

PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Wiedeman 28F-214**

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

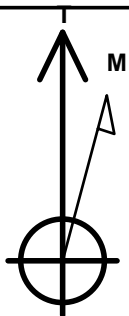
Ground Elevation: 4763.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1348218.71	3197776.66	40.287090	-104.791050	

Original Well Elev WELL @ 4778.0ft (Original Well Elev)

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 1006'FNL & 240'FWL, SEC.28	1.0	0.0	0.0	Point
BHL 996'FNL & 2163'FEL, SEC.30	7035.0	41.3	-7725.1	Point



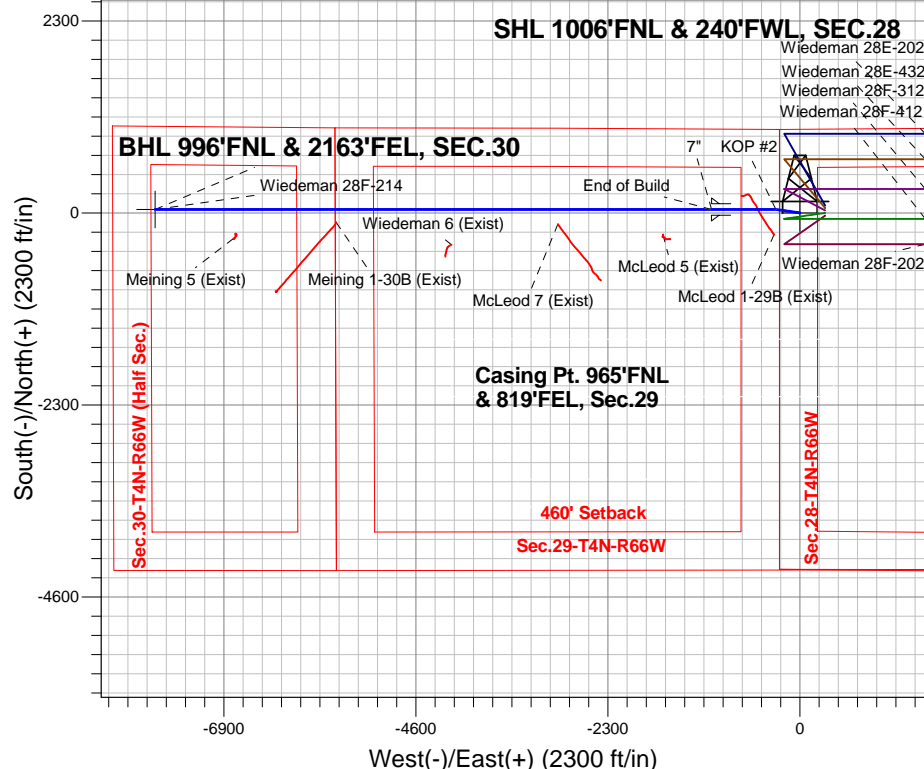
Azimuths to True North
Magnetic North: 8.44°

Magnetic Field
Strength: 52738.5srT
Dip Angle: 66.85°
Date: 8/7/2014
Model: IGRF2010

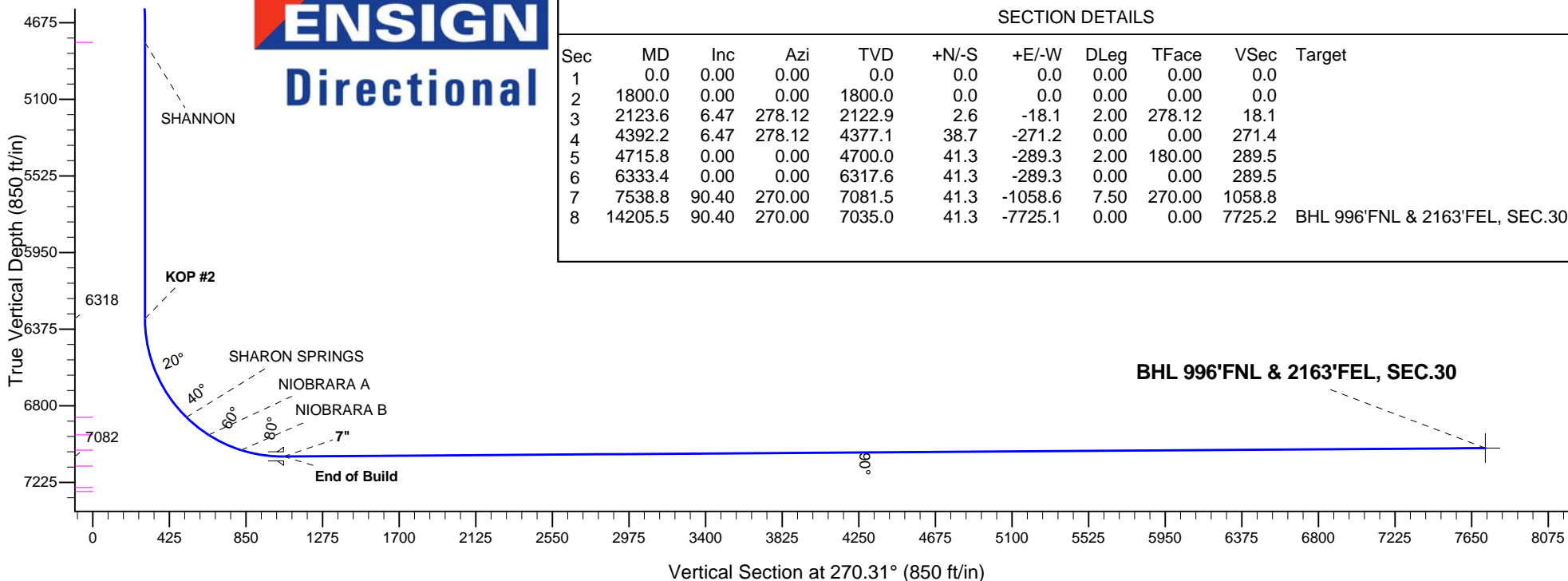
ANNOTATIONS

TVD	MD	Annotation
1800.0	1800.0	KOP #1
6317.6	6333.4	KOP #2
7081.5	7538.8	End of Build

Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W
Wiedeman 28F-214
Plan #1 (8-07-14)



ENSIGN
Directional



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1800.0	0.00	0.00	1800.0	0.0	0.0	0.00	0.00	0.0	
3	2123.6	6.47	278.12	2122.9	2.6	-18.1	2.00	278.12	18.1	
4	4392.2	6.47	278.12	4377.1	38.7	-271.2	0.00	0.00	271.4	
5	4715.8	0.00	0.00	4700.0	41.3	-289.3	2.00	180.00	289.5	
6	6333.4	0.00	0.00	6317.6	41.3	-289.3	0.00	0.00	289.5	
7	7538.8	90.40	270.00	7081.5	41.3	-1058.6	7.50	270.00	1058.8	
8	14205.5	90.40	270.00	7035.0	41.3	-7725.1	0.00	0.00	7725.2	BHL 996'FNL & 2163'FEL, SEC.30



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.28-T4N-R66W

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

Wiedeman 28F-214

Wellbore #1

Plan: Plan #1 (8-07-14)

Standard Planning Report

11 August, 2014

Database:	landmark	Local Co-ordinate Reference:	Well Wiedeman 28F-214
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4778.0ft (Original Well Elev)
Project:	SEC.28-T4N-R66W	MD Reference:	WELL @ 4778.0ft (Original Well Elev)
Site:	Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W	North Reference:	True
Well:	Wiedeman 28F-214	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-07-14)		

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

Site						Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W											
Site Position:						Northing:			1,348,277.01 ft			Latitude:			40.287250		
From:			Lat/Long			Easting:			3,197,776.19 ft			Longitude:			-104.791050		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			0.46 °		

Well	Wiedeman 28F-214					
Well Position	+N-S	-58.3 ft	Northing:	1,348,218.71 ft	Latitude:	40.287090
	+E-W	0.0 ft	Easting:	3,197,776.66 ft	Longitude:	-104.791050
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	8/7/2014	8.45	66.85	52,739

Design	Plan #1 (8-07-14)			
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	270.31

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	
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,123.6	6.47	278.12	2,122.9	2.6	-18.1	2.00	2.00	0.00	278.12	
4,392.2	6.47	278.12	4,377.1	38.7	-271.2	0.00	0.00	0.00	0.00	
4,715.8	0.00	0.00	4,700.0	41.3	-289.3	2.00	-2.00	0.00	180.00	
6,333.4	0.00	0.00	6,317.6	41.3	-289.3	0.00	0.00	0.00	0.00	
7,538.8	90.40	270.00	7,081.5	41.3	-1,058.6	7.50	7.50	0.00	270.00	
14,205.5	90.40	270.00	7,035.0	41.3	-7,725.1	0.00	0.00	0.00	0.00	BHL 996'FNL & 216'

Database:	landmark	Local Co-ordinate Reference:	Well Wiedeman 28F-214
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4778.0ft (Original Well Elev)
Project:	SEC.28-T4N-R66W	MD Reference:	WELL @ 4778.0ft (Original Well Elev)
Site:	Wiedeman 4N66W28F - West Pad	North Reference:	True
	Sec.28-T4N-R66W		
Well:	Wiedeman 28F-214	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-07-14)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP #1									
1,900.0	2.00	278.12	1,900.0	0.2	-1.7	1.7	2.00	2.00	0.00
2,000.0	4.00	278.12	1,999.8	1.0	-6.9	6.9	2.00	2.00	0.00
2,100.0	6.00	278.12	2,099.5	2.2	-15.5	15.5	2.00	2.00	0.00
2,123.6	6.47	278.12	2,122.9	2.6	-18.1	18.1	2.00	2.00	0.00
2,200.0	6.47	278.12	2,198.8	3.8	-26.6	26.6	0.00	0.00	0.00
2,300.0	6.47	278.12	2,298.2	5.4	-37.8	37.8	0.00	0.00	0.00
2,400.0	6.47	278.12	2,397.6	7.0	-48.9	49.0	0.00	0.00	0.00
2,500.0	6.47	278.12	2,496.9	8.6	-60.1	60.1	0.00	0.00	0.00
2,600.0	6.47	278.12	2,596.3	10.2	-71.2	71.3	0.00	0.00	0.00
2,700.0	6.47	278.12	2,695.6	11.8	-82.4	82.5	0.00	0.00	0.00
2,800.0	6.47	278.12	2,795.0	13.4	-93.6	93.6	0.00	0.00	0.00
2,900.0	6.47	278.12	2,894.4	14.9	-104.7	104.8	0.00	0.00	0.00
3,000.0	6.47	278.12	2,993.7	16.5	-115.9	116.0	0.00	0.00	0.00
3,100.0	6.47	278.12	3,093.1	18.1	-127.0	127.1	0.00	0.00	0.00
3,200.0	6.47	278.12	3,192.5	19.7	-138.2	138.3	0.00	0.00	0.00
3,300.0	6.47	278.12	3,291.8	21.3	-149.3	149.5	0.00	0.00	0.00
3,400.0	6.47	278.12	3,391.2	22.9	-160.5	160.6	0.00	0.00	0.00
3,500.0	6.47	278.12	3,490.5	24.5	-171.7	171.8	0.00	0.00	0.00
3,600.0	6.47	278.12	3,589.9	26.1	-182.8	183.0	0.00	0.00	0.00
3,700.0	6.47	278.12	3,689.3	27.7	-194.0	194.1	0.00	0.00	0.00
3,716.8	6.47	278.12	3,706.0	28.0	-195.9	196.0	0.00	0.00	0.00
PARKMAN									
3,800.0	6.47	278.12	3,788.6	29.3	-205.1	205.3	0.00	0.00	0.00
3,900.0	6.47	278.12	3,888.0	30.9	-216.3	216.5	0.00	0.00	0.00
4,000.0	6.47	278.12	3,987.4	32.5	-227.5	227.6	0.00	0.00	0.00
4,100.0	6.47	278.12	4,086.7	34.1	-238.6	238.8	0.00	0.00	0.00
4,200.0	6.47	278.12	4,186.1	35.6	-249.8	250.0	0.00	0.00	0.00
4,300.0	6.47	278.12	4,285.4	37.2	-260.9	261.1	0.00	0.00	0.00
4,368.0	6.47	278.12	4,353.0	38.3	-268.5	268.7	0.00	0.00	0.00
SUSSEX									
4,392.2	6.47	278.12	4,377.1	38.7	-271.2	271.4	0.00	0.00	0.00
4,400.0	6.32	278.12	4,384.8	38.8	-272.1	272.3	2.00	-2.00	0.00

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Project:	SEC.28-T4N-R66W	MD Reference:	WELL @ 4778.0ft (Original Well Elev)
Site:	Wiedeman 4N66W28F - West Pad	North Reference:	True
	Sec.28-T4N-R66W		
Well:	Wiedeman 28F-214	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-07-14)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,500.0	4.32	278.12	4,484.4	40.1	-281.3	281.5	2.00	-2.00	0.00
4,600.0	2.32	278.12	4,584.2	41.0	-287.0	287.2	2.00	-2.00	0.00
4,700.0	0.32	278.12	4,684.2	41.3	-289.3	289.5	2.00	-2.00	0.00
4,715.8	0.00	0.00	4,700.0	41.3	-289.3	289.5	2.00	-2.00	0.00
4,799.8	0.00	0.00	4,784.0	41.3	-289.3	289.5	0.00	0.00	0.00
SHANNON									
4,800.0	0.00	0.00	4,784.2	41.3	-289.3	289.5	0.00	0.00	0.00
4,900.0	0.00	0.00	4,884.2	41.3	-289.3	289.5	0.00	0.00	0.00
5,000.0	0.00	0.00	4,984.2	41.3	-289.3	289.5	0.00	0.00	0.00
5,100.0	0.00	0.00	5,084.2	41.3	-289.3	289.5	0.00	0.00	0.00
5,200.0	0.00	0.00	5,184.2	41.3	-289.3	289.5	0.00	0.00	0.00
5,300.0	0.00	0.00	5,284.2	41.3	-289.3	289.5	0.00	0.00	0.00
5,400.0	0.00	0.00	5,384.2	41.3	-289.3	289.5	0.00	0.00	0.00
5,500.0	0.00	0.00	5,484.2	41.3	-289.3	289.5	0.00	0.00	0.00
5,600.0	0.00	0.00	5,584.2	41.3	-289.3	289.5	0.00	0.00	0.00
5,700.0	0.00	0.00	5,684.2	41.3	-289.3	289.5	0.00	0.00	0.00
5,800.0	0.00	0.00	5,784.2	41.3	-289.3	289.5	0.00	0.00	0.00
5,900.0	0.00	0.00	5,884.2	41.3	-289.3	289.5	0.00	0.00	0.00
6,000.0	0.00	0.00	5,984.2	41.3	-289.3	289.5	0.00	0.00	0.00
6,100.0	0.00	0.00	6,084.2	41.3	-289.3	289.5	0.00	0.00	0.00
6,200.0	0.00	0.00	6,184.2	41.3	-289.3	289.5	0.00	0.00	0.00
6,300.0	0.00	0.00	6,284.2	41.3	-289.3	289.5	0.00	0.00	0.00
6,333.4	0.00	0.00	6,317.6	41.3	-289.3	289.5	0.00	0.00	0.00
KOP #2									
6,400.0	4.99	270.00	6,384.1	41.3	-292.2	292.4	7.49	7.49	0.00
6,500.0	12.49	270.00	6,482.9	41.3	-307.4	307.6	7.50	7.50	0.00
6,600.0	19.99	270.00	6,578.8	41.3	-335.3	335.5	7.50	7.50	0.00
6,700.0	27.49	270.00	6,670.3	41.3	-375.6	375.8	7.50	7.50	0.00
6,800.0	34.99	270.00	6,755.7	41.3	-427.4	427.6	7.50	7.50	0.00
6,900.0	42.49	270.00	6,833.6	41.3	-489.9	490.1	7.50	7.50	0.00
6,942.3	45.66	270.00	6,864.0	41.3	-519.3	519.5	7.50	7.50	0.00
SHARON SPRINGS									
7,000.0	49.99	270.00	6,902.8	41.3	-562.1	562.3	7.50	7.50	0.00
7,100.0	57.49	270.00	6,961.9	41.3	-642.7	642.9	7.50	7.50	0.00
7,100.3	57.51	270.00	6,962.0	41.3	-642.9	643.1	7.50	7.50	0.00
NIOBRARA A									
7,200.0	64.99	270.00	7,009.9	41.3	-730.3	730.5	7.50	7.50	0.00
7,299.4	72.45	270.00	7,046.0	41.3	-822.9	823.1	7.50	7.50	0.00
NIOBRARA B									
7,300.0	72.49	270.00	7,046.2	41.3	-823.4	823.6	7.50	7.50	0.00
7,400.0	79.99	270.00	7,069.9	41.3	-920.5	920.7	7.50	7.50	0.00
7,500.0	87.49	270.00	7,080.8	41.3	-1,019.8	1,020.0	7.50	7.50	0.00
7,538.8	90.40	270.00	7,081.5	41.3	-1,058.6	1,058.8	7.50	7.50	0.00
End of Build - 7"									
7,600.0	90.40	270.00	7,081.1	41.3	-1,119.8	1,120.0	0.00	0.00	0.00
7,700.0	90.40	270.00	7,080.4	41.3	-1,219.8	1,220.0	0.00	0.00	0.00
7,800.0	90.40	270.00	7,079.7	41.3	-1,319.8	1,320.0	0.00	0.00	0.00
7,900.0	90.40	270.00	7,079.0	41.3	-1,419.8	1,420.0	0.00	0.00	0.00
8,000.0	90.40	270.00	7,078.3	41.3	-1,519.8	1,520.0	0.00	0.00	0.00
8,100.0	90.40	270.00	7,077.6	41.3	-1,619.8	1,620.0	0.00	0.00	0.00
8,200.0	90.40	270.00	7,076.9	41.3	-1,719.8	1,720.0	0.00	0.00	0.00

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Project:	SEC.28-T4N-R66W	MD Reference:	WELL @ 4778.0ft (Original Well Elev)
Site:	Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W	North Reference:	True
Well:	Wiedeman 28F-214	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-07-14)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,300.0	90.40	270.00	7,076.2	41.3	-1,819.8	1,820.0	0.00	0.00	0.00
8,400.0	90.40	270.00	7,075.5	41.3	-1,919.8	1,920.0	0.00	0.00	0.00
8,500.0	90.40	270.00	7,074.8	41.3	-2,019.8	2,020.0	0.00	0.00	0.00
8,600.0	90.40	270.00	7,074.1	41.3	-2,119.8	2,120.0	0.00	0.00	0.00
8,700.0	90.40	270.00	7,073.4	41.3	-2,219.8	2,220.0	0.00	0.00	0.00
8,800.0	90.40	270.00	7,072.7	41.3	-2,319.8	2,320.0	0.00	0.00	0.00
8,900.0	90.40	270.00	7,072.0	41.3	-2,419.8	2,419.9	0.00	0.00	0.00
9,000.0	90.40	270.00	7,071.3	41.3	-2,519.8	2,519.9	0.00	0.00	0.00
9,100.0	90.40	270.00	7,070.6	41.3	-2,619.8	2,619.9	0.00	0.00	0.00
9,200.0	90.40	270.00	7,069.9	41.3	-2,719.8	2,719.9	0.00	0.00	0.00
9,300.0	90.40	270.00	7,069.2	41.3	-2,819.8	2,819.9	0.00	0.00	0.00
9,400.0	90.40	270.00	7,068.5	41.3	-2,919.7	2,919.9	0.00	0.00	0.00
9,500.0	90.40	270.00	7,067.9	41.3	-3,019.7	3,019.9	0.00	0.00	0.00
9,600.0	90.40	270.00	7,067.2	41.3	-3,119.7	3,119.9	0.00	0.00	0.00
9,700.0	90.40	270.00	7,066.5	41.3	-3,219.7	3,219.9	0.00	0.00	0.00
9,800.0	90.40	270.00	7,065.8	41.3	-3,319.7	3,319.9	0.00	0.00	0.00
9,900.0	90.40	270.00	7,065.1	41.3	-3,419.7	3,419.9	0.00	0.00	0.00
10,000.0	90.40	270.00	7,064.4	41.3	-3,519.7	3,519.9	0.00	0.00	0.00
10,100.0	90.40	270.00	7,063.7	41.3	-3,619.7	3,619.9	0.00	0.00	0.00
10,200.0	90.40	270.00	7,063.0	41.3	-3,719.7	3,719.9	0.00	0.00	0.00
10,300.0	90.40	270.00	7,062.3	41.3	-3,819.7	3,819.9	0.00	0.00	0.00
10,400.0	90.40	270.00	7,061.6	41.3	-3,919.7	3,919.9	0.00	0.00	0.00
10,500.0	90.40	270.00	7,060.9	41.3	-4,019.7	4,019.9	0.00	0.00	0.00
10,600.0	90.40	270.00	7,060.2	41.3	-4,119.7	4,119.9	0.00	0.00	0.00
10,700.0	90.40	270.00	7,059.5	41.3	-4,219.7	4,219.9	0.00	0.00	0.00
10,800.0	90.40	270.00	7,058.8	41.3	-4,319.7	4,319.9	0.00	0.00	0.00
10,900.0	90.40	270.00	7,058.1	41.3	-4,419.7	4,419.9	0.00	0.00	0.00
11,000.0	90.40	270.00	7,057.4	41.3	-4,519.7	4,519.9	0.00	0.00	0.00
11,100.0	90.40	270.00	7,056.7	41.3	-4,619.7	4,619.9	0.00	0.00	0.00
11,200.0	90.40	270.00	7,056.0	41.3	-4,719.7	4,719.9	0.00	0.00	0.00
11,300.0	90.40	270.00	7,055.3	41.3	-4,819.7	4,819.9	0.00	0.00	0.00
11,400.0	90.40	270.00	7,054.6	41.3	-4,919.7	4,919.9	0.00	0.00	0.00
11,500.0	90.40	270.00	7,053.9	41.3	-5,019.7	5,019.8	0.00	0.00	0.00
11,600.0	90.40	270.00	7,053.2	41.3	-5,119.7	5,119.8	0.00	0.00	0.00
11,700.0	90.40	270.00	7,052.5	41.3	-5,219.7	5,219.8	0.00	0.00	0.00
11,800.0	90.40	270.00	7,051.8	41.3	-5,319.7	5,319.8	0.00	0.00	0.00
11,900.0	90.40	270.00	7,051.1	41.3	-5,419.7	5,419.8	0.00	0.00	0.00
12,000.0	90.40	270.00	7,050.4	41.3	-5,519.7	5,519.8	0.00	0.00	0.00
12,100.0	90.40	270.00	7,049.7	41.3	-5,619.7	5,619.8	0.00	0.00	0.00
12,200.0	90.40	270.00	7,049.0	41.3	-5,719.7	5,719.8	0.00	0.00	0.00
12,300.0	90.40	270.00	7,048.3	41.3	-5,819.7	5,819.8	0.00	0.00	0.00
12,400.0	90.40	270.00	7,047.6	41.3	-5,919.7	5,919.8	0.00	0.00	0.00
12,500.0	90.40	270.00	7,046.9	41.3	-6,019.7	6,019.8	0.00	0.00	0.00
12,600.0	90.40	270.00	7,046.2	41.3	-6,119.7	6,119.8	0.00	0.00	0.00
12,700.0	90.40	270.00	7,045.5	41.3	-6,219.7	6,219.8	0.00	0.00	0.00
12,800.0	90.40	270.00	7,044.8	41.3	-6,319.7	6,319.8	0.00	0.00	0.00
12,900.0	90.40	270.00	7,044.1	41.3	-6,419.7	6,419.8	0.00	0.00	0.00
13,000.0	90.40	270.00	7,043.4	41.3	-6,519.7	6,519.8	0.00	0.00	0.00
13,100.0	90.40	270.00	7,042.7	41.3	-6,619.7	6,619.8	0.00	0.00	0.00
13,200.0	90.40	270.00	7,042.0	41.3	-6,719.7	6,719.8	0.00	0.00	0.00
13,300.0	90.40	270.00	7,041.3	41.3	-6,819.7	6,819.8	0.00	0.00	0.00
13,400.0	90.40	270.00	7,040.6	41.3	-6,919.7	6,919.8	0.00	0.00	0.00

Database:	landmark	Local Co-ordinate Reference:	Well Wiedeman 28F-214
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4778.0ft (Original Well Elev)
Project:	SEC.28-T4N-R66W	MD Reference:	WELL @ 4778.0ft (Original Well Elev)
Site:	Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W	North Reference:	True
Well:	Wiedeman 28F-214	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-07-14)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
13,500.0	90.40	270.00	7,039.9	41.3	-7,019.6	7,019.8	0.00	0.00	0.00
13,600.0	90.40	270.00	7,039.2	41.3	-7,119.6	7,119.8	0.00	0.00	0.00
13,700.0	90.40	270.00	7,038.5	41.3	-7,219.6	7,219.8	0.00	0.00	0.00
13,800.0	90.40	270.00	7,037.8	41.3	-7,319.6	7,319.8	0.00	0.00	0.00
13,900.0	90.40	270.00	7,037.1	41.3	-7,419.6	7,419.8	0.00	0.00	0.00
14,000.0	90.40	270.00	7,036.4	41.3	-7,519.6	7,519.7	0.00	0.00	0.00
14,100.0	90.40	270.00	7,035.7	41.3	-7,619.6	7,619.7	0.00	0.00	0.00
14,200.0	90.40	270.00	7,035.0	41.3	-7,719.6	7,719.7	0.00	0.00	0.00
14,205.5	90.40	270.00	7,035.0	41.3	-7,725.1	7,725.2	0.00	0.00	0.00

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,538.8	7,081.5	7"	7	7-1/2

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,716.8	3,706.0	PARKMAN			
4,368.0	4,353.0	SUSSEX			
4,799.8	4,784.0	SHANNON			
6,942.3	6,864.0	SHARON SPRINGS			
7,100.3	6,962.0	NIOBRARA A			
7,299.4	7,046.0	NIOBRARA B			
	7,134.0	NIOBRARA C			
	7,253.0	FT. HAYS			
	7,275.0	CODELL			

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,800.0	1,800.0	0.0	0.0	KOP #1
6,333.4	6,317.6	41.3	-289.3	KOP #2
7,538.8	7,081.5	41.3	-1,058.6	End of Build



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.28-T4N-R66W

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

Wiedeman 28F-214

Wellbore #1

Plan #1 (8-07-14)

Anticollision Report

11 August, 2014



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28F-214
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4778.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-214	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (8-07-14)	Offset TVD Reference:	Offset Datum

Reference	Plan #1 (8-07-14)		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0ft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,000.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program		Date	8/11/2014		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	14,205.5	Plan #1 (8-07-14) (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 Sec.28-T4N-R66W						
McLeod 1-29B (Exist) - Wellbore #1 - Wellbore #1	4,723.9	4,719.8	188.2	166.3	8.605	CC
McLeod 1-29B (Exist) - Wellbore #1 - Wellbore #1	4,800.0	4,797.1	188.4	166.3	8.526	ES
McLeod 1-29B (Exist) - Wellbore #1 - Wellbore #1	4,900.0	4,895.2	189.5	167.0	8.446	SF
McLeod 5 (Exist) - Wellbore #1 - Wellbore #1	8,120.5	7,072.1	303.9	245.7	5.221	CC, ES
McLeod 5 (Exist) - Wellbore #1 - Wellbore #1	8,200.0	7,071.6	314.2	253.9	5.214	SF
McLeod 7 (Exist) - Wellbore #1 - Wellbore #1	9,375.5	7,119.9	184.9	90.5	1.958	CC, ES, SF
Meining 1-30B (Exist) - Wellbore #1 - Wellbore #1	12,040.4	7,185.5	157.4	-9.4	0.944	Level 1, CC, ES, SF
Meining 5 (Exist) - Wellbore #1 - Wellbore #1	13,261.6	7,021.7	352.5	155.7	1.791	CC, ES, SF
Wiedeman 6 (Exist) - Wellbore #1 - Wellbore #1	10,675.9	7,049.7	432.5	302.3	3.321	CC
Wiedeman 6 (Exist) - Wellbore #1 - Wellbore #1	10,700.0	7,048.3	433.2	302.3	3.309	ES, SF
Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W						
Wiedeman 28E-202 - Wellbore #1 - Plan #1 (8-07-14)	1,448.5	1,452.9	305.1	298.7	48.083	CC
Wiedeman 28E-202 - Wellbore #1 - Plan #1 (8-07-14)	1,500.0	1,503.4	305.3	298.7	46.396	ES
Wiedeman 28E-202 - Wellbore #1 - Plan #1 (8-07-14)	6,300.0	6,379.8	911.8	877.6	26.657	SF
Wiedeman 28E-432 - Wellbore #1 - Plan #1 (7-25-14)	1,936.6	1,952.5	278.9	270.2	32.036	CC, ES
Wiedeman 28E-432 - Wellbore #1 - Plan #1 (7-25-14)	6,600.0	6,625.1	620.6	586.6	18.235	SF
Wiedeman 28F-202 - Wellbore #1 - Plan #1 (8-07-14)	2,033.0	2,057.4	252.2	243.3	28.262	CC, ES
Wiedeman 28F-202 - Wellbore #1 - Plan #1 (8-07-14)	6,400.0	6,414.7	429.5	397.4	13.373	SF
Wiedeman 28F-312 - Wellbore #1 - Plan #1 (7-25-14)	2,108.7	2,137.1	262.8	253.5	28.434	CC
Wiedeman 28F-312 - Wellbore #1 - Plan #1 (7-25-14)	6,400.0	6,418.2	267.7	235.5	8.321	ES, SF
Wiedeman 28F-412 - Wellbore #1 - Plan #1 (7-25-14)	6,300.0	6,315.8	151.0	122.1	5.232	CC
Wiedeman 28F-412 - Wellbore #1 - Plan #1 (7-25-14)	6,300.3	6,316.1	151.0	121.1	5.050	ES, SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28F-214
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4778.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-214	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (8-07-14)	Offset TVD Reference:	Offset Datum

Summary						
Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W						
Wiedeman 28E-234 - Wellbore #1 - Plan #1 (8-06-14)	400.0	400.0	58.3	56.7	37.047	CC, ES
Wiedeman 28E-234 - Wellbore #1 - Plan #1 (8-06-14)	14,205.5	14,232.9	641.2	220.6	1.524	SF
Wiedeman 28E-404 - Wellbore #1 - Plan #1 (8-07-14)	200.0	200.0	87.4	86.8	129.665	CC, ES
Wiedeman 28E-404 - Wellbore #1 - Plan #1 (8-07-14)	14,205.5	14,455.2	953.2	546.1	2.342	SF
Wiedeman 28F-234 - Wellbore #1 - Plan #1 (8-07-14)	600.0	600.0	61.9	59.5	25.049	CC, ES
Wiedeman 28F-234 - Wellbore #1 - Plan #1 (8-07-14)	14,205.5	14,209.7	728.6	308.2	1.733	SF
Wiedeman 28F-304 - Wellbore #1 - Plan #1 (8-07-14)	1,400.0	1,400.0	32.8	26.7	5.403	CC, ES
Wiedeman 28F-304 - Wellbore #1 - Plan #1 (8-07-14)	14,205.5	14,307.2	536.5	120.7	1.290	Level 3, SF
Wiedeman 28F-314 - Wellbore #1 - Plan #1 (8-07-14)	1,600.0	1,600.0	29.1	22.2	4.183	CC
Wiedeman 28F-314 - Wellbore #1 - Plan #1 (8-07-14)	14,205.5	14,304.4	152.9	-204.7	0.428	Level 1, ES, SF
Wiedeman 28G-214 - Wellbore #1 - Plan #1 (8-07-14)	200.0	199.0	120.2	119.5	178.886	CC, ES
Wiedeman 28G-214 - Wellbore #1 - Plan #1 (8-07-14)	1,800.0	1,733.2	410.0	399.6	39.574	SF
Wiedeman 28G-314 - Wellbore #1 - Plan #1 (8-07-14)	400.0	400.0	91.1	89.5	57.886	CC, ES
Wiedeman 28G-314 - Wellbore #1 - Plan #1 (8-07-14)	4,900.0	4,775.1	990.5	960.9	33.478	SF

