2	11.94	74.470		
2,700.0	2,681.5	2,849.0	2,826.0	7.1	8.1	32.97	-373.1	-970.2	857.1	844.6	12.47	68.758		
2,800.0	2,779.9	2,943.2	2,918.7	7.4	8.5	33.74	-367.9	-954.7	825.2	812.2	13.00	63.469		
2,900.0	2,878.3	3,037.3	3,011.4	7.8	8.8	34.56	-362.6	-939.2	793.4	779.8	13.55	58.562		
3,000.0	2,976.7	3,131.5	3,104.2	8.2	9.2	35.46	-357.3	-923.7	761.8	747.7	14.11	54.002		
3,100.0	3,075.1	3,225.7	3,196.9	8.6	9.6	36.43	-352.0	-908.2	730.3	715.6	14.68	49.757		
3,200.0	3,173.5	3,319.8	3,289.6	9.0	9.9	37.48	-346.8	-892.8	699.1	683.8	15.26	45.799		
3,300.0	3,271.9	3,414.0	3,382.3	9.4	10.3	38.63	-341.5	-877.3	668.1	652.2	15.87	42.103		
3,400.0	3,370.3	3,508.1	3,475.1	9.8	10.7	39.89	-336.2	-861.8	637.4	620.9	16.49	38.648		
3,500.0	3,468.7	3,602.3	3,567.8	10.2	11.0	41.28	-331.0	-846.3	607.0	589.8	17.14	35.416		
3,600.0	3,567.1	3,696.4	3,660.5	10.6	11.4	42.80	-325.7	-830.8	576.9	559.1	17.81	32.391		
3,700.0	3,665.5	3,790.6	3,753.2	11.0	11.8	44.49	-320.4	-815.3	547.3	528.8	18.52	29.560		
3,800.0	3,763.9	3,884.8	3,846.0	11.4	12.1	46.37	-315.2	-799.9	518.2	498.9	19.26	26.910		
3,900.0	3,862.3	3,978.9	3,938.7	11.8	12.5	48.45	-309.9	-784.4	489.7	469.6	20.04	24.434		
4,000.0	3,960.7	4,073.1	4,031.4	12.2	12.9	50.78	-304.6	-768.9	461.8	441.0	20.87	22.125		
4,100.0	4,059.1	4,167.2	4,124.1	12.6	13.2	53.40	-299.3	-753.4	434.8	413.1	21.76	19.978		
4,200.0	4,157.5	4,261.4	4,216.9	13.0	13.6	56.33	-294.1	-737.9	408.8	386.1	22.72	17.992		
4,300.0	4,255.9	4,355.5	4,309.6	13.4	14.0	59.63	-288.8	-722.4	384.0	360.2	23.75	16.169		
4,400.0	4,354.3	4,449.7	4,402.3	13.8	14.4	63.35	-283.5	-706.9	360.6	335.7	24.85	14.511		
4,500.0	4,452.7	4,543.9	4,495.1	14.2	14.7	67.53	-278.3	-691.5	338.9	312.9	26.02	13.024		
4,600.0	4,551.1	4,638.0	4,587.8	14.6	15.1	72.20	-273.0	-676.0	319.4	292.1	27.26	11.715		
4,700.0	4,649.5	4,732.2	4,680.5	15.0	15.5	77.40	-267.7	-660.5	302.3	273.8	28.54	10.594		
4,800.0	4,747.9	4,826.3	4,773.2	15.4	15.8	83.10	-262.5	-645.0	288.2	258.4	29.81	9.667		
4,900.0	4,846.3	4,920.5	4,866.0	15.8	16.2	89.27	-257.2	-629.5	277.4	246.4	31.02	8.943		
5,000.0	4,944.7	5,014.7	4,958.7	16.3	16.6	95.80	-251.9	-614.0	270.5	238.4	32.12	8.422		
5,100.0	5,043.1	5,108.8	5,051.4	16.7	17.0	102.54	-246.6	-598.6	267.7	234.6	33.04	8.102		
5,117.6	5,060.4	5,125.4	5,067.7	16.7	17.0	103.73	-245.7	-595.8	267.6	234.4	33.17	8.066		
5,200.0	5,141.5	5,203.0	5,144.1	17.1	17.3	109.31	-241.4	-583.1	269.0	235.3	33.73	7.975		
5,300.0	5,239.9	5,297.1	5,236.9	17.5	17.7	115.93	-236.1	-567.6	274.5	240.3	34.20	8.027		
5,400.0	5,338.3	5,391.3	5,329.6	17.9	18.1	122.24	-230.8	-552.1	284.0	249.5	34.47	8.239		
5,500.0	5,436.7	5,485.9	5,422.7	18.3	18.4	128.12	-225.6	-536.6	297.0	262.4	34.57	8.591		
5,553.9	5,489.7	5,538.1	5,474.3	18.5	18.6	131.02	-222.9	-528.8	305.0	270.5	34.54	8.832		
5,600.0	5,535.2	5,583.5	5,519.2	18.7	18.7	133.34	-220.9	-522.8	312.1	277.6	34.50	9.046		
5,700.0	5,634.1	5,683.8	5,618.9	18.9	19.0	137.36	-217.1	-511.8	326.2	291.7	34.43	9.474		
5,800.0	5,733.5	5,786.5	5,721.3	19.2	19.2	140.14	-214.5	-504.0	337.5	303.0	34.45	9.796		
5,900.0	5,833.2	5,890.8	5,825.5	19.4	19.3	141.78	-213.0	-499.6	345.1	310.5	34.57	9.984		
6,000.0	5,933.1	5,994.5	5,929.1	19.5	19.5	142.40	-212.7	-498.7	348.7	313.9	34.79	10.024		
6,066.9	6,000.0	6,061.4	5,996.0	19.6	19.6	6.29	-212.7	-498.7	349.3	316.5	32.79	10.652		
6,100.0	6,033.1	6,094.5	6,029.1	19.7	19.6	6.29	-212.7	-498.7	349.3	316.4	32.90	10.617		
6,200.0	6,133.1	6,194.5	6,129.1	19.8	19.8	6.29	-212.7	-498.7	349.3	316.1	33.22	10.515		
6,300.0	6,233.1	6,294.5	6,229.1	19.9	19.9	6.29	-212.7	-498.7	349.3	315.8	33.55	10.414		
6,400.0	6,333.1	6,394.5	6,329.1	20.0	20.1	6.29	-212.7	-498.7	349.3	315.5	33.87	10.314		
6,500.0	6,433.1	6,507.6	6,442.3	20.2	20.2	6.30	-213.2	-498.7	349.0	314.8	34.22	10.201		
6,566.2	6,499.3	6,627.1	6,560.8	20.3	20.3	6.56	-227.0	-498.7	341.4	306.9	34.47	9.904		
6,600.0	6,533.1	6,685.7	6,617.8	20.3	20.4	-84.00	-240.6	-498.7	333.6	296.8	36.80	9.065		
6,650.0	6,582.9	6,767.7	6,695.5	20.3	20.4	-85.96	-266.7	-498.7	317.3	280.1	37.24	8.520		
6,700.0	6,632.4	6,842.7	6,763.7	20.4	20.4	-89.43	-297.8	-498.7	296.2	258.4	37.82	7.831		
6,750.0	6,681.3	6,910.1	6,822.2	20.4	20.4	-94.68	-331.3	-498.7	271.1	232.7	38.46	7.049		

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 Trust 29O-432
Project:	SEC.29-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (RKB - 15')
Reference Site:	Wiedeman Trust 29O-HZ Pad Sec.29-T4N-R66W	MD Reference:	WELL @ 4778.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman Trust 29O-432	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (7-09-14)	Offset TVD Reference:	Offset Datum

Offset Design		Wiedeman 29K-HZ Pad Sec.29-T4N-R66W - Wiedeman 29K-323 - Wellbore #1 - Plan #3 (4-24-14)										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			
6,800.0	6,729.5	6,969.8	6,871.3	20.3	20.4	-101.98	-365.2	-498.7	243.3	204.3	39.02	6.235			
6,850.0	6,776.6	7,022.3	6,912.2	20.3	20.4	-111.44	-398.1	-498.7	214.2	175.0	39.20	5.463			
6,900.0	6,822.6	7,068.0	6,945.9	20.2	20.4	-122.76	-429.0	-498.7	185.7	147.1	38.64	4.806			
6,950.0	6,867.2	7,107.9	6,973.7	20.2	20.4	-135.00	-457.5	-498.7	160.8	123.7	37.11	4.334			
7,000.0	6,910.2	7,142.5	6,996.7	20.1	20.5	-146.92	-483.4	-498.7	143.9	109.0	34.92	4.122 SF			
7,038.6	6,942.2	7,166.0	7,011.6	20.0	20.5	-155.28	-501.6	-498.7	139.4	106.4	33.08	4.215 CC, ES			
7,050.0	6,951.4	7,172.5	7,015.6	20.0	20.5	-157.57	-506.7	-498.7	139.8	107.3	32.54	4.298			
7,100.0	6,990.7	7,198.6	7,031.3	19.9	20.5	-166.64	-527.5	-498.7	151.2	120.9	30.26	4.996			
7,150.0	7,027.9	7,221.2	7,044.3	19.9	20.5	-174.32	-546.0	-498.7	175.9	147.6	28.34	6.207			
7,200.0	7,062.8	7,240.8	7,055.1	19.8	20.6	179.01	-562.3	-498.7	210.0	183.2	26.76	7.845			
7,250.0	7,095.4	7,257.7	7,064.2	19.7	20.6	172.87	-576.6	-498.7	249.9	224.4	25.56	9.777			
7,300.0	7,125.3	7,272.3	7,071.7	19.7	20.6	166.76	-589.1	-498.7	293.6	268.8	24.82	11.828			
7,350.0	7,152.6	7,284.8	7,077.9	19.6	20.6	160.06	-600.0	-498.7	339.6	314.9	24.77	13.713			
7,400.0	7,177.1	7,295.4	7,083.1	19.6	20.7	151.86	-609.3	-498.7	387.2	361.4	25.85	14.979			
7,450.0	7,198.7	7,304.4	7,087.4	19.7	20.7	140.73	-617.1	-498.7	435.8	407.0	28.75	15.159			
7,500.0	7,217.3	7,311.8	7,090.8	19.8	20.7	124.34	-623.7	-498.7	484.9	451.0	33.88	14.313			
7,550.0	7,232.8	7,317.8	7,093.6	20.0	20.7	100.79	-629.0	-498.7	534.4	495.1	39.31	13.595			
7,600.0	7,245.2	7,322.4	7,095.7	20.4	20.7	73.94	-633.2	-498.7	584.0	544.2	39.77	14.685			
7,650.0	7,254.4	7,325.8	7,097.2	20.9	20.7	52.25	-636.2	-498.7	633.5	598.3	35.24	17.979			
7,700.0	7,260.4	7,328.0	7,098.1	21.6	20.7	37.87	-638.1	-498.7	682.8	652.5	30.29	22.542			
7,750.0	7,263.1	7,328.9	7,098.6	22.4	20.7	28.53	-639.0	-498.7	731.7	705.0	26.65	27.452			
7,767.8	7,263.2	7,329.0	7,098.6	22.7	20.7	26.01	-639.0	-498.7	749.0	723.3	25.68	29.164			
7,800.0	7,263.2	7,329.0	7,098.6	23.3	20.7	26.00	-639.0	-498.7	780.3	754.3	25.95	30.069			
7,900.0	7,262.9	7,328.9	7,098.6	25.1	20.7	25.98	-638.9	-498.7	877.9	851.1	26.84	32.712			
8,000.0	7,262.7	7,328.8	7,098.5	27.2	20.7	25.96	-638.9	-498.7	976.0	948.2	27.79	35.117			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman Trust 29O-432
Project:	SEC.29-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (RKB - 15')
Reference Site:	Wiedeman Trust 29O-HZ Pad Sec.29-T4N-R66W	MD Reference:	WELL @ 4778.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman Trust 29O-432	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (7-09-14)	Offset TVD Reference:	Offset Datum

