PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Wiedeman 29K-243**

Surface Location: Wiedeman 29K-HZ Pad Sec.29-T4N-R66W

North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

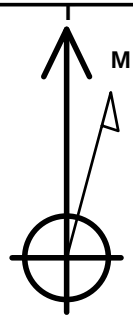
Ground Elevation: 4762.0

+N/-S	+E/-W	Northing	Easting	Latittude	Longitude	Slot
0.0	0.0	1346135.38	3193228.84	40.281470	-104.807410	

Ensign Rig #132 - RKB - 13' WELL @ 4775.0ft (Ensign Rig #132 - RKB - 13')

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 2233'FSL & 990'FWL, SEC.29	1.0	0.0	-0.1	Point
BHL 2133'FNL & 604'FWL, SEC.32	7070.0	-4364.3	-371.1	Point



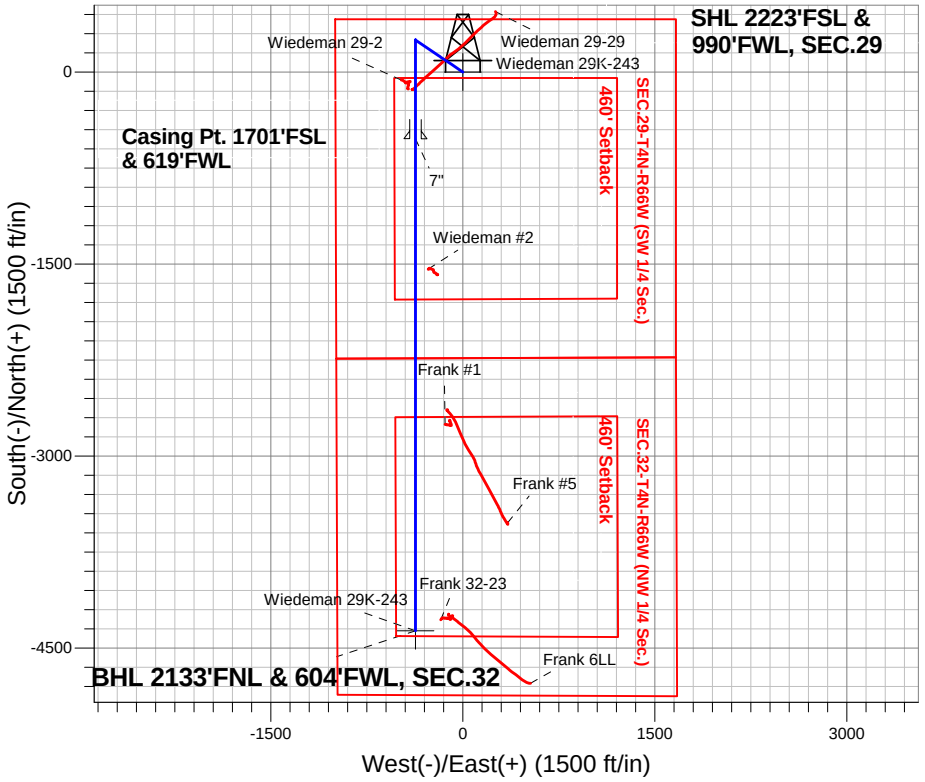
Azimuths to True North
Magnetic North: 8.49°

Magnetic Field
Strength: 52764.2snT
Dip Angle: 66.85°
Date: 4/24/2014
Model: IGRF2010

ANNOTATIONS

TVD	MD	Annotation
700.0	700.0	KOP #1
6345.0	6369.4	KOP #2
7108.9	7577.1	End of Build