Offset Design Existing Wells Sec.28-T4N-R66W - McLeod 1-29B (Exist) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 576-NS-GYRO-MS													Offset Well Error:	0.0 ft
Reference	Offset	Semi Major Axis		Distance		Minimum Separation		Separation Factor		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		
0.0	0.0	0.0	0.0	0.0	0.0	-73.69	204.0	-697.5	726.8					
100.0	100.0	93.2	93.2	0.1	0.1	-73.69	204.0	-697.1	726.4	726.1	0.24	3,058.550		
200.0	200.0	199.1	199.1	0.3	0.3	-73.67	203.9	-695.9	725.3	724.6	0.60	1,200.395		
300.0	300.0	305.0	304.9	0.6	0.4	-73.63	203.8	-693.8	723.3	722.3	0.97	745.052		
400.0	400.0	410.8	410.7	0.8	0.6	-73.58	203.6	-690.8	720.6	719.2	1.34	538.777		
500.0	500.0	516.5	516.4	1.0	0.7	-73.51	203.4	-687.0	717.0	715.3	1.70	420.799		
600.0	600.0	620.9	620.7	1.2	0.9	-73.42	203.2	-682.3	712.7	710.6	2.13	334.757		
700.0	700.0	723.6	723.2	1.5	1.2	-73.31	203.1	-677.2	707.9	705.3	2.63	269.244		
800.0	800.0	818.8	818.3	1.7	1.4	-73.16	203.5	-672.4	703.2	700.1	3.10	226.550		
900.0	900.0	915.8	915.2	1.9	1.7	-72.93	205.1	-667.9	699.3	695.7	3.58	195.195		
1,000.0	1,000.0	1,020.6	1,019.9	2.1	1.9	-72.62	207.4	-662.6	695.0	690.9	4.08	170.375		
1,100.0	1,100.0	1,123.5	1,122.5	2.4	2.2	-72.27	210.0	-656.6	690.2	685.6	4.57	150.871		
1,200.0	1,200.0	1,225.3	1,224.1	2.6	2.5	-71.90	212.5	-650.2	685.0	680.0	5.07	135.160		
1,300.0	1,300.0	1,325.4	1,323.9	2.8	2.8	-71.44	216.0	-643.5	679.7	674.2	5.56	122.333		
1,400.0	1,400.0	1,425.8	1,424.0	3.0	3.0	-70.92	220.1	-636.5	674.4	668.4	6.05	111.569		
1,500.0	1,500.0	1,525.3	1,523.3	3.3	3.3	-70.58	222.1	-630.1	669.1	662.5	6.53	102.388		
1,600.0	1,600.0	1,621.1	1,618.9	3.5	3.5	-70.41	222.4	-624.9	664.0	657.0	7.01	94.677		
1,700.0	1,700.0	1,717.6	1,715.3	3.7	3.8	-70.33	221.9	-620.7	659.8	652.3	7.49	88.101		
1,800.0	1,800.0	1,821.1	1,818.7	3.9	4.0	-70.32	220.5	-616.5	655.5	647.5	7.97	82.227		
1,900.0	1,900.0	1,924.8	1,922.3	4.1	4.3	11.53	217.8	-611.9	648.7	640.3	8.38	77.363		
2,000.0	1,999.8	2,023.1	2,020.4	4.4	4.5	11.51	214.5	-607.6	638.3	629.5	8.79	72.651		
2,100.0	2,099.5	2,119.1	2,116.3	4.6	4.7	11.48	210.4	-604.0	624.9	615.8	9.16	68.240		
2,200.0	2,198.8	2,212.9	2,209.9	4.8	4.9	11.38	206.0	-601.4	609.7	600.2	9.54	63.935		
2,300.0	2,298.2	2,310.0	2,306.9	5.0	5.1	11.31	202.2	-599.1	595.2	585.2	9.94	59.857		
2,400.0	2,397.6	2,406.5	2,403.3	5.3	5.3	11.34	199.4	-596.6	580.8	570.4	10.37	56.009		
2,500.0	2,496.9	2,510.1	2,506.9	5.5	5.6	11.44	197.0	-593.9	566.5	555.7	10.83	52.303		
2,600.0	2,596.3	2,614.0	2,610.7	5.8	5.8	11.41	193.0	-590.5	551.1	539.8	11.29	48.829		

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 28F-214
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4778.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-214	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (8-07-14)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.28-T4N-R66W - McLeod 1-29B (Exist) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 576-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		
2,700.0	2,695.6	2,716.2	2,712.6	6.1	6.0	11.21	187.4	-586.9	535.0	523.3	11.73	45.617		
2,800.0	2,795.0	2,817.0	2,813.1	6.3	6.3	10.84	180.3	-583.3	518.3	506.2	12.16	42.625		
2,900.0	2,894.4	2,917.6	2,913.3	6.6	6.5	10.35	172.4	-579.8	501.5	488.9	12.59	39.822		
3,000.0	2,993.7	3,022.6	3,017.8	6.9	6.7	9.71	163.0	-575.2	483.4	470.4	13.04	37.067		
3,100.0	3,093.1	3,122.2	3,116.9	7.1	6.9	8.95	153.1	-570.4	464.8	451.3	13.49	34.468		
3,200.0	3,192.5	3,221.7	3,215.7	7.4	7.2	8.13	143.2	-565.2	445.9	432.0	13.93	32.004		
3,300.0	3,291.8	3,323.2	3,316.6	7.7	7.4	7.29	133.5	-559.4	426.7	412.3	14.40	29.643		
3,400.0	3,391.2	3,429.7	3,422.2	8.0	7.7	6.29	122.6	-551.9	406.2	391.3	14.88	27.302		
3,500.0	3,490.5	3,531.5	3,523.0	8.3	8.0	5.16	111.4	-542.9	383.8	368.5	15.36	24.996		
3,600.0	3,589.9	3,628.0	3,618.4	8.6	8.2	3.91	100.5	-534.0	361.3	345.4	15.82	22.831		
3,700.0	3,689.3	3,719.9	3,709.3	8.8	8.5	2.40	89.2	-526.5	339.7	323.4	16.27	20.871		
3,800.0	3,788.6	3,820.3	3,808.4	9.1	8.7	0.01	74.2	-519.5	319.1	302.4	16.75	19.055		
3,900.0	3,888.0	3,918.0	3,904.3	9.4	9.0	-3.05	57.4	-511.9	298.1	280.9	17.22	17.309		
4,000.0	3,987.4	4,011.9	3,996.6	9.7	9.2	-6.23	42.1	-504.8	278.4	260.7	17.70	15.723		
4,100.0	4,086.7	4,108.7	4,092.2	10.0	9.5	-9.58	28.0	-498.2	260.3	242.1	18.21	14.295		
4,200.0	4,186.1	4,207.9	4,190.1	10.3	9.7	-13.49	13.7	-490.9	242.6	223.9	18.74	12.946		
4,300.0	4,285.4	4,304.7	4,285.5	10.6	10.0	-17.99	-0.6	-483.1	225.7	206.4	19.30	11.693		
4,400.0	4,384.8	4,402.6	4,382.3	10.9	10.3	-22.68	-13.2	-475.7	210.3	190.4	19.90	10.571		
4,500.0	4,484.4	4,500.1	4,478.7	11.1	10.5	-27.62	-25.5	-467.9	198.0	177.5	20.52	9.648		
4,600.0	4,584.2	4,597.3	4,574.8	11.3	10.8	-32.84	-38.6	-460.2	190.7	169.6	21.13	9.023		
4,700.0	4,684.2	4,695.8	4,672.0	11.5	11.1	-38.00	-52.5	-452.5	188.2	166.5	21.73	8.663		
4,723.9	4,708.1	4,719.8	4,695.6	11.5	11.1	-39.24	-56.0	-450.5	188.2	166.3	21.87	8.605 CC		
4,800.0	4,784.2	4,797.1	4,771.8	11.7	11.4	-125.11	-67.1	-443.4	188.4	166.3	22.10	8.526 ES		
4,900.0	4,884.2	4,895.2	4,868.3	11.9	11.6	-130.45	-81.6	-433.4	189.5	167.0	22.43	8.446 SF		
5,000.0	4,984.2	4,992.0	4,963.4	12.1	11.9	-135.81	-96.8	-423.5	192.8	170.0	22.77	8.465		
5,100.0	5,084.2	5,091.8	5,061.7	12.3	12.2	-140.79	-111.7	-414.1	197.7	174.6	23.14	8.543		
5,200.0	5,184.2	5,190.5	5,158.9	12.5	12.5	-145.30	-125.7	-405.0	203.6	180.0	23.54	8.648		
5,300.0	5,284.2	5,288.2	5,255.0	12.6	12.8	-149.67	-140.2	-395.5	211.0	187.0	23.96	8.807		
5,400.0	5,384.2	5,387.8	5,353.1	12.8	13.1	-153.74	-154.7	-386.0	219.3	194.9	24.40	8.988		
5,500.0	5,484.2	5,486.6	5,450.5	13.0	13.3	-157.37	-168.7	-376.9	228.6	203.7	24.86	9.192		
5,600.0	5,584.2	5,589.9	5,552.6	13.2	13.6	-160.59	-182.2	-368.1	237.8	212.4	25.35	9.378		
5,700.0	5,684.2	5,696.8	5,658.6	13.4	13.9	-163.21	-192.4	-359.8	244.5	218.6	25.86	9.456		
5,800.0	5,784.2	5,797.8	5,759.1	13.7	14.2	-165.29	-199.7	-352.6	249.5	223.2	26.35	9.469		
5,900.0	5,884.2	5,898.3	5,859.2	13.9	14.5	-166.81	-206.6	-347.4	254.9	228.1	26.84	9.495		
6,000.0	5,984.2	5,997.4	5,958.0	14.1	14.7	-168.05	-212.7	-343.1	260.0	232.7	27.33	9.513		
6,100.0	6,084.2	6,095.0	6,055.3	14.3	15.0	-169.17	-219.3	-339.1	265.9	238.1	27.81	9.560		
6,200.0	6,184.2	6,194.5	6,154.5	14.5	15.3	-170.36	-226.7	-334.8	272.4	244.1	28.30	9.623		
6,300.0	6,284.2	6,296.4	6,256.0	14.7	15.5	-171.62	-233.8	-329.8	278.6	249.7	28.80	9.671		
6,400.0	6,384.1	6,395.3	6,354.5	14.9	15.8	-83.06	-240.4	-325.1	284.2	253.8	30.38	9.355		
6,500.0	6,482.9	6,498.9	6,458.0	15.2	16.1	-86.70	-246.3	-321.5	288.2	257.3	30.91	9.325		
6,600.0	6,578.8	6,599.1	6,558.1	15.6	16.3	-92.43	-249.9	-319.0	291.8	260.3	31.47	9.273		
6,700.0	6,670.3	6,691.3	6,650.2	16.1	16.6	-99.28	-252.4	-317.3	299.5	267.5	31.98	9.367		
6,800.0	6,755.7	6,778.1	6,737.0	16.8	16.8	-106.46	-254.3	-316.1	315.9	283.5	32.32	9.772		
6,900.0	6,833.6	6,856.7	6,815.5	17.7	17.0	-112.78	-255.5	-315.3	344.4	311.9	32.47	10.607		
7,000.0	6,902.8	6,924.4	6,883.2	18.8	17.2	-117.26	-256.5	-314.5	387.4	354.8	32.60	11.884		
7,100.0	6,961.9	6,981.9	6,940.7	20.1	17.3	-119.51	-257.4	-313.8	444.4	411.4	33.04	13.451		
7,200.0	7,009.9	7,030.2	6,989.0	21.7	17.4	-119.34	-258.1	-313.1	513.5	479.3	34.20	15.017		
7,300.0	7,046.2	7,066.6	7,025.4	23.5	17.5	-115.86	-258.5	-312.7	592.3	555.7	36.61	16.179		
7,400.0	7,069.9	7,090.2	7,048.9	25.5	17.6	-107.89	-258.6	-312.4	678.1	637.6	40.45	16.762		
7,500.0	7,080.8	7,100.3	7,059.1	27.6	17.6	-94.06	-258.7	-312.3	768.6	723.9	44.63	17.221		
7,600.0	7,081.1	7,099.5	7,058.2	29.8	17.6	-86.85	-258.7	-312.3	861.5	814.5	47.02	18.322		

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 28F-214
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4778.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-214	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (8-07-14)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.28-T4N-R66W - McLeod 1-29B (Exist) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 576-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 +N/-S (ft)	Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
7,700.0	7,080.4	7,097.5	7,056.3	32.2	17.6	-86.49	-258.7	-312.3	955.9	906.5	49.32	19.380		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28F-214
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4778.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-214	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (8-07-14)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.28-T4N-R66W - McLeod 5 (Exist) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS													Offset Well Error:	0.0 ft
Reference		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)			
7,200.0	7,009.9	7,004.0	7,002.5	21.7	15.5	-38.63	-263.5	-1,640.2	959.6	932.6	27.08	35.442		
7,300.0	7,046.2	7,040.3	7,038.7	23.5	15.6	-51.47	-263.0	-1,640.2	871.7	839.7	32.00	27.242		
7,400.0	7,069.9	7,064.1	7,062.6	25.5	15.6	-68.21	-262.7	-1,640.3	781.4	743.0	38.41	20.341		
7,500.0	7,080.8	7,075.1	7,073.5	27.6	15.7	-85.58	-262.6	-1,640.3	690.9	647.8	43.11	16.027		
7,600.0	7,081.1	7,075.4	7,073.9	29.8	15.7	-91.39	-262.6	-1,640.3	602.7	557.2	45.48	13.252		
7,700.0	7,080.4	7,074.8	7,073.2	32.2	15.7	-91.27	-262.6	-1,640.3	518.8	471.0	47.80	10.853		
7,800.0	7,079.7	7,074.1	7,072.6	34.6	15.7	-91.15	-262.6	-1,640.3	441.7	391.5	50.19	8.799		
7,900.0	7,079.0	7,073.5	7,072.0	37.0	15.7	-91.03	-262.6	-1,640.3	375.5	322.8	52.65	7.132		
8,000.0	7,078.3	7,072.9	7,071.3	39.5	15.6	-90.91	-262.6	-1,640.3	326.9	271.8	55.15	5.929		
8,100.0	7,077.6	7,072.2	7,070.7	42.0	15.6	-90.79	-262.6	-1,640.3	304.6	246.9	57.68	5.281		
8,120.5	7,077.5	7,072.1	7,070.6	42.6	15.6	-90.77	-262.6	-1,640.3	303.9	245.7	58.21	5.221 CC, ES		
8,200.0	7,076.9	7,071.6	7,070.1	44.6	15.6	-90.67	-262.6	-1,640.3	314.2	253.9	60.25	5.214 SF		
8,300.0	7,076.2	7,071.0	7,069.4	47.2	15.6	-90.55	-262.6	-1,640.3	353.0	290.1	62.85	5.617		
8,400.0	7,075.5	7,070.3	7,068.8	49.8	15.6	-90.43	-262.6	-1,640.3	412.9	347.5	65.47	6.307		
8,500.0	7,074.8	7,069.7	7,068.1	52.5	15.6	-90.31	-262.6	-1,640.3	486.2	418.1	68.11	7.139		
8,600.0	7,074.1	7,069.0	7,067.5	55.1	15.6	-90.19	-262.7	-1,640.3	567.7	497.0	70.76	8.023		
8,700.0	7,073.4	7,068.4	7,066.9	57.8	15.6	-90.07	-262.7	-1,640.3	654.4	581.0	73.43	8.912		
8,800.0	7,072.7	7,067.8	7,066.2	60.5	15.6	-89.95	-262.7	-1,640.3	744.4	668.3	76.11	9.780		
8,900.0	7,072.0	7,067.1	7,065.6	63.2	15.6	-89.83	-262.7	-1,640.3	836.7	757.9	78.80	10.617		
9,000.0	7,071.3	7,066.5	7,065.0	65.9	15.6	-89.71	-262.7	-1,640.3	930.6	849.1	81.50	11.418		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28F-214
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4778.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-214	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (8-07-14)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.28-T4N-R66W - McLeod 7 (Exist) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 509-NS-GYRO-MS													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	
8,400.0	7,075.5	7,099.4	7,035.6	49.8	19.0	-85.35	-144.1	-2,894.7	992.6	924.9	67.72	14.658		
8,500.0	7,074.8	7,101.5	7,037.8	52.5	19.0	-86.00	-144.1	-2,894.8	894.6	824.2	70.43	12.701		
8,600.0	7,074.1	7,103.7	7,039.9	55.1	19.1	-86.65	-144.0	-2,894.8	797.1	723.9	73.16	10.895		
8,700.0	7,073.4	7,105.8	7,042.0	57.8	19.1	-87.29	-143.9	-2,894.9	700.2	624.3	75.90	9.226		
8,800.0	7,072.7	7,107.9	7,044.1	60.5	19.1	-87.94	-143.9	-2,894.9	604.3	525.7	78.64	7.685		
8,900.0	7,072.0	7,110.0	7,046.2	63.2	19.1	-88.59	-143.8	-2,895.0	510.1	428.7	81.38	6.267		
9,000.0	7,071.3	7,112.1	7,048.3	65.9	19.1	-89.24	-143.7	-2,895.1	418.5	334.3	84.13	4.974		
9,100.0	7,070.6	7,114.2	7,050.4	68.6	19.1	-89.89	-143.7	-2,895.1	331.7	244.9	86.88	3.818		
9,200.0	7,069.9	7,116.2	7,052.4	71.3	19.1	-90.53	-143.6	-2,895.2	254.9	165.3	89.62	2.844		
9,300.0	7,069.2	7,118.3	7,054.5	74.0	19.1	-91.18	-143.6	-2,895.2	199.7	107.3	92.36	2.162		
9,375.5	7,068.7	7,119.9	7,056.1	76.1	19.1	-91.67	-143.5	-2,895.3	184.9	90.5	94.42	1.958 CC, ES, SF		
9,400.0	7,068.5	7,120.4	7,056.6	76.8	19.1	-91.83	-143.5	-2,895.3	186.5	91.4	95.09	1.961		
9,500.0	7,067.9	7,122.5	7,058.7	79.5	19.1	-92.47	-143.4	-2,895.4	222.9	125.1	97.82	2.279		
9,600.0	7,067.2	7,124.6	7,060.8	82.2	19.1	-93.11	-143.4	-2,895.4	290.8	190.3	100.53	2.893		
9,700.0	7,066.5	7,126.6	7,062.8	85.0	19.1	-93.76	-143.3	-2,895.5	373.4	270.2	103.24	3.617		
9,800.0	7,065.8	7,128.0	7,064.2	87.7	19.1	-94.17	-143.3	-2,895.5	462.9	357.0	105.95	4.369		
9,900.0	7,065.1	7,128.0	7,064.2	90.5	19.1	-94.17	-143.3	-2,895.5	556.0	447.3	108.69	5.116		
10,000.0	7,064.4	7,128.0	7,064.2	93.2	19.1	-94.17	-143.3	-2,895.5	651.2	539.7	111.44	5.843		
10,100.0	7,063.7	7,128.0	7,064.2	96.0	19.1	-94.17	-143.3	-2,895.5	747.6	633.4	114.20	6.547		
10,200.0	7,063.0	7,136.2	7,072.4	98.8	19.1	-96.71	-143.1	-2,895.7	844.8	728.2	116.60	7.245		
10,300.0	7,062.3	7,138.0	7,074.2	101.5	19.1	-97.26	-143.0	-2,895.8	942.6	823.4	119.24	7.905		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28F-214
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4778.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-214	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (8-07-14)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.28-T4N-R66W - Meining 1-30B (Exist) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 579-NS-GYRO-MS													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	
11,100.0	7,056.7	7,195.0	7,039.6	123.7	18.2	-93.43	-116.1	-5,560.1	953.4	812.9	140.51	6.786		
11,200.0	7,056.0	7,193.9	7,038.5	126.5	18.2	-93.05	-116.1	-5,560.1	855.0	711.7	143.32	5.966		
11,300.0	7,055.3	7,192.9	7,037.5	129.3	18.2	-92.68	-116.1	-5,560.1	756.9	610.8	146.12	5.180		
11,400.0	7,054.6	7,191.8	7,036.4	132.1	18.2	-92.29	-116.1	-5,560.1	659.4	510.5	148.92	4.428		
11,500.0	7,053.9	7,190.8	7,035.3	134.8	18.2	-91.90	-116.1	-5,560.1	562.8	411.1	151.72	3.710		
11,600.0	7,053.2	7,189.7	7,034.3	137.6	18.2	-91.52	-116.1	-5,560.1	467.7	313.1	154.52	3.027		
11,700.0	7,052.5	7,188.7	7,033.3	140.4	18.2	-91.15	-116.1	-5,560.1	375.0	217.7	157.31	2.384		
11,800.0	7,051.8	7,187.7	7,032.3	143.2	18.2	-90.79	-116.1	-5,560.1	287.3	127.2	160.09	1.795		
11,900.0	7,051.1	7,186.8	7,031.3	146.0	18.2	-90.45	-116.1	-5,560.1	210.9	48.0	162.87	1.295	Level 3	
12,000.0	7,050.4	7,185.8	7,030.4	148.8	18.2	-90.11	-116.1	-5,560.1	162.5	-3.2	165.65	0.981	Level 1	
12,040.4	7,050.1	7,185.5	7,030.1	149.9	18.2	-89.98	-116.1	-5,560.1	157.4	-9.4	166.77	0.944	Level 1, CC, ES, SF	
12,100.0	7,049.7	7,184.9	7,029.5	151.6	18.2	-89.78	-116.1	-5,560.1	168.3	-0.2	168.42	0.999	Level 1	
12,200.0	7,049.0	7,184.1	7,028.6	154.4	18.2	-89.47	-116.1	-5,560.1	224.1	52.9	171.19	1.309	Level 3	
12,300.0	7,048.3	7,183.2	7,027.8	157.1	18.2	-89.16	-116.1	-5,560.1	303.6	129.6	173.95	1.745		
12,400.0	7,047.6	7,182.4	7,027.0	159.9	18.2	-88.86	-116.1	-5,560.1	392.5	215.8	176.71	2.221		
12,500.0	7,046.9	7,181.6	7,026.2	162.7	18.2	-88.57	-116.1	-5,560.1	485.8	306.3	179.47	2.707		
12,600.0	7,046.2	7,180.8	7,025.4	165.5	18.2	-88.28	-116.1	-5,560.1	581.3	399.1	182.22	3.190		
12,700.0	7,045.5	7,180.1	7,024.6	168.3	18.2	-88.01	-116.1	-5,560.1	678.1	493.1	184.97	3.666		
12,800.0	7,044.8	7,179.3	7,023.9	171.1	18.2	-87.74	-116.1	-5,560.1	775.7	588.0	187.72	4.132		
12,900.0	7,044.1	7,178.6	7,023.2	173.9	18.2	-87.48	-116.1	-5,560.1	873.8	683.4	190.47	4.588		
13,000.0	7,043.4	7,177.9	7,022.5	176.7	18.2	-87.22	-116.1	-5,560.1	972.4	779.2	193.21	5.033		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28F-214
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4778.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-214	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (8-07-14)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.28-T4N-R66W - Meining 5 (Exist) - Wellbore #1 - Wellbore #1													Offset Site Error: 0.0 ft
Survey Program: 100-NS-GYRO-MS													Offset Well Error: 0.0 ft
Reference	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	
12,400.0	7,047.6	7,014.3	7,013.0	159.9	12.9	-89.09	-311.3	-6,781.2	930.9	758.1	172.77	5.388	
12,500.0	7,046.9	7,015.2	7,013.8	162.7	12.9	-89.23	-311.3	-6,781.2	839.2	663.6	175.57	4.780	
12,600.0	7,046.2	7,016.0	7,014.7	165.5	12.9	-89.37	-311.3	-6,781.2	749.6	571.3	178.37	4.203	
12,700.0	7,045.5	7,016.9	7,015.6	168.3	12.9	-89.51	-311.3	-6,781.2	663.1	481.9	181.16	3.660	
12,800.0	7,044.8	7,017.7	7,016.4	171.1	12.9	-89.65	-311.3	-6,781.2	580.8	396.8	183.96	3.157	
12,900.0	7,044.1	7,018.6	7,017.3	173.9	12.9	-89.79	-311.2	-6,781.2	505.0	318.2	186.76	2.704	
13,000.0	7,043.4	7,019.5	7,018.1	176.7	12.9	-89.93	-311.2	-6,781.2	439.0	249.4	189.56	2.316	
13,100.0	7,042.7	7,020.3	7,019.0	179.5	12.9	-90.07	-311.2	-6,781.2	387.8	195.4	192.35	2.016	
13,200.0	7,042.0	7,021.2	7,019.9	182.3	12.9	-90.21	-311.2	-6,781.3	357.9	162.7	195.15	1.834	
13,261.6	7,041.6	7,021.7	7,020.4	184.0	12.9	-90.29	-311.2	-6,781.3	352.5	155.7	196.87	1.791	CC, ES, SF
13,300.0	7,041.3	7,022.1	7,020.7	185.1	12.9	-90.35	-311.2	-6,781.3	354.6	156.7	197.95	1.791	
13,400.0	7,040.6	7,022.9	7,021.6	187.9	12.9	-90.49	-311.2	-6,781.3	378.7	178.0	200.74	1.887	
13,500.0	7,039.9	7,023.8	7,022.4	190.7	12.9	-90.63	-311.2	-6,781.3	425.6	222.0	203.53	2.091	
13,600.0	7,039.2	7,024.6	7,023.3	193.5	12.9	-90.77	-311.2	-6,781.3	488.7	282.3	206.33	2.368	
13,700.0	7,038.5	7,025.5	7,024.2	196.3	12.9	-90.91	-311.2	-6,781.3	562.5	353.4	209.12	2.690	
13,800.0	7,037.8	7,026.4	7,025.0	199.0	12.9	-91.05	-311.2	-6,781.3	643.5	431.6	211.91	3.037	
13,900.0	7,037.1	7,027.2	7,025.9	201.8	12.9	-91.19	-311.2	-6,781.4	729.2	514.5	214.70	3.397	
14,000.0	7,036.4	7,028.1	7,026.7	204.6	12.9	-91.33	-311.2	-6,781.4	818.2	600.7	217.49	3.762	
14,100.0	7,035.7	7,028.9	7,027.6	207.4	12.9	-91.47	-311.2	-6,781.4	909.5	689.2	220.28	4.129	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28F-214
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4778.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-214	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (8-07-14)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.28-T4N-R66W - Wiedeman 6 (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 (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
9,800.0	7,065.8	7,101.6	7,099.5	87.7	18.5	-98.56	-389.5	-4,193.0	975.5	870.4	105.17	9.276	
9,900.0	7,065.1	7,095.7	7,093.6	90.5	18.5	-97.79	-389.7	-4,193.4	887.2	779.1	108.07	8.209	
10,000.0	7,064.4	7,089.8	7,087.7	93.2	18.5	-97.01	-389.8	-4,193.7	801.5	690.5	110.96	7.223	
10,100.0	7,063.7	7,083.8	7,081.8	96.0	18.4	-96.23	-390.0	-4,194.0	719.5	605.6	113.85	6.320	
10,200.0	7,063.0	7,077.9	7,075.9	98.8	18.4	-95.46	-390.2	-4,194.3	642.5	525.8	116.72	5.504	
10,300.0	7,062.3	7,072.0	7,070.0	101.5	18.4	-94.68	-390.4	-4,194.6	572.6	453.1	119.59	4.788	
10,400.0	7,061.6	7,066.1	7,064.0	104.3	18.4	-93.89	-390.6	-4,194.9	512.8	390.4	122.44	4.188	
10,500.0	7,060.9	7,060.2	7,058.1	107.1	18.4	-93.11	-390.7	-4,195.2	466.8	341.6	125.28	3.726	
10,600.0	7,060.2	7,054.2	7,052.2	109.8	18.4	-92.33	-390.9	-4,195.5	439.1	311.0	128.11	3.428	
10,675.9	7,059.6	7,049.7	7,047.7	111.9	18.4	-91.73	-391.1	-4,195.8	432.5	302.3	130.24	3.321 CC	
10,700.0	7,059.5	7,048.3	7,046.3	112.6	18.4	-91.55	-391.1	-4,195.8	433.2	302.3	130.91	3.309 ES, SF	
10,800.0	7,058.8	7,042.4	7,040.4	115.4	18.3	-90.76	-391.3	-4,196.1	449.9	316.2	133.70	3.365	
10,900.0	7,058.1	7,036.5	7,034.5	118.2	18.3	-89.98	-391.5	-4,196.4	486.9	350.5	136.46	3.568	
11,000.0	7,057.4	7,030.5	7,028.6	120.9	18.3	-89.20	-391.6	-4,196.8	540.1	400.9	139.20	3.880	
11,100.0	7,056.7	7,024.6	7,022.7	123.7	18.3	-88.42	-391.8	-4,197.1	605.2	463.3	141.92	4.264	
11,200.0	7,056.0	7,018.7	7,016.8	126.5	18.3	-87.64	-392.0	-4,197.4	678.8	534.2	144.61	4.694	
11,300.0	7,055.3	7,012.8	7,010.8	129.3	18.3	-86.86	-392.2	-4,197.7	758.4	611.1	147.28	5.149	
11,400.0	7,054.6	7,006.9	7,004.9	132.1	18.3	-86.08	-392.3	-4,198.0	842.3	692.4	149.92	5.619	
11,500.0	7,053.9	7,000.9	6,999.0	134.8	18.2	-85.31	-392.5	-4,198.3	929.4	776.9	152.53	6.093	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28F-214
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4778.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-214	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (8-07-14)	Offset TVD Reference:	Offset Datum