Offset Design Wiedeman 29K-HZ Pad Sec.29-T4N-R66W - Wiedeman 29K-403 - Wellbore #1 - Plan #2 (4-24-14)													Offset Site Error:	0.0ft
Survey Program: 0-MWD													Offset Well Error:	0.0ft
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		
2,800.0	2,779.9	2,879.6	2,870.8	7.4	7.0	36.66	-354.1	-1,137.9	993.4	980.4	12.98	76.521		
2,900.0	2,878.3	2,975.5	2,966.1	7.8	7.3	37.59	-347.3	-1,129.9	969.8	956.2	13.55	71.572		
3,000.0	2,976.7	3,071.4	3,061.4	8.2	7.5	38.58	-340.4	-1,122.0	946.4	932.3	14.13	66.985		
3,100.0	3,075.1	3,167.2	3,156.7	8.6	7.8	39.61	-333.6	-1,114.1	923.4	908.7	14.72	62.727		
3,200.0	3,173.5	3,263.1	3,252.0	9.0	8.1	40.70	-326.8	-1,106.1	900.7	885.3	15.33	58.770		
3,300.0	3,271.9	3,359.0	3,347.3	9.4	8.4	41.83	-319.9	-1,098.2	878.3	862.3	15.94	55.088		
3,400.0	3,370.3	3,454.9	3,442.6	9.8	8.7	43.03	-313.1	-1,090.3	856.2	839.7	16.57	51.660		
3,500.0	3,468.7	3,550.7	3,537.9	10.2	8.9	44.28	-306.3	-1,082.3	834.6	817.3	17.22	48.465		
3,600.0	3,567.1	3,646.6	3,633.2	10.6	9.2	45.60	-299.4	-1,074.4	813.3	795.4	17.88	45.486		
3,700.0	3,665.5	3,742.5	3,728.5	11.0	9.5	46.99	-292.6	-1,066.5	792.5	774.0	18.56	42.708		
3,800.0	3,763.9	3,838.4	3,823.8	11.4	9.8	48.45	-285.8	-1,058.5	772.2	753.0	19.25	40.118		
3,900.0	3,862.3	3,934.2	3,919.1	11.8	10.1	49.98	-278.9	-1,050.6	752.5	732.5	19.96	37.702		
4,000.0	3,960.7	4,030.1	4,014.4	12.2	10.3	51.59	-272.1	-1,042.7	733.2	712.6	20.68	35.450		
4,100.0	4,059.1	4,126.0	4,109.7	12.6	10.6	53.28	-265.3	-1,034.7	714.7	693.2	21.43	33.354		
4,200.0	4,157.5	4,221.9	4,205.0	13.0	10.9	55.05	-258.4	-1,026.8	696.7	674.5	22.19	31.404		
4,300.0	4,255.9	4,317.7	4,300.3	13.4	11.2	56.91	-251.6	-1,018.9	679.5	656.5	22.96	29.593		
4,400.0	4,354.3	4,413.6	4,395.6	13.8	11.5	58.86	-244.8	-1,010.9	663.1	639.3	23.75	27.914		
4,500.0	4,452.7	4,509.5	4,490.9	14.2	11.8	60.90	-237.9	-1,003.0	647.5	622.9	24.56	26.362		
4,600.0	4,551.1	4,605.4	4,586.2	14.6	12.1	63.04	-231.1	-995.1	632.7	607.4	25.38	24.930		
4,700.0	4,649.5	4,701.2	4,681.5	15.0	12.3	65.26	-224.3	-987.1	619.0	592.8	26.21	23.616		
4,800.0	4,747.9	4,788.7	4,768.6	15.4	12.6	67.28	-218.8	-980.8	606.9	579.9	26.97	22.501		
4,900.0	4,846.3	4,877.1	4,856.8	15.8	12.7	69.16	-215.0	-976.4	597.1	569.4	27.68	21.570		
5,000.0	4,944.7	4,966.7	4,946.3	16.3	12.9	70.87	-213.0	-974.1	589.4	561.0	28.36	20.783		
5,100.0	5,043.1	5,060.5	5,040.1	16.7	13.1	72.47	-212.7	-973.7	583.4	554.4	29.02	20.104		
5,200.0	5,141.5	5,158.9	5,138.5	17.1	13.2	74.13	-212.7	-973.7	578.2	548.5	29.70	19.466		
5,300.0	5,239.9	5,257.3	5,236.9	17.5	13.4	75.81	-212.7	-973.7	573.5	543.2	30.39	18.871		
5,400.0	5,338.3	5,355.7	5,335.3	17.9	13.6	77.53	-212.7	-973.7	569.4	538.3	31.08	18.322		
5,500.0	5,436.7	5,454.1	5,433.7	18.3	13.8	79.26	-212.7	-973.7	565.7	534.0	31.75	17.817		
5,553.9	5,489.7	5,507.1	5,486.7	18.5	13.9	80.20	-212.7	-973.7	564.0	531.9	32.12	17.561		
5,600.0	5,535.2	5,552.5	5,532.2	18.7	14.0	80.95	-212.7	-973.7	562.7	530.3	32.39	17.371		
5,700.0	5,634.1	5,651.5	5,631.1	18.9	14.2	82.36	-212.7	-973.7	560.6	527.7	32.90	17.038		
5,800.0	5,733.5	5,750.8	5,730.5	19.2	14.3	83.45	-212.7	-973.7	559.2	525.8	33.36	16.764		
5,900.0	5,833.2	5,850.5	5,830.2	19.4	14.5	84.20	-212.7	-973.7	558.4	524.6	33.77	16.536		
6,000.0	5,933.1	5,950.5	5,930.1	19.5	14.7	84.61	-212.7	-973.7	558.0	523.8	34.13	16.348		
6,066.9	6,000.0	6,017.4	5,997.0	19.6	14.9	-51.51	-212.7	-973.7	557.9	530.6	27.31	20.430		
6,100.0	6,033.1	6,050.5	6,030.1	19.7	14.9	-51.51	-212.7	-973.7	557.9	530.5	27.44	20.331		
6,200.0	6,133.1	6,150.5	6,130.1	19.8	15.1	-51.51	-212.7	-973.7	557.9	530.1	27.84	20.042		
6,300.0	6,233.1	6,250.5	6,230.1	19.9	15.3	-51.51	-212.7	-973.7	557.9	529.7	28.23	19.760		
6,400.0	6,333.1	6,350.5	6,330.1	20.0	15.5	-51.51	-212.7	-973.7	557.9	529.3	28.63	19.485		
6,500.0	6,433.1	6,450.5	6,430.1	20.2	15.7	-51.51	-212.7	-973.7	557.9	528.9	29.03	19.216		
6,566.2	6,499.3	6,516.6	6,496.3	20.3	15.8	-51.51	-212.7	-973.7	557.9	528.6	29.30	19.042 CC		
6,600.0	6,533.1	6,557.4	6,537.1	20.3	15.9	-141.56	-212.8	-973.7	558.4	522.4	36.09	15.475 ES, SF		
6,650.0	6,582.9	6,648.1	6,627.4	20.3	16.0	-142.56	-220.0	-973.7	559.0	522.9	36.11	15.482		
6,700.0	6,632.4	6,735.3	6,712.9	20.4	16.1	-144.70	-237.0	-973.7	558.8	522.9	35.92	15.559		
6,748.1	6,679.4	6,813.7	6,787.6	20.4	16.1	-147.58	-260.5	-973.7	558.6	523.0	35.53	15.722		
6,750.0	6,681.3	6,816.7	6,790.5	20.4	16.1	-147.71	-261.5	-973.7	558.6	523.1	35.51	15.731		
6,800.0	6,729.5	6,891.0	6,858.6	20.3	16.2	-151.24	-291.0	-973.7	559.2	524.3	34.89	16.031		
6,850.0	6,776.6	6,957.4	6,916.9	20.3	16.2	-154.96	-322.9	-973.7	561.8	527.8	34.08	16.486		
6,900.0	6,822.6	7,016.2	6,966.0	20.2	16.2	-158.61	-355.1	-973.7	567.4	534.2	33.13	17.125		
6,950.0	6,867.2	7,067.6	7,006.7	20.2	16.2	-162.01	-386.4	-973.7	576.6	544.5	32.08	17.973		
7,000.0	6,910.2	7,112.3	7,040.4	20.1	16.2	-165.08	-415.8	-973.7	590.2	559.2	30.96	19.061		

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 Trust 29O-432
Project:	SEC.29-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (RKB - 15')
Reference Site:	Wiedeman Trust 29O-HZ Pad Sec.29-T4N-R66W	MD Reference:	WELL @ 4778.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman Trust 29O-432	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (7-09-14)	Offset TVD Reference:	Offset Datum