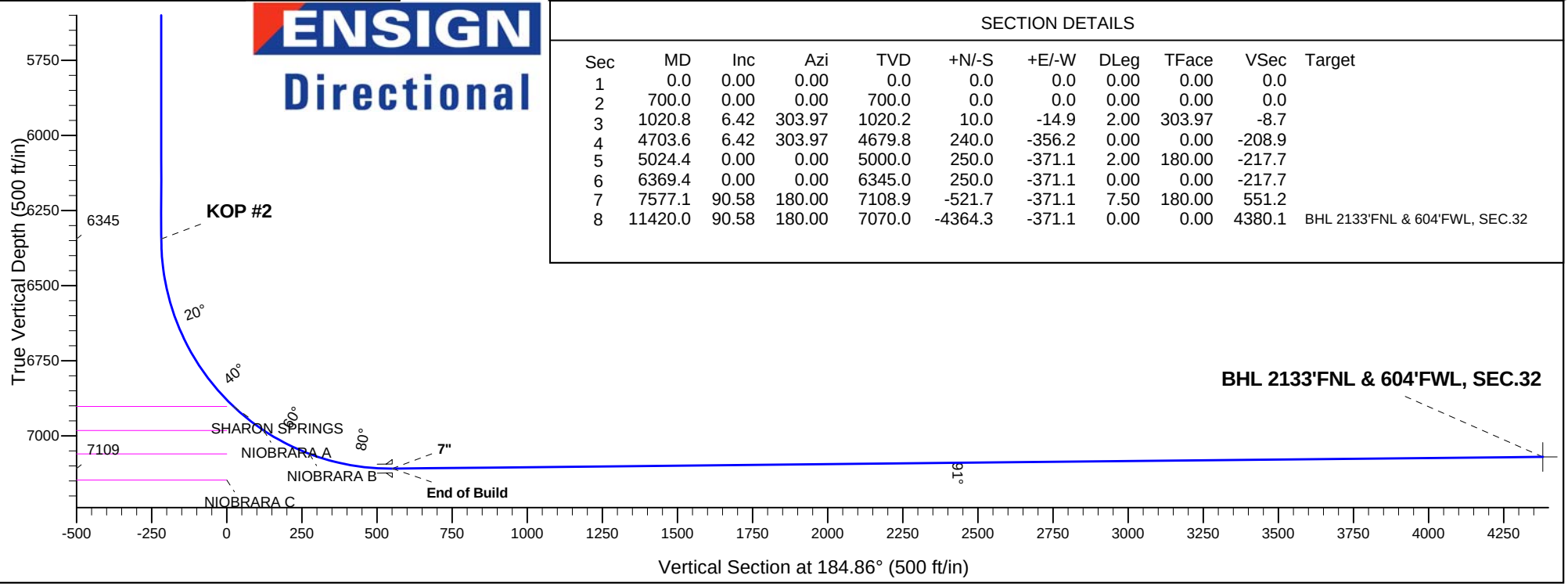
Wiedeman 29K-HZ Pad Sec.29-T4N-R66W
Wiedeman 29K-243
Plan #3 (4-30-14)
12:34, April 30 2014



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	700.0	0.00	0.00	700.0	0.0	0.0	0.00	0.00	0.0	
3	1020.8	6.42	303.97	1020.2	10.0	-14.9	2.00	303.97	-8.7	
4	4703.6	6.42	303.97	4679.8	240.0	-356.2	0.00	0.00	-208.9	
5	5024.4	0.00	0.00	5000.0	250.0	-371.1	2.00	180.00	-217.7	
6	6369.4	0.00	0.00	6345.0	250.0	-371.1	0.00	0.00	-217.7	
7	7577.1	90.58	180.00	7108.9	-521.7	-371.1	7.50	180.00	551.2	
8	11420.0	90.58	180.00	7070.0	-4364.3	-371.1	0.00	0.00	4380.1	BHL 2133'FNL & 604'FWL, SEC.32



ENSIGN Directional

PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.29-T4N-R66W
Wiedeman 29K-HZ Pad Sec.29-T4N-R66W
Wiedeman 29K-243

Wellbore #1

Plan: Plan #3 (4-30-14)

Standard Planning Report

30 April, 2014

PDC ENERGY
Growing E&P Value

Database:	Landmark	**Local Co-ordinate Reference:**	Well Wiedeman 29K-243
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**TVD Reference:**	WELL @ 4775.0ft (Ensign Rig #132 - RKB - 13')
Project:	SEC.29-T4N-R66W	**MD Reference:**	WELL @ 4775.0ft (Ensign Rig #132 - RKB - 13')
Site:	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	**North Reference:**	True
Well:	Wiedeman 29K-243	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3 (4-30-14)		

Project SEC.29-T4N-R66W

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

Site Wiedeman 29K-HZ Pad Sec.29-T4N-R66W

Site Position:		**Northing:**	1,346,126.76 ft	**Latitude:**	40.281440
From:	Lat/Long	**Easting:**	3,193,519.01 ft	**Longitude:**	-104.806370
Position Uncertainty:	0.0 ft	**Slot Radius:**	"	**Grid Convergence:**	0.45 °

Well Wiedeman 29K-243

Well Position	**+N/-S**	10.9 ft	**Northing:**	1,346,135.38 ft	**Latitude:**	40.281470
	+E/-W	-290.1 ft	**Easting:**	3,193,228.84 ft	**Longitude:**	-104.807410
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	4,762.0 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/24/2014	8.49	66.85	52,764

Design Plan #3 (4-30-14)

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	184.86

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	
700.0	0.00	0.00	700.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,020.8	6.42	303.97	1,020.2	10.0	-14.9	2.00	2.00	0.00	303.97	
4,703.6	6.42	303.97	4,679.8	240.0	-356.2	0.00	0.00	0.00	0.00	
5,024.4	0.00	0.00	5,000.0	250.0	-371.1	2.00	-2.00	0.00	180.00	
6,369.4	0.00	0.00	6,345.0	250.0	-371.1	0.00	0.00	0.00	0.00	
7,577.1	90.58	180.00	7,108.9	-521.7	-371.1	7.50	7.50	0.00	180.00	
11,420.0	90.58	180.00	7,070.0	-4,364.3	-371.1	0.00	0.00	0.00	0.00	BHL 2133'FNL & 6(