Offset Design				Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W - Wiedeman 28E-202 - Wellbore #1 - Plan #1 (8-								Offset Site Error:		0.0 ft
Survey Program: 0-MWD												Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth	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)			
0.0	0.0	0.0	0.0	0.0	0.0	73.82	87.4	301.3	313.7					
100.0	100.0	99.0	99.0	0.1	0.1	73.82	87.4	301.3	313.7	313.5	0.22	1,402.814		
200.0	200.0	199.0	199.0	0.3	0.3	73.82	87.4	301.3	313.7	313.1	0.67	466.827		
300.0	300.0	299.0	299.0	0.6	0.6	73.82	87.4	301.3	313.7	312.6	1.12	279.722		
400.0	400.0	399.0	399.0	0.8	0.8	73.82	87.4	301.3	313.7	312.2	1.57	199.687		
500.0	500.0	499.0	499.0	1.0	1.0	73.82	87.4	301.3	313.7	311.7	2.02	155.263		
600.0	600.0	599.0	599.0	1.2	1.2	73.82	87.4	301.3	313.7	311.3	2.47	127.007		
700.0	700.0	699.0	699.0	1.5	1.5	73.82	87.4	301.3	313.7	310.8	2.92	107.453		
800.0	800.0	799.0	799.0	1.7	1.7	73.82	87.4	301.3	313.7	310.4	3.37	93.116		
900.0	900.0	901.6	901.5	1.9	1.9	73.50	89.0	300.4	313.3	309.5	3.82	81.947		
1,000.0	1,000.0	1,003.9	1,003.7	2.1	2.1	72.53	93.7	297.7	312.2	307.9	4.28	72.935		
1,100.0	1,100.0	1,105.7	1,105.1	2.4	2.4	70.89	101.6	293.2	310.4	305.7	4.74	65.507		
1,200.0	1,200.0	1,206.7	1,205.3	2.6	2.6	68.60	112.5	287.0	308.3	303.2	5.20	59.322		
1,300.0	1,300.0	1,306.7	1,304.1	2.8	2.9	65.66	126.3	279.2	306.4	300.8	5.66	54.158		
1,400.0	1,400.0	1,405.4	1,401.0	3.0	3.2	62.12	142.7	269.8	305.2	299.1	6.12	49.848		
1,448.5	1,448.5	1,452.9	1,447.5	3.1	3.4	60.33	151.0	265.1	305.1	298.7	6.34	48.083 CC		
1,500.0	1,500.0	1,503.4	1,496.9	3.3	3.6	58.42	159.8	260.0	305.3	298.7	6.58	46.396 ES		
1,600.0	1,600.0	1,601.3	1,592.9	3.5	3.9	54.74	177.0	250.3	306.6	299.5	7.05	43.511		
1,700.0	1,700.0	1,699.3	1,688.8	3.7	4.3	51.10	194.1	240.5	309.2	301.7	7.53	41.079		
1,800.0	1,800.0	1,797.3	1,784.8	3.9	4.7	47.53	211.2	230.8	313.2	305.1	8.03	39.015		
1,900.0	1,900.0	1,895.4	1,880.9	4.1	5.1	126.08	228.4	221.0	319.3	310.2	9.19	34.737		
2,000.0	1,999.8	1,993.9	1,977.3	4.4	5.5	123.31	245.6	211.2	328.4	318.7	9.76	33.651		
2,100.0	2,099.5	2,092.5	2,074.0	4.6	5.9	121.13	262.9	201.4	340.0	329.6	10.33	32.907		
2,200.0	2,198.8	2,191.2	2,170.7	4.8	6.3	119.57	280.1	191.5	353.1	342.2	10.92	32.328		
2,300.0	2,298.2	2,289.9	2,267.4	5.0	6.7	118.18	297.4	181.7	366.5	355.0	11.52	31.805		
2,400.0	2,397.6	2,388.7	2,364.1	5.3	7.1	116.89	314.7	171.8	380.1	367.9	12.13	31.335		
2,500.0	2,496.9	2,487.4	2,460.8	5.5	7.5	115.69	331.9	162.0	393.8	381.1	12.74	30.913		
2,600.0	2,596.3	2,586.1	2,557.5	5.8	8.0	114.57	349.2	152.2	407.8	394.4	13.36	30.531		
2,700.0	2,695.6	2,684.8	2,654.2	6.1	8.4	113.53	366.5	142.3	421.8	407.9	13.97	30.187		
2,800.0	2,795.0	2,783.5	2,750.9	6.3	8.8	112.55	383.7	132.5	436.0	421.4	14.60	29.874		
2,900.0	2,894.4	2,882.3	2,847.6	6.6	9.2	111.63	401.0	122.7	450.4	435.1	15.22	29.590		
3,000.0	2,993.7	2,981.0	2,944.3	6.9	9.7	110.77	418.3	112.8	464.8	448.9	15.85	29.331		
3,100.0	3,093.1	3,079.7	3,041.0	7.1	10.1	109.96	435.5	103.0	479.3	462.8	16.47	29.095		
3,200.0	3,192.5	3,178.4	3,137.7	7.4	10.5	109.20	452.8	93.2	493.9	476.8	17.10	28.879		
3,300.0	3,291.8	3,277.1	3,234.4	7.7	10.9	108.49	470.0	83.3	508.6	490.9	17.73	28.680		
3,400.0	3,391.2	3,375.9	3,331.1	8.0	11.4	107.81	487.3	73.5	523.4	505.0	18.37	28.498		
3,500.0	3,490.5	3,474.6	3,427.8	8.3	11.8	107.17	504.6	63.7	538.2	519.2	19.00	28.329		
3,600.0	3,589.9	3,573.3	3,524.5	8.6	12.2	106.56	521.8	53.8	553.1	533.5	19.63	28.174		
3,700.0	3,689.3	3,672.0	3,621.2	8.8	12.6	105.99	539.1	44.0	568.0	547.8	20.27	28.030		
3,800.0	3,788.6	3,770.7	3,717.9	9.1	13.1	105.45	556.4	34.1	583.1	562.2	20.90	27.897		
3,900.0	3,888.0	3,869.5	3,814.6	9.4	13.5	104.93	573.6	24.3	598.1	576.6	21.54	27.773		
4,000.0	3,987.4	3,968.2	3,911.3	9.7	13.9	104.44	590.9	14.5	613.2	591.0	22.17	27.658		
4,100.0	4,086.7	4,066.9	4,008.0	10.0	14.4	103.97	608.2	4.6	628.3	605.5	22.81	27.550		
4,200.0	4,186.1	4,165.6	4,104.7	10.3	14.8	103.52	625.4	-5.2	643.5	620.1	23.44	27.450		
4,300.0	4,285.4	4,264.3	4,201.4	10.6	15.2	103.10	642.7	-15.0	658.7	634.7	24.08	27.356		
4,400.0	4,384.8	4,363.1	4,298.1	10.9	15.6	102.71	660.0	-24.9	674.0	649.3	24.72	27.268		
4,500.0	4,484.4	4,461.7	4,394.7	11.1	16.1	102.45	677.2	-34.7	688.8	663.5	25.30	27.227		
4,600.0	4,584.2	4,560.2	4,491.2	11.3	16.5	101.93	694.4	-44.5	703.1	677.2	25.84	27.209		
4,700.0	4,684.2	4,658.4	4,587.4	11.5	16.9	101.15	711.6	-54.3	716.7	690.4	26.33	27.222		
4,800.0	4,784.2	4,756.4	4,683.3	11.7	17.4	18.14	728.7	-64.1	730.3	705.4	24.82	29.417		
4,900.0	4,884.2	4,854.3	4,779.3	11.9	17.8	17.01	745.9	-73.8	744.1	718.6	25.48	29.199		

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 28F-214
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4778.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-214	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (8-07-14)	Offset TVD Reference:	Offset Datum

Offset Design Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W - Wiedeman 28E-202 - Wellbore #1 - Plan #1 (8-													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
5,000.0	4,984.2	4,952.3	4,875.2	12.1	18.2	15.91	763.0	-83.6	758.2	732.0	26.15	28.997		
5,100.0	5,084.2	5,050.3	4,971.2	12.3	18.6	14.85	780.1	-93.3	772.6	745.7	26.81	28.812		
5,200.0	5,184.2	5,148.2	5,067.1	12.5	19.1	13.84	797.3	-103.1	787.2	759.7	27.48	28.642		
5,300.0	5,284.2	5,246.2	5,163.1	12.6	19.5	12.86	814.4	-112.9	802.0	773.9	28.16	28.485		
5,400.0	5,384.2	5,344.1	5,259.0	12.8	19.9	11.91	831.5	-122.6	817.1	788.3	28.83	28.341		
5,500.0	5,484.2	5,442.1	5,355.0	13.0	20.4	11.00	848.7	-132.4	832.4	802.9	29.51	28.210		
5,600.0	5,584.2	5,540.0	5,450.9	13.2	20.8	10.12	865.8	-142.1	847.9	817.7	30.19	28.089		
5,700.0	5,684.2	5,638.0	5,546.9	13.4	21.2	9.27	882.9	-151.9	863.6	832.7	30.87	27.979		
5,800.0	5,784.2	5,742.3	5,649.1	13.7	21.6	8.41	901.1	-162.2	879.4	847.8	31.56	27.861		
5,900.0	5,884.2	5,873.1	5,778.0	13.9	22.1	7.52	920.4	-173.2	892.9	860.7	32.27	27.671		
6,000.0	5,984.2	6,005.6	5,909.5	14.1	22.4	6.89	934.7	-181.4	902.9	870.0	32.88	27.462		
6,100.0	6,084.2	6,139.5	6,042.9	14.3	22.7	6.49	943.8	-186.6	909.2	875.8	33.40	27.223		
6,200.0	6,184.2	6,274.0	6,177.3	14.5	22.9	6.34	947.4	-188.7	911.7	877.9	33.84	26.945		
6,300.0	6,284.2	6,379.8	6,283.2	14.7	23.0	6.33	947.5	-188.7	911.8	877.6	34.20	26.657 SF		
6,400.0	6,384.1	6,470.1	6,373.4	14.9	23.1	96.63	947.5	-185.5	912.5	879.0	33.51	27.229		
6,500.0	6,482.9	6,550.0	6,452.4	15.2	23.1	97.77	947.5	-174.1	916.5	882.5	33.94	27.003		
6,600.0	6,578.8	6,623.8	6,524.0	15.6	23.1	99.39	947.5	-156.3	925.3	890.9	34.41	26.894		
6,700.0	6,670.3	6,680.8	6,577.9	16.1	23.1	100.54	947.5	-137.9	941.3	906.5	34.85	27.010		
6,800.0	6,755.7	6,723.4	6,617.2	16.8	23.1	100.73	947.5	-121.5	966.3	931.0	35.31	27.368		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28F-214
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4778.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-214	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (8-07-14)	Offset TVD Reference:	Offset Datum

Offset Design		Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W - Wiedeman 28E-432 - Wellbore #1 - Plan #1 (7-										Offset Site Error:		0.0 ft	
Survey Program:		0-MWD										Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
0.0	0.0	0.0	0.0	0.0	0.0	79.05	58.3	301.3	306.9						
100.0	100.0	99.0	99.0	0.1	0.1	79.05	58.3	301.3	306.9	306.7	0.22	1,372.232			
200.0	200.0	199.0	199.0	0.3	0.3	79.05	58.3	301.3	306.9	306.2	0.67	456.650			
300.0	300.0	299.0	299.0	0.6	0.6	79.05	58.3	301.3	306.9	305.8	1.12	273.624			
400.0	400.0	399.0	399.0	0.8	0.8	79.05	58.3	301.3	306.9	305.3	1.57	195.334			
500.0	500.0	499.0	499.0	1.0	1.0	79.05	58.3	301.3	306.9	304.9	2.02	151.878			
600.0	600.0	599.0	599.0	1.2	1.2	79.05	58.3	301.3	306.9	304.4	2.47	124.239			
700.0	700.0	699.0	699.0	1.5	1.5	79.05	58.3	301.3	306.9	304.0	2.92	105.110			
800.0	800.0	799.0	799.0	1.7	1.7	79.05	58.3	301.3	306.9	303.5	3.37	91.086			
900.0	900.0	899.0	899.0	1.9	1.9	79.05	58.3	301.3	306.9	303.1	3.82	80.364			
1,000.0	1,000.0	999.0	999.0	2.1	2.1	79.05	58.3	301.3	306.9	302.6	4.27	71.900			
1,100.0	1,100.0	1,099.0	1,099.0	2.4	2.4	79.05	58.3	301.3	306.9	302.2	4.72	65.049			
1,200.0	1,200.0	1,199.0	1,199.0	2.6	2.6	79.05	58.3	301.3	306.9	301.7	5.17	59.390			
1,300.0	1,300.0	1,304.4	1,304.4	2.8	2.8	78.74	59.7	300.1	306.0	300.4	5.63	54.390			
1,400.0	1,400.0	1,409.5	1,409.3	3.0	3.1	77.79	64.2	296.4	303.4	297.3	6.09	49.859			
1,500.0	1,500.0	1,514.1	1,513.5	3.3	3.3	76.17	71.5	290.3	299.3	292.7	6.55	45.706			
1,600.0	1,600.0	1,617.9	1,616.4	3.5	3.5	73.85	81.6	281.8	293.9	286.9	7.01	41.909			
1,700.0	1,700.0	1,718.6	1,715.9	3.7	3.8	70.93	93.8	271.5	287.8	280.3	7.47	38.516			
1,800.0	1,800.0	1,817.3	1,813.2	3.9	4.1	67.89	106.1	261.2	282.3	274.4	7.92	35.649			
1,900.0	1,900.0	1,916.2	1,910.8	4.1	4.4	146.83	118.5	250.9	279.2	270.7	8.52	32.761			
1,936.6	1,936.6	1,952.5	1,946.6	4.2	4.5	145.83	123.0	247.1	278.9	270.2	8.71	32.036 CC, ES			
2,000.0	1,999.8	2,015.3	2,008.6	4.4	4.7	144.21	130.8	240.6	279.6	270.6	9.03	30.972			
2,100.0	2,099.5	2,114.7	2,106.6	4.6	5.0	141.98	143.2	230.2	283.4	273.9	9.55	29.691			
2,200.0	2,198.8	2,214.1	2,204.7	4.8	5.4	140.16	155.6	219.8	289.5	279.4	10.09	28.700			
2,300.0	2,298.2	2,313.5	2,302.8	5.0	5.7	138.44	168.0	209.4	295.9	285.3	10.65	27.797			
2,400.0	2,397.6	2,412.9	2,400.9	5.3	6.0	136.79	180.4	199.1	302.6	291.4	11.22	26.980			
2,500.0	2,496.9	2,512.3	2,499.0	5.5	6.4	135.22	192.8	188.7	309.6	297.8	11.80	26.238			
2,600.0	2,596.3	2,611.7	2,597.0	5.8	6.7	133.71	205.2	178.3	316.7	304.3	12.39	25.567			
2,700.0	2,695.6	2,711.1	2,695.1	6.1	7.1	132.27	217.6	167.9	324.1	311.1	12.99	24.957			
2,800.0	2,795.0	2,810.5	2,793.2	6.3	7.4	130.90	230.0	157.5	331.6	318.0	13.59	24.403			
2,900.0	2,894.4	2,909.9	2,891.3	6.6	7.8	129.59	242.4	147.2	339.4	325.2	14.20	23.900			
3,000.0	2,993.7	3,009.3	2,989.4	6.9	8.1	128.33	254.8	136.8	347.3	332.5	14.81	23.441			
3,100.0	3,093.1	3,108.7	3,087.4	7.1	8.5	127.14	267.2	126.4	355.3	339.9	15.43	23.023			
3,200.0	3,192.5	3,208.1	3,185.5	7.4	8.9	125.99	279.6	116.0	363.6	347.5	16.06	22.641			
3,300.0	3,291.8	3,307.5	3,283.6	7.7	9.2	124.90	292.0	105.7	371.9	355.2	16.68	22.291			
3,400.0	3,391.2	3,406.9	3,381.7	8.0	9.6	123.85	304.3	95.3	380.4	363.1	17.31	21.971			
3,500.0	3,490.5	3,506.3	3,479.8	8.3	9.9	122.85	316.7	84.9	389.0	371.1	17.95	21.676			
3,600.0	3,589.9	3,605.7	3,577.8	8.6	10.3	121.90	329.1	74.5	397.7	379.1	18.58	21.406			
3,700.0	3,689.3	3,705.1	3,675.9	8.8	10.7	120.98	341.5	64.1	406.5	387.3	19.22	21.157			
3,800.0	3,788.6	3,804.5	3,774.0	9.1	11.0	120.11	353.9	53.8	415.5	395.6	19.85	20.927			
3,900.0	3,888.0	3,903.9	3,872.1	9.4	11.4	119.27	366.3	43.4	424.5	404.0	20.49	20.715			
4,000.0	3,987.4	4,003.3	3,970.2	9.7	11.8	118.46	378.7	33.0	433.6	412.5	21.13	20.519			
4,100.0	4,086.7	4,102.7	4,068.2	10.0	12.1	117.69	391.1	22.6	442.8	421.0	21.77	20.338			
4,200.0	4,186.1	4,202.1	4,166.3	10.3	12.5	116.95	403.5	12.3	452.0	429.6	22.41	20.169			
4,300.0	4,285.4	4,301.5	4,264.4	10.6	12.9	116.24	415.9	1.9	461.4	438.3	23.05	20.013			
4,400.0	4,384.8	4,400.9	4,362.5	10.9	13.3	115.57	428.3	-8.5	470.8	447.1	23.69	19.868			
4,500.0	4,484.4	4,500.3	4,460.5	11.1	13.6	114.86	440.7	-18.9	479.4	455.1	24.28	19.741			
4,600.0	4,584.2	4,599.5	4,558.4	11.3	14.0	113.78	453.0	-29.2	486.7	461.8	24.84	19.590			
4,700.0	4,684.2	4,698.4	4,656.0	11.5	14.4	112.35	465.4	-39.6	492.9	467.5	25.37	19.429			
4,800.0	4,784.2	4,797.1	4,753.4	11.7	14.7	28.75	477.7	-49.9	498.7	476.4	22.23	22.431			
4,900.0	4,884.2	4,895.8	4,850.7	11.9	15.1	27.05	490.0	-60.2	504.9	482.1	22.75	22.189			

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 28F-214
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4778.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-214	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (8-07-14)	Offset TVD Reference:	Offset Datum

Offset Design Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W - Wiedeman 28E-432 - Wellbore #1 - Plan #1 (7-														Offset Site Error:	0.0 ft
Survey Program: 0-MWD														Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
5,000.0	4,984.2	4,994.4	4,948.1	12.1	15.5	25.39	502.3	-70.5	511.5	488.2	23.29	21.966			
5,100.0	5,084.2	5,093.1	5,045.4	12.3	15.8	23.78	514.6	-80.8	518.6	494.7	23.83	21.760			
5,200.0	5,184.2	5,191.8	5,142.8	12.5	16.2	22.21	526.9	-91.1	526.1	501.7	24.39	21.570			
5,300.0	5,284.2	5,290.4	5,240.1	12.6	16.6	20.68	539.2	-101.4	533.9	509.0	24.95	21.396			
5,400.0	5,384.2	5,389.1	5,337.5	12.8	16.9	19.20	551.5	-111.7	542.2	516.6	25.53	21.238			
5,500.0	5,484.2	5,487.8	5,434.8	13.0	17.3	17.76	563.8	-122.0	550.8	524.7	26.11	21.093			
5,600.0	5,584.2	5,586.4	5,532.2	13.2	17.7	16.36	576.1	-132.3	559.7	533.0	26.70	20.961			
5,700.0	5,684.2	5,685.1	5,629.6	13.4	18.0	15.01	588.4	-142.6	569.0	541.7	27.30	20.842			
5,800.0	5,784.2	5,783.8	5,726.9	13.7	18.4	13.71	600.7	-152.9	578.6	550.7	27.90	20.735			
5,900.0	5,884.2	5,882.4	5,824.3	13.9	18.8	12.44	613.0	-163.2	588.4	559.9	28.51	20.639			
6,000.0	5,984.2	5,994.6	5,935.2	14.1	19.1	11.19	625.6	-173.7	597.6	568.5	29.10	20.535			
6,100.0	6,084.2	6,109.3	6,049.2	14.3	19.4	10.28	635.1	-181.6	604.4	574.8	29.64	20.393			
6,200.0	6,184.2	6,224.9	6,164.5	14.5	19.6	9.71	641.0	-186.6	608.8	578.6	30.12	20.210			
6,300.0	6,284.2	6,340.8	6,280.5	14.7	19.8	9.49	643.4	-188.7	610.5	580.0	30.55	19.985			
6,400.0	6,384.1	6,443.5	6,383.1	14.9	19.9	99.72	643.5	-188.7	611.0	578.0	33.00	18.519			
6,500.0	6,482.9	6,542.2	6,481.9	15.2	20.1	100.89	643.5	-188.7	613.8	580.3	33.51	18.319			
6,600.0	6,578.8	6,625.1	6,564.6	15.6	20.2	102.73	643.5	-185.7	620.6	586.6	34.04	18.235 SF			
6,700.0	6,670.3	6,694.4	6,633.3	16.1	20.2	104.88	643.5	-176.5	635.3	600.7	34.53	18.398			
6,800.0	6,755.7	6,750.0	6,687.6	16.8	20.2	106.36	643.5	-164.7	660.4	625.5	34.99	18.876			
6,900.0	6,833.6	6,790.7	6,726.8	17.7	20.2	106.34	643.5	-153.5	697.9	662.4	35.53	19.642			
7,000.0	6,902.8	6,818.8	6,753.3	18.8	20.2	104.41	643.5	-144.6	747.7	711.3	36.35	20.566			
7,100.0	6,961.9	6,835.6	6,769.1	20.1	20.2	100.27	643.5	-138.8	808.3	770.7	37.61	21.490			
7,200.0	7,009.9	6,850.0	6,782.5	21.7	20.2	94.47	643.5	-133.5	877.5	838.3	39.25	22.357			
7,300.0	7,046.2	6,850.0	6,782.5	23.5	20.2	85.93	643.5	-133.5	952.7	911.7	40.97	23.255			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28F-214
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4778.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-214	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (8-07-14)	Offset TVD Reference:	Offset Datum

Offset Design		Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W - Wiedeman 28F-202 - Wellbore #1 - Plan #1 (8-										Offset Site Error:		0.0 ft	
Survey Program:		0-MWD										Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
0.0	0.0	0.0	0.0	0.0	0.0	96.21	-32.8	301.3	303.1						
100.0	100.0	99.0	99.0	0.1	0.1	96.21	-32.8	301.3	303.1	302.9	0.22	1,355.209			
200.0	200.0	199.0	199.0	0.3	0.3	96.21	-32.8	301.3	303.1	302.4	0.67	450.985			
300.0	300.0	299.0	299.0	0.6	0.6	96.21	-32.8	301.3	303.1	302.0	1.12	270.229			
400.0	400.0	399.0	399.0	0.8	0.8	96.21	-32.8	301.3	303.1	301.5	1.57	192.911			
500.0	500.0	499.0	499.0	1.0	1.0	96.21	-32.8	301.3	303.1	301.1	2.02	149.994			
600.0	600.0	599.0	599.0	1.2	1.2	96.21	-32.8	301.3	303.1	300.6	2.47	122.697			
700.0	700.0	699.0	699.0	1.5	1.5	96.21	-32.8	301.3	303.1	300.2	2.92	103.806			
800.0	800.0	799.0	799.0	1.7	1.7	96.21	-32.8	301.3	303.1	299.7	3.37	89.956			
900.0	900.0	899.0	899.0	1.9	1.9	96.21	-32.8	301.3	303.1	299.3	3.82	79.367			
1,000.0	1,000.0	999.0	999.0	2.1	2.1	96.21	-32.8	301.3	303.1	298.8	4.27	71.008			
1,100.0	1,100.0	1,099.0	1,099.0	2.4	2.4	96.21	-32.8	301.3	303.1	298.4	4.72	64.242			
1,200.0	1,200.0	1,199.0	1,199.0	2.6	2.6	96.21	-32.8	301.3	303.1	297.9	5.17	58.654			
1,300.0	1,300.0	1,307.5	1,307.5	2.8	2.8	96.46	-33.9	299.7	301.7	296.1	5.61	53.759			
1,400.0	1,400.0	1,415.8	1,415.6	3.0	3.0	97.24	-37.4	294.6	297.5	291.4	6.04	49.223			
1,500.0	1,500.0	1,523.5	1,522.8	3.3	3.2	98.59	-43.2	286.3	290.6	284.1	6.49	44.779			
1,600.0	1,600.0	1,627.9	1,626.3	3.5	3.5	100.48	-50.9	275.3	281.3	274.4	6.95	40.502			
1,700.0	1,700.0	1,726.9	1,724.4	3.7	3.7	102.54	-58.7	264.1	271.8	264.4	7.40	36.732			
1,800.0	1,800.0	1,826.0	1,822.5	3.9	4.0	104.73	-66.5	253.0	262.6	254.8	7.86	33.418			
1,900.0	1,900.0	1,925.2	1,920.8	4.1	4.3	-171.11	-74.3	241.8	255.6	247.3	8.31	30.764			
2,000.0	1,999.8	2,024.6	2,019.3	4.4	4.5	-168.86	-82.2	230.6	252.4	243.7	8.77	28.784			
2,033.0	2,032.7	2,057.4	2,051.8	4.4	4.6	-168.14	-84.8	226.9	252.2	243.3	8.92	28.262	CC, ES		
2,100.0	2,099.5	2,124.1	2,117.9	4.6	4.8	-166.72	-90.0	219.3	253.1	243.8	9.24	27.390			
2,200.0	2,198.8	2,223.7	2,216.5	4.8	5.1	-164.74	-97.8	208.1	256.5	246.7	9.74	26.340			
2,300.0	2,298.2	2,323.2	2,315.1	5.0	5.4	-162.82	-105.7	196.9	260.2	250.0	10.25	25.382			
2,400.0	2,397.6	2,422.8	2,413.7	5.3	5.8	-160.96	-113.5	185.7	264.3	253.5	10.78	24.515			
2,500.0	2,496.9	2,522.3	2,512.3	5.5	6.1	-159.15	-121.4	174.4	268.6	257.3	11.32	23.729			
2,600.0	2,596.3	2,621.9	2,610.9	5.8	6.4	-157.41	-129.2	163.2	273.2	261.3	11.87	23.016			
2,700.0	2,695.6	2,721.5	2,709.5	6.1	6.7	-155.72	-137.0	152.0	278.0	265.6	12.43	22.369			
2,800.0	2,795.0	2,821.0	2,808.1	6.3	7.0	-154.09	-144.9	140.8	283.1	270.1	13.00	21.781			
2,900.0	2,894.4	2,920.6	2,906.7	6.6	7.4	-152.52	-152.7	129.5	288.4	274.8	13.57	21.247			
3,000.0	2,993.7	3,020.1	3,005.3	6.9	7.7	-151.01	-160.5	118.3	293.9	279.7	14.15	20.761			
3,100.0	3,093.1	3,119.7	3,103.9	7.1	8.0	-149.55	-168.4	107.1	299.6	284.8	14.74	20.318			
3,200.0	3,192.5	3,219.2	3,202.5	7.4	8.4	-148.15	-176.2	95.9	305.4	290.1	15.34	19.914			
3,300.0	3,291.8	3,318.8	3,301.1	7.7	8.7	-146.80	-184.0	84.6	311.5	295.6	15.94	19.545			
3,400.0	3,391.2	3,418.3	3,399.7	8.0	9.0	-145.50	-191.9	73.4	317.7	301.2	16.54	19.207			
3,500.0	3,490.5	3,517.9	3,498.3	8.3	9.4	-144.26	-199.7	62.2	324.1	306.9	17.15	18.898			
3,600.0	3,589.9	3,617.4	3,596.9	8.6	9.7	-143.06	-207.6	51.0	330.6	312.9	17.76	18.614			
3,700.0	3,689.3	3,717.0	3,695.6	8.8	10.0	-141.91	-215.4	39.7	337.3	318.9	18.38	18.354			
3,800.0	3,788.6	3,816.5	3,794.2	9.1	10.4	-140.80	-223.2	28.5	344.1	325.1	18.99	18.115			
3,900.0	3,888.0	3,916.1	3,892.8	9.4	10.7	-139.74	-231.1	17.3	351.0	331.4	19.61	17.895			
4,000.0	3,987.4	4,015.6	3,991.4	9.7	11.0	-138.71	-238.9	6.1	358.0	337.8	20.24	17.692			
4,100.0	4,086.7	4,115.2	4,090.0	10.0	11.4	-137.73	-246.7	-5.2	365.2	344.3	20.86	17.505			
4,200.0	4,186.1	4,214.7	4,188.6	10.3	11.7	-136.79	-254.6	-16.4	372.4	350.9	21.49	17.332			
4,300.0	4,285.4	4,314.3	4,287.2	10.6	12.1	-135.88	-262.4	-27.6	379.8	357.7	22.12	17.173			
4,400.0	4,384.8	4,413.8	4,385.8	10.9	12.4	-135.01	-270.3	-38.8	387.2	364.5	22.74	17.025			
4,500.0	4,484.4	4,513.4	4,484.4	11.1	12.8	-134.05	-278.1	-50.1	393.3	370.0	23.33	16.862			
4,600.0	4,584.2	4,612.8	4,582.9	11.3	13.1	-132.72	-285.9	-61.3	397.2	373.3	23.89	16.624			
4,700.0	4,684.2	4,712.1	4,681.2	11.5	13.4	-131.03	-293.7	-72.5	399.0	374.6	24.44	16.326			
4,800.0	4,784.2	4,811.1	4,779.3	11.7	13.8	149.04	-301.5	-83.6	399.8	378.1	25.04	16.075			
4,900.0	4,884.2	4,910.2	4,877.4	11.9	14.1	150.98	-309.3	-94.8	401.0	378.9	25.67	15.811			

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 28F-214
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4778.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-214	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (8-07-14)	Offset TVD Reference:	Offset Datum

Offset Design Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W - Wiedeman 28F-202 - Wellbore #1 - Plan #1 (8-													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
5,000.0	4,984.2	5,009.2	4,975.6	12.1	14.5	152.91	-317.1	-106.0	402.6	380.1	22.51	17.890		
5,100.0	5,084.2	5,108.3	5,073.7	12.3	14.8	154.82	-324.9	-117.2	404.8	381.8	22.96	17.629		
5,200.0	5,184.2	5,207.3	5,171.8	12.5	15.1	156.71	-332.7	-128.3	407.3	383.9	23.43	17.387		
5,300.0	5,284.2	5,306.4	5,269.9	12.6	15.5	158.58	-340.5	-139.5	410.4	386.4	23.91	17.164		
5,400.0	5,384.2	5,405.4	5,368.0	12.8	15.8	160.41	-348.3	-150.7	413.8	389.4	24.40	16.958		
5,500.0	5,484.2	5,504.5	5,466.1	13.0	16.2	162.22	-356.1	-161.8	417.7	392.8	24.91	16.768		
5,600.0	5,584.2	5,606.5	5,567.2	13.2	16.5	163.95	-363.8	-172.8	421.8	396.4	25.42	16.594		
5,700.0	5,684.2	5,711.2	5,671.4	13.4	16.7	165.26	-369.6	-181.2	425.1	399.2	25.88	16.424		
5,800.0	5,784.2	5,816.6	5,776.6	13.7	16.9	166.08	-373.3	-186.5	427.2	400.9	26.32	16.232		
5,900.0	5,884.2	5,922.2	5,882.2	13.9	17.1	166.40	-374.8	-188.6	428.1	401.4	26.73	16.014		
6,000.0	5,984.2	6,023.2	5,983.2	14.1	17.2	166.41	-374.9	-188.7	428.1	401.0	27.13	15.779		
6,100.0	6,084.2	6,123.2	6,083.2	14.3	17.4	166.41	-374.9	-188.7	428.1	400.6	27.53	15.553		
6,200.0	6,184.2	6,223.2	6,183.2	14.5	17.5	166.41	-374.9	-188.7	428.1	400.2	27.92	15.333		
6,300.0	6,284.2	6,323.2	6,283.2	14.7	17.7	166.41	-374.9	-188.7	428.1	399.8	28.32	15.118		
6,300.0	6,284.2	6,323.2	6,283.2	14.7	17.7	166.41	-374.9	-188.7	428.1	399.8	28.32	15.118		
6,400.0	6,384.1	6,414.7	6,374.6	14.9	17.8	-104.14	-374.9	-186.2	429.5	397.4	32.12	13.373 SF		
6,500.0	6,482.9	6,500.0	6,459.1	15.2	17.8	-106.67	-374.9	-174.7	437.4	404.9	32.47	13.471		
6,600.0	6,578.8	6,569.3	6,526.4	15.6	17.8	-109.66	-374.9	-158.4	455.1	422.3	32.77	13.890		
6,700.0	6,670.3	6,627.0	6,581.2	16.1	17.8	-112.00	-374.9	-140.2	486.1	453.1	33.02	14.723		
6,800.0	6,755.7	6,670.2	6,621.1	16.8	17.8	-112.46	-374.9	-124.0	532.1	498.7	33.34	15.960		
6,900.0	6,833.6	6,700.0	6,648.2	17.7	17.7	-110.37	-374.9	-111.4	592.0	558.1	33.94	17.442		
7,000.0	6,902.8	6,718.1	6,664.4	18.8	17.7	-105.21	-374.9	-103.3	663.4	628.3	35.05	18.927		
7,100.0	6,961.9	6,726.7	6,672.0	20.1	17.7	-96.64	-374.9	-99.3	742.9	706.3	36.62	20.286		
7,200.0	7,009.9	6,727.4	6,672.6	21.7	17.7	-84.79	-374.9	-99.0	827.6	789.5	38.03	21.759		
7,300.0	7,046.2	6,721.7	6,667.5	23.5	17.7	-71.04	-374.9	-101.6	914.7	876.5	38.20	23.946		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28F-214
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4778.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-214	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (8-07-14)	Offset TVD Reference:	Offset Datum