Offset Design Wiedeman 29K-HZ Pad Sec.29-T4N-R66W - Wiedeman 29K-403 - Wellbore #1 - Plan #2 (4-24-14)													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)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
7,050.0	6,951.4	7,151.1	7,068.2	20.0	16.2	-167.82	-442.9	-973.7	608.4	578.6	29.80	20.417		
7,100.0	6,990.7	7,184.7	7,091.2	19.9	16.2	-170.24	-467.4	-973.7	631.2	602.6	28.60	22.072		
7,150.0	7,027.9	7,213.7	7,110.1	19.9	16.3	-172.39	-489.4	-973.7	658.5	631.1	27.37	24.059		
7,200.0	7,062.8	7,238.7	7,125.7	19.8	16.3	-174.30	-508.9	-973.7	689.9	663.8	26.13	26.402		
7,250.0	7,095.4	7,260.2	7,138.7	19.7	16.3	-176.04	-526.1	-973.7	725.1	700.2	24.89	29.138		
7,300.0	7,125.3	7,278.7	7,149.4	19.7	16.3	-177.66	-541.2	-973.7	763.6	739.9	23.65	32.283		
7,350.0	7,152.6	7,294.5	7,158.2	19.6	16.3	-179.23	-554.2	-973.7	804.8	782.3	22.45	35.852		
7,400.0	7,177.1	7,307.8	7,165.5	19.6	16.4	-179.18	-565.4	-973.7	848.4	827.1	21.31	39.818		
7,450.0	7,198.7	7,319.0	7,171.5	19.7	16.4	-177.45	-574.9	-973.7	893.9	873.6	20.26	44.111		
7,500.0	7,217.3	7,328.3	7,176.3	19.8	16.4	-175.41	-582.8	-973.7	940.8	921.5	19.38	48.556		
7,550.0	7,232.8	7,335.7	7,180.1	20.0	16.4	-172.68	-589.2	-973.7	989.0	970.3	18.75	52.734		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman Trust 29O-432
Project:	SEC.29-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (RKB - 15')
Reference Site:	Wiedeman Trust 29O-HZ Pad Sec.29-T4N-R66W	MD Reference:	WELL @ 4778.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman Trust 29O-432	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (7-09-14)	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							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		
1,700.0	1,697.5	1,923.4	1,894.3	3.6	7.0	25.01	-395.7	-913.5	976.4	968.3	8.11	120.463		
1,713.0	1,710.3	1,935.5	1,906.2	3.7	7.1	25.08	-395.1	-911.0	971.7	963.6	8.16	119.128		
1,800.0	1,795.9	2,016.5	1,985.4	3.9	7.5	25.31	-391.3	-894.6	940.2	931.7	8.55	109.971		
1,900.0	1,894.3	2,109.7	2,076.5	4.2	7.9	25.60	-386.9	-875.7	904.1	895.1	9.01	100.325		
2,000.0	1,992.7	2,202.8	2,167.6	4.5	8.3	25.91	-382.5	-856.8	867.9	858.4	9.48	91.538		
2,100.0	2,091.1	2,295.9	2,258.7	4.9	8.7	26.24	-378.1	-837.9	831.8	821.8	9.96	83.520		
2,200.0	2,189.5	2,389.1	2,349.8	5.2	9.2	26.60	-373.8	-819.0	795.7	785.3	10.44	76.189		
2,300.0	2,287.9	2,482.2	2,440.9	5.6	9.6	27.00	-369.4	-800.0	759.6	748.7	10.93	69.473		
2,400.0	2,386.3	2,575.3	2,532.0	5.9	10.0	27.44	-365.0	-781.1	723.6	712.2	11.43	63.304		
2,500.0	2,484.7	2,668.5	2,623.1	6.3	10.4	27.93	-360.6	-762.2	687.6	675.7	11.93	57.626		
2,600.0	2,583.1	2,761.6	2,714.1	6.7	10.9	28.47	-356.2	-743.3	651.7	639.2	12.44	52.385		
2,700.0	2,681.5	2,854.7	2,805.2	7.1	11.3	29.07	-351.8	-724.4	615.8	602.8	12.95	47.538		
2,800.0	2,779.9	2,947.9	2,896.3	7.4	11.7	29.74	-347.5	-705.5	580.0	566.5	13.47	43.043		
2,900.0	2,878.3	3,041.0	2,987.4	7.8	12.1	30.50	-343.1	-686.6	544.2	530.2	14.00	38.867		
3,000.0	2,976.7	3,134.1	3,078.5	8.2	12.6	31.37	-338.7	-667.7	508.6	494.0	14.54	34.977		
3,100.0	3,075.1	3,227.3	3,169.6	8.6	13.0	32.37	-334.3	-648.8	473.1	458.0	15.09	31.346		
3,200.0	3,173.5	3,320.4	3,260.7	9.0	13.4	33.53	-329.9	-629.9	437.7	422.0	15.66	27.951		
3,300.0	3,271.9	3,413.5	3,351.8	9.4	13.9	34.89	-325.5	-611.0	402.5	386.2	16.25	24.770		
3,400.0	3,370.3	3,506.6	3,442.8	9.8	14.3	36.51	-321.2	-592.1	367.5	350.7	16.87	21.784		
3,500.0	3,468.7	3,599.8	3,533.9	10.2	14.7	38.46	-316.8	-573.2	332.9	315.4	17.54	18.979		
3,600.0	3,567.1	3,692.9	3,625.0	10.6	15.1	40.85	-312.4	-554.3	298.7	280.4	18.28	16.341		
3,700.0	3,665.5	3,786.0	3,716.1	11.0	15.6	43.84	-308.0	-535.3	265.1	245.9	19.12	13.862		
3,800.0	3,763.9	3,879.2	3,807.2	11.4	16.0	47.67	-303.6	-516.4	232.3	212.2	20.13	11.542		
3,900.0	3,862.3	3,972.3	3,898.3	11.8	16.4	52.67	-299.3	-497.5	200.8	179.4	21.38	9.390		
4,000.0	3,960.7	4,065.4	3,989.4	12.2	16.8	59.38	-294.9	-478.6	171.2	148.2	23.01	7.441		
4,100.0	4,059.1	4,158.6	4,080.5	12.6	17.3	68.52	-290.5	-459.7	144.8	119.7	25.13	5.762		
4,200.0	4,157.5	4,251.7	4,171.5	13.0	17.7	80.91	-286.1	-440.8	123.6	95.9	27.70	4.461		
4,300.0	4,255.9	4,344.8	4,262.6	13.4	18.1	96.77	-281.7	-421.9	110.6	80.4	30.17	3.665		
4,364.6	4,319.4	4,405.0	4,321.4	13.7	18.4	108.23	-278.9	-409.7	108.1	76.8	31.23	3.461 CC, ES		
4,400.0	4,354.3	4,438.0	4,353.7	13.8	18.5	114.57	-277.3	-403.0	108.8	77.3	31.52	3.452 SF		
4,500.0	4,452.7	4,531.1	4,444.8	14.2	19.0	131.26	-273.0	-384.1	118.8	87.4	31.36	3.787		
4,600.0	4,551.1	4,624.2	4,535.9	14.6	19.4	144.69	-268.6	-365.2	137.9	107.5	30.42	4.534		
4,700.0	4,649.5	4,717.4	4,627.0	15.0	19.8	154.71	-264.2	-346.3	163.1	133.6	29.47	5.533		
4,800.0	4,747.9	4,810.5	4,718.1	15.4	20.3	162.04	-259.8	-327.4	191.9	163.1	28.81	6.661		
4,900.0	4,846.3	4,903.6	4,809.2	15.8	20.7	167.48	-255.4	-308.5	222.9	194.5	28.43	7.841		
5,000.0	4,944.7	4,996.8	4,900.2	16.3	21.1	171.60	-251.0	-289.6	255.4	227.1	28.28	9.030		
5,100.0	5,043.1	5,089.9	4,991.3	16.7	21.5	174.81	-246.7	-270.7	288.8	260.5	28.31	10.203		
5,200.0	5,141.5	5,183.0	5,082.4	17.1	22.0	177.36	-242.3	-251.7	322.9	294.4	28.45	11.350		
5,300.0	5,239.9	5,276.2	5,173.5	17.5	22.4	179.42	-237.9	-232.8	357.4	328.7	28.67	12.465		
5,400.0	5,338.3	5,369.3	5,264.6	17.9	22.8	-178.87	-233.5	-213.9	392.3	363.3	28.96	13.545		
5,500.0	5,436.7	5,462.4	5,355.7	18.3	23.2	-177.44	-229.1	-195.0	427.4	398.1	29.30	14.589		
5,553.9	5,489.7	5,512.9	5,405.0	18.5	23.5	-176.76	-226.8	-184.8	446.4	416.9	29.49	15.137		
5,600.0	5,535.2	5,563.1	5,454.2	18.7	23.7	-176.19	-224.5	-175.1	462.0	432.3	29.73	15.542		
5,700.0	5,634.1	5,674.8	5,564.3	18.9	24.0	-175.22	-220.2	-156.4	491.2	461.0	30.20	16.265		
5,800.0	5,733.5	5,789.9	5,678.4	19.2	24.3	-174.55	-216.7	-141.6	513.7	483.1	30.65	16.761		
5,900.0	5,833.2	5,907.7	5,795.6	19.4	24.6	-174.13	-214.3	-131.0	529.4	498.3	31.07	17.036		
6,000.0	5,933.1	6,027.1	5,914.9	19.5	24.7	-173.90	-212.9	-125.2	537.9	506.5	31.46	17.100		
6,066.9	6,000.0	6,107.4	5,995.2	19.6	24.8	49.95	-212.7	-123.9	539.6	497.0	42.58	12.672		
6,100.0	6,033.1	6,141.3	6,029.1	19.7	24.9	49.95	-212.7	-123.9	539.6	497.0	42.67	12.648		
6,200.0	6,133.1	6,241.3	6,129.1	19.8	25.0	49.95	-212.7	-123.9	539.6	496.7	42.91	12.575		
6,300.0	6,233.1	6,341.3	6,229.1	19.9	25.1	49.95	-212.7	-123.9	539.6	496.5	43.16	12.502		

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 Trust 29O-432
Project:	SEC.29-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (RKB - 15')
Reference Site:	Wiedeman Trust 29O-HZ Pad Sec.29-T4N-R66W	MD Reference:	WELL @ 4778.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman Trust 29O-432	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (7-09-14)	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							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		
6,400.0	6,333.1	6,452.1	6,339.9	20.0	25.2	49.98	-213.0	-123.9	539.5	496.1	43.43	12.422		
6,500.0	6,433.1	6,630.6	6,516.0	20.2	25.3	52.18	-239.3	-123.9	530.1	486.3	43.78	12.107		
6,566.2	6,499.3	6,738.5	6,617.8	20.3	25.4	55.38	-274.8	-123.9	516.7	472.7	44.01	11.739		
6,600.0	6,533.1	6,789.3	6,663.8	20.3	25.4	-32.99	-296.3	-123.9	507.6	474.2	33.32	15.232		
6,650.0	6,582.9	6,858.2	6,723.6	20.3	25.4	-30.46	-330.4	-123.9	490.4	456.9	33.43	14.668		
6,700.0	6,632.4	6,919.6	6,774.3	20.4	25.4	-27.76	-365.3	-123.9	469.3	435.8	33.48	14.019		
6,750.0	6,681.3	6,973.9	6,816.5	20.4	25.4	-24.86	-399.3	-123.9	445.1	411.6	33.44	13.310		
6,800.0	6,729.5	7,021.5	6,851.5	20.3	25.4	-21.72	-431.6	-123.9	418.2	384.9	33.30	12.560		
6,850.0	6,776.6	7,063.1	6,880.4	20.3	25.4	-18.31	-461.5	-123.9	389.3	356.2	33.07	11.771		
6,900.0	6,822.6	7,099.4	6,904.2	20.2	25.4	-14.58	-488.9	-123.9	358.9	326.3	32.65	10.993		
6,950.0	6,867.2	7,131.0	6,923.9	20.2	25.4	-10.48	-513.7	-123.9	327.7	295.5	32.16	10.187		
7,000.0	6,910.2	7,158.6	6,940.2	20.1	25.5	-5.99	-535.9	-123.9	296.1	264.5	31.63	9.363		
7,050.0	6,951.4	7,182.6	6,953.7	20.0	25.5	-1.14	-555.7	-123.9	265.0	234.0	31.06	8.532		
7,100.0	6,990.7	7,203.6	6,965.0	19.9	25.5	3.99	-573.4	-123.9	235.4	204.9	30.56	7.704		
7,150.0	7,027.9	7,221.9	6,974.5	19.9	25.5	9.23	-589.0	-123.9	208.7	178.5	30.19	6.912		
7,200.0	7,062.8	7,237.8	6,982.4	19.8	25.6	14.35	-602.8	-123.9	186.7	156.7	30.00	6.224		
7,250.0	7,095.4	7,250.0	6,988.3	19.7	25.6	18.55	-613.5	-123.9	172.1	142.2	29.86	5.762		
7,298.1	7,124.2	7,263.1	6,994.4	19.7	25.6	22.97	-625.1	-123.9	167.1	137.0	30.07	5.555		
7,300.0	7,125.3	7,263.5	6,994.6	19.7	25.6	23.11	-625.5	-123.9	167.1	137.0	30.08	5.554		
7,350.0	7,152.6	7,273.8	6,999.3	19.6	25.6	26.33	-634.7	-123.9	173.0	142.8	30.18	5.731		
7,400.0	7,177.1	7,282.6	7,003.2	19.6	25.6	28.62	-642.5	-123.9	189.0	158.8	30.21	6.254		
7,450.0	7,198.7	7,290.0	7,006.4	19.7	25.6	29.97	-649.2	-123.9	212.9	182.8	30.12	7.071		
7,500.0	7,217.3	7,300.0	7,010.6	19.8	25.7	31.61	-658.3	-123.9	242.6	212.3	30.32	8.002		
7,550.0	7,232.8	7,300.0	7,010.6	20.0	25.7	29.89	-658.3	-123.9	276.1	246.8	29.30	9.422		
7,600.0	7,245.2	7,300.0	7,010.6	20.4	25.7	27.99	-658.3	-123.9	312.2	283.9	28.27	11.044		
7,650.0	7,254.4	7,307.9	7,013.9	20.9	25.7	28.03	-665.4	-123.9	349.8	321.6	28.22	12.396		
7,700.0	7,260.4	7,309.7	7,014.6	21.6	25.7	26.36	-667.1	-123.9	388.6	361.1	27.49	14.136		
7,750.0	7,263.1	7,310.5	7,014.9	22.4	25.7	24.48	-667.8	-123.9	428.1	401.3	26.75	16.003		
7,767.8	7,263.2	7,310.5	7,014.9	22.7	25.7	23.78	-667.8	-123.9	442.2	415.7	26.50	16.691		
7,800.0	7,263.2	7,310.5	7,014.9	23.3	25.7	23.77	-667.8	-123.9	468.3	441.5	26.75	17.506		
7,900.0	7,262.9	7,310.4	7,014.9	25.1	25.7	23.76	-667.8	-123.9	553.3	525.7	27.58	20.058		
8,000.0	7,262.7	7,310.4	7,014.9	27.2	25.7	23.74	-667.7	-123.9	642.6	614.1	28.48	22.560		
8,100.0	7,262.5	7,310.3	7,014.8	29.4	25.7	23.73	-667.7	-123.9	734.7	705.3	29.44	24.958		
8,200.0	7,262.3	7,310.2	7,014.8	31.7	25.7	23.72	-667.6	-123.9	828.6	798.2	30.44	27.226		
8,300.0	7,262.1	7,310.2	7,014.8	34.0	25.7	23.70	-667.5	-123.9	923.8	892.4	31.47	29.356		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman Trust 29O-432
Project:	SEC.29-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (RKB - 15')
Reference Site:	Wiedeman Trust 29O-HZ Pad Sec.29-T4N-R66W	MD Reference:	WELL @ 4778.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman Trust 29O-432	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (7-09-14)	Offset TVD Reference:	Offset Datum

Offset Design		Wiedeman Trust 29O-HZ Pad Sec.29-T4N-R66W - Wiedeman Trust 29O-332 - Wellbore #1 - Plan #1 (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	-37.45	25.5	-19.5	32.1					
100.0	100.0	100.0	100.0	0.1	0.1	-37.45	25.5	-19.5	32.1	31.9	0.22	142.908		
200.0	200.0	200.0	200.0	0.3	0.3	-37.45	25.5	-19.5	32.1	31.4	0.67	47.636		
300.0	300.0	300.0	300.0	0.6	0.6	-37.45	25.5	-19.5	32.1	31.0	1.12	28.582		
400.0	400.0	400.0	400.0	0.8	0.8	-37.45	25.5	-19.5	32.1	30.5	1.57	20.415		
500.0	500.0	500.0	500.0	1.0	1.0	-37.45	25.5	-19.5	32.1	30.1	2.02	15.879		
600.0	600.0	600.0	600.0	1.2	1.2	-37.45	25.5	-19.5	32.1	29.6	2.47	12.992		
700.0	700.0	700.0	700.0	1.5	1.5	-37.45	25.5	-19.5	32.1	29.2	2.92	10.993		
800.0	800.0	800.0	800.0	1.7	1.7	-37.45	25.5	-19.5	32.1	28.7	3.37	9.527		
900.0	900.0	900.0	900.0	1.9	1.9	-37.45	25.5	-19.5	32.1	28.3	3.82	8.406		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-37.45	25.5	-19.5	32.1	27.9	4.27	7.521		
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	-37.45	25.5	-19.5	32.1	27.4	4.72	6.805		
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	-37.45	25.5	-19.5	32.1	27.0	5.17	6.213 CC		
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	101.79	25.5	-19.5	32.4	26.8	5.59	5.797		
1,400.0	1,399.8	1,399.8	1,399.8	3.0	3.0	110.45	25.5	-19.5	33.9	27.9	6.00	5.647		
1,500.0	1,499.5	1,499.5	1,499.5	3.2	3.3	122.81	25.5	-19.5	37.8	31.4	6.42	5.896		
1,600.0	1,598.7	1,598.7	1,598.7	3.4	3.5	135.62	25.5	-19.5	45.6	38.8	6.83	6.678		
1,700.0	1,697.5	1,697.5	1,697.5	3.6	3.7	146.34	25.5	-19.5	57.9	50.7	7.24	7.999		
1,713.0	1,710.3	1,710.3	1,710.3	3.7	3.7	147.53	25.5	-19.5	59.8	52.5	7.29	8.207		
1,800.0	1,795.9	1,795.9	1,795.9	3.9	3.9	154.01	25.5	-19.5	73.4	65.8	7.66	9.588		
1,900.0	1,894.3	1,894.3	1,894.3	4.2	4.1	158.99	25.5	-19.5	89.8	81.7	8.08	11.108		
2,000.0	1,992.7	1,992.7	1,992.7	4.5	4.4	162.42	25.5	-19.5	106.7	98.1	8.52	12.521		
2,100.0	2,091.1	2,094.6	2,094.5	4.9	4.6	164.61	24.7	-20.9	122.5	113.5	8.94	13.695		
2,200.0	2,189.5	2,197.7	2,197.6	5.2	4.8	165.54	22.0	-25.4	135.3	126.0	9.36	14.462		
2,300.0	2,287.9	2,301.7	2,301.1	5.6	5.0	165.59	17.4	-33.2	145.1	135.3	9.79	14.821		
2,400.0	2,386.3	2,406.1	2,404.8	5.9	5.2	164.92	10.8	-44.2	151.8	141.5	10.24	14.813		
2,500.0	2,484.7	2,510.8	2,508.1	6.3	5.4	163.59	2.3	-58.6	155.3	144.6	10.72	14.483		
2,600.0	2,583.1	2,611.2	2,606.8	6.7	5.7	161.93	-7.0	-74.2	157.1	145.9	11.22	14.002		
2,700.0	2,681.5	2,711.1	2,705.1	7.1	6.0	160.32	-16.2	-89.7	159.0	147.3	11.73	13.551		
2,800.0	2,779.9	2,810.9	2,803.3	7.4	6.3	158.74	-25.4	-105.3	161.0	148.8	12.27	13.126		
2,900.0	2,878.3	2,910.8	2,901.5	7.8	6.6	157.21	-34.6	-120.8	163.2	150.4	12.82	12.726		
3,000.0	2,976.7	3,010.7	2,999.8	8.2	6.9	155.72	-43.9	-136.3	165.4	152.0	13.40	12.349		
3,100.0	3,075.1	3,110.6	3,098.0	8.6	7.2	154.26	-53.1	-151.9	167.8	153.8	13.99	11.995		
3,200.0	3,173.5	3,210.5	3,196.2	9.0	7.6	152.85	-62.3	-167.4	170.3	155.7	14.60	11.662		
3,300.0	3,271.9	3,310.4	3,294.5	9.4	7.9	151.49	-71.6	-182.9	172.9	157.6	15.23	11.350		
3,400.0	3,370.3	3,410.2	3,392.7	9.8	8.3	150.16	-80.8	-198.5	175.5	159.7	15.88	11.056		
3,500.0	3,468.7	3,510.1	3,490.9	10.2	8.6	148.87	-90.0	-214.0	178.3	161.8	16.54	10.781		
3,600.0	3,567.1	3,610.0	3,589.2	10.6	9.0	147.62	-99.3	-229.6	181.2	163.9	17.22	10.523		
3,700.0	3,665.5	3,709.9	3,687.4	11.0	9.4	146.41	-108.5	-245.1	184.1	166.2	17.91	10.280		
3,800.0	3,763.9	3,809.8	3,785.6	11.4	9.7	145.24	-117.7	-260.6	187.1	168.5	18.61	10.053		
3,900.0	3,862.3	3,909.7	3,883.9	11.8	10.1	144.11	-126.9	-276.2	190.2	170.9	19.33	9.841		
4,000.0	3,960.7	4,009.5	3,982.1	12.2	10.5	143.01	-136.2	-291.7	193.4	173.3	20.06	9.641		
4,100.0	4,059.1	4,109.4	4,080.3	12.6	10.9	141.95	-145.4	-307.2	196.6	175.8	20.79	9.454		
4,200.0	4,157.5	4,209.3	4,178.6	13.0	11.2	140.93	-154.6	-322.8	199.9	178.3	21.54	9.279		
4,300.0	4,255.9	4,309.2	4,276.8	13.4	11.6	139.93	-163.9	-338.3	203.2	180.9	22.30	9.114		
4,400.0	4,354.3	4,409.1	4,375.0	13.8	12.0	138.98	-173.1	-353.8	206.7	183.6	23.07	8.960		
4,500.0	4,452.7	4,508.9	4,473.3	14.2	12.4	138.05	-182.3	-369.4	210.1	186.3	23.84	8.815		
4,600.0	4,551.1	4,608.8	4,571.5	14.6	12.8	137.15	-191.5	-384.9	213.7	189.0	24.62	8.679		
4,700.0	4,649.5	4,708.7	4,669.7	15.0	13.2	136.28	-200.8	-400.5	217.2	191.8	25.40	8.551		
4,800.0	4,747.9	4,808.6	4,768.0	15.4	13.6	135.44	-210.0	-416.0	220.9	194.7	26.20	8.431		
4,900.0	4,846.3	4,908.5	4,866.2	15.8	14.0	134.63	-219.2	-431.5	224.5	197.5	26.99	8.318		

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 Trust 29O-432
Project:	SEC.29-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (RKB - 15')
Reference Site:	Wiedeman Trust 29O-HZ Pad Sec.29-T4N-R66W	MD Reference:	WELL @ 4778.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman Trust 29O-432	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (7-09-14)	Offset TVD Reference:	Offset Datum

Offset Design		Wiedeman Trust 29O-HZ Pad Sec.29-T4N-R66W - Wiedeman Trust 29O-332 - Wellbore #1 - Plan #1 (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	4,944.7	5,008.4	4,964.4	16.3	14.4	133.84	-228.5	-447.1	228.3	200.5	27.80	8.212		
5,100.0	5,043.1	5,108.2	5,062.7	16.7	14.8	133.08	-237.7	-462.6	232.0	203.4	28.60	8.112		
5,200.0	5,141.5	5,208.1	5,160.9	17.1	15.2	132.34	-246.9	-478.1	235.8	206.4	29.41	8.017		
5,300.0	5,239.9	5,308.0	5,259.1	17.5	15.6	131.63	-256.1	-493.7	239.6	209.4	30.23	7.928		
5,400.0	5,338.3	5,407.9	5,357.4	17.9	16.0	130.94	-265.4	-509.2	243.5	212.5	31.04	7.844		
5,500.0	5,436.7	5,507.8	5,455.6	18.3	16.4	130.27	-274.6	-524.8	247.4	215.6	31.86	7.765		
5,553.9	5,489.7	5,560.6	5,507.6	18.5	16.6	129.95	-279.4	-532.9	249.6	217.3	32.28	7.731		
5,600.0	5,535.2	5,605.1	5,551.5	18.7	16.8	129.78	-283.2	-539.2	251.5	218.9	32.60	7.714		
5,700.0	5,634.1	5,700.0	5,645.4	18.9	17.0	129.49	-290.0	-550.6	255.0	221.9	33.16	7.691		
5,800.0	5,733.5	5,798.0	5,742.8	19.2	17.2	129.27	-295.3	-559.6	257.7	224.1	33.65	7.659		
5,900.0	5,833.2	5,894.4	5,839.0	19.4	17.4	129.12	-298.9	-565.6	259.6	225.5	34.06	7.621		
6,000.0	5,933.1	5,990.9	5,935.5	19.5	17.6	129.04	-300.8	-568.9	260.5	226.2	34.39	7.575		
6,066.9	6,000.0	6,055.5	6,000.0	19.6	17.7	-7.17	-301.2	-569.5	260.7	230.1	30.60	8.520		
6,100.0	6,033.1	6,088.6	6,033.1	19.7	17.8	-7.17	-301.2	-569.5	260.7	230.0	30.72	8.489		
6,200.0	6,133.1	6,188.6	6,133.1	19.8	17.9	-7.17	-301.2	-569.5	260.7	229.7	31.05	8.398		
6,300.0	6,233.1	6,288.6	6,233.1	19.9	18.1	-7.17	-301.2	-569.5	260.7	229.4	31.38	8.308		
6,400.0	6,333.1	6,388.6	6,333.1	20.0	18.2	-7.17	-301.2	-569.5	260.7	229.0	31.72	8.219		
6,500.0	6,433.1	6,490.0	6,434.6	20.2	18.4	-6.99	-301.2	-568.7	260.6	228.6	32.09	8.122		
6,566.2	6,499.3	6,558.5	6,502.8	20.3	18.4	-5.63	-301.2	-562.5	260.0	227.5	32.51	7.996		
6,600.0	6,533.1	6,593.1	6,536.9	20.3	18.4	-94.63	-301.2	-557.1	259.6	223.8	35.76	7.260		
6,650.0	6,582.9	6,643.8	6,586.4	20.3	18.4	-93.14	-301.2	-546.3	259.1	223.5	35.57	7.285		
6,700.0	6,632.4	6,694.1	6,634.7	20.4	18.4	-91.63	-301.2	-532.4	258.8	223.5	35.33	7.325		
6,750.0	6,681.3	6,743.9	6,681.5	20.4	18.3	-90.13	-301.2	-515.5	258.7	223.6	35.06	7.380		
6,754.2	6,685.4	6,748.0	6,685.4	20.4	18.3	-90.00	-301.2	-514.0	258.7	223.7	35.03	7.385		
6,800.0	6,729.5	6,793.2	6,726.8	20.3	18.3	-88.63	-301.2	-495.8	258.8	224.0	34.76	7.445		
6,850.0	6,776.6	6,842.1	6,770.3	20.3	18.2	-87.14	-301.2	-473.5	259.0	224.6	34.45	7.520		
6,900.0	6,822.6	6,890.6	6,811.9	20.2	18.2	-85.67	-301.2	-448.6	259.5	225.3	34.14	7.600		
6,950.0	6,867.2	6,938.7	6,851.6	20.2	18.1	-84.24	-301.2	-421.4	260.0	226.2	33.85	7.681		
7,000.0	6,910.2	6,986.5	6,889.1	20.1	18.1	-82.83	-301.2	-391.9	260.8	227.2	33.60	7.761		
7,050.0	6,951.4	7,033.8	6,924.5	20.0	18.0	-81.47	-301.2	-360.5	261.6	228.2	33.40	7.834		
7,100.0	6,990.7	7,080.9	6,957.7	19.9	18.0	-80.16	-301.2	-327.1	262.6	229.4	33.26	7.896		
7,150.0	7,027.9	7,127.6	6,988.5	19.9	18.1	-78.90	-301.2	-292.0	263.7	230.5	33.21	7.941		
7,200.0	7,062.8	7,174.0	7,016.9	19.8	18.1	-77.69	-301.2	-255.4	264.9	231.6	33.25	7.965		
7,250.0	7,095.4	7,220.1	7,042.9	19.7	18.2	-76.54	-301.2	-217.3	266.1	232.7	33.41	7.964		
7,300.0	7,125.3	7,265.9	7,066.5	19.7	18.4	-75.46	-301.2	-178.0	267.3	233.7	33.69	7.936		
7,350.0	7,152.6	7,311.5	7,087.5	19.6	18.6	-74.45	-301.2	-137.5	268.6	234.5	34.10	7.878		
7,400.0	7,177.1	7,356.9	7,106.0	19.6	18.9	-73.50	-301.2	-96.1	269.9	235.3	34.65	7.790		
7,450.0	7,198.7	7,400.0	7,121.2	19.7	19.3	-72.66	-301.2	-55.8	271.2	235.8	35.32	7.678		
7,500.0	7,217.3	7,446.9	7,135.2	19.8	19.7	-71.82	-301.2	-11.0	272.4	236.2	36.16	7.532		
7,550.0	7,232.8	7,491.7	7,146.0	20.0	20.3	-71.09	-301.2	32.5	273.5	236.4	37.13	7.367		
7,600.0	7,245.2	7,536.3	7,154.2	20.4	20.9	-70.43	-301.2	76.3	274.6	236.4	38.22	7.186		
7,650.0	7,254.4	7,580.8	7,159.8	20.9	21.5	-69.85	-301.2	120.4	275.6	236.2	39.41	6.993		
7,700.0	7,260.4	7,625.1	7,162.8	21.6	22.3	-69.34	-301.2	164.6	276.5	235.8	40.71	6.792		
7,750.0	7,263.1	7,670.5	7,163.3	22.4	23.0	-68.92	-301.2	210.0	277.3	235.2	42.11	6.584		
7,767.8	7,263.2	7,688.3	7,163.1	22.7	23.3	-68.85	-301.2	227.8	277.4	234.7	42.68	6.499		
7,800.0	7,263.2	7,720.5	7,162.9	23.3	23.9	-68.82	-301.2	260.0	277.4	233.7	43.75	6.341		
7,900.0	7,262.9	7,820.5	7,162.1	25.1	25.9	-68.71	-301.2	360.0	277.6	230.4	47.28	5.873		
8,000.0	7,262.7	7,920.5	7,161.4	27.2	28.0	-68.61	-301.2	460.0	277.8	226.7	51.09	5.438		
8,100.0	7,262.5	8,020.5	7,160.6	29.4	30.2	-68.50	-301.2	560.0	278.0	222.9	55.13	5.043		
8,200.0	7,262.3	8,120.5	7,159.9	31.7	32.5	-68.40	-301.2	660.0	278.2	218.9	59.36	4.688		