Offset Design				Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W - Wiedeman 28F-312 - Wellbore #1 - Plan #1 (7-								Offset Site Error:		0.0 ft
Survey Program: 0-MWD												Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
				(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)						
0.0	0.0	0.0	0.0	0.0	0.0	84.47	29.1	301.3	302.7					
100.0	100.0	99.0	99.0	0.1	0.1	84.47	29.1	301.3	302.7	302.5	0.22	1,353.542		
200.0	200.0	199.0	199.0	0.3	0.3	84.47	29.1	301.3	302.7	302.0	0.67	450.430		
300.0	300.0	299.0	299.0	0.6	0.6	84.47	29.1	301.3	302.7	301.6	1.12	269.897		
400.0	400.0	399.0	399.0	0.8	0.8	84.47	29.1	301.3	302.7	301.1	1.57	192.673		
500.0	500.0	499.0	499.0	1.0	1.0	84.47	29.1	301.3	302.7	300.7	2.02	149.809		
600.0	600.0	599.0	599.0	1.2	1.2	84.47	29.1	301.3	302.7	300.2	2.47	122.547		
700.0	700.0	699.0	699.0	1.5	1.5	84.47	29.1	301.3	302.7	299.8	2.92	103.679		
800.0	800.0	799.0	799.0	1.7	1.7	84.47	29.1	301.3	302.7	299.3	3.37	89.846		
900.0	900.0	899.0	899.0	1.9	1.9	84.47	29.1	301.3	302.7	298.9	3.82	79.269		
1,000.0	1,000.0	999.0	999.0	2.1	2.1	84.47	29.1	301.3	302.7	298.4	4.27	70.921		
1,100.0	1,100.0	1,099.0	1,099.0	2.4	2.4	84.47	29.1	301.3	302.7	298.0	4.72	64.163		
1,200.0	1,200.0	1,199.0	1,199.0	2.6	2.6	84.47	29.1	301.3	302.7	297.5	5.17	58.581		
1,300.0	1,300.0	1,299.0	1,299.0	2.8	2.8	84.47	29.1	301.3	302.7	297.1	5.62	53.893		
1,400.0	1,400.0	1,399.0	1,399.0	3.0	3.0	84.47	29.1	301.3	302.7	296.6	6.07	49.899		
1,500.0	1,500.0	1,508.5	1,508.5	3.3	3.3	84.26	30.1	299.5	301.1	294.6	6.53	46.117		
1,600.0	1,600.0	1,617.8	1,617.6	3.5	3.5	83.59	33.0	294.0	296.4	289.4	6.99	42.394		
1,700.0	1,700.0	1,726.5	1,725.8	3.7	3.8	82.44	37.8	284.9	288.6	281.2	7.46	38.682		
1,800.0	1,800.0	1,829.5	1,828.0	3.9	4.0	80.87	43.9	273.4	278.4	270.5	7.93	35.112		
1,900.0	1,900.0	1,928.9	1,926.5	4.1	4.3	161.26	50.0	261.9	269.7	261.4	8.34	32.334		
2,000.0	1,999.8	2,028.5	2,025.3	4.4	4.5	159.91	56.0	250.5	264.5	255.8	8.77	30.165		
2,100.0	2,099.5	2,128.4	2,124.3	4.6	4.8	158.75	62.1	239.0	262.8	253.6	9.20	28.557		
2,108.7	2,108.1	2,137.1	2,132.9	4.6	4.8	158.66	62.6	238.0	262.8	253.5	9.24	28.434	CC	
2,200.0	2,198.8	2,228.3	2,223.3	4.8	5.1	157.78	68.1	227.5	263.4	253.7	9.66	27.278		
2,300.0	2,298.2	2,328.2	2,322.4	5.0	5.4	156.82	74.2	216.0	264.2	254.0	10.13	26.090		
2,400.0	2,397.6	2,428.1	2,421.4	5.3	5.7	155.86	80.3	204.6	265.0	254.4	10.60	24.993		
2,500.0	2,496.9	2,528.0	2,520.5	5.5	6.0	154.91	86.4	193.1	266.0	254.9	11.09	23.979		
2,600.0	2,596.3	2,627.9	2,619.5	5.8	6.3	153.97	92.4	181.6	267.0	255.4	11.59	23.041		
2,700.0	2,695.6	2,727.8	2,718.6	6.1	6.6	153.03	98.5	170.1	268.1	256.0	12.09	22.170		
2,800.0	2,795.0	2,827.7	2,817.7	6.3	6.9	152.11	104.6	158.6	269.2	256.6	12.60	21.363		
2,900.0	2,894.4	2,927.6	2,916.7	6.6	7.2	151.19	110.6	147.1	270.4	257.3	13.12	20.612		
3,000.0	2,993.7	3,027.5	3,015.8	6.9	7.5	150.28	116.7	135.6	271.7	258.1	13.64	19.913		
3,100.0	3,093.1	3,127.4	3,114.8	7.1	7.8	149.37	122.8	124.2	273.1	258.9	14.18	19.262		
3,200.0	3,192.5	3,227.3	3,213.9	7.4	8.1	148.48	128.9	112.7	274.5	259.8	14.71	18.654		
3,300.0	3,291.8	3,327.2	3,312.9	7.7	8.4	147.60	134.9	101.2	276.0	260.7	15.26	18.086		
3,400.0	3,391.2	3,427.1	3,412.0	8.0	8.7	146.72	141.0	89.7	277.5	261.7	15.81	17.555		
3,500.0	3,490.5	3,526.9	3,511.0	8.3	9.1	145.86	147.1	78.2	279.1	262.8	16.37	17.058		
3,600.0	3,589.9	3,626.8	3,610.1	8.6	9.4	145.01	153.1	66.7	280.8	263.9	16.93	16.591		
3,700.0	3,689.3	3,726.7	3,709.1	8.8	9.7	144.16	159.2	55.2	282.6	265.1	17.49	16.153		
3,800.0	3,788.6	3,826.6	3,808.2	9.1	10.0	143.33	165.3	43.8	284.4	266.3	18.07	15.741		
3,900.0	3,888.0	3,926.5	3,907.2	9.4	10.3	142.51	171.3	32.3	286.2	267.6	18.64	15.354		
4,000.0	3,987.4	4,026.4	4,006.3	9.7	10.7	141.70	177.4	20.8	288.2	268.9	19.22	14.990		
4,100.0	4,086.7	4,126.3	4,105.3	10.0	11.0	140.90	183.5	9.3	290.1	270.3	19.81	14.646		
4,200.0	4,186.1	4,226.2	4,204.4	10.3	11.3	140.11	189.6	-2.2	292.2	271.8	20.40	14.322		
4,300.0	4,285.4	4,326.1	4,303.4	10.6	11.6	139.33	195.6	-13.7	294.3	273.3	20.99	14.016		
4,400.0	4,384.8	4,426.0	4,402.5	10.9	12.0	138.56	201.7	-25.1	296.4	274.8	21.59	13.726		
4,500.0	4,484.4	4,525.9	4,501.5	11.1	12.3	137.55	207.8	-36.6	297.1	274.9	22.17	13.400		
4,600.0	4,584.2	4,625.6	4,600.3	11.3	12.6	136.06	213.8	-48.1	295.4	272.6	22.75	12.981		
4,700.0	4,684.2	4,725.0	4,698.9	11.5	12.9	134.03	219.9	-59.5	291.4	268.1	23.34	12.484		
4,800.0	4,784.2	4,824.1	4,797.2	11.7	13.2	132.59	225.9	-70.9	286.3	263.9	23.99	12.784		
4,900.0	4,884.2	4,923.3	4,895.5	11.9	13.6	131.36	231.9	-82.3	281.7	258.9	24.72	12.399		

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 28F-214
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4778.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-214	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (8-07-14)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W - Wiedeman 28F-312 - Wellbore #1 - Plan #1 (7-													Offset Well Error:	0.0 ft
Survey Program: 0-MWD														
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	4,984.2	5,022.4	4,993.8	12.1	13.9	44.84	237.9	-93.7	277.6	254.5	23.04	12.047		
5,100.0	5,084.2	5,121.6	5,092.1	12.3	14.2	42.26	244.0	-105.1	274.0	250.7	23.36	11.728		
5,200.0	5,184.2	5,220.7	5,190.4	12.5	14.5	39.62	250.0	-116.5	271.0	247.4	23.69	11.440		
5,300.0	5,284.2	5,319.9	5,288.7	12.6	14.9	36.93	256.0	-127.9	268.7	244.6	24.03	11.181		
5,400.0	5,384.2	5,419.0	5,387.0	12.8	15.2	34.19	262.0	-139.3	266.9	242.5	24.38	10.949		
5,500.0	5,484.2	5,518.2	5,485.3	13.0	15.5	31.43	268.1	-150.7	265.8	241.0	24.74	10.742		
5,600.0	5,584.2	5,617.3	5,583.6	13.2	15.8	28.65	274.1	-162.1	265.3	240.2	25.12	10.559		
5,628.3	5,612.5	5,645.4	5,611.5	13.3	15.9	27.86	275.8	-165.3	265.3	240.0	25.23	10.512		
5,700.0	5,684.2	5,716.7	5,682.2	13.4	16.1	25.97	279.9	-173.1	265.4	239.9	25.51	10.405		
5,800.0	5,784.2	5,816.7	5,781.8	13.7	16.3	23.96	284.3	-181.3	265.9	240.0	25.88	10.272		
5,900.0	5,884.2	5,917.3	5,882.2	13.9	16.5	22.69	287.0	-186.6	266.3	240.1	26.27	10.138		
6,000.0	5,984.2	6,018.1	5,983.0	14.1	16.7	22.18	288.1	-188.7	266.6	239.9	26.66	9.999		
6,100.0	6,084.2	6,118.3	6,083.2	14.3	16.9	22.17	288.1	-188.7	266.6	239.5	27.07	9.849		
6,200.0	6,184.2	6,218.3	6,183.2	14.5	17.0	22.17	288.1	-188.7	266.6	239.1	27.49	9.697		
6,300.0	6,284.2	6,318.3	6,283.2	14.7	17.2	22.17	288.1	-188.7	266.6	238.7	27.91	9.550		
6,300.0	6,284.2	6,318.3	6,283.2	14.7	17.2	22.17	288.1	-188.7	266.6	238.7	27.91	9.550		
6,400.0	6,384.1	6,418.2	6,383.1	14.9	17.4	112.67	288.1	-188.7	267.7	235.5	32.17	8.321 ES, SF		
6,500.0	6,482.9	6,505.8	6,470.5	15.2	17.5	115.29	288.1	-185.4	275.6	243.1	32.47	8.488		
6,600.0	6,578.8	6,582.4	6,546.4	15.6	17.5	119.63	288.1	-174.5	296.3	263.7	32.58	9.094		
6,700.0	6,670.3	6,650.0	6,612.0	16.1	17.5	123.92	288.1	-158.6	333.6	301.1	32.49	10.267		
6,800.0	6,755.7	6,700.0	6,659.6	16.8	17.5	125.84	288.1	-143.2	388.3	355.9	32.39	11.987		
6,900.0	6,833.6	6,729.8	6,687.4	17.7	17.5	123.83	288.1	-132.5	458.0	425.3	32.74	13.988		
7,000.0	6,902.8	6,750.0	6,706.0	18.8	17.5	118.01	288.1	-124.7	539.1	505.1	33.93	15.887		
7,100.0	6,961.9	6,764.8	6,719.5	20.1	17.5	107.55	288.1	-118.6	627.6	591.4	36.16	17.353		
7,200.0	7,009.9	6,768.5	6,722.9	21.7	17.5	90.00	288.1	-117.1	720.3	681.7	38.63	18.644		
7,300.0	7,046.2	6,765.2	6,719.9	23.5	17.5	68.33	288.1	-118.4	814.7	776.5	38.20	21.327		
7,400.0	7,069.9	6,750.0	6,706.0	25.5	17.5	48.41	288.1	-124.7	908.8	874.9	33.94	26.775		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28F-214
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4778.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-214	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (8-07-14)	Offset TVD Reference:	Offset Datum

Offset Design				Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W - Wiedeman 28F-412 - Wellbore #1 - Plan #1 (7-										Offset Site Error:		0.0 ft
Survey Program: 0-MWD														Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
				(ft)	(ft)		+N/-S (ft)	+E/-W (ft)								
0.0	0.0	0.0	0.0	0.0	0.0	90.00	0.0	301.3	301.3							
100.0	100.0	99.0	99.0	0.1	0.1	90.00	0.0	301.3	301.3	301.1	0.22	1,347.255				
200.0	200.0	199.0	199.0	0.3	0.3	90.00	0.0	301.3	301.3	300.6	0.67	448.338				
300.0	300.0	299.0	299.0	0.6	0.6	90.00	0.0	301.3	301.3	300.2	1.12	268.643				
400.0	400.0	399.0	399.0	0.8	0.8	90.00	0.0	301.3	301.3	299.7	1.57	191.778				
500.0	500.0	499.0	499.0	1.0	1.0	90.00	0.0	301.3	301.3	299.3	2.02	149.114				
600.0	600.0	599.0	599.0	1.2	1.2	90.00	0.0	301.3	301.3	298.8	2.47	121.977				
700.0	700.0	699.0	699.0	1.5	1.5	90.00	0.0	301.3	301.3	298.4	2.92	103.197				
800.0	800.0	799.0	799.0	1.7	1.7	90.00	0.0	301.3	301.3	297.9	3.37	89.428				
900.0	900.0	899.0	899.0	1.9	1.9	90.00	0.0	301.3	301.3	297.5	3.82	78.901				
1,000.0	1,000.0	999.0	999.0	2.1	2.1	90.00	0.0	301.3	301.3	297.0	4.27	70.591				
1,100.0	1,100.0	1,099.0	1,099.0	2.4	2.4	90.00	0.0	301.3	301.3	296.6	4.72	63.865				
1,200.0	1,200.0	1,199.0	1,199.0	2.6	2.6	90.00	0.0	301.3	301.3	296.1	5.17	58.309				
1,300.0	1,300.0	1,299.0	1,299.0	2.8	2.8	90.00	0.0	301.3	301.3	295.7	5.62	53.643				
1,400.0	1,400.0	1,399.0	1,399.0	3.0	3.0	90.00	0.0	301.3	301.3	295.2	6.07	49.668				
1,500.0	1,500.0	1,499.0	1,499.0	3.3	3.3	90.00	0.0	301.3	301.3	294.8	6.52	46.241				
1,600.0	1,600.0	1,599.0	1,599.0	3.5	3.5	90.00	0.0	301.3	301.3	294.3	6.97	43.257				
1,700.0	1,700.0	1,699.0	1,699.0	3.7	3.7	90.00	0.0	301.3	301.3	293.9	7.42	40.634				
1,800.0	1,800.0	1,799.0	1,799.0	3.9	3.9	90.00	0.0	301.3	301.3	293.4	7.86	38.312				
1,900.0	1,900.0	1,899.0	1,899.0	4.1	4.2	171.92	0.0	301.3	303.0	294.7	8.30	36.518				
2,000.0	1,999.8	1,998.8	1,998.8	4.4	4.4	172.04	0.0	301.3	308.2	299.5	8.71	35.375				
2,100.0	2,099.5	2,110.5	2,110.5	4.6	4.6	172.33	-0.3	299.2	315.0	305.8	9.13	34.516				
2,200.0	2,198.8	2,222.6	2,222.4	4.8	4.8	172.80	-1.2	292.8	320.3	310.8	9.54	33.574				
2,300.0	2,298.2	2,335.0	2,334.2	5.0	5.1	173.39	-2.8	281.9	321.9	312.0	9.97	32.284				
2,400.0	2,397.6	2,441.1	2,439.4	5.3	5.3	174.06	-4.8	268.2	320.2	309.8	10.40	30.792				
2,500.0	2,496.9	2,541.0	2,538.4	5.5	5.6	174.71	-6.8	254.8	318.1	307.2	10.82	29.395				
2,600.0	2,596.3	2,640.9	2,637.3	5.8	5.8	175.38	-8.7	241.3	315.9	304.7	11.25	28.091				
2,700.0	2,695.6	2,740.8	2,736.3	6.1	6.1	176.05	-10.7	227.9	313.9	302.2	11.68	26.877				
2,800.0	2,795.0	2,840.7	2,835.3	6.3	6.3	176.73	-12.6	214.4	311.8	299.7	12.12	25.739				
2,900.0	2,894.4	2,940.6	2,934.3	6.6	6.6	177.42	-14.6	201.0	309.9	297.3	12.56	24.675				
3,000.0	2,993.7	3,040.5	3,033.3	6.9	6.9	178.12	-16.5	187.6	307.9	294.9	13.00	23.678				
3,100.0	3,093.1	3,140.4	3,132.3	7.1	7.2	178.82	-18.5	174.1	306.0	292.6	13.46	22.744				
3,200.0	3,192.5	3,240.3	3,231.2	7.4	7.5	179.54	-20.5	160.7	304.2	290.3	13.91	21.866				
3,300.0	3,291.8	3,340.2	3,330.2	7.7	7.8	-179.74	-22.4	147.2	302.4	288.0	14.37	21.041				
3,400.0	3,391.2	3,440.2	3,429.2	8.0	8.1	-179.00	-24.4	133.8	300.6	285.8	14.84	20.265				
3,500.0	3,490.5	3,540.1	3,528.2	8.3	8.4	-178.26	-26.3	120.4	298.9	283.6	15.30	19.533				
3,600.0	3,589.9	3,640.0	3,627.2	8.6	8.7	-177.51	-28.3	106.9	297.3	281.5	15.78	18.843				
3,700.0	3,689.3	3,739.9	3,726.2	8.8	9.0	-176.76	-30.2	93.5	295.7	279.4	16.25	18.191				
3,800.0	3,788.6	3,839.8	3,825.1	9.1	9.3	-175.99	-32.2	80.0	294.1	277.4	16.74	17.575				
3,900.0	3,888.0	3,939.7	3,924.1	9.4	9.6	-175.22	-34.1	66.6	292.6	275.4	17.22	16.992				
4,000.0	3,987.4	4,039.6	4,023.1	9.7	9.9	-174.44	-36.1	53.2	291.2	273.5	17.71	16.440				
4,100.0	4,086.7	4,139.5	4,122.1	10.0	10.3	-173.65	-38.1	39.7	289.8	271.6	18.21	15.916				
4,200.0	4,186.1	4,239.4	4,221.1	10.3	10.6	-172.85	-40.0	26.3	288.5	269.8	18.71	15.419				
4,300.0	4,285.4	4,339.3	4,320.1	10.6	10.9	-172.05	-42.0	12.8	287.2	268.0	19.22	14.947				
4,400.0	4,384.8	4,439.3	4,419.0	10.9	11.2	-171.24	-43.9	-0.6	286.0	266.3	19.73	14.498				
4,500.0	4,484.4	4,539.1	4,518.0	11.1	11.6	-170.34	-45.9	-14.0	282.9	262.6	20.22	13.990				
4,600.0	4,584.2	4,638.8	4,616.7	11.3	11.9	-169.28	-47.8	-27.4	276.4	255.7	20.70	13.354				
4,700.0	4,684.2	4,738.1	4,715.1	11.5	12.2	-168.00	-49.8	-40.8	266.5	245.4	21.16	12.597				
4,800.0	4,784.2	4,837.2	4,813.3	11.7	12.5	111.58	-51.7	-54.1	254.7	231.1	23.62	10.780				
4,900.0	4,884.2	4,936.3	4,911.4	11.9	12.9	113.17	-53.7	-67.4	243.0	218.9	24.06	10.100				
5,000.0	4,984.2	5,035.3	5,009.6	12.1	13.2	114.92	-55.6	-80.8	231.4	207.0	24.47	9.457				

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 28F-214
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4778.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-214	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (8-07-14)	Offset TVD Reference:	Offset Datum

Offset Design				Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W - Wiedeman 28F-412 - Wellbore #1 - Plan #1 (7-										Offset Site Error:		0.0 ft
Survey Program: 0-MWD														Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor				
Depth (ft)	Depth (ft)	Depth (ft)	Depth (ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)					
5,100.0	5,084.2	5,134.4	5,107.7	12.3	13.5	116.85	-57.5	-94.1	220.2	195.3	24.88	8.850				
5,200.0	5,184.2	5,233.5	5,205.9	12.5	13.8	118.99	-59.5	-107.4	209.2	183.9	25.26	8.279				
5,300.0	5,284.2	5,332.5	5,304.0	12.6	14.2	121.36	-61.4	-120.8	198.5	172.8	25.63	7.745				
5,400.0	5,384.2	5,431.6	5,402.2	12.8	14.5	123.99	-63.4	-134.1	188.2	162.2	25.96	7.247				
5,500.0	5,484.2	5,530.7	5,500.3	13.0	14.8	126.91	-65.3	-147.4	178.3	152.0	26.27	6.786				
5,600.0	5,584.2	5,629.8	5,598.5	13.2	15.2	130.17	-67.2	-160.7	168.9	142.4	26.55	6.363				
5,700.0	5,684.2	5,725.9	5,693.9	13.4	15.4	133.33	-68.9	-172.5	161.0	134.2	26.78	6.011				
5,800.0	5,784.2	5,822.3	5,789.9	13.7	15.6	135.84	-70.2	-181.1	155.5	128.5	27.03	5.755				
5,900.0	5,884.2	5,919.1	5,886.6	13.9	15.8	137.51	-71.0	-186.5	152.3	125.0	27.31	5.575				
6,000.0	5,984.2	6,016.2	5,983.6	14.1	16.0	138.20	-71.3	-188.6	151.0	123.4	27.65	5.461				
6,040.1	6,024.2	6,055.8	6,023.2	14.1	16.0	138.22	-71.3	-188.7	151.0	123.2	27.81	5.429				
6,100.0	6,084.2	6,115.8	6,083.2	14.3	16.1	138.22	-71.3	-188.7	151.0	122.9	28.05	5.383				
6,200.0	6,184.2	6,215.8	6,183.2	14.5	16.3	138.22	-71.3	-188.7	151.0	122.5	28.45	5.307				
6,300.0	6,284.2	6,315.8	6,283.2	14.7	16.5	138.22	-71.3	-188.7	151.0	122.1	28.86	5.232 CC				
6,300.3	6,284.5	6,316.1	6,283.5	14.7	16.5	-131.78	-71.3	-188.7	151.0	121.1	29.90	5.050 ES, SF				
6,400.0	6,384.1	6,415.7	6,383.1	14.9	16.7	-132.48	-71.3	-188.7	152.9	122.7	30.28	5.051				
6,500.0	6,482.9	6,514.4	6,481.9	15.2	16.8	-135.83	-71.3	-188.7	163.6	133.2	30.40	5.381				
6,600.0	6,578.8	6,600.0	6,567.3	15.6	17.0	-140.63	-71.3	-185.5	187.7	157.5	30.17	6.222				
6,700.0	6,670.3	6,666.6	6,633.3	16.1	17.0	-144.86	-71.3	-176.5	231.5	201.9	29.63	7.813				
6,800.0	6,755.7	6,721.9	6,687.3	16.8	17.0	-147.47	-71.3	-164.7	293.6	264.7	28.94	10.146				
6,900.0	6,833.6	6,762.9	6,726.8	17.7	17.0	-147.48	-71.3	-153.5	370.3	341.9	28.40	13.037				
7,000.0	6,902.8	6,800.0	6,761.8	18.8	17.0	-145.40	-71.3	-141.5	457.4	429.1	28.28	16.172				
7,100.0	6,961.9	6,800.0	6,761.8	20.1	17.0	-132.04	-71.3	-141.5	550.9	519.5	31.36	17.567				
7,200.0	7,009.9	6,815.3	6,776.1	21.7	17.0	-109.66	-71.3	-136.0	648.1	611.0	37.06	17.487				
7,300.0	7,046.2	6,815.2	6,776.0	23.5	17.0	-66.09	-71.3	-136.1	746.7	709.1	37.59	19.864				
7,400.0	7,069.9	6,800.0	6,761.8	25.5	17.0	-33.98	-71.3	-141.5	844.9	817.3	27.58	30.637				
7,500.0	7,080.8	6,800.0	6,761.8	27.6	17.0	-21.96	-71.3	-141.5	940.9	918.4	22.49	41.827				

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28F-214
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4778.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-214	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (8-07-14)	Offset TVD Reference:	Offset Datum

Offset Design Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W - Wiedeman 28E-234 - Wellbore #1 - Plan #1 (8														Offset Site Error:	0.0 ft
Survey Program: 0-MWD														Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	0.00	58.3	0.0	58.3						
100.0	100.0	100.0	100.0	0.1	0.1	0.00	58.3	0.0	58.3	58.1	0.22	259.331			
200.0	200.0	200.0	200.0	0.3	0.3	0.00	58.3	0.0	58.3	57.6	0.67	86.444			
300.0	300.0	300.0	300.0	0.6	0.6	0.00	58.3	0.0	58.3	57.2	1.12	51.866			
400.0	400.0	400.0	400.0	0.8	0.8	0.00	58.3	0.0	58.3	56.7	1.57	37.047 CC, ES			
500.0	500.0	498.1	498.1	1.0	1.0	-0.68	59.8	-0.7	59.8	57.8	2.02	29.668			
600.0	600.0	596.1	595.9	1.2	1.2	-2.51	64.4	-2.8	64.6	62.1	2.46	26.206			
700.0	700.0	693.5	693.0	1.5	1.5	-5.02	71.9	-6.3	72.5	69.6	2.92	24.819			
800.0	800.0	791.0	789.8	1.7	1.7	-7.72	82.4	-11.2	83.8	80.3	3.40	24.600			
900.0	900.0	890.1	888.1	1.9	2.0	-9.97	93.9	-16.5	96.1	92.1	3.91	24.558			
1,000.0	1,000.0	989.3	986.5	2.1	2.3	-11.70	105.4	-21.8	108.5	104.1	4.43	24.490			
1,100.0	1,100.0	1,088.5	1,084.8	2.4	2.6	-13.08	116.9	-27.2	121.0	116.0	4.96	24.415			
1,200.0	1,200.0	1,187.7	1,183.2	2.6	2.9	-14.20	128.4	-32.5	133.5	128.1	5.49	24.343			
1,300.0	1,300.0	1,286.8	1,281.6	2.8	3.2	-15.13	139.9	-37.8	146.1	140.1	6.02	24.276			
1,400.0	1,400.0	1,386.0	1,379.9	3.0	3.5	-15.91	151.5	-43.2	158.8	152.2	6.56	24.216			
1,500.0	1,500.0	1,485.2	1,478.3	3.3	3.8	-16.58	163.0	-48.5	171.4	164.3	7.09	24.161			
1,600.0	1,600.0	1,584.4	1,576.7	3.5	4.2	-17.15	174.5	-53.9	184.1	176.5	7.63	24.113			
1,700.0	1,700.0	1,683.6	1,675.0	3.7	4.5	-17.65	186.0	-59.2	196.8	188.6	8.18	24.070			
1,800.0	1,800.0	1,782.7	1,773.4	3.9	4.8	-18.09	197.5	-64.5	209.5	200.8	8.72	24.031			
1,900.0	1,900.0	1,882.0	1,871.8	4.1	5.1	63.59	209.0	-69.9	221.4	213.0	8.43	26.270			
2,000.0	1,999.8	1,981.4	1,970.4	4.4	5.4	64.19	220.6	-75.2	231.9	223.0	8.88	26.111			
2,100.0	2,099.5	2,080.8	2,069.0	4.6	5.7	65.50	232.1	-80.6	240.9	231.5	9.34	25.777			
2,200.0	2,198.8	2,180.1	2,167.5	4.8	6.1	67.36	243.7	-85.9	249.1	239.2	9.83	25.345			
2,300.0	2,298.2	2,279.5	2,266.0	5.0	6.4	69.15	255.2	-91.3	257.5	247.2	10.32	24.943			
2,400.0	2,397.6	2,378.8	2,364.6	5.3	6.7	70.82	266.7	-96.6	266.1	255.3	10.83	24.574			
2,500.0	2,496.9	2,478.1	2,463.1	5.5	7.0	72.39	278.3	-102.0	275.0	263.7	11.35	24.235			
2,600.0	2,596.3	2,577.5	2,561.6	5.8	7.3	73.86	289.8	-107.3	284.1	272.2	11.87	23.924			
2,700.0	2,695.6	2,676.8	2,660.1	6.1	7.7	75.24	301.3	-112.6	293.3	280.9	12.41	23.638			
2,800.0	2,795.0	2,776.1	2,758.6	6.3	8.0	76.53	312.9	-118.0	302.7	289.7	12.95	23.375			
2,900.0	2,894.4	2,875.5	2,857.1	6.6	8.3	77.75	324.4	-123.3	312.2	298.7	13.50	23.133			
3,000.0	2,993.7	2,974.8	2,955.6	6.9	8.6	78.89	335.9	-128.7	321.9	307.8	14.05	22.911			
3,100.0	3,093.1	3,074.1	3,054.2	7.1	8.9	79.97	347.5	-134.0	331.7	317.1	14.61	22.705			
3,200.0	3,192.5	3,173.5	3,152.7	7.4	9.3	80.98	359.0	-139.4	341.6	326.4	15.17	22.516			
3,300.0	3,291.8	3,272.8	3,251.2	7.7	9.6	81.94	370.5	-144.7	351.6	335.9	15.74	22.341			
3,400.0	3,391.2	3,372.1	3,349.7	8.0	9.9	82.84	382.0	-150.1	361.7	345.4	16.31	22.179			
3,500.0	3,490.5	3,471.5	3,448.2	8.3	10.2	83.70	393.6	-155.4	371.9	355.0	16.88	22.029			
3,600.0	3,589.9	3,570.8	3,546.7	8.6	10.6	84.51	405.1	-160.8	382.1	364.7	17.46	21.890			
3,700.0	3,689.3	3,670.1	3,645.2	8.8	10.9	85.28	416.6	-166.1	392.4	374.4	18.03	21.761			
3,800.0	3,788.6	3,769.4	3,743.8	9.1	11.2	86.01	428.2	-171.4	402.8	384.2	18.61	21.641			
3,900.0	3,888.0	3,868.8	3,842.3	9.4	11.5	86.70	439.7	-176.8	413.3	394.1	19.20	21.529			
4,000.0	3,987.4	3,968.1	3,940.8	9.7	11.8	87.35	451.2	-182.1	423.8	404.0	19.78	21.426			
4,100.0	4,086.7	4,067.4	4,039.3	10.0	12.2	87.98	462.8	-187.5	434.4	414.0	20.37	21.329			
4,200.0	4,186.1	4,166.8	4,137.8	10.3	12.5	88.58	474.3	-192.8	445.0	424.0	20.95	21.238			
4,300.0	4,285.4	4,266.1	4,236.3	10.6	12.8	89.14	485.8	-198.2	455.6	434.1	21.54	21.153			
4,400.0	4,384.8	4,365.4	4,334.8	10.9	13.1	89.70	497.4	-203.5	466.3	444.2	22.13	21.076			
4,500.0	4,484.4	4,464.8	4,433.4	11.1	13.5	90.19	508.9	-208.9	477.1	454.4	22.64	21.075			
4,600.0	4,584.2	4,564.2	4,532.0	11.3	13.8	90.26	520.5	-214.2	487.8	464.7	23.11	21.111			
4,700.0	4,684.2	4,663.5	4,630.5	11.5	14.1	89.93	532.0	-219.6	498.5	475.0	23.53	21.183			
4,800.0	4,784.2	4,762.7	4,728.9	11.7	14.4	7.31	543.5	-224.9	509.3	485.4	23.93	21.287			
4,900.0	4,884.2	4,861.9	4,827.2	11.9	14.8	6.56	555.0	-230.2	520.2	495.8	24.48	21.255			
5,000.0	4,984.2	4,961.1	4,925.6	12.1	15.1	5.84	566.5	-235.6	531.2	506.2	25.03	21.227			