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 Trust 29O-432
Project:	SEC.29-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (RKB - 15')
Reference Site:	Wiedeman Trust 29O-HZ Pad Sec.29-T4N-R66W	MD Reference:	WELL @ 4778.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman Trust 29O-432	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (7-09-14)	Offset TVD Reference:	Offset Datum

Offset Design		Wiedeman Trust 29O-HZ Pad Sec.29-T4N-R66W - Wiedeman Trust 29O-332 - Wellbore #1 - Plan #1 (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	
8,300.0	7,262.1	8,220.5	7,159.1	34.0	34.8	-68.30	-301.2	760.0	278.4	214.7	63.72	4.370		
8,400.0	7,261.9	8,320.5	7,158.4	36.4	37.3	-68.19	-301.2	860.0	278.6	210.4	68.20	4.086		
8,500.0	7,261.7	8,420.5	7,157.6	38.9	39.8	-68.09	-301.2	960.0	278.8	206.1	72.77	3.832		
8,600.0	7,261.5	8,520.5	7,156.9	41.4	42.3	-67.99	-301.2	1,060.0	279.0	201.6	77.41	3.605		
8,700.0	7,261.3	8,620.5	7,156.1	44.0	44.8	-67.88	-301.2	1,160.0	279.2	197.1	82.11	3.401		
8,800.0	7,261.1	8,720.5	7,155.4	46.5	47.4	-67.78	-301.2	1,260.0	279.4	192.6	86.86	3.217		
8,900.0	7,260.9	8,820.5	7,154.6	49.1	50.0	-67.68	-301.2	1,360.0	279.7	188.0	91.65	3.051		
9,000.0	7,260.6	8,920.5	7,153.9	51.8	52.7	-67.58	-301.2	1,460.0	279.9	183.4	96.48	2.901		
9,100.0	7,260.4	9,020.5	7,153.1	54.4	55.3	-67.47	-301.2	1,560.0	280.1	178.7	101.33	2.764		
9,200.0	7,260.2	9,120.5	7,152.4	57.1	58.0	-67.37	-301.2	1,659.9	280.3	174.1	106.20	2.639		
9,300.0	7,260.0	9,220.5	7,151.6	59.7	60.6	-67.27	-301.2	1,759.9	280.5	169.4	111.09	2.525		
9,400.0	7,259.8	9,320.5	7,150.9	62.4	63.3	-67.17	-301.2	1,859.9	280.7	164.7	116.00	2.420		
9,500.0	7,259.6	9,420.5	7,150.1	65.1	66.0	-67.07	-301.2	1,959.9	280.9	160.0	120.91	2.323		
9,600.0	7,259.4	9,520.5	7,149.4	67.8	68.7	-66.97	-301.2	2,059.9	281.1	155.3	125.84	2.234		
9,700.0	7,259.2	9,620.5	7,148.6	70.5	71.4	-66.86	-301.2	2,159.9	281.3	150.5	130.77	2.151		
9,800.0	7,259.0	9,720.5	7,147.9	73.2	74.2	-66.76	-301.2	2,259.9	281.5	145.8	135.72	2.074		
9,900.0	7,258.8	9,820.5	7,147.1	75.9	76.9	-66.66	-301.2	2,359.9	281.7	141.1	140.66	2.003		
10,000.0	7,258.5	9,920.5	7,146.4	78.7	79.6	-66.56	-301.2	2,459.9	282.0	136.4	145.61	1.936		
10,100.0	7,258.3	10,020.5	7,145.6	81.4	82.4	-66.46	-301.2	2,559.9	282.2	131.6	150.56	1.874		
10,200.0	7,258.1	10,120.5	7,144.9	84.1	85.1	-66.36	-301.2	2,659.9	282.4	126.9	155.51	1.816		
10,300.0	7,257.9	10,220.5	7,144.1	86.9	87.8	-66.26	-301.2	2,759.9	282.6	122.1	160.47	1.761		
10,400.0	7,257.7	10,320.5	7,143.4	89.6	90.6	-66.16	-301.2	2,859.9	282.8	117.4	165.42	1.710		
10,500.0	7,257.5	10,420.5	7,142.6	92.4	93.3	-66.06	-301.2	2,959.9	283.0	112.7	170.37	1.661		
10,600.0	7,257.3	10,520.5	7,141.9	95.1	96.1	-65.96	-301.2	3,059.9	283.3	108.0	175.32	1.616		
10,700.0	7,257.1	10,620.4	7,141.1	97.9	98.9	-65.86	-301.2	3,159.9	283.5	103.2	180.27	1.573		
10,800.0	7,256.9	10,720.4	7,140.4	100.6	101.6	-65.76	-301.2	3,259.9	283.7	98.5	185.21	1.532		
10,900.0	7,256.7	10,820.4	7,139.6	103.4	104.4	-65.66	-301.2	3,359.9	283.9	93.8	190.15	1.493 Level 3		
11,000.0	7,256.5	10,920.4	7,138.9	106.2	107.2	-65.56	-301.2	3,459.9	284.2	89.1	195.09	1.457 Level 3		
11,100.0	7,256.2	11,020.4	7,138.1	108.9	109.9	-65.46	-301.2	3,559.9	284.4	84.4	200.02	1.422 Level 3		
11,200.0	7,256.0	11,120.4	7,137.4	111.7	112.7	-65.36	-301.2	3,659.9	284.6	79.7	204.95	1.389 Level 3		
11,300.0	7,255.8	11,220.4	7,136.6	114.5	115.5	-65.26	-301.2	3,759.9	284.8	75.0	209.88	1.357 Level 3		
11,400.0	7,255.6	11,320.4	7,135.9	117.2	118.2	-65.16	-301.2	3,859.9	285.1	70.3	214.80	1.327 Level 3		
11,500.0	7,255.4	11,420.4	7,135.1	120.0	121.0	-65.06	-301.2	3,959.9	285.3	65.6	219.72	1.298 Level 3		
11,600.0	7,255.2	11,520.4	7,134.4	122.8	123.8	-64.97	-301.2	4,059.8	285.5	60.9	224.63	1.271 Level 3		
11,700.0	7,255.0	11,620.4	7,133.6	125.6	126.6	-64.87	-301.2	4,159.8	285.7	56.2	229.54	1.245 Level 2		
11,800.0	7,254.8	11,720.4	7,132.9	128.3	129.3	-64.77	-301.2	4,259.8	286.0	51.5	234.44	1.220 Level 2		
11,900.0	7,254.6	11,820.4	7,132.1	131.1	132.1	-64.67	-301.2	4,359.8	286.2	46.9	239.33	1.196 Level 2		
12,000.0	7,254.4	11,920.4	7,131.4	133.9	134.9	-64.57	-301.2	4,459.8	286.4	42.2	244.22	1.173 Level 2		
12,100.0	7,254.1	12,020.4	7,130.6	136.7	137.7	-64.48	-301.2	4,559.8	286.7	37.6	249.10	1.151 Level 2		
12,200.0	7,253.9	12,120.4	7,129.9	139.5	140.5	-64.38	-301.2	4,659.8	286.9	32.9	253.98	1.130 Level 2		
12,300.0	7,253.7	12,220.4	7,129.1	142.3	143.3	-64.28	-301.2	4,759.8	287.1	28.3	258.85	1.109 Level 2		
12,400.0	7,253.5	12,320.4	7,128.4	145.0	146.0	-64.18	-301.2	4,859.8	287.4	23.7	263.72	1.090 Level 2		
12,500.0	7,253.3	12,420.4	7,127.6	147.8	148.8	-64.09	-301.2	4,959.8	287.6	19.0	268.58	1.071 Level 2		
12,600.0	7,253.1	12,520.4	7,126.9	150.6	151.6	-63.99	-301.2	5,059.8	287.8	14.4	273.43	1.053 Level 2		
12,700.0	7,252.9	12,620.4	7,126.1	153.4	154.4	-63.89	-301.2	5,159.8	288.1	9.8	278.27	1.035 Level 2		
12,800.0	7,252.7	12,720.4	7,125.4	156.2	157.2	-63.80	-301.2	5,259.8	288.3	5.2	283.11	1.018 Level 2		
12,900.0	7,252.5	12,820.4	7,124.6	159.0	160.0	-63.70	-301.2	5,359.8	288.6	0.6	287.94	1.002 Level 2		
13,000.0	7,252.3	12,920.4	7,123.9	161.8	162.8	-63.60	-301.2	5,459.8	288.8	-4.0	292.77	0.986 Level 1		
13,100.0	7,252.1	13,020.4	7,123.1	164.5	165.6	-63.51	-301.2	5,559.8	289.0	-8.5	297.58	0.971 Level 1		
13,200.0	7,251.8	13,120.4	7,122.4	167.3	168.3	-63.41	-301.2	5,659.8	289.3	-13.1	302.40	0.957 Level 1		
13,300.0	7,251.6	13,220.4	7,121.6	170.1	171.1	-63.32	-301.2	5,759.8	289.5	-17.7	307.20	0.942 Level 1		

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 Trust 29O-432
Project:	SEC.29-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (RKB - 15')
Reference Site:	Wiedeman Trust 29O-HZ Pad Sec.29-T4N-R66W	MD Reference:	WELL @ 4778.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman Trust 29O-432	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (7-09-14)	Offset TVD Reference:	Offset Datum