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 28F-214
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4778.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-214	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (8-07-14)	Offset TVD Reference:	Offset Datum

Offset Design				Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W - Wiedeman 28E-234 - Wellbore #1 - Plan #1 (8										Offset Site Error:		0.0 ft
Survey Program: 0-MWD														Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning			
5,100.0	5,084.2	5,060.3	5,024.0	12.3	15.4	5.15	578.0	-240.9	542.3	516.7	25.58	21.203				
5,200.0	5,184.2	5,159.4	5,122.3	12.5	15.7	4.49	589.6	-246.2	553.4	527.3	26.13	21.182				
5,300.0	5,284.2	5,258.6	5,220.7	12.6	16.0	3.86	601.1	-251.6	564.6	538.0	26.68	21.165				
5,400.0	5,384.2	5,357.8	5,319.0	12.8	16.4	3.24	612.6	-256.9	575.9	548.7	27.23	21.150				
5,500.0	5,484.2	5,457.0	5,417.4	13.0	16.7	2.66	624.1	-262.3	587.3	559.5	27.78	21.138				
5,600.0	5,584.2	5,556.1	5,515.8	13.2	17.0	2.09	635.6	-267.6	598.6	570.3	28.33	21.128				
5,700.0	5,684.2	5,655.3	5,614.1	13.4	17.3	1.55	647.1	-272.9	610.1	581.2	28.89	21.121				
5,800.0	5,784.2	5,754.5	5,712.5	13.7	17.7	1.02	658.6	-278.3	621.6	592.2	29.44	21.115				
5,900.0	5,884.2	5,873.2	5,830.4	13.9	18.0	0.49	670.9	-284.0	632.0	602.0	29.98	21.077				
6,000.0	5,984.2	5,998.0	5,954.8	14.1	18.2	0.14	679.1	-287.8	638.5	608.0	30.47	20.955				
6,100.0	6,084.2	6,123.3	6,080.1	14.3	18.4	0.00	682.4	-289.3	641.1	610.2	30.90	20.751				
6,200.0	6,184.2	6,227.4	6,184.2	14.5	18.6	0.00	682.5	-289.3	641.2	609.9	31.27	20.503				
6,300.0	6,284.2	6,327.4	6,284.2	14.7	18.7	0.00	682.5	-289.3	641.2	609.5	31.65	20.255				
6,400.0	6,384.1	6,427.4	6,384.1	14.9	18.9	90.00	682.5	-292.2	641.2	610.6	30.61	20.950				
6,500.0	6,482.9	6,527.4	6,482.9	15.2	19.1	90.00	682.5	-307.4	641.2	610.0	31.20	20.551				
6,600.0	6,578.8	6,627.4	6,578.8	15.6	19.4	90.00	682.5	-335.3	641.2	609.2	31.99	20.041				
6,700.0	6,670.3	6,727.4	6,670.3	16.1	19.8	90.00	682.5	-375.6	641.2	608.2	33.02	19.418				
6,800.0	6,755.7	6,827.4	6,755.7	16.8	20.3	90.00	682.5	-427.4	641.2	606.8	34.33	18.675				
6,900.0	6,833.6	6,927.4	6,833.7	17.7	21.0	90.00	682.5	-489.9	641.2	605.2	36.00	17.809				
7,000.0	6,902.8	7,027.4	6,902.8	18.8	21.8	90.00	682.5	-562.1	641.2	603.1	38.10	16.830				
7,100.0	6,961.9	7,127.4	6,961.9	20.1	22.8	90.00	682.5	-642.7	641.2	600.5	40.67	15.765				
7,200.0	7,009.9	7,227.4	7,010.0	21.7	24.1	90.00	682.5	-730.3	641.2	597.4	43.74	14.658				
7,300.0	7,046.2	7,327.4	7,046.2	23.5	25.6	90.00	682.5	-823.4	641.2	593.9	47.28	13.561				
7,400.0	7,069.9	7,427.4	7,070.0	25.5	27.3	90.00	682.5	-920.5	641.2	590.0	51.22	12.518				
7,500.0	7,080.8	7,527.4	7,080.8	27.6	29.3	90.00	682.5	-1,019.8	641.2	585.7	55.45	11.563				
7,600.0	7,081.1	7,627.4	7,081.1	29.8	31.3	90.00	682.5	-1,119.8	641.2	581.3	59.89	10.707				
7,700.0	7,080.4	7,727.4	7,080.4	32.2	33.5	90.00	682.5	-1,219.8	641.2	576.7	64.49	9.942				
7,800.0	7,079.7	7,827.4	7,079.7	34.6	35.7	90.00	682.5	-1,319.8	641.2	571.9	69.25	9.259				
7,900.0	7,079.0	7,927.4	7,079.0	37.0	38.1	90.00	682.5	-1,419.8	641.2	567.1	74.12	8.650				
8,000.0	7,078.3	8,027.4	7,078.3	39.5	40.5	90.00	682.5	-1,519.8	641.2	562.1	79.10	8.106				
8,100.0	7,077.6	8,127.4	7,077.6	42.0	42.9	90.00	682.5	-1,619.8	641.2	557.0	84.15	7.619				
8,200.0	7,076.9	8,227.4	7,076.9	44.6	45.4	90.00	682.5	-1,719.8	641.2	551.9	89.28	7.182				
8,300.0	7,076.2	8,327.4	7,076.2	47.2	48.0	90.00	682.5	-1,819.8	641.2	546.7	94.45	6.788				
8,400.0	7,075.5	8,427.4	7,075.5	49.8	50.5	90.00	682.5	-1,919.8	641.2	541.5	99.68	6.432				
8,500.0	7,074.8	8,527.4	7,074.8	52.5	53.1	90.00	682.5	-2,019.8	641.2	536.2	104.95	6.110				
8,600.0	7,074.1	8,627.4	7,074.2	55.1	55.7	90.00	682.5	-2,119.8	641.2	530.9	110.25	5.816				
8,700.0	7,073.4	8,727.4	7,073.5	57.8	58.3	90.00	682.5	-2,219.8	641.2	525.6	115.58	5.548				
8,800.0	7,072.7	8,827.4	7,072.8	60.5	61.0	90.00	682.5	-2,319.8	641.2	520.2	120.93	5.302				
8,900.0	7,072.0	8,927.4	7,072.1	63.2	63.6	90.00	682.5	-2,419.8	641.2	514.9	126.31	5.076				
9,000.0	7,071.3	9,027.4	7,071.4	65.9	66.3	90.00	682.5	-2,519.8	641.2	509.5	131.71	4.868				
9,100.0	7,070.6	9,127.4	7,070.7	68.6	69.0	90.00	682.5	-2,619.8	641.2	504.1	137.12	4.676				
9,200.0	7,069.9	9,227.4	7,070.0	71.3	71.7	90.00	682.5	-2,719.8	641.2	498.6	142.55	4.498				
9,300.0	7,069.2	9,327.4	7,069.3	74.0	74.4	90.00	682.5	-2,819.8	641.2	493.2	148.00	4.332				
9,400.0	7,068.5	9,427.4	7,068.6	76.8	77.1	90.00	682.5	-2,919.7	641.2	487.7	153.45	4.178				
9,500.0	7,067.9	9,527.4	7,067.9	79.5	79.8	90.00	682.5	-3,019.7	641.2	482.3	158.92	4.035				
9,600.0	7,067.2	9,627.4	7,067.2	82.2	82.5	90.00	682.5	-3,119.7	641.2	476.8	164.40	3.900				
9,700.0	7,066.5	9,727.4	7,066.5	85.0	85.3	90.00	682.5	-3,219.7	641.2	471.3	169.89	3.774				
9,800.0	7,065.8	9,827.4	7,065.8	87.7	88.0	90.00	682.5	-3,319.7	641.2	465.8	175.38	3.656				
9,900.0	7,065.1	9,927.4	7,065.1	90.5	90.7	90.00	682.5	-3,419.7	641.2	460.3	180.88	3.545				
10,000.0	7,064.4	10,027.4	7,064.4	93.2	93.5	90.00	682.5	-3,519.7	641.2	454.8	186.39	3.440				

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 28F-214
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4778.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-214	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (8-07-14)	Offset TVD Reference:	Offset Datum

Offset Design Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W - Wiedeman 28E-234 - Wellbore #1 - Plan #1 (8										Offset Site Error:		0.0 ft	
Survey Program: 0-MWD										Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,100.0	7,063.7	10,127.4	7,063.7	96.0	96.2	90.00	682.5	-3,619.7	641.2	449.3	191.91	3.341	
10,200.0	7,063.0	10,227.4	7,063.0	98.8	99.0	90.00	682.5	-3,719.7	641.2	443.7	197.43	3.248	
10,300.0	7,062.3	10,327.4	7,062.3	101.5	101.7	90.00	682.5	-3,819.7	641.2	438.2	202.95	3.159	
10,400.0	7,061.6	10,427.4	7,061.6	104.3	104.5	90.00	682.5	-3,919.7	641.2	432.7	208.48	3.075	
10,500.0	7,060.9	10,527.4	7,060.9	107.1	107.2	90.00	682.5	-4,019.7	641.2	427.2	214.02	2.996	
10,600.0	7,060.2	10,627.4	7,060.2	109.8	110.0	90.00	682.5	-4,119.7	641.2	421.6	219.56	2.920	
10,700.0	7,059.5	10,727.4	7,059.5	112.6	112.8	90.00	682.5	-4,219.7	641.2	416.1	225.10	2.848	
10,800.0	7,058.8	10,827.4	7,058.8	115.4	115.5	90.00	682.5	-4,319.7	641.2	410.5	230.65	2.780	
10,900.0	7,058.1	10,927.4	7,058.1	118.2	118.3	90.00	682.5	-4,419.7	641.2	405.0	236.20	2.715	
11,000.0	7,057.4	11,027.4	7,057.4	120.9	121.1	90.00	682.5	-4,519.7	641.2	399.4	241.75	2.652	
11,100.0	7,056.7	11,127.4	7,056.7	123.7	123.8	90.00	682.5	-4,619.7	641.2	393.9	247.30	2.593	
11,200.0	7,056.0	11,227.4	7,056.0	126.5	126.6	90.00	682.5	-4,719.7	641.2	388.3	252.86	2.536	
11,300.0	7,055.3	11,327.4	7,055.3	129.3	129.4	90.00	682.5	-4,819.7	641.2	382.8	258.42	2.481	
11,400.0	7,054.6	11,427.4	7,054.6	132.1	132.1	90.00	682.5	-4,919.7	641.2	377.2	263.99	2.429	
11,500.0	7,053.9	11,527.4	7,053.9	134.8	134.9	90.00	682.5	-5,019.7	641.2	371.6	269.55	2.379	
11,600.0	7,053.2	11,627.4	7,053.2	137.6	137.7	90.00	682.5	-5,119.7	641.2	366.1	275.12	2.331	
11,700.0	7,052.5	11,727.4	7,052.5	140.4	140.5	90.00	682.5	-5,219.7	641.2	360.5	280.69	2.284	
11,800.0	7,051.8	11,827.4	7,051.8	143.2	143.3	90.00	682.5	-5,319.7	641.2	354.9	286.26	2.240	
11,900.0	7,051.1	11,927.4	7,051.1	146.0	146.0	90.00	682.5	-5,419.7	641.2	349.3	291.83	2.197	
12,000.0	7,050.4	12,027.4	7,050.4	148.8	148.8	90.00	682.5	-5,519.7	641.2	343.8	297.40	2.156	
12,100.0	7,049.7	12,127.4	7,049.7	151.6	151.6	90.00	682.5	-5,619.7	641.2	338.2	302.98	2.116	
12,200.0	7,049.0	12,227.4	7,049.0	154.4	154.4	90.00	682.5	-5,719.7	641.2	332.6	308.55	2.078	
12,300.0	7,048.3	12,327.4	7,048.3	157.1	157.2	90.00	682.5	-5,819.7	641.2	327.0	314.13	2.041	
12,400.0	7,047.6	12,427.4	7,047.6	159.9	160.0	90.00	682.5	-5,919.7	641.2	321.5	319.71	2.005	
12,500.0	7,046.9	12,527.4	7,046.9	162.7	162.7	90.00	682.5	-6,019.7	641.2	315.9	325.29	1.971	
12,600.0	7,046.2	12,627.4	7,046.2	165.5	165.5	90.00	682.5	-6,119.7	641.2	310.3	330.87	1.938	
12,700.0	7,045.5	12,727.4	7,045.5	168.3	168.3	90.00	682.5	-6,219.7	641.2	304.7	336.46	1.906	
12,800.0	7,044.8	12,827.4	7,044.8	171.1	171.1	90.00	682.5	-6,319.7	641.2	299.1	342.04	1.875	
12,900.0	7,044.1	12,927.4	7,044.1	173.9	173.9	90.00	682.5	-6,419.7	641.2	293.6	347.63	1.844	
13,000.0	7,043.4	13,027.4	7,043.4	176.7	176.7	90.00	682.5	-6,519.7	641.2	288.0	353.21	1.815	
13,100.0	7,042.7	13,127.4	7,042.7	179.5	179.5	90.00	682.5	-6,619.7	641.2	282.4	358.80	1.787	
13,200.0	7,042.0	13,227.4	7,042.0	182.3	182.3	90.00	682.5	-6,719.7	641.2	276.8	364.39	1.760	
13,300.0	7,041.3	13,327.4	7,041.3	185.1	185.1	90.00	682.5	-6,819.7	641.2	271.2	369.97	1.733	
13,400.0	7,040.6	13,427.4	7,040.6	187.9	187.9	90.00	682.5	-6,919.7	641.2	265.6	375.56	1.707	
13,500.0	7,039.9	13,527.4	7,039.9	190.7	190.6	90.00	682.5	-7,019.6	641.2	260.0	381.15	1.682	
13,600.0	7,039.2	13,627.4	7,039.2	193.5	193.4	90.00	682.5	-7,119.6	641.2	254.4	386.74	1.658	
13,700.0	7,038.5	13,727.4	7,038.5	196.3	196.2	90.00	682.5	-7,219.6	641.2	248.8	392.34	1.634	
13,800.0	7,037.8	13,827.4	7,037.8	199.0	199.0	90.00	682.5	-7,319.6	641.2	243.2	397.93	1.611	
13,900.0	7,037.1	13,927.4	7,037.2	201.8	201.8	90.00	682.5	-7,419.6	641.2	237.7	403.52	1.589	
14,000.0	7,036.4	14,027.4	7,036.5	204.6	204.6	90.00	682.5	-7,519.6	641.2	232.1	409.11	1.567	
14,100.0	7,035.7	14,127.4	7,035.8	207.4	207.4	90.00	682.5	-7,619.6	641.2	226.5	414.71	1.546	
14,200.0	7,035.0	14,227.4	7,035.1	210.2	210.2	90.00	682.5	-7,719.6	641.2	220.9	420.30	1.526	
14,205.5	7,035.0	14,232.9	7,035.0	210.4	210.4	90.00	682.5	-7,725.1	641.2	220.6	420.61	1.524 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28F-214
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4778.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-214	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (8-07-14)	Offset TVD Reference:	Offset Datum

Offset Design		Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W - Wiedeman 28E-404 - Wellbore #1 - Plan #1 (8										Offset Site Error:		0.0 ft
Survey Program: 0-MWD												Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	0.00	87.4	0.0	87.4					
100.0	100.0	100.0	100.0	0.1	0.1	0.00	87.4	0.0	87.4	87.2	0.22	388.996		
200.0	200.0	200.0	200.0	0.3	0.3	0.00	87.4	0.0	87.4	86.8	0.67	129.665	CC, ES	
300.0	300.0	297.1	297.1	0.6	0.6	-0.33	89.0	-0.5	89.0	87.9	1.12	79.732		
400.0	400.0	394.1	393.9	0.8	0.8	-1.26	93.7	-2.1	93.9	92.3	1.57	59.990		
500.0	500.0	490.6	490.1	1.0	1.0	-2.61	101.4	-4.6	102.0	100.0	2.03	50.246		
600.0	600.0	586.4	585.2	1.2	1.3	-4.16	112.1	-8.2	113.4	110.9	2.52	44.962		
700.0	700.0	682.1	679.8	1.5	1.6	-5.76	125.8	-12.7	128.0	125.0	3.05	42.008		
800.0	800.0	780.8	777.2	1.7	1.9	-7.15	140.9	-17.7	143.9	140.3	3.61	39.845		
900.0	900.0	879.4	874.6	1.9	2.3	-8.27	156.1	-22.7	159.7	155.6	4.18	38.195		
1,000.0	1,000.0	978.1	972.0	2.1	2.6	-9.18	171.2	-27.7	175.7	170.9	4.76	36.905		
1,100.0	1,100.0	1,076.8	1,069.4	2.4	3.0	-9.95	186.3	-32.7	191.6	186.3	5.34	35.875		
1,200.0	1,200.0	1,175.5	1,166.8	2.6	3.3	-10.59	201.5	-37.7	207.6	201.7	5.93	35.037		
1,300.0	1,300.0	1,274.2	1,264.2	2.8	3.7	-11.15	216.6	-42.7	223.7	217.1	6.51	34.344		
1,400.0	1,400.0	1,372.9	1,361.5	3.0	4.1	-11.63	231.7	-47.7	239.7	232.6	7.10	33.762		
1,500.0	1,500.0	1,471.6	1,458.9	3.3	4.4	-12.05	246.9	-52.7	255.7	248.1	7.69	33.267		
1,600.0	1,600.0	1,570.2	1,556.3	3.5	4.8	-12.42	262.0	-57.7	271.8	263.5	8.28	32.840		
1,700.0	1,700.0	1,668.9	1,653.7	3.7	5.2	-12.75	277.1	-62.7	287.9	279.0	8.87	32.470		
1,800.0	1,800.0	1,767.6	1,751.1	3.9	5.5	-13.04	292.3	-67.7	304.0	294.5	9.46	32.146		
1,900.0	1,900.0	1,866.4	1,848.6	4.1	5.9	68.58	307.4	-72.7	319.4	310.9	8.54	37.397		
2,000.0	1,999.8	1,965.3	1,946.2	4.4	6.3	68.90	322.6	-77.7	333.6	324.6	9.00	37.069		
2,100.0	2,099.5	2,064.3	2,043.9	4.6	6.6	69.74	337.8	-82.7	346.7	337.2	9.47	36.595		
2,200.0	2,198.8	2,163.1	2,141.4	4.8	7.0	71.06	352.9	-87.7	359.1	349.1	9.96	36.036		
2,300.0	2,298.2	2,262.0	2,239.0	5.0	7.4	72.37	368.1	-92.7	371.6	361.1	10.47	35.504		
2,400.0	2,397.6	2,360.9	2,336.6	5.3	7.7	73.58	383.2	-97.7	384.3	373.3	10.98	35.003		
2,500.0	2,496.9	2,459.7	2,434.1	5.5	8.1	74.72	398.4	-102.8	397.2	385.7	11.50	34.531		
2,600.0	2,596.3	2,558.6	2,531.7	5.8	8.5	75.79	413.6	-107.8	410.2	398.1	12.03	34.088		
2,700.0	2,695.6	2,657.5	2,629.3	6.1	8.8	76.79	428.7	-112.8	423.3	410.7	12.57	33.672		
2,800.0	2,795.0	2,756.4	2,726.9	6.3	9.2	77.73	443.9	-117.8	436.6	423.5	13.12	33.283		
2,900.0	2,894.4	2,855.2	2,824.4	6.6	9.6	78.61	459.1	-122.8	449.9	436.3	13.67	32.917		
3,000.0	2,993.7	2,954.1	2,922.0	6.9	9.9	79.45	474.2	-127.8	463.4	449.2	14.23	32.575		
3,100.0	3,093.1	3,053.0	3,019.6	7.1	10.3	80.24	489.4	-132.8	477.0	462.2	14.79	32.254		
3,200.0	3,192.5	3,151.8	3,117.1	7.4	10.7	80.98	504.5	-137.8	490.6	475.3	15.35	31.953		
3,300.0	3,291.8	3,250.7	3,214.7	7.7	11.0	81.68	519.7	-142.8	504.4	488.4	15.93	31.670		
3,400.0	3,391.2	3,349.6	3,312.3	8.0	11.4	82.35	534.9	-147.8	518.2	501.7	16.50	31.405		
3,500.0	3,490.5	3,448.4	3,409.8	8.3	11.8	82.98	550.0	-152.9	532.0	514.9	17.08	31.155		
3,600.0	3,589.9	3,547.3	3,507.4	8.6	12.1	83.58	565.2	-157.9	545.9	528.3	17.66	30.920		
3,700.0	3,689.3	3,646.2	3,605.0	8.8	12.5	84.15	580.3	-162.9	559.9	541.7	18.24	30.699		
3,800.0	3,788.6	3,745.0	3,702.6	9.1	12.9	84.69	595.5	-167.9	573.9	555.1	18.82	30.491		
3,900.0	3,888.0	3,843.9	3,800.1	9.4	13.3	85.21	610.7	-172.9	588.0	568.6	19.41	30.294		
4,000.0	3,987.4	3,942.8	3,897.7	9.7	13.6	85.70	625.8	-177.9	602.1	582.1	20.00	30.108		
4,100.0	4,086.7	4,041.6	3,995.3	10.0	14.0	86.17	641.0	-182.9	616.3	595.7	20.59	29.932		
4,200.0	4,186.1	4,140.5	4,092.8	10.3	14.4	86.62	656.2	-187.9	630.5	609.3	21.18	29.766		
4,300.0	4,285.4	4,239.4	4,190.4	10.6	14.7	87.05	671.3	-192.9	644.7	623.0	21.78	29.609		
4,400.0	4,384.8	4,338.2	4,288.0	10.9	15.1	87.48	686.5	-197.9	659.0	636.7	22.37	29.461		
4,500.0	4,484.4	4,437.2	4,385.6	11.1	15.5	87.99	701.6	-203.0	673.4	650.5	22.89	29.416		
4,600.0	4,584.2	4,536.1	4,483.2	11.3	15.8	88.20	716.8	-208.0	687.9	664.5	23.38	29.427		
4,700.0	4,684.2	4,634.9	4,580.8	11.5	16.2	88.13	732.0	-213.0	702.5	678.7	23.82	29.494		
4,800.0	4,784.2	4,733.6	4,678.2	11.7	16.6	5.77	747.1	-218.0	717.3	691.1	26.20	27.373		
4,900.0	4,884.2	4,832.3	4,775.5	11.9	16.9	5.26	762.2	-223.0	732.1	705.3	26.80	27.319		
5,000.0	4,984.2	4,931.0	4,872.9	12.1	17.3	4.76	777.4	-228.0	747.0	719.6	27.39	27.269		

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 28F-214
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4778.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-214	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (8-07-14)	Offset TVD Reference:	Offset Datum

Offset Design		Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W - Wiedeman 28E-404 - Wellbore #1 - Plan #1 (8										Offset Site Error:		0.0 ft		
Survey Program: 0-MWD														Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
5,100.0	5,084.2	5,029.7	4,970.3	12.3	17.7	4.29	792.5	-233.0	761.9	733.9	27.99	27.223				
5,200.0	5,184.2	5,128.4	5,067.7	12.5	18.0	3.83	807.6	-238.0	776.8	748.3	28.58	27.180				
5,300.0	5,284.2	5,227.0	5,165.1	12.6	18.4	3.39	822.8	-243.0	791.9	762.7	29.18	27.140				
5,400.0	5,384.2	5,325.7	5,262.5	12.8	18.8	2.97	837.9	-248.0	806.9	777.1	29.77	27.104				
5,500.0	5,484.2	5,424.4	5,359.9	13.0	19.2	2.56	853.0	-253.0	822.0	791.6	30.37	27.069				
5,600.0	5,584.2	5,523.1	5,457.3	13.2	19.5	2.17	868.2	-258.0	837.1	806.2	30.96	27.038				
5,700.0	5,684.2	5,621.8	5,554.7	13.4	19.9	1.79	883.3	-263.0	852.3	820.8	31.56	27.009				
5,800.0	5,784.2	5,720.5	5,652.1	13.7	20.3	1.42	898.4	-268.0	867.5	835.4	32.15	26.981				
5,900.0	5,884.2	5,819.2	5,749.5	13.9	20.6	1.07	913.6	-273.0	882.8	850.0	32.75	26.956				
6,000.0	5,984.2	5,921.9	5,850.9	14.1	21.0	0.72	929.3	-278.2	898.0	864.7	33.35	26.925				
6,100.0	6,084.2	6,063.4	5,991.1	14.3	21.4	0.33	947.1	-284.1	910.6	876.6	33.99	26.793				
6,200.0	6,184.2	6,206.3	6,133.5	14.5	21.7	0.09	958.3	-287.8	918.4	883.9	34.51	26.610				
6,300.0	6,284.2	6,350.1	6,277.2	14.7	21.9	0.00	962.8	-289.3	921.6	886.6	34.96	26.364				
6,400.0	6,384.1	6,457.0	6,384.1	14.9	22.1	90.18	962.9	-289.3	921.6	890.5	31.18	29.563				
6,500.0	6,482.9	6,555.8	6,482.9	15.2	22.2	91.10	962.9	-289.3	921.8	890.1	31.74	29.039				
6,600.0	6,578.8	6,655.9	6,582.8	15.6	22.3	92.57	962.9	-292.7	922.6	890.2	32.46	28.425				
6,700.0	6,670.3	6,760.3	6,685.8	16.1	22.6	94.07	962.9	-309.7	924.1	890.8	33.36	27.701				
6,800.0	6,755.7	6,868.7	6,789.2	16.8	22.9	95.53	962.9	-341.9	926.2	891.7	34.49	26.851				
6,900.0	6,833.6	6,981.3	6,890.6	17.7	23.3	96.91	962.9	-390.6	928.7	892.8	35.91	25.860				
7,000.0	6,902.8	7,098.2	6,987.3	18.8	23.8	98.20	962.9	-456.3	931.5	893.9	37.69	24.715				
7,100.0	6,961.9	7,219.5	7,075.6	20.1	24.5	99.34	962.9	-539.2	934.4	894.5	39.93	23.403				
7,200.0	7,009.9	7,344.9	7,152.0	21.7	25.6	100.31	962.9	-638.4	937.1	894.4	42.69	21.952				
7,300.0	7,046.2	7,473.8	7,212.6	23.5	27.0	101.06	962.9	-752.0	939.3	893.2	46.04	20.403				
7,400.0	7,069.9	7,605.4	7,253.9	25.5	28.8	101.57	962.9	-876.8	940.8	890.9	49.95	18.836				
7,500.0	7,080.8	7,738.7	7,273.2	27.6	31.0	101.81	962.9	-1,008.5	941.6	887.2	54.34	17.327				
7,600.0	7,081.1	7,849.9	7,274.5	29.8	33.1	101.85	962.9	-1,119.7	941.7	883.0	58.76	16.028				
7,700.0	7,080.4	7,949.9	7,274.6	32.2	35.1	101.90	962.9	-1,219.7	941.9	878.7	63.22	14.898				
7,800.0	7,079.7	8,049.9	7,274.6	34.6	37.3	101.94	962.9	-1,319.7	942.0	874.2	67.84	13.887				
7,900.0	7,079.0	8,149.9	7,274.7	37.0	39.5	101.99	962.9	-1,419.7	942.2	869.6	72.57	12.983				
8,000.0	7,078.3	8,249.9	7,274.7	39.5	41.8	102.03	962.9	-1,519.7	942.4	864.9	77.40	12.175				
8,100.0	7,077.6	8,349.9	7,274.8	42.0	44.1	102.08	962.9	-1,619.7	942.5	860.2	82.32	11.450				
8,200.0	7,076.9	8,449.9	7,274.9	44.6	46.6	102.12	962.9	-1,719.7	942.7	855.4	87.30	10.798				
8,300.0	7,076.2	8,549.9	7,274.9	47.2	49.0	102.16	962.9	-1,819.7	942.8	850.5	92.33	10.211				
8,400.0	7,075.5	8,649.9	7,275.0	49.8	51.5	102.21	962.9	-1,919.7	943.0	845.6	97.41	9.680				
8,500.0	7,074.8	8,749.9	7,275.0	52.5	54.0	102.25	962.9	-2,019.7	943.1	840.6	102.53	9.198				
8,600.0	7,074.1	8,849.9	7,275.1	55.1	56.6	102.30	962.9	-2,119.7	943.3	835.6	107.69	8.760				
8,700.0	7,073.4	8,949.9	7,275.1	57.8	59.2	102.34	962.9	-2,219.7	943.5	830.6	112.87	8.359				
8,800.0	7,072.7	9,049.9	7,275.2	60.5	61.8	102.39	962.9	-2,319.7	943.6	825.5	118.08	7.991				
8,900.0	7,072.0	9,149.9	7,275.2	63.2	64.4	102.43	962.9	-2,419.6	943.8	820.5	123.31	7.654				
9,000.0	7,071.3	9,249.9	7,275.3	65.9	67.1	102.48	962.9	-2,519.6	944.0	815.4	128.56	7.343				
9,100.0	7,070.6	9,349.9	7,275.3	68.6	69.7	102.52	962.9	-2,619.6	944.1	810.3	133.82	7.055				
9,200.0	7,069.9	9,449.9	7,275.4	71.3	72.4	102.57	962.9	-2,719.6	944.3	805.2	139.10	6.789				
9,300.0	7,069.2	9,549.9	7,275.4	74.0	75.0	102.61	962.9	-2,819.6	944.4	800.1	144.38	6.541				
9,400.0	7,068.5	9,649.9	7,275.5	76.8	77.7	102.65	962.9	-2,919.6	944.6	794.9	149.68	6.311				
9,500.0	7,067.9	9,749.9	7,275.5	79.5	80.4	102.70	963.0	-3,019.6	944.8	789.8	154.99	6.096				
9,600.0	7,067.2	9,849.9	7,275.6	82.2	83.1	102.74	963.0	-3,119.6	944.9	784.6	160.31	5.894				
9,700.0	7,066.5	9,949.8	7,275.6	85.0	85.8	102.79	963.0	-3,219.6	945.1	779.5	165.64	5.706				
9,800.0	7,065.8	10,049.8	7,275.7	87.7	88.5	102.83	963.0	-3,319.6	945.3	774.3	170.97	5.529				
9,900.0	7,065.1	10,149.8	7,275.7	90.5	91.3	102.88	963.0	-3,419.6	945.4	769.1	176.30	5.363				
10,000.0	7,064.4	10,249.8	7,275.8	93.2	94.0	102.92	963.0	-3,519.6	945.6	764.0	181.65	5.206				

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 28F-214
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4778.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-214	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (8-07-14)	Offset TVD Reference:	Offset Datum

Offset Design Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W - Wiedeman 28E-404 - Wellbore #1 - Plan #1 (8														Offset Site Error:	0.0 ft
Survey Program: 0-MWD														Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning		
10,100.0	7,063.7	10,349.8	7,275.8	96.0	96.7	102.96	963.0	-3,619.6	945.8	758.8	186.99	5.058			
10,200.0	7,063.0	10,449.8	7,275.9	98.8	99.5	103.01	963.0	-3,719.6	945.9	753.6	192.34	4.918			
10,300.0	7,062.3	10,549.8	7,276.0	101.5	102.2	103.05	963.0	-3,819.6	946.1	748.4	197.69	4.786			
10,400.0	7,061.6	10,649.8	7,276.0	104.3	104.9	103.10	963.0	-3,919.6	946.3	743.2	203.05	4.660			
10,500.0	7,060.9	10,749.8	7,276.1	107.1	107.7	103.14	963.0	-4,019.6	946.5	738.0	208.41	4.541			
10,600.0	7,060.2	10,849.8	7,276.1	109.8	110.4	103.19	963.0	-4,119.6	946.6	732.9	213.77	4.428			
10,700.0	7,059.5	10,949.8	7,276.2	112.6	113.2	103.23	963.0	-4,219.6	946.8	727.7	219.13	4.321			
10,800.0	7,058.8	11,049.8	7,276.2	115.4	115.9	103.27	963.0	-4,319.6	947.0	722.5	224.50	4.218			
10,900.0	7,058.1	11,149.8	7,276.3	118.2	118.7	103.32	963.0	-4,419.6	947.1	717.3	229.86	4.120			
11,000.0	7,057.4	11,249.8	7,276.3	120.9	121.4	103.36	963.0	-4,519.6	947.3	712.1	235.23	4.027			
11,100.0	7,056.7	11,349.8	7,276.4	123.7	124.2	103.41	963.0	-4,619.6	947.5	706.9	240.60	3.938			
11,200.0	7,056.0	11,449.8	7,276.4	126.5	127.0	103.45	963.0	-4,719.6	947.7	701.7	245.97	3.853			
11,300.0	7,055.3	11,549.8	7,276.5	129.3	129.7	103.49	963.0	-4,819.6	947.8	696.5	251.33	3.771			
11,400.0	7,054.6	11,649.8	7,276.5	132.1	132.5	103.54	963.0	-4,919.6	948.0	691.3	256.70	3.693			
11,500.0	7,053.9	11,749.8	7,276.6	134.8	135.3	103.58	963.0	-5,019.6	948.2	686.1	262.07	3.618			
11,600.0	7,053.2	11,849.8	7,276.6	137.6	138.0	103.63	963.0	-5,119.6	948.4	680.9	267.44	3.546			
11,700.0	7,052.5	11,949.8	7,276.7	140.4	140.8	103.67	963.0	-5,219.6	948.6	675.7	272.81	3.477			
11,800.0	7,051.8	12,049.8	7,276.7	143.2	143.6	103.72	963.0	-5,319.6	948.7	670.6	278.18	3.410			
11,900.0	7,051.1	12,149.8	7,276.8	146.0	146.4	103.76	963.0	-5,419.6	948.9	665.4	283.55	3.347			
12,000.0	7,050.4	12,249.8	7,276.8	148.8	149.1	103.80	963.0	-5,519.6	949.1	660.2	288.92	3.285			
12,100.0	7,049.7	12,349.8	7,276.9	151.6	151.9	103.85	963.0	-5,619.6	949.3	655.0	294.28	3.226			
12,200.0	7,049.0	12,449.8	7,276.9	154.4	154.7	103.89	963.0	-5,719.6	949.4	649.8	299.65	3.169			
12,300.0	7,048.3	12,549.8	7,277.0	157.1	157.5	103.94	963.0	-5,819.6	949.6	644.6	305.02	3.113			
12,400.0	7,047.6	12,649.8	7,277.1	159.9	160.3	103.98	963.0	-5,919.5	949.8	639.4	310.38	3.060			
12,500.0	7,046.9	12,749.8	7,277.1	162.7	163.0	104.02	963.0	-6,019.5	950.0	634.2	315.75	3.009			
12,600.0	7,046.2	12,849.8	7,277.2	165.5	165.8	104.07	963.0	-6,119.5	950.2	629.1	321.11	2.959			
12,700.0	7,045.5	12,949.8	7,277.2	168.3	168.6	104.11	963.0	-6,219.5	950.4	623.9	326.48	2.911			
12,800.0	7,044.8	13,049.8	7,277.3	171.1	171.4	104.15	963.0	-6,319.5	950.5	618.7	331.84	2.864			
12,900.0	7,044.1	13,149.8	7,277.3	173.9	174.2	104.20	963.0	-6,419.5	950.7	613.5	337.20	2.819			
13,000.0	7,043.4	13,249.8	7,277.4	176.7	177.0	104.24	963.0	-6,519.5	950.9	608.4	342.56	2.776			
13,100.0	7,042.7	13,349.8	7,277.4	179.5	179.7	104.29	963.0	-6,619.5	951.1	603.2	347.92	2.734			
13,200.0	7,042.0	13,449.8	7,277.5	182.3	182.5	104.33	963.0	-6,719.5	951.3	598.0	353.27	2.693			
13,300.0	7,041.3	13,549.7	7,277.5	185.1	185.3	104.37	963.0	-6,819.5	951.5	592.8	358.63	2.653			
13,400.0	7,040.6	13,649.7	7,277.6	187.9	188.1	104.42	963.0	-6,919.5	951.7	587.7	363.98	2.615			
13,500.0	7,039.9	13,749.7	7,277.6	190.7	190.9	104.46	963.0	-7,019.5	951.8	582.5	369.34	2.577			
13,600.0	7,039.2	13,849.7	7,277.7	193.5	193.7	104.50	963.0	-7,119.5	952.0	577.3	374.69	2.541			
13,700.0	7,038.5	13,949.7	7,277.7	196.3	196.5	104.55	963.0	-7,219.5	952.2	572.2	380.04	2.506			
13,800.0	7,037.8	14,049.7	7,277.8	199.0	199.3	104.59	963.0	-7,319.5	952.4	567.0	385.39	2.471			
13,900.0	7,037.1	14,149.7	7,277.8	201.8	202.1	104.64	963.0	-7,419.5	952.6	561.9	390.73	2.438			
14,000.0	7,036.4	14,249.7	7,277.9	204.6	204.8	104.68	963.0	-7,519.5	952.8	556.7	396.08	2.406			
14,100.0	7,035.7	14,349.7	7,277.9	207.4	207.6	104.72	963.0	-7,619.5	953.0	551.6	401.42	2.374			
14,200.0	7,035.0	14,449.7	7,278.0	210.2	210.4	104.77	963.0	-7,719.5	953.2	546.4	406.76	2.343			
14,205.5	7,035.0	14,455.2	7,278.0	210.4	210.6	104.77	963.0	-7,725.0	953.2	546.1	407.06	2.342 SF			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28F-214
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4778.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-214	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (8-07-14)	Offset TVD Reference:	Offset Datum

Offset Design		Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W - Wiedeman 28F-234 - Wellbore #1 - Plan #1 (8										Offset Site Error:		0.0 ft		
Survey Program: 0-MWD														Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +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	180.00	-61.9	0.0	61.9							
100.0	100.0	100.0	100.0	0.1	0.1	180.00	-61.9	0.0	61.9	61.7	0.22	275.539				
200.0	200.0	200.0	200.0	0.3	0.3	180.00	-61.9	0.0	61.9	61.3	0.67	91.846				
300.0	300.0	300.0	300.0	0.6	0.6	180.00	-61.9	0.0	61.9	60.8	1.12	55.108				
400.0	400.0	400.0	400.0	0.8	0.8	180.00	-61.9	0.0	61.9	60.4	1.57	39.363				
500.0	500.0	500.0	500.0	1.0	1.0	180.00	-61.9	0.0	61.9	59.9	2.02	30.615				
600.0	600.0	600.0	600.0	1.2	1.2	180.00	-61.9	0.0	61.9	59.5	2.47	25.049	CC, ES			
700.0	700.0	698.0	698.0	1.5	1.4	-179.36	-63.5	-0.7	63.5	60.6	2.89	21.958				
800.0	800.0	795.8	795.7	1.7	1.6	-177.63	-68.0	-2.8	68.2	64.9	3.30	20.681				
900.0	900.0	893.2	892.7	1.9	1.8	-175.24	-75.5	-6.3	76.2	72.4	3.72	20.458				
1,000.0	1,000.0	990.1	988.9	2.1	2.0	-172.63	-86.0	-11.1	87.4	83.2	4.17	20.952				
1,100.0	1,100.0	1,089.2	1,087.1	2.4	2.3	-170.34	-98.0	-16.7	100.2	95.6	4.65	21.536				
1,200.0	1,200.0	1,188.3	1,185.3	2.6	2.6	-168.57	-110.0	-22.2	113.2	108.0	5.15	21.959				
1,300.0	1,300.0	1,287.4	1,283.5	2.8	2.9	-167.17	-122.0	-27.8	126.2	120.5	5.67	22.268				
1,400.0	1,400.0	1,386.5	1,381.7	3.0	3.2	-166.03	-134.0	-33.3	139.3	133.1	6.19	22.499				
1,500.0	1,500.0	1,485.6	1,479.9	3.3	3.5	-165.08	-146.0	-38.9	152.4	145.7	6.72	22.676				
1,600.0	1,600.0	1,584.7	1,578.2	3.5	3.8	-164.29	-158.0	-44.5	165.6	158.3	7.26	22.813				
1,700.0	1,700.0	1,683.8	1,676.4	3.7	4.1	-163.61	-170.0	-50.0	178.8	171.0	7.80	22.922				
1,800.0	1,800.0	1,782.9	1,774.6	3.9	4.5	-163.03	-182.0	-55.6	192.0	183.7	8.34	23.010				
1,900.0	1,900.0	1,882.1	1,872.9	4.1	4.8	-80.87	-194.1	-61.1	205.0	196.8	8.17	25.090				
2,000.0	1,999.8	1,981.2	1,971.1	4.4	5.1	-81.51	-206.1	-66.7	217.4	208.8	8.61	25.242				
2,100.0	2,099.5	2,080.3	2,069.3	4.6	5.4	-82.94	-218.1	-72.2	229.5	220.4	9.07	25.294				
2,200.0	2,198.8	2,179.2	2,167.3	4.8	5.8	-84.96	-230.1	-77.8	241.4	231.9	9.55	25.283				
2,300.0	2,298.2	2,278.1	2,265.4	5.0	6.1	-86.86	-242.0	-83.3	253.7	243.7	10.04	25.266				
2,400.0	2,397.6	2,377.0	2,363.4	5.3	6.4	-88.59	-254.0	-88.9	266.2	255.7	10.55	25.246				
2,500.0	2,496.9	2,475.9	2,461.4	5.5	6.8	-90.16	-266.0	-94.4	279.0	267.9	11.06	25.225				
2,600.0	2,596.3	2,574.8	2,559.4	5.8	7.1	-91.60	-278.0	-99.9	291.9	280.3	11.58	25.203				
2,700.0	2,695.6	2,673.7	2,657.4	6.1	7.4	-92.91	-290.0	-105.5	305.0	292.9	12.11	25.180				
2,800.0	2,795.0	2,772.6	2,755.5	6.3	7.8	-94.11	-301.9	-111.0	318.2	305.6	12.65	25.157				
2,900.0	2,894.4	2,871.5	2,853.5	6.6	8.1	-95.22	-313.9	-116.6	331.6	318.4	13.19	25.135				
3,000.0	2,993.7	2,970.4	2,951.5	6.9	8.4	-96.24	-325.9	-122.1	345.1	331.4	13.74	25.114				
3,100.0	3,093.1	3,069.3	3,049.5	7.1	8.8	-97.19	-337.9	-127.7	358.7	344.4	14.29	25.094				
3,200.0	3,192.5	3,168.2	3,147.6	7.4	9.1	-98.06	-349.9	-133.2	372.4	357.5	14.85	25.074				
3,300.0	3,291.8	3,267.2	3,245.6	7.7	9.4	-98.88	-361.9	-138.7	386.1	370.7	15.41	25.056				
3,400.0	3,391.2	3,366.1	3,343.6	8.0	9.8	-99.63	-373.8	-144.3	399.9	384.0	15.97	25.039				
3,500.0	3,490.5	3,465.0	3,441.6	8.3	10.1	-100.34	-385.8	-149.8	413.8	397.3	16.54	25.023				
3,600.0	3,589.9	3,563.9	3,539.6	8.6	10.5	-101.00	-397.8	-155.4	427.8	410.6	17.10	25.009				
3,700.0	3,689.3	3,662.8	3,637.7	8.8	10.8	-101.62	-409.8	-160.9	441.7	424.1	17.67	24.995				
3,800.0	3,788.6	3,761.7	3,735.7	9.1	11.1	-102.20	-421.8	-166.5	455.8	437.5	18.24	24.982				
3,900.0	3,888.0	3,860.6	3,833.7	9.4	11.5	-102.75	-433.8	-172.0	469.9	451.1	18.82	24.970				
4,000.0	3,987.4	3,959.5	3,931.7	9.7	11.8	-103.27	-445.7	-177.5	484.0	464.6	19.39	24.959				
4,100.0	4,086.7	4,058.4	4,029.7	10.0	12.1	-103.75	-457.7	-183.1	498.2	478.2	19.97	24.949				
4,200.0	4,186.1	4,157.3	4,127.8	10.3	12.5	-104.21	-469.7	-188.6	512.4	491.8	20.54	24.940				
4,300.0	4,285.4	4,256.2	4,225.8	10.6	12.8	-104.65	-481.7	-194.2	526.6	505.5	21.12	24.931				
4,400.0	4,384.8	4,355.1	4,323.8	10.9	13.2	-105.08	-493.7	-199.7	540.8	519.1	21.70	24.924				
4,500.0	4,484.4	4,454.1	4,421.9	11.1	13.5	-105.53	-505.7	-205.3	554.6	532.4	22.21	24.966				
4,600.0	4,584.2	4,553.3	4,520.2	11.3	13.8	-105.62	-517.7	-210.8	567.4	544.7	22.69	25.004				
4,700.0	4,684.2	4,652.5	4,618.5	11.5	14.2	-105.36	-529.7	-216.4	579.3	556.2	23.13	25.044				
4,800.0	4,784.2	4,751.6	4,716.7	11.7	14.5	173.41	-541.7	-221.9	590.7	566.6	24.12	24.496				
4,900.0	4,884.2	4,850.7	4,814.9	11.9	14.8	174.07	-553.7	-227.5	602.2	577.5	24.67	24.408				
5,000.0	4,984.2	4,949.8	4,913.1	12.1	15.2	174.71	-565.7	-233.0	613.7	588.5	25.23	24.326				

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 28F-214
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4778.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-214	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (8-07-14)	Offset TVD Reference:	Offset Datum

Offset Design				Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W - Wiedeman 28F-234 - Wellbore #1 - Plan #1 (8										Offset Site Error:		0.0 ft
Survey Program: 0-MWD														Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
							+N/-S (ft)	+E/-W (ft)								
5,100.0	5,084.2	5,048.9	5,011.4	12.3	15.5	175.32	-577.7	-238.6	625.3	599.5	25.79	24.250				
5,200.0	5,184.2	5,148.0	5,109.6	12.5	15.9	175.91	-589.7	-244.2	637.0	610.7	26.35	24.178				
5,300.0	5,284.2	5,247.1	5,207.8	12.6	16.2	176.48	-601.7	-249.7	648.8	621.8	26.91	24.111				
5,400.0	5,384.2	5,346.2	5,306.0	12.8	16.5	177.03	-613.7	-255.3	660.6	633.1	27.47	24.048				
5,500.0	5,484.2	5,445.3	5,404.2	13.0	16.9	177.55	-625.7	-260.8	672.4	644.4	28.03	23.989				
5,600.0	5,584.2	5,544.4	5,502.5	13.2	17.2	178.07	-637.8	-266.4	684.3	655.7	28.59	23.933				
5,700.0	5,684.2	5,643.5	5,600.7	13.4	17.6	178.56	-649.8	-271.9	696.3	667.1	29.16	23.882				
5,800.0	5,784.2	5,742.6	5,698.9	13.7	17.9	179.04	-661.8	-277.5	708.3	678.6	29.72	23.833				
5,900.0	5,884.2	5,865.3	5,820.7	13.9	18.2	179.54	-674.9	-283.6	719.1	688.8	30.26	23.759				
6,000.0	5,984.2	5,994.6	5,949.6	14.1	18.5	179.87	-683.7	-287.6	725.9	695.1	30.74	23.612				
6,100.0	6,084.2	6,124.5	6,079.4	14.3	18.7	180.00	-687.3	-289.3	728.6	697.4	31.16	23.378				
6,200.0	6,184.2	6,229.2	6,184.2	14.5	18.8	180.00	-687.3	-289.3	728.6	697.1	31.53	23.106				
6,300.0	6,284.2	6,329.2	6,284.2	14.7	18.9	180.00	-687.3	-289.3	728.6	696.7	31.88	22.854				
6,400.0	6,384.1	6,429.1	6,383.8	14.9	19.1	-89.81	-687.3	-294.6	728.6	698.3	30.31	24.036				
6,500.0	6,482.9	6,528.5	6,481.5	15.2	19.4	-89.58	-687.3	-312.6	728.6	697.7	30.91	23.574				
6,600.0	6,578.8	6,627.6	6,575.7	15.6	19.7	-89.35	-687.3	-343.0	728.7	697.0	31.69	22.992				
6,700.0	6,670.3	6,726.3	6,664.9	16.1	20.1	-89.13	-687.3	-385.2	728.7	696.0	32.70	22.282				
6,800.0	6,755.7	6,824.7	6,747.6	16.8	20.6	-88.93	-687.3	-438.3	728.7	694.7	34.00	21.434				
6,900.0	6,833.6	6,922.8	6,822.6	17.7	21.2	-88.75	-687.3	-501.4	728.8	693.1	35.65	20.441				
7,000.0	6,902.8	7,020.6	6,888.8	18.8	22.0	-88.59	-687.3	-573.4	728.8	691.1	37.73	19.315				
7,100.0	6,961.9	7,118.1	6,945.0	20.1	22.9	-88.45	-687.3	-653.0	728.9	688.6	40.29	18.089				
7,200.0	7,009.9	7,215.5	6,990.6	21.7	24.1	-88.34	-687.3	-739.0	728.9	685.6	43.35	16.813				
7,300.0	7,046.2	7,312.7	7,024.9	23.5	25.6	-88.25	-687.3	-829.9	728.9	682.1	46.88	15.549				
7,400.0	7,069.9	7,409.9	7,047.3	25.5	27.2	-88.20	-687.3	-924.3	729.0	678.2	50.81	14.348				
7,500.0	7,080.8	7,506.9	7,057.6	27.6	29.1	-88.17	-687.3	-1,020.8	729.0	674.0	55.02	13.248				
7,600.0	7,081.1	7,605.8	7,058.0	29.8	31.1	-88.19	-687.3	-1,119.7	729.0	669.5	59.46	12.259				
7,700.0	7,080.4	7,705.8	7,057.7	32.2	33.2	-88.21	-687.3	-1,219.7	729.0	664.9	64.09	11.373				
7,800.0	7,079.7	7,805.8	7,057.4	34.6	35.5	-88.24	-687.3	-1,319.7	729.0	660.1	68.87	10.585				
7,900.0	7,079.0	7,905.8	7,057.0	37.0	37.8	-88.27	-687.3	-1,419.7	728.9	655.2	73.76	9.882				
8,000.0	7,078.3	8,005.8	7,056.7	39.5	40.2	-88.30	-687.3	-1,519.7	728.9	650.2	78.75	9.256				
8,100.0	7,077.6	8,105.8	7,056.3	42.0	42.7	-88.32	-687.3	-1,619.7	728.9	645.1	83.82	8.696				
8,200.0	7,076.9	8,205.8	7,056.0	44.6	45.2	-88.35	-687.3	-1,719.7	728.9	640.0	88.96	8.194				
8,300.0	7,076.2	8,305.8	7,055.6	47.2	47.7	-88.38	-687.3	-1,819.7	728.9	634.8	94.14	7.742				
8,400.0	7,075.5	8,405.8	7,055.3	49.8	50.3	-88.41	-687.3	-1,919.7	728.9	629.5	99.38	7.334				
8,500.0	7,074.8	8,505.8	7,054.9	52.5	52.9	-88.43	-687.3	-2,019.7	728.9	624.2	104.65	6.965				
8,600.0	7,074.1	8,605.8	7,054.6	55.1	55.5	-88.46	-687.3	-2,119.7	728.9	618.9	109.96	6.628				
8,700.0	7,073.4	8,705.8	7,054.2	57.8	58.1	-88.49	-687.3	-2,219.7	728.9	613.6	115.30	6.321				
8,800.0	7,072.7	8,805.8	7,053.9	60.5	60.8	-88.52	-687.3	-2,319.7	728.9	608.2	120.66	6.040				
8,900.0	7,072.0	8,905.8	7,053.5	63.2	63.4	-88.54	-687.3	-2,419.7	728.8	602.8	126.05	5.782				
9,000.0	7,071.3	9,005.8	7,053.2	65.9	66.1	-88.57	-687.3	-2,519.7	728.8	597.4	131.45	5.545				
9,100.0	7,070.6	9,105.8	7,052.8	68.6	68.8	-88.60	-687.3	-2,619.7	728.8	592.0	136.87	5.325				
9,200.0	7,069.9	9,205.8	7,052.5	71.3	71.5	-88.63	-687.3	-2,719.7	728.8	586.5	142.31	5.121				
9,300.0	7,069.2	9,305.8	7,052.1	74.0	74.2	-88.65	-687.3	-2,819.7	728.8	581.1	147.76	4.933				
9,400.0	7,068.5	9,405.8	7,051.8	76.8	76.9	-88.68	-687.3	-2,919.7	728.8	575.6	153.22	4.757				
9,500.0	7,067.9	9,505.8	7,051.4	79.5	79.6	-88.71	-687.3	-3,019.7	728.8	570.1	158.69	4.593				
9,600.0	7,067.2	9,605.8	7,051.1	82.2	82.3	-88.74	-687.3	-3,119.7	728.8	564.6	164.17	4.439				
9,700.0	7,066.5	9,705.8	7,050.7	85.0	85.1	-88.76	-687.3	-3,219.7	728.8	559.1	169.66	4.296				
9,800.0	7,065.8	9,805.8	7,050.4	87.7	87.8	-88.79	-687.3	-3,319.7	728.8	553.6	175.16	4.161				
9,900.0	7,065.1	9,905.8	7,050.0	90.5	90.5	-88.82	-687.3	-3,419.7	728.8	548.1	180.67	4.034				
10,000.0	7,064.4	10,005.8	7,049.7	93.2	93.3	-88.85	-687.3	-3,519.7	728.8	542.6	186.18	3.914				

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 28F-214
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4778.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-214	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (8-07-14)	Offset TVD Reference:	Offset Datum

Offset Design		Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W - Wiedeman 28F-234 - Wellbore #1 - Plan #1 (8										Offset Site Error:		0.0 ft
Survey Program:		0-MWD										Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
10,100.0	7,063.7	10,105.8	7,049.3	96.0	96.0	-88.87	-687.3	-3,619.7	728.8	537.1	191.70	3.802		
10,200.0	7,063.0	10,205.8	7,049.0	98.8	98.8	-88.90	-687.3	-3,719.7	728.7	531.5	197.22	3.695		
10,300.0	7,062.3	10,305.8	7,048.6	101.5	101.5	-88.93	-687.3	-3,819.7	728.7	526.0	202.75	3.594		
10,400.0	7,061.6	10,405.8	7,048.3	104.3	104.3	-88.95	-687.3	-3,919.7	728.7	520.5	208.28	3.499		
10,500.0	7,060.9	10,505.8	7,047.9	107.1	107.1	-88.98	-687.3	-4,019.7	728.7	514.9	213.82	3.408		
10,600.0	7,060.2	10,605.8	7,047.6	109.8	109.8	-89.01	-687.3	-4,119.7	728.7	509.4	219.36	3.322		
10,700.0	7,059.5	10,705.8	7,047.2	112.6	112.6	-89.04	-687.3	-4,219.7	728.7	503.8	224.91	3.240		
10,800.0	7,058.8	10,805.8	7,046.9	115.4	115.4	-89.06	-687.3	-4,319.7	728.7	498.3	230.46	3.162		
10,900.0	7,058.1	10,905.8	7,046.5	118.2	118.1	-89.09	-687.3	-4,419.7	728.7	492.7	236.01	3.088		
11,000.0	7,057.4	11,005.8	7,046.2	120.9	120.9	-89.12	-687.3	-4,519.7	728.7	487.1	241.56	3.017		
11,100.0	7,056.7	11,105.8	7,045.8	123.7	123.7	-89.15	-687.3	-4,619.7	728.7	481.6	247.12	2.949		
11,200.0	7,056.0	11,205.8	7,045.5	126.5	126.4	-89.17	-687.3	-4,719.7	728.7	476.0	252.68	2.884		
11,300.0	7,055.3	11,305.8	7,045.1	129.3	129.2	-89.20	-687.3	-4,819.7	728.7	470.4	258.24	2.822		
11,400.0	7,054.6	11,405.8	7,044.8	132.1	132.0	-89.23	-687.3	-4,919.7	728.7	464.9	263.81	2.762		
11,500.0	7,053.9	11,505.8	7,044.4	134.8	134.8	-89.26	-687.3	-5,019.7	728.7	459.3	269.37	2.705		
11,600.0	7,053.2	11,605.8	7,044.1	137.6	137.5	-89.28	-687.3	-5,119.7	728.7	453.7	274.94	2.650		
11,700.0	7,052.5	11,705.8	7,043.7	140.4	140.3	-89.31	-687.3	-5,219.7	728.7	448.1	280.51	2.598		
11,800.0	7,051.8	11,805.8	7,043.4	143.2	143.1	-89.34	-687.3	-5,319.7	728.7	442.6	286.09	2.547		
11,900.0	7,051.1	11,905.8	7,043.0	146.0	145.9	-89.37	-687.3	-5,419.7	728.7	437.0	291.66	2.498		
12,000.0	7,050.4	12,005.8	7,042.7	148.8	148.7	-89.39	-687.3	-5,519.7	728.7	431.4	297.24	2.451		
12,100.0	7,049.7	12,105.8	7,042.3	151.6	151.5	-89.42	-687.3	-5,619.7	728.6	425.8	302.81	2.406		
12,200.0	7,049.0	12,205.8	7,042.0	154.4	154.2	-89.45	-687.3	-5,719.7	728.6	420.3	308.39	2.363		
12,300.0	7,048.3	12,305.8	7,041.6	157.1	157.0	-89.48	-687.3	-5,819.7	728.6	414.7	313.97	2.321		
12,400.0	7,047.6	12,405.8	7,041.3	159.9	159.8	-89.50	-687.3	-5,919.7	728.6	409.1	319.55	2.280		
12,500.0	7,046.9	12,505.8	7,040.9	162.7	162.6	-89.53	-687.3	-6,019.7	728.6	403.5	325.14	2.241		
12,600.0	7,046.2	12,605.8	7,040.6	165.5	165.4	-89.56	-687.3	-6,119.7	728.6	397.9	330.72	2.203		
12,700.0	7,045.5	12,705.8	7,040.2	168.3	168.2	-89.59	-687.3	-6,219.6	728.6	392.3	336.31	2.167		
12,800.0	7,044.8	12,805.8	7,039.9	171.1	171.0	-89.61	-687.3	-6,319.6	728.6	386.7	341.89	2.131		
12,900.0	7,044.1	12,905.8	7,039.5	173.9	173.8	-89.64	-687.3	-6,419.6	728.6	381.1	347.48	2.097		
13,000.0	7,043.4	13,005.8	7,039.2	176.7	176.6	-89.67	-687.3	-6,519.6	728.6	375.6	353.06	2.064		
13,100.0	7,042.7	13,105.8	7,038.8	179.5	179.3	-89.70	-687.3	-6,619.6	728.6	370.0	358.65	2.032		
13,200.0	7,042.0	13,205.8	7,038.5	182.3	182.1	-89.72	-687.3	-6,719.6	728.6	364.4	364.24	2.000		
13,300.0	7,041.3	13,305.8	7,038.2	185.1	184.9	-89.75	-687.3	-6,819.6	728.6	358.8	369.83	1.970		
13,400.0	7,040.6	13,405.8	7,037.8	187.9	187.7	-89.78	-687.3	-6,919.6	728.6	353.2	375.42	1.941		
13,500.0	7,039.9	13,505.8	7,037.5	190.7	190.5	-89.81	-687.3	-7,019.6	728.6	347.6	381.01	1.912		
13,600.0	7,039.2	13,605.8	7,037.1	193.5	193.3	-89.83	-687.3	-7,119.6	728.6	342.0	386.60	1.885		
13,700.0	7,038.5	13,705.8	7,036.8	196.3	196.1	-89.86	-687.3	-7,219.6	728.6	336.4	392.20	1.858		
13,800.0	7,037.8	13,805.8	7,036.4	199.0	198.9	-89.89	-687.3	-7,319.6	728.6	330.8	397.79	1.832		
13,900.0	7,037.1	13,905.8	7,036.1	201.8	201.7	-89.92	-687.3	-7,419.6	728.6	325.2	403.38	1.806		
14,000.0	7,036.4	14,005.8	7,035.7	204.6	204.5	-89.94	-687.3	-7,519.6	728.6	319.6	408.98	1.782		
14,100.0	7,035.7	14,105.8	7,035.4	207.4	207.3	-89.97	-687.3	-7,619.6	728.6	314.0	414.57	1.758		
14,200.0	7,035.0	14,205.8	7,035.0	210.2	210.1	-90.00	-687.3	-7,719.6	728.6	308.4	420.17	1.734		
14,203.3	7,035.0	14,209.1	7,035.0	210.3	210.2	-90.00	-687.3	-7,722.9	728.6	308.3	420.35	1.733		
14,205.5	7,035.0	14,209.7	7,035.0	210.4	210.2	-90.00	-687.3	-7,723.5	728.6	308.2	420.42	1.733 SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28F-214
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4778.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-214	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (8-07-14)	Offset TVD Reference:	Offset Datum