Offset Design		Wiedeman Trust 29O-HZ Pad Sec.29-T4N-R66W - Wiedeman Trust 29O-332 - Wellbore #1 - Plan #1 (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		
13,400.0	7,251.4	13,320.4	7,120.9	172.9	173.9	-63.22	-301.2	5,859.8	289.8	-22.2	312.00	0.929	Level 1	
13,500.0	7,251.2	13,420.4	7,120.1	175.7	176.7	-63.13	-301.2	5,959.8	290.0	-26.8	316.78	0.915	Level 1	
13,600.0	7,251.0	13,520.4	7,119.4	178.5	179.5	-63.03	-301.2	6,059.8	290.3	-31.3	321.57	0.903	Level 1	
13,700.0	7,250.8	13,620.4	7,118.6	181.3	182.3	-62.93	-301.2	6,159.8	290.5	-35.8	326.34	0.890	Level 1	
13,800.0	7,250.6	13,720.4	7,117.9	184.1	185.1	-62.84	-301.2	6,259.8	290.7	-40.4	331.11	0.878	Level 1	
13,900.0	7,250.4	13,820.4	7,117.1	186.9	187.9	-62.75	-301.2	6,359.7	291.0	-44.9	335.87	0.866	Level 1	
14,000.0	7,250.2	13,920.4	7,116.4	189.7	190.7	-62.65	-301.2	6,459.7	291.2	-49.4	340.62	0.855	Level 1	
14,100.0	7,250.0	14,020.4	7,115.6	192.5	193.5	-62.56	-301.2	6,559.7	291.5	-53.9	345.37	0.844	Level 1	
14,200.0	7,249.8	14,120.4	7,114.9	195.3	196.3	-62.46	-301.2	6,659.7	291.7	-58.4	350.10	0.833	Level 1	
14,300.0	7,249.5	14,220.4	7,114.1	198.1	199.1	-62.37	-301.2	6,759.7	292.0	-62.8	354.83	0.823	Level 1	
14,400.0	7,249.3	14,320.4	7,113.4	200.8	201.9	-62.27	-301.2	6,859.7	292.2	-67.3	359.56	0.813	Level 1	
14,500.0	7,249.1	14,420.4	7,112.6	203.6	204.7	-62.18	-301.2	6,959.7	292.5	-71.8	364.27	0.803	Level 1	
14,600.0	7,248.9	14,520.4	7,111.9	206.4	207.5	-62.09	-301.2	7,059.7	292.7	-76.2	368.98	0.793	Level 1	
14,700.0	7,248.7	14,620.4	7,111.1	209.2	210.3	-61.99	-301.2	7,159.7	293.0	-80.7	373.68	0.784	Level 1	
14,800.0	7,248.5	14,720.4	7,110.4	212.0	213.0	-61.90	-301.2	7,259.7	293.3	-85.1	378.37	0.775	Level 1	
14,900.0	7,248.3	14,820.4	7,109.6	214.8	215.8	-61.81	-301.2	7,359.7	293.5	-89.5	383.05	0.766	Level 1	
15,000.0	7,248.1	14,920.4	7,108.9	217.6	218.6	-61.71	-301.2	7,459.7	293.8	-94.0	387.73	0.758	Level 1	
15,036.3	7,248.0	14,956.7	7,108.6	218.6	219.7	-61.68	-301.2	7,496.0	293.9	-95.6	389.42	0.755	Level 1, ES, SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman Trust 29O-432
Project:	SEC.29-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (RKB - 15')
Reference Site:	Wiedeman Trust 29O-HZ Pad Sec.29-T4N-R66W	MD Reference:	WELL @ 4778.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman Trust 29O-432	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (7-09-14)	Offset TVD Reference:	Offset Datum

Offset Design		Wiedeman Trust 29O-HZ Pad Sec.29-T4N-R66W - Wiedeman Trust 29P-212 - Wellbore #1 - Plan #16-										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	138.22	-21.9	19.5	29.3					
100.0	100.0	100.0	100.0	0.1	0.1	138.22	-21.9	19.5	29.3	29.1	0.22	130.413		
200.0	200.0	200.0	200.0	0.3	0.3	138.22	-21.9	19.5	29.3	28.6	0.67	43.471	CC, ES	
300.0	300.0	299.7	299.6	0.6	0.5	141.40	-23.3	18.6	29.9	28.8	1.10	27.117		
400.0	400.0	399.1	398.9	0.8	0.8	150.13	-27.8	15.9	32.0	30.5	1.53	20.881		
500.0	500.0	498.0	497.5	1.0	1.0	161.86	-35.1	11.5	37.0	35.0	2.00	18.493		
600.0	600.0	596.3	595.0	1.2	1.3	173.26	-45.3	5.4	45.8	43.3	2.51	18.282		
700.0	700.0	693.6	691.1	1.5	1.6	-177.59	-58.1	-2.4	58.9	55.8	3.05	19.323		
800.0	800.0	790.7	786.6	1.7	2.0	-170.90	-73.5	-11.8	75.7	72.1	3.61	20.962		
900.0	900.0	888.8	882.9	1.9	2.4	-166.50	-89.6	-21.5	93.7	89.5	4.18	22.415		
1,000.0	1,000.0	987.0	979.2	2.1	2.8	-163.53	-105.6	-31.2	112.1	107.3	4.75	23.602		
1,100.0	1,100.0	1,085.1	1,075.6	2.4	3.2	-161.40	-121.7	-41.0	130.7	125.4	5.32	24.577		
1,200.0	1,200.0	1,183.3	1,171.9	2.6	3.6	-159.80	-137.7	-50.7	149.4	143.6	5.89	25.387		
1,300.0	1,300.0	1,281.8	1,268.6	2.8	4.0	-22.45	-153.9	-60.4	166.7	161.0	5.71	29.180		
1,400.0	1,399.8	1,380.7	1,365.7	3.0	4.4	-21.94	-170.0	-70.3	180.8	174.6	6.14	29.421		
1,500.0	1,499.5	1,480.2	1,463.3	3.2	4.9	-21.89	-186.3	-80.1	191.6	185.0	6.59	29.089		
1,600.0	1,598.7	1,579.8	1,561.2	3.4	5.3	-22.24	-202.6	-90.0	199.3	192.2	7.04	28.291		
1,700.0	1,697.5	1,679.7	1,659.2	3.6	5.7	-22.97	-218.9	-99.9	203.7	196.2	7.51	27.110		
1,713.0	1,710.3	1,692.7	1,672.0	3.7	5.8	-23.09	-221.1	-101.2	204.1	196.5	7.58	26.931		
1,800.0	1,795.9	1,779.6	1,757.2	3.9	6.1	-23.93	-235.3	-109.8	206.2	198.2	8.02	25.723		
1,900.0	1,894.3	1,879.5	1,855.3	4.2	6.6	-24.88	-251.6	-119.7	208.7	200.2	8.54	24.455		
2,000.0	1,992.7	1,979.4	1,953.4	4.5	7.0	-25.80	-268.0	-129.6	211.3	202.3	9.07	23.304		
2,100.0	2,091.1	2,079.3	2,051.4	4.9	7.4	-26.71	-284.3	-139.5	214.0	204.4	9.61	22.257		
2,200.0	2,189.5	2,179.2	2,149.5	5.2	7.9	-27.58	-300.7	-149.4	216.7	206.5	10.17	21.302		
2,300.0	2,287.9	2,279.2	2,247.6	5.6	8.3	-28.44	-317.0	-159.3	219.4	208.7	10.74	20.428		
2,400.0	2,386.3	2,379.1	2,345.6	5.9	8.7	-29.28	-333.3	-169.2	222.2	210.9	11.32	19.628		
2,500.0	2,484.7	2,479.0	2,443.7	6.3	9.2	-30.10	-349.7	-179.1	225.0	213.1	11.91	18.892		
2,600.0	2,583.1	2,578.9	2,541.8	6.7	9.6	-30.89	-366.0	-189.0	227.9	215.4	12.51	18.215		
2,700.0	2,681.5	2,678.8	2,639.8	7.1	10.0	-31.67	-382.4	-198.9	230.8	217.7	13.12	17.591		
2,800.0	2,779.9	2,778.7	2,737.9	7.4	10.4	-32.42	-398.7	-208.8	233.8	220.0	13.74	17.013		
2,900.0	2,878.3	2,878.6	2,836.0	7.8	10.9	-33.16	-415.0	-218.7	236.8	222.4	14.37	16.478		
3,000.0	2,976.7	2,978.5	2,934.0	8.2	11.3	-33.88	-431.4	-228.6	239.8	224.8	15.01	15.981		
3,100.0	3,075.1	3,078.4	3,032.1	8.6	11.7	-34.58	-447.7	-238.5	242.9	227.2	15.65	15.519		
3,200.0	3,173.5	3,178.3	3,130.1	9.0	12.2	-35.26	-464.1	-248.4	246.0	229.7	16.30	15.089		
3,300.0	3,271.9	3,278.3	3,228.2	9.4	12.6	-35.92	-480.4	-258.3	249.1	232.2	16.96	14.687		
3,400.0	3,370.3	3,378.2	3,326.3	9.8	13.0	-36.57	-496.8	-268.2	252.3	234.7	17.63	14.312		
3,500.0	3,468.7	3,478.1	3,424.3	10.2	13.5	-37.21	-513.1	-278.1	255.5	237.2	18.30	13.960		
3,600.0	3,567.1	3,578.0	3,522.4	10.6	13.9	-37.82	-529.4	-288.0	258.8	239.8	18.98	13.631		
3,700.0	3,665.5	3,677.9	3,620.5	11.0	14.3	-38.42	-545.8	-297.9	262.0	242.4	19.67	13.322		
3,800.0	3,763.9	3,777.8	3,718.5	11.4	14.8	-39.01	-562.1	-307.8	265.3	245.0	20.36	13.031		
3,900.0	3,862.3	3,877.7	3,816.6	11.8	15.2	-39.58	-578.5	-317.7	268.7	247.6	21.06	12.757		
4,000.0	3,960.7	3,977.6	3,914.7	12.2	15.6	-40.14	-594.8	-327.6	272.0	250.2	21.76	12.499		
4,100.0	4,059.1	4,077.5	4,012.7	12.6	16.1	-40.69	-611.1	-337.5	275.4	252.9	22.47	12.255		
4,200.0	4,157.5	4,177.4	4,110.8	13.0	16.5	-41.22	-627.5	-347.4	278.8	255.6	23.18	12.025		
4,300.0	4,255.9	4,277.3	4,208.9	13.4	16.9	-41.74	-643.8	-357.3	282.2	258.3	23.90	11.807		
4,400.0	4,354.3	4,377.3	4,306.9	13.8	17.4	-42.24	-660.2	-367.2	285.7	261.0	24.62	11.601		
4,500.0	4,452.7	4,477.2	4,405.0	14.2	17.8	-42.74	-676.5	-377.1	289.1	263.8	25.35	11.406		
4,600.0	4,551.1	4,577.1	4,503.1	14.6	18.2	-43.22	-692.9	-387.0	292.6	266.5	26.08	11.220		
4,700.0	4,649.5	4,677.0	4,601.1	15.0	18.7	-43.69	-709.2	-396.9	296.1	269.3	26.81	11.044		
4,800.0	4,747.9	4,776.9	4,699.2	15.4	19.1	-44.15	-725.5	-406.8	299.7	272.1	27.55	10.876		
4,900.0	4,846.3	4,876.8	4,797.2	15.8	19.5	-44.60	-741.9	-416.7	303.2	274.9	28.29	10.717		

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 Trust 29O-432
Project:	SEC.29-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (RKB - 15')
Reference Site:	Wiedeman Trust 29O-HZ Pad Sec.29-T4N-R66W	MD Reference:	WELL @ 4778.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman Trust 29O-432	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (7-09-14)	Offset TVD Reference:	Offset Datum

Offset Design		Wiedeman Trust 29O-HZ Pad Sec.29-T4N-R66W - Wiedeman Trust 29P-212 - Wellbore #1 - Plan #16-										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)							
5,000.0	4,944.7	4,976.7	4,895.3	16.3	20.0	-45.04	-758.2	-426.7	306.8	277.7	29.04	10.565			
5,100.0	5,043.1	5,076.6	4,993.4	16.7	20.4	-45.47	-774.6	-436.6	310.3	280.6	29.78	10.420			
5,200.0	5,141.5	5,176.5	5,091.4	17.1	20.8	-45.88	-790.9	-446.5	313.9	283.4	30.53	10.282			
5,300.0	5,239.9	5,276.4	5,189.5	17.5	21.2	-46.29	-807.2	-456.4	317.6	286.3	31.29	10.150			
5,400.0	5,338.3	5,376.3	5,287.6	17.9	21.7	-46.69	-823.6	-466.3	321.2	289.2	32.04	10.024			
5,500.0	5,436.7	5,476.3	5,385.6	18.3	22.1	-47.08	-839.9	-476.2	324.8	292.0	32.80	9.904			
5,553.9	5,489.7	5,530.1	5,438.5	18.5	22.3	-47.29	-848.7	-481.5	326.8	293.6	33.21	9.841			
5,600.0	5,535.2	5,576.2	5,483.7	18.7	22.5	-47.45	-856.3	-486.1	328.8	295.2	33.53	9.805			
5,700.0	5,634.1	5,676.0	5,581.7	18.9	23.0	-47.48	-872.6	-496.0	334.7	300.6	34.09	9.817			
5,800.0	5,733.5	5,778.6	5,682.5	19.2	23.4	-47.12	-889.2	-506.0	342.9	308.4	34.52	9.934			
5,900.0	5,833.2	5,889.3	5,791.7	19.4	23.7	-46.58	-904.5	-515.3	351.1	316.3	34.80	10.090			
6,000.0	5,933.1	6,000.4	5,901.9	19.5	24.0	-45.98	-916.3	-522.4	358.6	323.6	35.00	10.245			
6,066.9	6,000.0	6,075.0	5,976.2	19.6	24.1	178.25	-922.1	-525.9	363.1	324.3	38.83	9.351			
6,100.0	6,033.1	6,111.9	6,013.0	19.7	24.2	178.48	-924.3	-527.3	365.1	326.1	39.00	9.363			
6,200.0	6,133.1	6,223.9	6,124.9	19.8	24.3	178.91	-928.7	-530.0	369.0	329.6	39.40	9.365			
6,300.0	6,233.1	6,332.1	6,233.1	19.9	24.5	178.99	-929.6	-530.5	369.7	330.0	39.71	9.312			
6,353.1	6,286.2	6,385.2	6,286.2	20.0	24.5	178.99	-929.6	-530.5	369.7	329.9	39.85	9.278			
6,400.0	6,333.1	6,431.9	6,332.8	20.0	24.6	178.90	-929.6	-529.9	369.7	329.8	39.95	9.255			
6,500.0	6,433.1	6,529.8	6,430.2	20.2	24.6	177.34	-929.6	-519.8	370.1	330.2	39.85	9.286			
6,566.2	6,499.3	6,592.6	6,491.6	20.3	24.6	175.33	-929.6	-506.8	371.0	331.4	39.56	9.376			
6,600.0	6,533.1	6,623.9	6,521.8	20.3	24.6	84.09	-929.6	-498.4	371.8	334.3	37.44	9.929			
6,650.0	6,582.9	6,669.7	6,565.3	20.3	24.5	82.29	-929.5	-484.0	373.2	335.4	37.86	9.858			
6,700.0	6,632.4	6,714.9	6,607.2	20.4	24.5	80.54	-929.5	-467.2	375.0	336.8	38.20	9.817			
6,750.0	6,681.3	6,759.6	6,647.6	20.4	24.4	78.86	-929.5	-448.3	377.1	338.7	38.46	9.806			
6,800.0	6,729.5	6,803.7	6,686.4	20.3	24.4	77.23	-929.5	-427.2	379.5	340.8	38.63	9.823			
6,850.0	6,776.6	6,850.0	6,725.7	20.3	24.3	75.59	-929.5	-402.8	382.0	343.3	38.73	9.865			
6,900.0	6,822.6	6,890.5	6,758.9	20.2	24.2	74.20	-929.5	-379.5	384.7	346.0	38.72	9.937			
6,950.0	6,867.2	6,933.3	6,792.5	20.2	24.2	72.79	-929.5	-353.0	387.6	348.9	38.65	10.029			
7,000.0	6,910.2	6,975.7	6,824.2	20.1	24.1	71.47	-929.5	-325.0	390.5	352.0	38.51	10.141			
7,050.0	6,951.4	7,017.7	6,854.2	20.0	24.0	70.23	-929.5	-295.5	393.4	355.1	38.32	10.268			
7,100.0	6,990.7	7,059.4	6,882.2	19.9	23.9	69.08	-929.5	-264.6	396.4	358.3	38.09	10.406			
7,150.0	7,027.9	7,100.0	6,907.8	19.9	23.8	68.03	-929.5	-233.1	399.2	361.4	37.85	10.549			
7,200.0	7,062.8	7,142.0	6,932.5	19.8	23.8	67.03	-929.5	-199.2	402.0	364.4	37.62	10.686			
7,250.0	7,095.4	7,182.9	6,954.8	19.7	23.7	66.14	-929.5	-164.9	404.6	367.2	37.43	10.811			
7,300.0	7,125.3	7,223.6	6,975.1	19.7	23.6	65.34	-929.5	-129.6	407.1	369.8	37.30	10.915			
7,350.0	7,152.6	7,264.1	6,993.4	19.6	23.5	64.62	-929.5	-93.5	409.4	372.2	37.26	10.989			
7,400.0	7,177.1	7,300.0	7,008.0	19.6	23.5	64.04	-929.5	-60.7	411.5	374.2	37.31	11.030			
7,450.0	7,198.7	7,344.6	7,024.0	19.7	23.4	63.45	-929.4	-19.0	413.4	375.8	37.55	11.008			
7,500.0	7,217.3	7,384.7	7,036.2	19.8	23.3	62.99	-929.4	19.1	414.9	377.0	37.93	10.940			
7,550.0	7,232.8	7,424.7	7,046.4	20.0	23.3	62.62	-929.4	57.8	416.2	377.8	38.48	10.818			
7,600.0	7,245.2	7,464.6	7,054.6	20.4	23.2	62.34	-929.4	96.8	417.3	378.1	39.20	10.644			
7,650.0	7,254.4	7,500.0	7,060.1	20.9	23.1	62.15	-929.4	131.8	418.0	378.0	40.05	10.436			
7,700.0	7,260.4	7,544.2	7,064.7	21.6	23.1	62.03	-929.4	175.8	418.4	377.2	41.19	10.158			
7,750.0	7,263.1	7,584.0	7,066.7	22.4	23.0	62.00	-929.4	215.5	418.5	376.0	42.44	9.861			
7,767.8	7,263.2	7,600.0	7,066.9	22.7	23.1	62.02	-929.4	231.5	418.4	375.5	42.94	9.744			
7,775.0	7,263.2	7,603.8	7,066.9	22.8	23.1	62.02	-929.4	235.3	418.4	375.3	43.11	9.705			
7,800.0	7,263.2	7,628.4	7,066.8	23.3	23.3	62.01	-929.4	259.9	418.4	374.6	43.88	9.536			
7,900.0	7,262.9	7,728.4	7,066.3	25.1	25.2	61.97	-929.4	359.9	418.6	371.4	47.14	8.880			
8,000.0	7,262.7	7,828.4	7,065.8	27.2	27.3	61.94	-929.3	459.9	418.7	368.0	50.67	8.262			
8,100.0	7,262.5	7,928.4	7,065.3	29.4	29.4	61.90	-929.3	559.9	418.8	364.3	54.43	7.694			

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 Trust 29O-432
Project:	SEC.29-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (RKB - 15')
Reference Site:	Wiedeman Trust 29O-HZ Pad Sec.29-T4N-R66W	MD Reference:	WELL @ 4778.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman Trust 29O-432	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (7-09-14)	Offset TVD Reference:	Offset Datum

Offset Design		Wiedeman Trust 29O-HZ Pad Sec.29-T4N-R66W - Wiedeman Trust 29P-212 - Wellbore #1 - Plan #16-										Offset Site Error:		0.0 ft
Survey Program: 0-MWD												Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth	Vertical	Measured	Vertical	Reference	Offset	Highside	Offset Wellbore Centre		Between	Between	Minimum	Separation		
Depth (ft)	Depth (ft)	Depth (ft)	Depth (ft)	(ft)	(ft)	Toolface (°)	+N/-S (ft)	+E/-W (ft)	Centres (ft)	Ellipses (ft)	Separation (ft)	Factor		
8,200.0	7,262.3	8,028.4	7,064.8	31.7	31.7	61.87	-929.3	659.9	418.9	360.5	58.38	7.176		
8,300.0	7,262.1	8,128.4	7,064.3	34.0	34.0	61.83	-929.3	759.9	419.0	356.5	62.46	6.708		
8,400.0	7,261.9	8,228.4	7,063.8	36.4	36.4	61.80	-929.3	859.9	419.1	352.4	66.67	6.286		
8,500.0	7,261.7	8,328.4	7,063.3	38.9	38.9	61.76	-929.2	959.9	419.2	348.3	70.98	5.906		
8,600.0	7,261.5	8,428.4	7,062.9	41.4	41.4	61.73	-929.2	1,059.9	419.3	344.0	75.36	5.564		
8,700.0	7,261.3	8,528.4	7,062.4	44.0	43.9	61.69	-929.2	1,159.9	419.5	339.6	79.81	5.255		
8,800.0	7,261.1	8,628.4	7,061.9	46.5	46.4	61.66	-929.2	1,259.9	419.6	335.3	84.32	4.976		
8,900.0	7,260.9	8,728.4	7,061.4	49.1	49.0	61.62	-929.2	1,359.9	419.7	330.8	88.87	4.722		
9,000.0	7,260.6	8,828.4	7,060.9	51.8	51.6	61.59	-929.1	1,459.9	419.8	326.3	93.47	4.491		
9,100.0	7,260.4	8,928.4	7,060.4	54.4	54.3	61.55	-929.1	1,559.9	419.9	321.8	98.09	4.281		
9,200.0	7,260.2	9,028.4	7,059.9	57.1	56.9	61.52	-929.1	1,659.9	420.0	317.3	102.74	4.088		
9,300.0	7,260.0	9,128.4	7,059.4	59.7	59.5	61.48	-929.1	1,759.9	420.1	312.7	107.42	3.911		
9,400.0	7,259.8	9,228.4	7,058.9	62.4	62.2	61.45	-929.0	1,859.9	420.3	308.1	112.12	3.748		
9,500.0	7,259.6	9,328.4	7,058.5	65.1	64.9	61.41	-929.0	1,959.9	420.4	303.5	116.83	3.598		
9,600.0	7,259.4	9,428.4	7,058.0	67.8	67.6	61.38	-929.0	2,059.9	420.5	298.9	121.56	3.459		
9,700.0	7,259.2	9,528.4	7,057.5	70.5	70.3	61.34	-929.0	2,159.9	420.6	294.3	126.31	3.330		
9,800.0	7,259.0	9,628.4	7,057.0	73.2	73.0	61.31	-929.0	2,259.8	420.7	289.7	131.06	3.210		
9,900.0	7,258.8	9,728.4	7,056.5	75.9	75.7	61.27	-928.9	2,359.8	420.8	285.0	135.83	3.098		
10,000.0	7,258.5	9,828.4	7,056.0	78.7	78.4	61.24	-928.9	2,459.8	420.9	280.3	140.60	2.994		
10,100.0	7,258.3	9,928.4	7,055.5	81.4	81.1	61.21	-928.9	2,559.8	421.1	275.7	145.38	2.896		
10,200.0	7,258.1	10,028.4	7,055.0	84.1	83.9	61.17	-928.9	2,659.8	421.2	271.0	150.17	2.805		
10,300.0	7,257.9	10,128.4	7,054.5	86.9	86.6	61.14	-928.9	2,759.8	421.3	266.3	154.96	2.719		
10,400.0	7,257.7	10,228.4	7,054.1	89.6	89.3	61.10	-928.8	2,859.8	421.4	261.7	159.76	2.638		
10,500.0	7,257.5	10,328.4	7,053.6	92.4	92.1	61.07	-928.8	2,959.8	421.5	257.0	164.56	2.562		
10,600.0	7,257.3	10,428.4	7,053.1	95.1	94.8	61.03	-928.8	3,059.8	421.6	252.3	169.37	2.490		
10,700.0	7,257.1	10,528.4	7,052.6	97.9	97.6	61.00	-928.8	3,159.8	421.8	247.6	174.18	2.421		
10,800.0	7,256.9	10,628.4	7,052.1	100.6	100.3	60.96	-928.7	3,259.8	421.9	242.9	178.99	2.357		
10,900.0	7,256.7	10,728.4	7,051.6	103.4	103.1	60.93	-928.7	3,359.8	422.0	238.2	183.80	2.296		
11,000.0	7,256.5	10,828.4	7,051.1	106.2	105.8	60.89	-928.7	3,459.8	422.1	233.5	188.61	2.238		
11,100.0	7,256.2	10,928.4	7,050.6	108.9	108.6	60.86	-928.7	3,559.8	422.2	228.8	193.43	2.183		
11,200.0	7,256.0	11,028.4	7,050.1	111.7	111.4	60.82	-928.7	3,659.8	422.3	224.1	198.24	2.130		
11,300.0	7,255.8	11,128.4	7,049.7	114.5	114.1	60.79	-928.6	3,759.8	422.5	219.4	203.06	2.080		
11,400.0	7,255.6	11,228.4	7,049.2	117.2	116.9	60.76	-928.6	3,859.8	422.6	214.7	207.88	2.033		
11,500.0	7,255.4	11,328.4	7,048.7	120.0	119.7	60.72	-928.6	3,959.8	422.7	210.0	212.70	1.987		
11,600.0	7,255.2	11,428.4	7,048.2	122.8	122.4	60.69	-928.6	4,059.8	422.8	205.3	217.51	1.944		
11,700.0	7,255.0	11,528.4	7,047.7	125.6	125.2	60.65	-928.5	4,159.8	422.9	200.6	222.33	1.902		
11,800.0	7,254.8	11,628.4	7,047.2	128.3	128.0	60.62	-928.5	4,259.8	423.1	195.9	227.15	1.862		
11,900.0	7,254.6	11,728.4	7,046.7	131.1	130.7	60.58	-928.5	4,359.8	423.2	191.2	231.96	1.824		
12,000.0	7,254.4	11,828.4	7,046.2	133.9	133.5	60.55	-928.5	4,459.8	423.3	186.5	236.78	1.788		
12,100.0	7,254.1	11,928.3	7,045.8	136.7	136.3	60.51	-928.5	4,559.8	423.4	181.8	241.59	1.753		
12,200.0	7,253.9	12,028.3	7,045.3	139.5	139.1	60.48	-928.4	4,659.8	423.5	177.1	246.40	1.719		
12,300.0	7,253.7	12,128.3	7,044.8	142.3	141.9	60.45	-928.4	4,759.8	423.6	172.4	251.22	1.686		
12,400.0	7,253.5	12,228.3	7,044.3	145.0	144.6	60.41	-928.4	4,859.8	423.8	167.7	256.03	1.655		
12,500.0	7,253.3	12,328.3	7,043.8	147.8	147.4	60.38	-928.4	4,959.8	423.9	163.1	260.84	1.625		
12,600.0	7,253.1	12,428.3	7,043.3	150.6	150.2	60.34	-928.4	5,059.8	424.0	158.4	265.64	1.596		
12,700.0	7,252.9	12,528.3	7,042.8	153.4	153.0	60.31	-928.3	5,159.8	424.1	153.7	270.45	1.568		
12,800.0	7,252.7	12,628.3	7,042.3	156.2	155.8	60.28	-928.3	5,259.8	424.2	149.0	275.25	1.541		
12,900.0	7,252.5	12,728.3	7,041.8	159.0	158.5	60.24	-928.3	5,359.8	424.4	144.3	280.06	1.515		
13,000.0	7,252.3	12,828.3	7,041.4	161.8	161.3	60.21	-928.3	5,459.8	424.5	139.6	284.86	1.490 Level 3		
13,100.0	7,252.1	12,928.3	7,040.9	164.5	164.1	60.17	-928.2	5,559.8	424.6	135.0	289.66	1.466 Level 3		
13,200.0	7,251.8	13,028.3	7,040.4	167.3	166.9	60.14	-928.2	5,659.8	424.7	130.3	294.45	1.442 Level 3		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman Trust 29O-432
Project:	SEC.29-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (RKB - 15')
Reference Site:	Wiedeman Trust 29O-HZ Pad Sec.29-T4N-R66W	MD Reference:	WELL @ 4778.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman Trust 29O-432	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (7-09-14)	Offset TVD Reference:	Offset Datum