Offset Design		Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W - Wiedeman 28F-304 - Wellbore #1 - Plan #1 (8										Offset Site Error:		0.0 ft			
Survey Program: 0-MWD														Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis			Distance							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	180.00	-32.8	0.0	32.8								
100.0	100.0	100.0	100.0	0.1	0.1	180.00	-32.8	0.0	32.8	32.6	0.22	145.874					
200.0	200.0	200.0	200.0	0.3	0.3	180.00	-32.8	0.0	32.8	32.1	0.67	48.625					
300.0	300.0	300.0	300.0	0.6	0.6	180.00	-32.8	0.0	32.8	31.7	1.12	29.175					
400.0	400.0	400.0	400.0	0.8	0.8	180.00	-32.8	0.0	32.8	31.2	1.57	20.839					
500.0	500.0	500.0	500.0	1.0	1.0	180.00	-32.8	0.0	32.8	30.8	2.02	16.208					
600.0	600.0	600.0	600.0	1.2	1.2	180.00	-32.8	0.0	32.8	30.3	2.47	13.261					
700.0	700.0	700.0	700.0	1.5	1.5	180.00	-32.8	0.0	32.8	29.9	2.92	11.221					
800.0	800.0	800.0	800.0	1.7	1.7	180.00	-32.8	0.0	32.8	29.4	3.37	9.725					
900.0	900.0	900.0	900.0	1.9	1.9	180.00	-32.8	0.0	32.8	29.0	3.82	8.581					
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	180.00	-32.8	0.0	32.8	28.5	4.27	7.678					
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	180.00	-32.8	0.0	32.8	28.1	4.72	6.946					
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	180.00	-32.8	0.0	32.8	27.6	5.17	6.342					
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	180.00	-32.8	0.0	32.8	27.2	5.62	5.835					
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	180.00	-32.8	0.0	32.8	26.7	6.07	5.403 CC, ES					
1,500.0	1,500.0	1,499.0	1,499.0	3.3	3.2	-178.47	-34.2	-0.9	34.3	27.8	6.49	5.279					
1,600.0	1,600.0	1,597.8	1,597.6	3.5	3.4	-174.58	-38.5	-3.7	38.8	31.9	6.89	5.632					
1,700.0	1,700.0	1,696.1	1,695.5	3.7	3.6	-169.84	-45.7	-8.2	46.6	39.3	7.30	6.391					
1,800.0	1,800.0	1,793.7	1,792.4	3.9	3.8	-165.41	-55.6	-14.5	57.9	50.2	7.72	7.505					
1,900.0	1,900.0	1,891.2	1,888.9	4.1	4.0	-80.98	-68.1	-22.4	72.3	64.2	8.13	8.894					
2,000.0	1,999.8	1,990.1	1,986.5	4.4	4.3	-81.32	-81.4	-30.9	86.9	78.3	8.53	10.179					
2,100.0	2,099.5	2,089.1	2,084.1	4.6	4.5	-83.46	-94.8	-39.3	101.0	92.1	8.96	11.274					
2,200.0	2,198.8	2,187.9	2,181.7	4.8	4.8	-86.45	-108.1	-47.8	115.2	105.7	9.41	12.234					
2,300.0	2,298.2	2,286.7	2,279.3	5.0	5.1	-88.88	-121.4	-56.2	129.5	119.7	9.88	13.107					
2,400.0	2,397.6	2,385.5	2,376.8	5.3	5.4	-90.82	-134.7	-64.7	144.1	133.7	10.37	13.898					
2,500.0	2,496.9	2,484.4	2,474.4	5.5	5.7	-92.41	-148.1	-73.1	158.8	147.9	10.87	14.613					
2,600.0	2,596.3	2,583.2	2,572.0	5.8	6.1	-93.73	-161.4	-81.6	173.6	162.2	11.38	15.258					
2,700.0	2,695.6	2,682.0	2,669.5	6.1	6.4	-94.84	-174.7	-90.0	188.4	176.5	11.90	15.840					
2,800.0	2,795.0	2,780.9	2,767.1	6.3	6.7	-95.79	-188.0	-98.5	203.4	190.9	12.42	16.367					
2,900.0	2,894.4	2,879.7	2,864.6	6.6	7.1	-96.60	-201.3	-106.9	218.3	205.4	12.96	16.845					
3,000.0	2,993.7	2,978.5	2,962.2	6.9	7.4	-97.32	-214.7	-115.4	233.3	219.8	13.50	17.278					
3,100.0	3,093.1	3,077.3	3,059.8	7.1	7.8	-97.94	-228.0	-123.8	248.4	234.3	14.05	17.673					
3,200.0	3,192.5	3,176.2	3,157.3	7.4	8.1	-98.50	-241.3	-132.3	263.4	248.8	14.61	18.033					
3,300.0	3,291.8	3,275.0	3,254.9	7.7	8.5	-98.99	-254.6	-140.7	278.5	263.4	15.17	18.363					
3,400.0	3,391.2	3,373.8	3,352.4	8.0	8.8	-99.44	-267.9	-149.2	293.6	277.9	15.73	18.665					
3,500.0	3,490.5	3,472.7	3,450.0	8.3	9.2	-99.84	-281.3	-157.6	308.8	292.5	16.30	18.942					
3,600.0	3,589.9	3,571.5	3,547.6	8.6	9.5	-100.20	-294.6	-166.1	323.9	307.0	16.87	19.198					
3,700.0	3,689.3	3,670.3	3,645.1	8.8	9.9	-100.53	-307.9	-174.5	339.0	321.6	17.45	19.435					
3,800.0	3,788.6	3,769.1	3,742.7	9.1	10.2	-100.83	-321.2	-183.0	354.2	336.2	18.02	19.654					
3,900.0	3,888.0	3,868.0	3,840.3	9.4	10.6	-101.11	-334.6	-191.4	369.4	350.8	18.60	19.857					
4,000.0	3,987.4	3,966.8	3,937.8	9.7	11.0	-101.37	-347.9	-199.9	384.5	365.4	19.18	20.046					
4,100.0	4,086.7	4,065.6	4,035.4	10.0	11.3	-101.60	-361.2	-208.4	399.7	379.9	19.77	20.221					
4,200.0	4,186.1	4,164.5	4,132.9	10.3	11.7	-101.82	-374.5	-216.8	414.9	394.5	20.35	20.386					
4,300.0	4,285.4	4,263.3	4,230.5	10.6	12.1	-102.03	-387.8	-225.3	430.1	409.2	20.94	20.539					
4,400.0	4,384.8	4,362.1	4,328.1	10.9	12.4	-102.24	-401.2	-233.7	445.3	423.8	21.53	20.684					
4,500.0	4,484.4	4,461.0	4,425.7	11.1	12.8	-102.46	-414.5	-242.2	460.1	438.0	22.05	20.866					
4,600.0	4,584.2	4,559.9	4,523.3	11.3	13.2	-102.25	-427.8	-250.6	474.1	451.6	22.53	21.043					
4,700.0	4,684.2	4,658.8	4,620.9	11.5	13.5	-101.66	-441.1	-259.1	487.5	464.5	22.97	21.222					
4,800.0	4,784.2	4,757.5	4,718.4	11.7	13.9	177.48	-454.4	-267.5	500.6	477.2	23.35	21.436					
4,900.0	4,884.2	4,869.2	4,828.8	11.9	14.2	178.55	-468.4	-276.4	512.8	488.9	23.92	21.442					
5,000.0	4,984.2	4,986.3	4,945.2	12.1	14.5	179.33	-479.2	-283.2	522.0	497.5	24.43	21.364					

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 28F-214
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4778.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-214	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (8-07-14)	Offset TVD Reference:	Offset Datum

Offset Design				Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W - Wiedeman 28F-304 - Wellbore #1 - Plan #1 (8								Offset Site Error:		0.0 ft
Survey Program: 0-MWD												Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
5,100.0	5,084.2	5,104.2	5,062.9	12.3	14.7	179.81	-486.0	-287.5	527.7	502.8	24.90	21.191		
5,200.0	5,184.2	5,222.6	5,181.2	12.5	14.9	180.00	-488.7	-289.3	530.0	504.7	25.33	20.928		
5,300.0	5,284.2	5,325.6	5,284.2	12.6	15.1	180.00	-488.8	-289.3	530.1	504.4	25.70	20.622		
5,400.0	5,384.2	5,425.6	5,384.2	12.8	15.2	180.00	-488.8	-289.3	530.1	504.0	26.07	20.331		
5,500.0	5,484.2	5,525.6	5,484.2	13.0	15.4	180.00	-488.8	-289.3	530.1	503.6	26.44	20.046		
5,600.0	5,584.2	5,625.6	5,584.2	13.2	15.5	180.00	-488.8	-289.3	530.1	503.3	26.81	19.768		
5,700.0	5,684.2	5,725.6	5,684.2	13.4	15.7	180.00	-488.8	-289.3	530.1	502.9	27.19	19.496		
5,800.0	5,784.2	5,825.6	5,784.2	13.7	15.8	180.00	-488.8	-289.3	530.1	502.5	27.57	19.230		
5,900.0	5,884.2	5,925.6	5,884.2	13.9	16.0	180.00	-488.8	-289.3	530.1	502.1	27.94	18.969		
6,000.0	5,984.2	6,025.6	5,984.2	14.1	16.2	180.00	-488.8	-289.3	530.1	501.8	28.32	18.715		
6,100.0	6,084.2	6,125.6	6,084.2	14.3	16.3	180.00	-488.8	-289.3	530.1	501.4	28.71	18.466		
6,200.0	6,184.2	6,225.6	6,184.2	14.5	16.5	180.00	-488.8	-289.3	530.1	501.0	29.09	18.222		
6,300.0	6,284.2	6,325.6	6,284.2	14.7	16.6	180.00	-488.8	-289.3	530.1	500.6	29.47	17.984		
6,344.5	6,328.6	6,370.0	6,328.6	14.8	16.7	-90.09	-488.8	-289.3	530.1	500.7	29.42	18.015		
6,400.0	6,384.1	6,425.5	6,384.1	14.9	16.8	-90.31	-488.8	-289.3	530.1	500.4	29.66	17.871		
6,500.0	6,482.9	6,526.0	6,484.4	15.2	17.0	-91.37	-488.8	-294.7	530.2	500.0	30.25	17.529		
6,600.0	6,578.8	6,627.9	6,584.4	15.6	17.3	-92.42	-488.8	-313.5	530.6	499.5	31.03	17.099		
6,700.0	6,670.3	6,731.1	6,682.3	16.1	17.7	-93.44	-488.8	-346.0	531.0	499.0	32.03	16.581		
6,800.0	6,755.7	6,835.7	6,776.2	16.8	18.2	-94.40	-488.8	-392.0	531.7	498.4	33.30	15.968		
6,900.0	6,833.6	6,941.6	6,863.9	17.7	18.9	-95.28	-488.8	-451.2	532.3	497.4	34.90	15.254		
7,000.0	6,902.8	7,048.8	6,943.4	18.8	19.7	-96.07	-488.8	-522.8	533.1	496.2	36.92	14.440		
7,100.0	6,961.9	7,157.0	7,012.9	20.1	20.8	-96.76	-488.8	-605.8	533.8	494.4	39.42	13.541		
7,200.0	7,009.9	7,266.3	7,070.3	21.7	22.2	-97.32	-488.8	-698.6	534.4	492.0	42.45	12.591		
7,300.0	7,046.2	7,376.3	7,114.2	23.5	23.9	-97.74	-488.8	-799.5	535.0	489.0	45.98	11.634		
7,400.0	7,069.9	7,486.9	7,143.3	25.5	25.9	-98.02	-488.8	-906.1	535.3	485.3	49.97	10.713		
7,500.0	7,080.8	7,597.9	7,156.7	27.6	28.1	-98.15	-488.8	-1,016.1	535.5	481.2	54.30	9.862		
7,600.0	7,081.1	7,702.0	7,157.2	29.8	30.4	-98.17	-488.8	-1,120.2	535.5	476.7	58.77	9.112		
7,700.0	7,080.4	7,802.0	7,156.6	32.2	32.6	-98.18	-488.8	-1,220.2	535.5	472.2	63.37	8.451		
7,800.0	7,079.7	7,902.0	7,156.0	34.6	34.9	-98.19	-488.8	-1,320.2	535.5	467.4	68.11	7.863		
7,900.0	7,079.0	8,002.0	7,155.4	37.0	37.3	-98.20	-488.8	-1,420.2	535.6	462.6	72.97	7.340		
8,000.0	7,078.3	8,102.0	7,154.8	39.5	39.8	-98.21	-488.8	-1,520.2	535.6	457.7	77.92	6.874		
8,100.0	7,077.6	8,202.0	7,154.2	42.0	42.3	-98.22	-488.8	-1,620.2	535.6	452.6	82.94	6.457		
8,200.0	7,076.9	8,302.0	7,153.6	44.6	44.8	-98.23	-488.8	-1,720.2	535.6	447.6	88.04	6.084		
8,300.0	7,076.2	8,402.0	7,153.0	47.2	47.4	-98.25	-488.8	-1,820.2	535.6	442.4	93.18	5.748		
8,400.0	7,075.5	8,502.0	7,152.4	49.8	50.0	-98.26	-488.8	-1,920.2	535.6	437.3	98.37	5.445		
8,500.0	7,074.8	8,602.0	7,151.9	52.5	52.6	-98.27	-488.8	-2,020.2	535.6	432.0	103.60	5.170		
8,600.0	7,074.1	8,702.0	7,151.3	55.1	55.3	-98.28	-488.8	-2,120.2	535.7	426.8	108.86	4.921		
8,700.0	7,073.4	8,802.0	7,150.7	57.8	57.9	-98.29	-488.8	-2,220.2	535.7	421.5	114.15	4.693		
8,800.0	7,072.7	8,902.0	7,150.1	60.5	60.6	-98.30	-488.8	-2,320.2	535.7	416.2	119.46	4.484		
8,900.0	7,072.0	9,002.0	7,149.5	63.2	63.3	-98.31	-488.8	-2,420.2	535.7	410.9	124.79	4.293		
9,000.0	7,071.3	9,102.0	7,148.9	65.9	65.9	-98.32	-488.8	-2,520.2	535.7	405.6	130.15	4.116		
9,100.0	7,070.6	9,202.0	7,148.3	68.6	68.6	-98.33	-488.8	-2,620.2	535.7	400.2	135.52	3.953		
9,200.0	7,069.9	9,302.0	7,147.7	71.3	71.3	-98.35	-488.8	-2,720.2	535.7	394.8	140.90	3.802		
9,300.0	7,069.2	9,402.0	7,147.1	74.0	74.1	-98.36	-488.8	-2,820.2	535.8	389.5	146.29	3.662		
9,400.0	7,068.5	9,502.0	7,146.5	76.8	76.8	-98.37	-488.8	-2,920.2	535.8	384.1	151.70	3.532		
9,500.0	7,067.9	9,602.0	7,145.9	79.5	79.5	-98.38	-488.8	-3,020.2	535.8	378.7	157.12	3.410		
9,600.0	7,067.2	9,702.0	7,145.3	82.2	82.2	-98.39	-488.8	-3,120.2	535.8	373.3	162.55	3.296		
9,700.0	7,066.5	9,802.0	7,144.7	85.0	85.0	-98.40	-488.8	-3,220.2	535.8	367.8	167.98	3.190		
9,800.0	7,065.8	9,902.0	7,144.1	87.7	87.7	-98.41	-488.8	-3,320.2	535.8	362.4	173.42	3.090		
9,900.0	7,065.1	10,002.0	7,143.5	90.5	90.5	-98.42	-488.8	-3,420.2	535.9	357.0	178.87	2.996		

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 28F-214
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4778.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-214	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (8-07-14)	Offset TVD Reference:	Offset Datum

Offset Design		Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W - Wiedeman 28F-304 - Wellbore #1 - Plan #1 (8										Offset Site Error:		0.0 ft
Survey Program: 0-MWD												Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
10,000.0	7,064.4	10,102.0	7,143.0	93.2	93.2	-98.43	-488.8	-3,520.2	535.9	351.5	184.33	2.907		
10,100.0	7,063.7	10,202.0	7,142.4	96.0	96.0	-98.44	-488.8	-3,620.2	535.9	346.1	189.79	2.824		
10,200.0	7,063.0	10,302.0	7,141.8	98.8	98.7	-98.46	-488.8	-3,720.2	535.9	340.7	195.25	2.745		
10,300.0	7,062.3	10,402.0	7,141.2	101.5	101.5	-98.47	-488.8	-3,820.2	535.9	335.2	200.72	2.670		
10,400.0	7,061.6	10,502.0	7,140.6	104.3	104.3	-98.48	-488.8	-3,920.2	535.9	329.7	206.20	2.599		
10,500.0	7,060.9	10,602.0	7,140.0	107.1	107.0	-98.49	-488.8	-4,020.2	535.9	324.3	211.67	2.532		
10,600.0	7,060.2	10,702.0	7,139.4	109.8	109.8	-98.50	-488.8	-4,120.2	536.0	318.8	217.15	2.468		
10,700.0	7,059.5	10,802.0	7,138.8	112.6	112.6	-98.51	-488.8	-4,220.2	536.0	313.3	222.64	2.407		
10,800.0	7,058.8	10,902.0	7,138.2	115.4	115.3	-98.52	-488.8	-4,320.2	536.0	307.9	228.13	2.350		
10,900.0	7,058.1	11,002.0	7,137.6	118.2	118.1	-98.53	-488.8	-4,420.2	536.0	302.4	233.62	2.294		
11,000.0	7,057.4	11,102.0	7,137.0	120.9	120.9	-98.54	-488.8	-4,520.2	536.0	296.9	239.11	2.242		
11,100.0	7,056.7	11,202.0	7,136.4	123.7	123.7	-98.56	-488.8	-4,620.2	536.0	291.4	244.61	2.191		
11,200.0	7,056.0	11,302.0	7,135.8	126.5	126.4	-98.57	-488.8	-4,720.2	536.1	286.0	250.10	2.143		
11,300.0	7,055.3	11,402.0	7,135.2	129.3	129.2	-98.58	-488.8	-4,820.2	536.1	280.5	255.60	2.097		
11,400.0	7,054.6	11,502.0	7,134.6	132.1	132.0	-98.59	-488.8	-4,920.2	536.1	275.0	261.10	2.053		
11,500.0	7,053.9	11,602.0	7,134.1	134.8	134.8	-98.60	-488.8	-5,020.2	536.1	269.5	266.61	2.011		
11,600.0	7,053.2	11,702.0	7,133.5	137.6	137.6	-98.61	-488.8	-5,120.2	536.1	264.0	272.11	1.970		
11,700.0	7,052.5	11,802.0	7,132.9	140.4	140.3	-98.62	-488.8	-5,220.2	536.1	258.5	277.62	1.931		
11,800.0	7,051.8	11,902.0	7,132.3	143.2	143.1	-98.63	-488.8	-5,320.2	536.2	253.0	283.13	1.894		
11,900.0	7,051.1	12,002.0	7,131.7	146.0	145.9	-98.64	-488.8	-5,420.2	536.2	247.5	288.64	1.858		
12,000.0	7,050.4	12,102.0	7,131.1	148.8	148.7	-98.66	-488.8	-5,520.2	536.2	242.0	294.15	1.823		
12,100.0	7,049.7	12,202.0	7,130.5	151.6	151.5	-98.67	-488.8	-5,620.2	536.2	236.5	299.66	1.789		
12,200.0	7,049.0	12,302.0	7,129.9	154.4	154.3	-98.68	-488.8	-5,720.2	536.2	231.0	305.17	1.757		
12,300.0	7,048.3	12,402.0	7,129.3	157.1	157.1	-98.69	-488.8	-5,820.2	536.2	225.5	310.68	1.726		
12,400.0	7,047.6	12,502.0	7,128.7	159.9	159.8	-98.70	-488.8	-5,920.2	536.2	220.0	316.20	1.696		
12,500.0	7,046.9	12,602.0	7,128.1	162.7	162.6	-98.71	-488.8	-6,020.2	536.3	214.5	321.71	1.667		
12,600.0	7,046.2	12,702.0	7,127.5	165.5	165.4	-98.72	-488.8	-6,120.2	536.3	209.0	327.23	1.639		
12,700.0	7,045.5	12,802.0	7,126.9	168.3	168.2	-98.73	-488.8	-6,220.2	536.3	203.5	332.75	1.612		
12,800.0	7,044.8	12,902.0	7,126.3	171.1	171.0	-98.74	-488.8	-6,320.1	536.3	198.0	338.26	1.585		
12,900.0	7,044.1	13,002.0	7,125.7	173.9	173.8	-98.75	-488.8	-6,420.1	536.3	192.5	343.78	1.560		
13,000.0	7,043.4	13,102.0	7,125.2	176.7	176.6	-98.77	-488.8	-6,520.1	536.3	187.0	349.30	1.535		
13,100.0	7,042.7	13,202.0	7,124.6	179.5	179.4	-98.78	-488.8	-6,620.1	536.4	181.5	354.82	1.512		
13,200.0	7,042.0	13,302.0	7,124.0	182.3	182.2	-98.79	-488.8	-6,720.1	536.4	176.0	360.34	1.489 Level 3		
13,300.0	7,041.3	13,402.0	7,123.4	185.1	185.0	-98.80	-488.8	-6,820.1	536.4	170.5	365.86	1.466 Level 3		
13,400.0	7,040.6	13,502.0	7,122.8	187.9	187.8	-98.81	-488.8	-6,920.1	536.4	165.0	371.38	1.444 Level 3		
13,500.0	7,039.9	13,602.0	7,122.2	190.7	190.6	-98.82	-488.8	-7,020.1	536.4	159.5	376.90	1.423 Level 3		
13,600.0	7,039.2	13,702.0	7,121.6	193.5	193.3	-98.83	-488.8	-7,120.1	536.4	154.0	382.42	1.403 Level 3		
13,700.0	7,038.5	13,802.0	7,121.0	196.3	196.1	-98.84	-488.8	-7,220.1	536.5	148.5	387.94	1.383 Level 3		
13,800.0	7,037.8	13,902.0	7,120.4	199.0	198.9	-98.85	-488.8	-7,320.1	536.5	143.0	393.46	1.363 Level 3		
13,900.0	7,037.1	14,002.0	7,119.8	201.8	201.7	-98.87	-488.8	-7,420.1	536.5	137.5	398.99	1.345 Level 3		
14,000.0	7,036.4	14,102.0	7,119.2	204.6	204.5	-98.88	-488.8	-7,520.1	536.5	132.0	404.51	1.326 Level 3		
14,100.0	7,035.7	14,202.0	7,118.6	207.4	207.3	-98.89	-488.8	-7,620.1	536.5	126.5	410.03	1.308 Level 3		
14,200.0	7,035.0	14,302.0	7,118.0	210.2	210.1	-98.90	-488.8	-7,720.1	536.5	121.0	415.55	1.291 Level 3		
14,205.5	7,035.0	14,307.2	7,118.0	210.4	210.3	-98.90	-488.8	-7,725.3	536.5	120.7	415.85	1.290 Level 3, SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28F-214
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4778.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-214	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (8-07-14)	Offset TVD Reference:	Offset Datum

Offset Design		Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W - Wiedeman 28F-314 - Wellbore #1 - Plan #1 (8										Offset Site Error:		0.0 ft
Survey Program: 0-MWD												Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	0.00	29.1	0.0	29.1					
100.0	100.0	100.0	100.0	0.1	0.1	0.00	29.1	0.0	29.1	28.9	0.22	129.665		
200.0	200.0	200.0	200.0	0.3	0.3	0.00	29.1	0.0	29.1	28.5	0.67	43.222		
300.0	300.0	300.0	300.0	0.6	0.6	0.00	29.1	0.0	29.1	28.0	1.12	25.933		
400.0	400.0	400.0	400.0	0.8	0.8	0.00	29.1	0.0	29.1	27.6	1.57	18.524		
500.0	500.0	500.0	500.0	1.0	1.0	0.00	29.1	0.0	29.1	27.1	2.02	14.407		
600.0	600.0	600.0	600.0	1.2	1.2	0.00	29.1	0.0	29.1	26.7	2.47	11.788		
700.0	700.0	700.0	700.0	1.5	1.5	0.00	29.1	0.0	29.1	26.2	2.92	9.974		
800.0	800.0	800.0	800.0	1.7	1.7	0.00	29.1	0.0	29.1	25.8	3.37	8.644		
900.0	900.0	900.0	900.0	1.9	1.9	0.00	29.1	0.0	29.1	25.3	3.82	7.627		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	0.00	29.1	0.0	29.1	24.9	4.27	6.824		
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	0.00	29.1	0.0	29.1	24.4	4.72	6.175		
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	0.00	29.1	0.0	29.1	24.0	5.17	5.638		
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	0.00	29.1	0.0	29.1	23.5	5.62	5.187		
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	0.00	29.1	0.0	29.1	23.1	6.07	4.802		
1,500.0	1,500.0	1,500.0	1,500.0	3.3	3.3	0.00	29.1	0.0	29.1	22.6	6.52	4.471		
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	0.00	29.1	0.0	29.1	22.2	6.97	4.183 CC		
1,700.0	1,700.0	1,699.5	1,699.5	3.7	3.7	-2.98	29.9	-1.6	29.9	22.5	7.41	4.042		
1,800.0	1,800.0	1,798.8	1,798.6	3.9	3.9	-10.91	32.2	-6.2	32.8	24.9	7.84	4.179		
1,900.0	1,900.0	1,897.7	1,897.2	4.1	4.1	62.91	35.9	-13.9	37.8	29.5	8.28	4.564		
2,000.0	1,999.8	1,996.9	1,995.6	4.4	4.4	57.92	41.0	-24.5	43.9	35.2	8.70	5.050		
2,100.0	2,099.5	2,096.7	2,094.7	4.6	4.6	56.98	46.5	-35.8	48.9	39.8	9.14	5.355		
2,200.0	2,198.8	2,196.6	2,193.8	4.8	4.9	58.51	52.0	-47.1	52.6	43.0	9.60	5.480		
2,300.0	2,298.2	2,296.6	2,293.0	5.0	5.1	59.94	57.5	-58.4	56.3	46.2	10.08	5.582		
2,400.0	2,397.6	2,396.5	2,392.1	5.3	5.4	61.19	63.0	-69.7	60.0	49.4	10.58	5.671		
2,500.0	2,496.9	2,496.4	2,491.2	5.5	5.7	62.29	68.5	-81.0	63.7	52.6	11.08	5.748		
2,600.0	2,596.3	2,596.3	2,590.3	5.8	6.0	63.28	74.0	-92.3	67.5	55.9	11.60	5.815		
2,700.0	2,695.6	2,696.3	2,689.5	6.1	6.3	64.15	79.5	-103.6	71.2	59.1	12.13	5.873		
2,800.0	2,795.0	2,796.2	2,788.6	6.3	6.5	64.95	85.0	-114.9	75.0	62.3	12.66	5.924		
2,900.0	2,894.4	2,896.1	2,887.7	6.6	6.8	65.66	90.5	-126.2	78.8	65.6	13.20	5.968		
3,000.0	2,993.7	2,996.0	2,986.9	6.9	7.1	66.31	95.9	-137.5	82.6	68.8	13.75	6.007		
3,100.0	3,093.1	3,096.0	3,086.0	7.1	7.4	66.90	101.4	-148.8	86.4	72.1	14.30	6.041		
3,200.0	3,192.5	3,195.9	3,185.1	7.4	7.7	67.45	106.9	-160.1	90.2	75.3	14.86	6.071		
3,300.0	3,291.8	3,295.8	3,284.3	7.7	8.0	67.94	112.4	-171.3	94.0	78.6	15.42	6.097		
3,400.0	3,391.2	3,395.7	3,383.4	8.0	8.3	68.40	117.9	-182.6	97.9	81.9	15.99	6.120		
3,500.0	3,490.5	3,495.7	3,482.5	8.3	8.6	68.83	123.4	-193.9	101.7	85.1	16.56	6.141		
3,600.0	3,589.9	3,595.6	3,581.7	8.6	9.0	69.22	128.9	-205.2	105.5	88.4	17.14	6.159		
3,700.0	3,689.3	3,695.5	3,680.8	8.8	9.3	69.59	134.4	-216.5	109.4	91.7	17.71	6.176		
3,800.0	3,788.6	3,795.4	3,779.9	9.1	9.6	69.93	139.9	-227.8	113.2	94.9	18.29	6.190		
3,900.0	3,888.0	3,895.3	3,879.0	9.4	9.9	70.25	145.4	-239.1	117.1	98.2	18.88	6.203		
4,000.0	3,987.4	3,995.3	3,978.2	9.7	10.2	70.54	150.9	-250.4	120.9	101.5	19.46	6.215		
4,100.0	4,086.7	4,095.2	4,077.3	10.0	10.5	70.82	156.3	-261.7	124.8	104.8	20.05	6.225		
4,200.0	4,186.1	4,196.1	4,177.5	10.3	10.8	71.18	161.8	-272.9	128.5	107.9	20.63	6.230		
4,300.0	4,285.4	4,298.8	4,279.7	10.6	11.0	72.56	166.0	-281.7	130.6	109.4	21.18	6.166		
4,400.0	4,384.8	4,401.2	4,381.9	10.9	11.2	75.23	168.7	-287.1	130.7	109.0	21.74	6.013		
4,500.0	4,484.4	4,503.4	4,484.0	11.1	11.4	78.36	169.7	-289.3	129.8	107.6	22.22	5.844		
4,600.0	4,584.2	4,603.5	4,584.2	11.3	11.6	80.85	169.7	-289.3	128.8	106.2	22.65	5.687		
4,700.0	4,684.2	4,703.5	4,684.2	11.5	11.8	81.86	169.7	-289.3	128.5	105.4	23.04	5.576		
4,744.6	4,728.8	4,748.1	4,728.8	11.6	11.9	81.94	169.7	-289.3	128.4	105.2	23.21	5.535		
4,800.0	4,784.2	4,803.5	4,784.2	11.7	12.0	0.00	169.7	-289.3	128.5	107.3	21.20	6.060		
4,900.0	4,884.2	4,903.5	4,884.2	11.9	12.2	0.00	169.7	-289.3	128.5	106.8	21.62	5.942		

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 28F-214
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4778.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-214	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (8-07-14)	Offset TVD Reference:	Offset Datum

Offset Design		Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W - Wiedeman 28F-314 - Wellbore #1 - Plan #1 (8										Offset Site Error:		0.0 ft
Survey Program: 0-MWD												Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical	Measured	Vertical	Reference	Offset	Highside	Offset Wellbore Centre		Between	Between	Minimum	Separation	Warning	
Depth (ft)	Depth (ft)	Depth (ft)	Depth (ft)	(ft)	(ft)	Toolface (°)	+N/-S (ft)	+E/-W (ft)	Centres (ft)	Ellipses (ft)	Separation (ft)	Factor		
5,000.0	4,984.2	5,003.5	4,984.2	12.1	12.4	0.00	169.7	-289.3	128.5	106.4	22.04	5.828		
5,100.0	5,084.2	5,103.5	5,084.2	12.3	12.5	0.00	169.7	-289.3	128.5	106.0	22.46	5.719		
5,200.0	5,184.2	5,203.5	5,184.2	12.5	12.7	0.00	169.7	-289.3	128.5	105.6	22.89	5.612		
5,300.0	5,284.2	5,303.5	5,284.2	12.6	12.9	0.00	169.7	-289.3	128.5	105.1	23.31	5.510		
5,400.0	5,384.2	5,403.5	5,384.2	12.8	13.1	0.00	169.7	-289.3	128.5	104.7	23.74	5.411		
5,500.0	5,484.2	5,503.5	5,484.2	13.0	13.3	0.00	169.7	-289.3	128.5	104.3	24.17	5.316		
5,600.0	5,584.2	5,603.5	5,584.2	13.2	13.5	0.00	169.7	-289.3	128.5	103.9	24.59	5.223		
5,700.0	5,684.2	5,703.5	5,684.2	13.4	13.7	0.00	169.7	-289.3	128.5	103.4	25.02	5.134		
5,800.0	5,784.2	5,803.5	5,784.2	13.7	13.9	0.00	169.7	-289.3	128.5	103.0	25.45	5.047		
5,900.0	5,884.2	5,903.5	5,884.2	13.9	14.1	0.00	169.7	-289.3	128.5	102.6	25.88	4.963		
6,000.0	5,984.2	6,003.5	5,984.2	14.1	14.3	0.00	169.7	-289.3	128.5	102.1	26.31	4.882		
6,100.0	6,084.2	6,103.5	6,084.2	14.3	14.5	0.00	169.7	-289.3	128.5	101.7	26.74	4.803		
6,200.0	6,184.2	6,203.5	6,184.2	14.5	14.7	0.00	169.7	-289.3	128.5	101.3	27.18	4.727		
6,300.0	6,284.2	6,303.5	6,284.2	14.7	14.9	0.00	169.7	-289.3	128.5	100.8	27.61	4.653		
6,344.5	6,328.6	6,348.0	6,328.6	14.8	15.0	90.38	169.7	-289.3	128.5	98.8	29.63	4.335		
6,400.0	6,384.1	6,403.4	6,384.1	14.9	15.1	91.29	169.7	-289.3	128.5	98.6	29.88	4.300		
6,500.0	6,482.9	6,503.7	6,484.2	15.2	15.4	96.50	169.7	-292.7	129.3	98.8	30.47	4.243		
6,600.0	6,578.8	6,605.7	6,584.9	15.6	15.7	101.77	169.7	-309.1	131.3	100.1	31.17	4.211		
6,700.0	6,670.3	6,709.5	6,684.1	16.1	16.1	106.70	169.7	-339.3	134.2	102.2	31.95	4.200		
6,800.0	6,755.7	6,815.0	6,779.8	16.8	16.7	111.17	169.7	-383.5	137.9	105.1	32.80	4.203		
6,900.0	6,833.6	6,922.2	6,869.9	17.7	17.4	115.09	169.7	-441.5	142.0	108.2	33.72	4.210		
7,000.0	6,902.8	7,031.1	6,952.1	18.8	18.4	118.43	169.7	-512.7	146.2	111.4	34.78	4.203		
7,100.0	6,961.9	7,141.5	7,024.3	20.1	19.7	121.17	169.7	-596.0	150.2	114.2	36.08	4.164		
7,200.0	7,009.9	7,253.1	7,084.3	21.7	21.2	123.32	169.7	-690.1	153.8	116.1	37.72	4.078		
7,300.0	7,046.2	7,365.9	7,130.4	23.5	23.2	124.89	169.7	-792.9	156.6	116.8	39.80	3.936		
7,400.0	7,069.9	7,479.4	7,161.1	25.5	25.3	125.89	169.7	-902.1	158.6	116.2	42.38	3.742		
7,500.0	7,080.8	7,593.4	7,175.2	27.6	27.7	126.35	169.7	-1,015.1	159.5	114.0	45.48	3.507		
7,600.0	7,081.1	7,699.0	7,175.6	29.8	30.1	126.35	169.7	-1,120.6	159.5	110.4	49.06	3.251		
7,700.0	7,080.4	7,799.0	7,174.8	32.2	32.4	126.30	169.7	-1,220.6	159.4	106.5	52.84	3.016		
7,800.0	7,079.7	7,899.0	7,173.9	34.6	34.8	126.25	169.7	-1,320.6	159.3	102.5	56.76	2.806		
7,900.0	7,079.0	7,999.0	7,173.0	37.0	37.2	126.20	169.7	-1,420.6	159.2	98.4	60.77	2.619		
8,000.0	7,078.3	8,099.0	7,172.1	39.5	39.7	126.15	169.7	-1,520.6	159.1	94.2	64.88	2.452		
8,100.0	7,077.6	8,199.0	7,171.3	42.0	42.2	126.09	169.7	-1,620.6	159.0	89.9	69.06	2.302		
8,200.0	7,076.9	8,299.0	7,170.4	44.6	44.8	126.04	169.7	-1,720.6	158.9	85.6	73.30	2.168		
8,300.0	7,076.2	8,399.0	7,169.5	47.2	47.4	125.99	169.7	-1,820.6	158.8	81.2	77.59	2.046		
8,400.0	7,075.5	8,499.0	7,168.7	49.8	50.0	125.94	169.7	-1,920.6	158.7	76.7	81.92	1.937		
8,500.0	7,074.8	8,599.0	7,167.8	52.5	52.6	125.89	169.7	-2,020.6	158.6	72.3	86.30	1.837		
8,600.0	7,074.1	8,699.0	7,166.9	55.1	55.3	125.84	169.7	-2,120.6	158.5	67.7	90.71	1.747		
8,700.0	7,073.4	8,799.0	7,166.0	57.8	57.9	125.79	169.7	-2,220.6	158.4	63.2	95.15	1.664		
8,800.0	7,072.7	8,899.0	7,165.2	60.5	60.6	125.74	169.7	-2,320.6	158.3	58.6	99.62	1.589		
8,900.0	7,072.0	8,999.0	7,164.3	63.2	63.3	125.69	169.7	-2,420.6	158.2	54.0	104.11	1.519		
9,000.0	7,071.3	9,099.0	7,163.4	65.9	66.0	125.63	169.7	-2,520.6	158.1	49.4	108.62	1.455 Level 3		
9,100.0	7,070.6	9,199.0	7,162.5	68.6	68.7	125.58	169.7	-2,620.6	157.9	44.8	113.16	1.396 Level 3		
9,200.0	7,069.9	9,299.0	7,161.7	71.3	71.4	125.53	169.7	-2,720.6	157.8	40.1	117.71	1.341 Level 3		
9,300.0	7,069.2	9,399.0	7,160.8	74.0	74.1	125.48	169.7	-2,820.5	157.7	35.5	122.28	1.290 Level 3		
9,400.0	7,068.5	9,499.0	7,159.9	76.8	76.9	125.43	169.7	-2,920.5	157.6	30.8	126.86	1.243 Level 2		
9,500.0	7,067.9	9,599.0	7,159.1	79.5	79.6	125.38	169.7	-3,020.5	157.5	26.1	131.46	1.198 Level 2		
9,600.0	7,067.2	9,699.0	7,158.2	82.2	82.3	125.32	169.7	-3,120.5	157.4	21.4	136.08	1.157 Level 2		
9,700.0	7,066.5	9,799.0	7,157.3	85.0	85.1	125.27	169.7	-3,220.5	157.3	16.6	140.70	1.118 Level 2		
9,800.0	7,065.8	9,899.0	7,156.4	87.7	87.8	125.22	169.7	-3,320.5	157.2	11.9	145.34	1.082 Level 2		

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 28F-214
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4778.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-214	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (8-07-14)	Offset TVD Reference:	Offset Datum

Offset Design Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W - Wiedeman 28F-314 - Wellbore #1 - Plan #1 (8														Offset Site Error:	0.0ft
Survey Program: 0-MWD														Offset Well Error:	0.0ft
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		
9,900.0	7,065.1	9,999.0	7,155.6	90.5	90.6	125.17	169.7	-3,420.5	157.1	7.1	149.99	1.048	Level 2		
10,000.0	7,064.4	10,099.0	7,154.7	93.2	93.3	125.12	169.7	-3,520.5	157.0	2.4	154.65	1.015	Level 2		
10,100.0	7,063.7	10,199.0	7,153.8	96.0	96.1	125.06	169.7	-3,620.5	156.9	-2.4	159.32	0.985	Level 1		
10,200.0	7,063.0	10,299.0	7,152.9	98.8	98.9	125.01	169.7	-3,720.5	156.8	-7.2	164.01	0.956	Level 1		
10,300.0	7,062.3	10,399.0	7,152.1	101.5	101.6	124.96	169.7	-3,820.5	156.7	-12.0	168.70	0.929	Level 1		
10,400.0	7,061.6	10,499.0	7,151.2	104.3	104.4	124.91	169.7	-3,920.5	156.6	-16.8	173.40	0.903	Level 1		
10,500.0	7,060.9	10,599.0	7,150.3	107.1	107.2	124.86	169.7	-4,020.5	156.5	-21.6	178.11	0.879	Level 1		
10,600.0	7,060.2	10,699.0	7,149.5	109.8	109.9	124.80	169.7	-4,120.5	156.4	-26.4	182.83	0.856	Level 1		
10,700.0	7,059.5	10,799.0	7,148.6	112.6	112.7	124.75	169.7	-4,220.5	156.3	-31.2	187.55	0.834	Level 1		
10,800.0	7,058.8	10,899.0	7,147.7	115.4	115.5	124.70	169.7	-4,320.5	156.2	-36.0	192.29	0.813	Level 1		
10,900.0	7,058.1	10,999.0	7,146.8	118.2	118.2	124.65	169.7	-4,420.5	156.1	-40.9	197.03	0.792	Level 1		
11,000.0	7,057.4	11,099.0	7,146.0	120.9	121.0	124.59	169.7	-4,520.5	156.0	-45.7	201.78	0.773	Level 1		
11,100.0	7,056.7	11,199.0	7,145.1	123.7	123.8	124.54	169.7	-4,620.5	155.9	-50.6	206.54	0.755	Level 1		
11,200.0	7,056.0	11,299.0	7,144.2	126.5	126.6	124.49	169.7	-4,720.5	155.8	-55.5	211.31	0.738	Level 1		
11,300.0	7,055.3	11,399.0	7,143.3	129.3	129.4	124.43	169.7	-4,820.5	155.7	-60.3	216.08	0.721	Level 1		
11,400.0	7,054.6	11,499.0	7,142.5	132.1	132.1	124.38	169.7	-4,920.5	155.6	-65.2	220.87	0.705	Level 1		
11,500.0	7,053.9	11,599.0	7,141.6	134.8	134.9	124.33	169.7	-5,020.5	155.5	-70.1	225.66	0.689	Level 1		
11,600.0	7,053.2	11,699.0	7,140.7	137.6	137.7	124.27	169.7	-5,120.5	155.5	-75.0	230.45	0.675	Level 1		
11,700.0	7,052.5	11,799.0	7,139.9	140.4	140.5	124.22	169.7	-5,220.5	155.4	-79.9	235.25	0.660	Level 1		
11,800.0	7,051.8	11,899.0	7,139.0	143.2	143.3	124.17	169.7	-5,320.5	155.3	-84.8	240.06	0.647	Level 1		
11,900.0	7,051.1	11,999.0	7,138.1	146.0	146.1	124.11	169.7	-5,420.4	155.2	-89.7	244.88	0.634	Level 1		
12,000.0	7,050.4	12,099.0	7,137.2	148.8	148.8	124.06	169.7	-5,520.4	155.1	-94.6	249.70	0.621	Level 1		
12,100.0	7,049.7	12,199.0	7,136.4	151.6	151.6	124.01	169.7	-5,620.4	155.0	-99.6	254.53	0.609	Level 1		
12,200.0	7,049.0	12,299.0	7,135.5	154.4	154.4	123.95	169.7	-5,720.4	154.9	-104.5	259.37	0.597	Level 1		
12,300.0	7,048.3	12,399.0	7,134.6	157.1	157.2	123.90	169.7	-5,820.4	154.8	-109.4	264.21	0.586	Level 1		
12,400.0	7,047.6	12,499.0	7,133.7	159.9	160.0	123.85	169.7	-5,920.4	154.7	-114.4	269.06	0.575	Level 1		
12,500.0	7,046.9	12,599.0	7,132.9	162.7	162.8	123.79	169.7	-6,020.4	154.6	-119.3	273.92	0.564	Level 1		
12,600.0	7,046.2	12,699.0	7,132.0	165.5	165.6	123.74	169.7	-6,120.4	154.5	-124.3	278.78	0.554	Level 1		
12,700.0	7,045.5	12,799.0	7,131.1	168.3	168.4	123.69	169.7	-6,220.4	154.4	-129.3	283.65	0.544	Level 1		
12,800.0	7,044.8	12,899.0	7,130.3	171.1	171.2	123.63	169.7	-6,320.4	154.3	-134.2	288.53	0.535	Level 1		
12,900.0	7,044.1	12,999.0	7,129.4	173.9	174.0	123.58	169.7	-6,420.4	154.2	-139.2	293.41	0.525	Level 1		
13,000.0	7,043.4	13,099.0	7,128.5	176.7	176.8	123.52	169.7	-6,520.4	154.1	-144.2	298.30	0.517	Level 1		
13,100.0	7,042.7	13,199.0	7,127.6	179.5	179.5	123.47	169.7	-6,620.4	154.0	-149.2	303.19	0.508	Level 1		
13,200.0	7,042.0	13,299.0	7,126.8	182.3	182.3	123.42	169.7	-6,720.4	153.9	-154.2	308.09	0.500	Level 1		
13,300.0	7,041.3	13,399.0	7,125.9	185.1	185.1	123.36	169.7	-6,820.4	153.8	-159.2	312.99	0.491	Level 1		
13,400.0	7,040.6	13,499.0	7,125.0	187.9	187.9	123.31	169.7	-6,920.4	153.7	-164.2	317.91	0.483	Level 1		
13,500.0	7,039.9	13,599.0	7,124.1	190.7	190.7	123.25	169.7	-7,020.4	153.6	-169.2	322.82	0.476	Level 1		
13,600.0	7,039.2	13,699.0	7,123.3	193.5	193.5	123.20	169.7	-7,120.4	153.5	-174.2	327.75	0.468	Level 1		
13,700.0	7,038.5	13,799.0	7,122.4	196.3	196.3	123.14	169.7	-7,220.4	153.4	-179.3	332.68	0.461	Level 1		
13,800.0	7,037.8	13,899.0	7,121.5	199.0	199.1	123.09	169.7	-7,320.4	153.3	-184.3	337.61	0.454	Level 1		
13,900.0	7,037.1	13,999.0	7,120.7	201.8	201.9	123.03	169.7	-7,420.4	153.2	-189.3	342.55	0.447	Level 1		
14,000.0	7,036.4	14,099.0	7,119.8	204.6	204.7	122.98	169.7	-7,520.4	153.1	-194.4	347.50	0.441	Level 1		
14,100.0	7,035.7	14,199.0	7,118.9	207.4	207.5	122.92	169.7	-7,620.4	153.0	-199.4	352.45	0.434	Level 1		
14,200.0	7,035.0	14,299.0	7,118.0	210.2	210.3	122.87	169.7	-7,720.4	152.9	-204.5	357.41	0.428	Level 1		
14,205.5	7,035.0	14,304.4	7,118.0	210.4	210.4	122.87	169.7	-7,725.8	152.9	-204.7	357.68	0.428	Level 1, ES, SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28F-214
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4778.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-214	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (8-07-14)	Offset TVD Reference:	Offset Datum

Offset Design		Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W - Wiedeman 28G-214 - Wellbore #1 - Plan #1 (8										Offset Site Error:		0.0 ft
Survey Program: 0-MWD												Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-180.00	-120.2	0.0	120.2					
100.0	100.0	99.0	99.0	0.1	0.1	-180.00	-120.2	0.0	120.2	120.0	0.22	537.553		
200.0	200.0	199.0	199.0	0.3	0.3	-180.00	-120.2	0.0	120.2	119.5	0.67	178.886	CC, ES	
300.0	300.0	295.1	295.1	0.6	0.5	-179.83	-121.8	-0.4	121.8	120.7	1.09	111.705		
400.0	400.0	390.9	390.8	0.8	0.7	-179.34	-126.4	-1.5	126.7	125.2	1.51	83.678		
500.0	500.0	486.3	485.8	1.0	1.0	-178.60	-134.1	-3.3	134.8	132.9	1.97	68.547		
600.0	600.0	581.1	580.0	1.2	1.2	-177.70	-144.9	-5.8	146.2	143.8	2.45	59.610		
700.0	700.0	675.0	672.8	1.5	1.5	-176.74	-158.5	-9.0	160.9	157.9	2.98	54.045		
800.0	800.0	767.9	764.2	1.7	1.9	-175.79	-174.8	-12.9	178.7	175.2	3.54	50.482		
900.0	900.0	859.7	853.8	1.9	2.3	-174.88	-193.8	-17.4	199.8	195.6	4.14	48.221		
1,000.0	1,000.0	955.5	947.1	2.1	2.7	-174.04	-215.7	-22.5	223.0	218.2	4.80	46.435		
1,100.0	1,100.0	1,052.7	1,041.5	2.4	3.2	-173.35	-237.9	-27.8	246.3	240.8	5.48	44.938		
1,200.0	1,200.0	1,149.9	1,136.0	2.6	3.6	-172.77	-260.1	-33.0	269.6	263.5	6.17	43.719		
1,300.0	1,300.0	1,247.2	1,230.5	2.8	4.1	-172.29	-282.3	-38.2	293.0	286.1	6.86	42.713		
1,400.0	1,400.0	1,344.4	1,325.0	3.0	4.6	-171.88	-304.5	-43.5	316.4	308.8	7.56	41.873		
1,500.0	1,500.0	1,441.6	1,419.5	3.3	5.1	-171.52	-326.7	-48.7	339.8	331.5	8.25	41.163		
1,600.0	1,600.0	1,538.8	1,514.0	3.5	5.5	-171.21	-348.9	-53.9	363.2	354.2	8.95	40.555		
1,700.0	1,700.0	1,636.0	1,608.5	3.7	6.0	-170.94	-371.1	-59.2	386.6	376.9	9.66	40.031		
1,800.0	1,800.0	1,733.2	1,703.0	3.9	6.5	-170.70	-393.3	-64.4	410.0	399.6	10.36	39.574	SF	
1,900.0	1,900.0	1,830.4	1,797.5	4.1	7.0	-88.36	-415.6	-69.7	433.4	424.8	8.55	50.663		
2,000.0	1,999.8	1,927.6	1,891.9	4.4	7.5	-88.35	-437.8	-74.9	456.7	447.6	9.02	50.618		
2,100.0	2,099.5	2,024.6	1,986.2	4.6	8.0	-88.72	-459.9	-80.1	479.9	470.4	9.50	50.507		
2,200.0	2,198.8	2,121.4	2,080.4	4.8	8.4	-89.67	-482.0	-85.3	503.3	493.3	10.00	50.322		
2,300.0	2,298.2	2,218.3	2,174.5	5.0	8.9	-90.64	-504.2	-90.6	526.8	516.3	10.51	50.105		
2,400.0	2,397.6	2,315.1	2,268.6	5.3	9.4	-91.54	-526.3	-95.8	550.4	539.4	11.04	49.871		
2,500.0	2,496.9	2,411.9	2,362.7	5.5	9.9	-92.36	-548.4	-101.0	574.2	562.6	11.57	49.627		
2,600.0	2,596.3	2,508.7	2,456.8	5.8	10.4	-93.11	-570.5	-106.2	598.0	585.9	12.11	49.379		
2,700.0	2,695.6	2,605.5	2,551.0	6.1	10.9	-93.81	-592.7	-111.4	621.9	609.3	12.66	49.131		
2,800.0	2,795.0	2,702.4	2,645.1	6.3	11.4	-94.45	-614.8	-116.7	646.0	632.7	13.21	48.886		
2,900.0	2,894.4	2,799.2	2,739.2	6.6	11.8	-95.05	-636.9	-121.9	670.1	656.3	13.77	48.645		
3,000.0	2,993.7	2,896.0	2,833.3	6.9	12.3	-95.61	-659.0	-127.1	694.2	679.9	14.34	48.411		
3,100.0	3,093.1	2,992.8	2,927.4	7.1	12.8	-96.13	-681.2	-132.3	718.4	703.5	14.91	48.183		
3,200.0	3,192.5	3,089.7	3,021.5	7.4	13.3	-96.62	-703.3	-137.5	742.7	727.2	15.48	47.963		
3,300.0	3,291.8	3,186.5	3,115.7	7.7	13.8	-97.07	-725.4	-142.7	767.0	750.9	16.06	47.751		
3,400.0	3,391.2	3,283.3	3,209.8	8.0	14.3	-97.50	-747.5	-148.0	791.4	774.7	16.64	47.547		
3,500.0	3,490.5	3,380.1	3,303.9	8.3	14.8	-97.90	-769.6	-153.2	815.8	798.5	17.23	47.352		
3,600.0	3,589.9	3,477.0	3,398.0	8.6	15.2	-98.28	-791.8	-158.4	840.2	822.4	17.81	47.164		
3,700.0	3,689.3	3,573.8	3,492.1	8.8	15.7	-98.64	-813.9	-163.6	864.7	846.3	18.40	46.983		
3,800.0	3,788.6	3,670.6	3,586.3	9.1	16.2	-98.98	-836.0	-168.8	889.2	870.2	18.99	46.811		
3,900.0	3,888.0	3,767.4	3,680.4	9.4	16.7	-99.30	-858.1	-174.1	913.7	894.1	19.59	46.645		
4,000.0	3,987.4	3,864.3	3,774.5	9.7	17.2	-99.60	-880.3	-179.3	938.2	918.0	20.18	46.486		
4,100.0	4,086.7	3,961.1	3,868.6	10.0	17.7	-99.89	-902.4	-184.5	962.8	942.0	20.78	46.334		
4,200.0	4,186.1	4,057.9	3,962.7	10.3	18.2	-100.16	-924.5	-189.7	987.4	966.0	21.38	46.188		

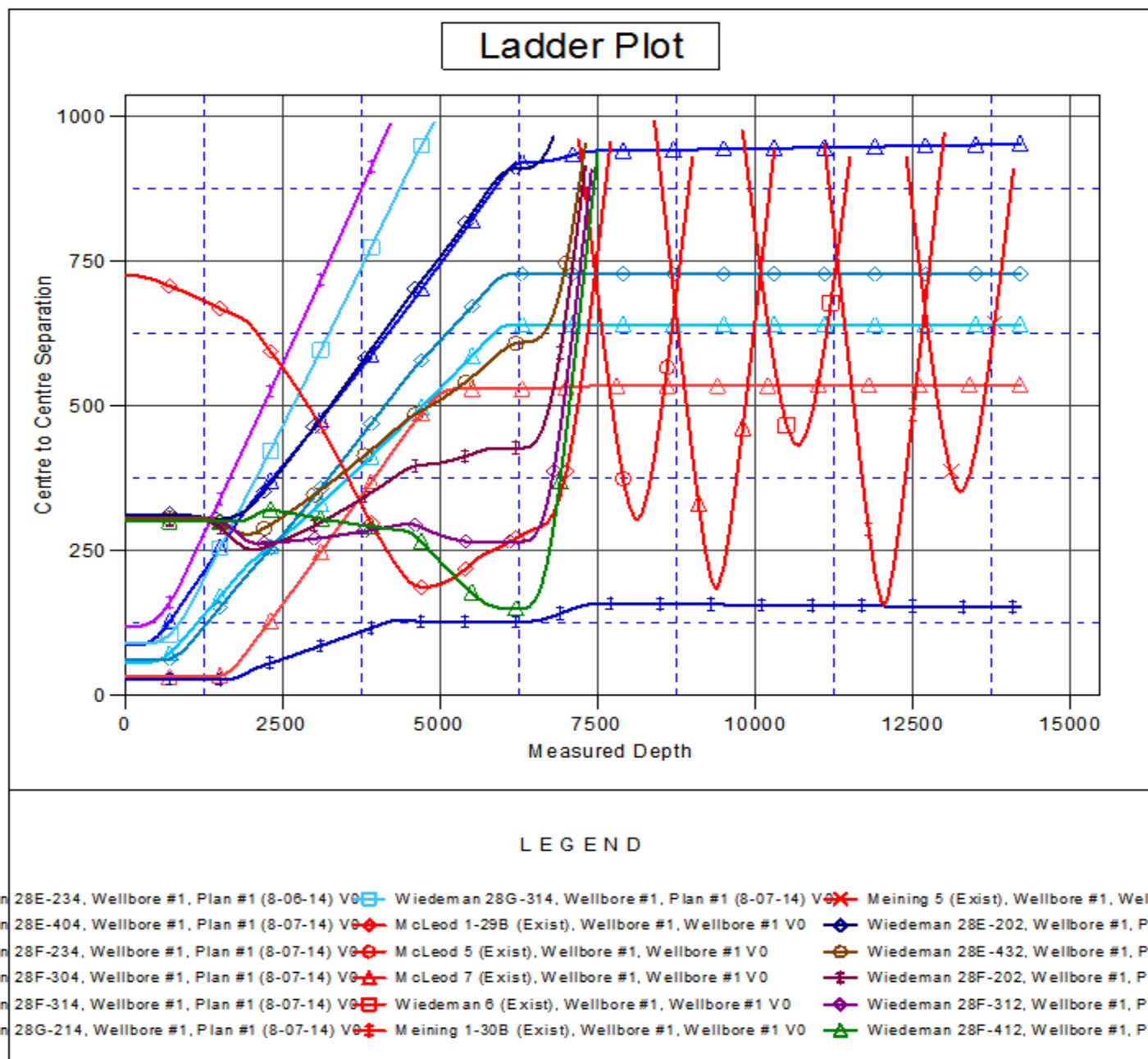
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28F-214
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4778.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-214	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (8-07-14)	Offset TVD Reference:	Offset Datum

Offset Design		Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W - Wiedeman 28G-314 - Wellbore #1 - Plan #1 (8											Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	180.00	-91.1	0.0	91.1					
100.0	100.0	100.0	100.0	0.1	0.1	180.00	-91.1	0.0	91.1	90.9	0.22	405.205		
200.0	200.0	200.0	200.0	0.3	0.3	180.00	-91.1	0.0	91.1	90.4	0.67	135.068		
300.0	300.0	300.0	300.0	0.6	0.6	180.00	-91.1	0.0	91.1	90.0	1.12	81.041		
400.0	400.0	400.0	400.0	0.8	0.8	180.00	-91.1	0.0	91.1	89.5	1.57	57.886	CC, ES	
500.0	500.0	497.0	497.0	1.0	1.0	-179.74	-92.7	-0.4	92.7	90.7	1.99	46.579		
600.0	600.0	593.7	593.6	1.2	1.2	-179.01	-97.4	-1.7	97.6	95.2	2.40	40.670		
700.0	700.0	690.1	689.6	1.5	1.4	-177.95	-105.3	-3.8	105.8	103.0	2.83	37.335		
800.0	800.0	785.7	784.6	1.7	1.6	-176.72	-116.1	-6.7	117.3	114.0	3.30	35.561		
900.0	900.0	880.5	878.3	1.9	1.9	-175.46	-129.9	-10.3	132.1	128.3	3.80	34.757		
1,000.0	1,000.0	974.3	970.5	2.1	2.2	-174.26	-146.5	-14.7	150.2	145.9	4.35	34.564		
1,100.0	1,100.0	1,070.0	1,064.0	2.4	2.6	-173.17	-165.9	-19.9	170.9	166.0	4.94	34.630		
1,200.0	1,200.0	1,167.7	1,159.5	2.6	3.0	-172.28	-186.0	-25.2	192.0	186.4	5.56	34.540		
1,300.0	1,300.0	1,265.4	1,255.0	2.8	3.4	-171.57	-206.0	-30.5	213.1	206.9	6.19	34.399		
1,400.0	1,400.0	1,363.2	1,350.5	3.0	3.9	-170.99	-226.1	-35.9	234.2	227.4	6.84	34.243		
1,500.0	1,500.0	1,460.9	1,446.0	3.3	4.3	-170.50	-246.2	-41.2	255.4	247.9	7.49	34.086		
1,600.0	1,600.0	1,558.6	1,541.5	3.5	4.7	-170.09	-266.2	-46.5	276.5	268.4	8.15	33.936		
1,700.0	1,700.0	1,656.3	1,637.0	3.7	5.2	-169.73	-286.3	-51.9	297.7	288.9	8.81	33.796		
1,800.0	1,800.0	1,754.0	1,732.4	3.9	5.6	-169.43	-306.4	-57.2	318.9	309.4	9.47	33.668		
1,900.0	1,900.0	1,851.8	1,828.0	4.1	6.0	-87.15	-326.4	-62.5	340.0	331.6	8.35	40.700		
2,000.0	1,999.8	1,949.5	1,923.4	4.4	6.5	-87.32	-346.5	-67.8	360.9	352.1	8.81	40.953		
2,100.0	2,099.5	2,047.0	2,018.8	4.6	6.9	-87.95	-366.5	-73.2	381.8	372.5	9.29	41.113		
2,200.0	2,198.8	2,144.4	2,113.9	4.8	7.4	-89.16	-386.5	-78.5	402.8	393.0	9.78	41.186		
2,300.0	2,298.2	2,241.8	2,209.1	5.0	7.8	-90.35	-406.5	-83.8	423.9	413.6	10.29	41.215		
2,400.0	2,397.6	2,339.2	2,304.2	5.3	8.3	-91.43	-426.5	-89.1	445.2	434.4	10.80	41.213		
2,500.0	2,496.9	2,436.6	2,399.4	5.5	8.7	-92.41	-446.5	-94.4	466.6	455.3	11.33	41.187		
2,600.0	2,596.3	2,533.9	2,494.6	5.8	9.2	-93.30	-466.5	-99.7	488.2	476.3	11.87	41.143		
2,700.0	2,695.6	2,631.3	2,589.7	6.1	9.6	-94.12	-486.5	-105.0	509.8	497.4	12.41	41.086		
2,800.0	2,795.0	2,728.7	2,684.9	6.3	10.1	-94.87	-506.4	-110.3	531.6	518.6	12.96	41.019		
2,900.0	2,894.4	2,826.1	2,780.0	6.6	10.5	-95.56	-526.4	-115.6	553.4	539.9	13.52	40.947		
3,000.0	2,993.7	2,923.4	2,875.2	6.9	11.0	-96.21	-546.4	-120.9	575.3	561.3	14.08	40.869		
3,100.0	3,093.1	3,020.8	2,970.3	7.1	11.4	-96.80	-566.4	-126.3	597.3	582.7	14.64	40.790		
3,200.0	3,192.5	3,118.2	3,065.5	7.4	11.9	-97.35	-586.4	-131.6	619.3	604.1	15.21	40.709		
3,300.0	3,291.8	3,215.6	3,160.6	7.7	12.3	-97.87	-606.4	-136.9	641.4	625.6	15.79	40.628		
3,400.0	3,391.2	3,312.9	3,255.8	8.0	12.8	-98.35	-626.4	-142.2	663.5	647.1	16.36	40.547		
3,500.0	3,490.5	3,410.3	3,350.9	8.3	13.2	-98.79	-646.4	-147.5	685.7	668.7	16.94	40.467		
3,600.0	3,589.9	3,507.7	3,446.1	8.6	13.7	-99.22	-666.4	-152.8	707.9	690.3	17.53	40.389		
3,700.0	3,689.3	3,605.1	3,541.3	8.8	14.1	-99.61	-686.4	-158.1	730.1	712.0	18.11	40.312		
3,800.0	3,788.6	3,702.4	3,636.4	9.1	14.6	-99.98	-706.4	-163.4	752.4	733.7	18.70	40.237		
3,900.0	3,888.0	3,799.8	3,731.6	9.4	15.0	-100.33	-726.3	-168.7	774.7	755.4	19.29	40.164		
4,000.0	3,987.4	3,897.2	3,826.7	9.7	15.5	-100.66	-746.3	-174.0	797.0	777.1	19.88	40.093		
4,100.0	4,086.7	3,994.6	3,921.9	10.0	15.9	-100.98	-766.3	-179.4	819.3	798.9	20.47	40.025		
4,200.0	4,186.1	4,092.0	4,017.0	10.3	16.4	-101.27	-786.3	-184.7	841.7	820.6	21.06	39.958		
4,300.0	4,285.4	4,189.3	4,112.2	10.6	16.8	-101.56	-806.3	-190.0	864.1	842.4	21.66	39.894		
4,400.0	4,384.8	4,286.7	4,207.3	10.9	17.3	-101.86	-826.3	-195.3	886.5	864.2	22.26	39.829		
4,500.0	4,484.4	4,384.2	4,302.6	11.1	17.7	-102.42	-846.3	-200.6	908.5	885.7	22.82	39.817		
4,600.0	4,584.2	4,481.9	4,398.1	11.3	18.2	-102.76	-866.4	-205.9	929.8	906.4	23.34	39.836		
4,700.0	4,684.2	4,579.7	4,493.6	11.5	18.7	-102.86	-886.4	-211.3	950.3	926.5	23.82	39.887		
4,800.0	4,784.2	4,677.4	4,589.1	11.7	19.1	175.61	-906.5	-216.6	970.4	941.5	28.91	33.562		
4,900.0	4,884.2	4,775.1	4,684.6	11.9	19.6	176.02	-926.6	-221.9	990.5	960.9	29.59	33.478	SF	

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 28F-214
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Reference Site:	Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4778.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-214	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (8-07-14)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4778.0ft (Original Well Elev) Coordinates are relative to: Wiedeman 28F-214
 Offset Depths are relative to Offset Datum
 Central Meridian is -105.500000 °
 Coordinate System is US State Plane 1983, Colorado Northern Zone
 Grid Convergence at Surface is: 0.46°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28F-214
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4778.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4778.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-214	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
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Reference Depths are relative to WELL @ 4778.0ft (Original Well Elev) Coordinates are relative to: Wiedeman 28F-214

Offset Depths are relative to Offset Datum

Coordinate System is US State Plane 1983, Colorado Northern Zone

Central Meridian is -105.500000 °

Grid Convergence at Surface is: 0.46°