Offset Design		Wiedeman Trust 29O-HZ Pad Sec.29-T4N-R66W - Wiedeman Trust 29P-212 - Wellbore #1 - Plan #16-										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					
13,300.0	7,251.6	13,128.3	7,039.9	170.1	169.7	60.10	-928.2	5,759.8	424.8	125.6	299.25	1.420	Level 3				
13,400.0	7,251.4	13,228.3	7,039.4	172.9	172.5	60.07	-928.2	5,859.8	425.0	120.9	304.04	1.398	Level 3				
13,500.0	7,251.2	13,328.3	7,038.9	175.7	175.3	60.04	-928.2	5,959.8	425.1	116.3	308.83	1.376	Level 3				
13,600.0	7,251.0	13,428.3	7,038.4	178.5	178.1	60.00	-928.1	6,059.8	425.2	111.6	313.62	1.356	Level 3				
13,700.0	7,250.8	13,528.3	7,037.9	181.3	180.8	59.97	-928.1	6,159.8	425.3	106.9	318.41	1.336	Level 3				
13,800.0	7,250.6	13,628.3	7,037.4	184.1	183.6	59.93	-928.1	6,259.8	425.5	102.3	323.19	1.316	Level 3				
13,900.0	7,250.4	13,728.3	7,037.0	186.9	186.4	59.90	-928.1	6,359.8	425.6	97.6	327.97	1.298	Level 3				
14,000.0	7,250.2	13,828.3	7,036.5	189.7	189.2	59.87	-928.1	6,459.8	425.7	92.9	332.75	1.279	Level 3				
14,100.0	7,250.0	13,928.3	7,036.0	192.5	192.0	59.83	-928.0	6,559.8	425.8	88.3	337.53	1.262	Level 3				
14,200.0	7,249.8	14,028.3	7,035.5	195.3	194.8	59.80	-928.0	6,659.8	425.9	83.6	342.30	1.244	Level 2				
14,300.0	7,249.5	14,128.3	7,035.0	198.1	197.6	59.76	-928.0	6,759.8	426.1	79.0	347.07	1.228	Level 2				
14,400.0	7,249.3	14,228.3	7,034.5	200.8	200.4	59.73	-928.0	6,859.8	426.2	74.3	351.84	1.211	Level 2				
14,500.0	7,249.1	14,328.3	7,034.0	203.6	203.2	59.70	-927.9	6,959.8	426.3	69.7	356.61	1.195	Level 2				
14,600.0	7,248.9	14,428.3	7,033.5	206.4	206.0	59.66	-927.9	7,059.8	426.4	65.1	361.38	1.180	Level 2				
14,700.0	7,248.7	14,528.3	7,033.0	209.2	208.8	59.63	-927.9	7,159.8	426.6	60.4	366.14	1.165	Level 2				
14,800.0	7,248.5	14,628.3	7,032.6	212.0	211.6	59.60	-927.9	7,259.8	426.7	55.8	370.90	1.150	Level 2				
14,900.0	7,248.3	14,728.3	7,032.1	214.8	214.4	59.56	-927.9	7,359.8	426.8	51.1	375.65	1.136	Level 2				
15,000.0	7,248.1	14,828.3	7,031.6	217.6	217.2	59.53	-927.8	7,459.8	426.9	46.5	380.41	1.122	Level 2				
15,036.3	7,248.0	14,864.6	7,031.4	218.6	218.2	59.52	-927.8	7,496.0	427.0	44.8	382.13	1.117	Level 2, SF				

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman Trust 29O-432
Project:	SEC.29-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (RKB - 15')
Reference Site:	Wiedeman Trust 29O-HZ Pad Sec.29-T4N-R66W	MD Reference:	WELL @ 4778.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman Trust 29O-432	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (7-09-14)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4778.0ft (RKB - 15')

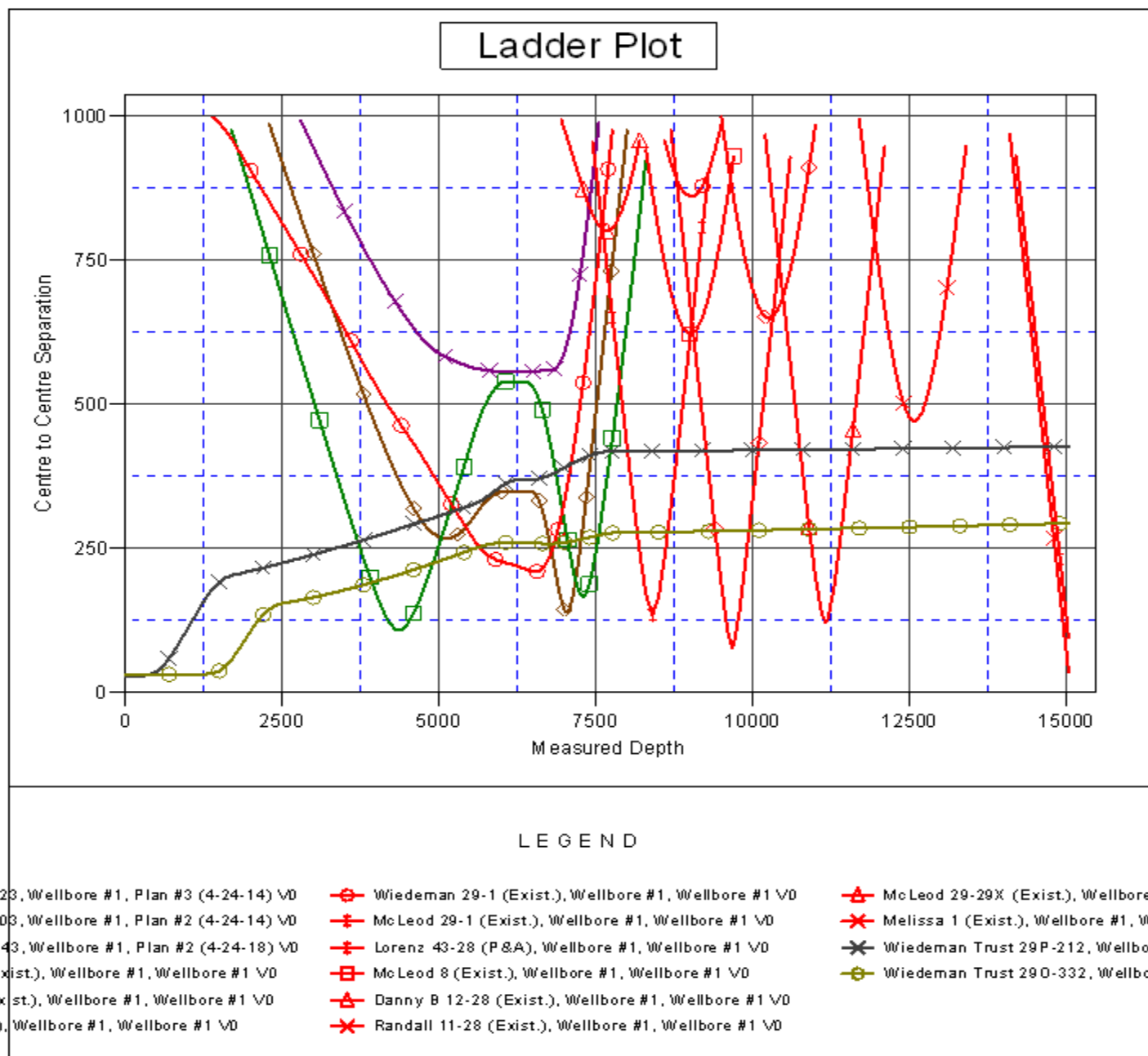
Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Wiedeman Trust 29O-432

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.45°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman Trust 29O-432
Project:	SEC.29-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (RKB - 15')
Reference Site:	Wiedeman Trust 29O-HZ Pad Sec.29-T4N-R66W	MD Reference:	WELL @ 4778.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman Trust 29O-432	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #2 (7-09-14)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4778.0ft (RKB - 15')

Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Wiedeman Trust 29O-432

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.45°