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Project:	SEC.29-T4N-R66W	**MD Reference:**	WELL @ 4775.0ft (Ensign Rig #132 - RKB - 13')
Site:	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	**North Reference:**	True
Well:	Wiedeman 29K-243	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3 (4-30-14)		

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
KOP #1									
800.0	2.00	303.97	800.0	1.0	-1.4	-0.8	2.00	2.00	0.00
900.0	4.00	303.97	899.8	3.9	-5.8	-3.4	2.00	2.00	0.00
1,000.0	6.00	303.97	999.5	8.8	-13.0	-7.6	2.00	2.00	0.00
1,020.8	6.42	303.97	1,020.2	10.0	-14.9	-8.7	2.00	2.00	0.00
1,100.0	6.42	303.97	1,098.8	15.0	-22.2	-13.0	0.00	0.00	0.00
1,200.0	6.42	303.97	1,198.2	21.2	-31.5	-18.5	0.00	0.00	0.00
1,300.0	6.42	303.97	1,297.6	27.5	-40.8	-23.9	0.00	0.00	0.00
1,400.0	6.42	303.97	1,397.0	33.7	-50.0	-29.3	0.00	0.00	0.00
1,500.0	6.42	303.97	1,496.3	39.9	-59.3	-34.8	0.00	0.00	0.00
1,600.0	6.42	303.97	1,595.7	46.2	-68.6	-40.2	0.00	0.00	0.00
1,700.0	6.42	303.97	1,695.1	52.4	-77.8	-45.7	0.00	0.00	0.00
1,800.0	6.42	303.97	1,794.4	58.7	-87.1	-51.1	0.00	0.00	0.00
1,900.0	6.42	303.97	1,893.8	64.9	-96.4	-56.5	0.00	0.00	0.00
2,000.0	6.42	303.97	1,993.2	71.2	-105.6	-62.0	0.00	0.00	0.00
2,100.0	6.42	303.97	2,092.6	77.4	-114.9	-67.4	0.00	0.00	0.00
2,200.0	6.42	303.97	2,191.9	83.7	-124.2	-72.8	0.00	0.00	0.00
2,300.0	6.42	303.97	2,291.3	89.9	-133.4	-78.3	0.00	0.00	0.00
2,400.0	6.42	303.97	2,390.7	96.1	-142.7	-83.7	0.00	0.00	0.00
2,500.0	6.42	303.97	2,490.1	102.4	-152.0	-89.1	0.00	0.00	0.00
2,600.0	6.42	303.97	2,589.4	108.6	-161.2	-94.6	0.00	0.00	0.00
2,700.0	6.42	303.97	2,688.8	114.9	-170.5	-100.0	0.00	0.00	0.00
2,800.0	6.42	303.97	2,788.2	121.1	-179.8	-105.5	0.00	0.00	0.00
2,900.0	6.42	303.97	2,887.6	127.4	-189.1	-110.9	0.00	0.00	0.00
3,000.0	6.42	303.97	2,986.9	133.6	-198.3	-116.3	0.00	0.00	0.00
3,100.0	6.42	303.97	3,086.3	139.8	-207.6	-121.8	0.00	0.00	0.00
3,200.0	6.42	303.97	3,185.7	146.1	-216.9	-127.2	0.00	0.00	0.00
3,300.0	6.42	303.97	3,285.1	152.3	-226.1	-132.6	0.00	0.00	0.00
3,400.0	6.42	303.97	3,384.4	158.6	-235.4	-138.1	0.00	0.00	0.00
3,500.0	6.42	303.97	3,483.8	164.8	-244.7	-143.5	0.00	0.00	0.00
3,600.0	6.42	303.97	3,583.2	171.1	-253.9	-148.9	0.00	0.00	0.00
3,697.4	6.42	303.97	3,680.0	177.2	-263.0	-154.2	0.00	0.00	0.00
PARKMAN									
3,700.0	6.42	303.97	3,682.5	177.3	-263.2	-154.4	0.00	0.00	0.00
3,800.0	6.42	303.97	3,781.9	183.6	-272.5	-159.8	0.00	0.00	0.00
3,900.0	6.42	303.97	3,881.3	189.8	-281.7	-165.3	0.00	0.00	0.00
4,000.0	6.42	303.97	3,980.7	196.0	-291.0	-170.7	0.00	0.00	0.00
4,100.0	6.42	303.97	4,080.0	202.3	-300.3	-176.1	0.00	0.00	0.00
4,200.0	6.42	303.97	4,179.4	208.5	-309.5	-181.6	0.00	0.00	0.00
4,300.0	6.42	303.97	4,278.8	214.8	-318.8	-187.0	0.00	0.00	0.00
4,303.2	6.42	303.97	4,282.0	215.0	-319.1	-187.2	0.00	0.00	0.00
SUSSEX									
4,400.0	6.42	303.97	4,378.2	221.0	-328.1	-192.4	0.00	0.00	0.00
4,500.0	6.42	303.97	4,477.5	227.3	-337.3	-197.9	0.00	0.00	0.00

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Project:	SEC.29-T4N-R66W	**MD Reference:**	WELL @ 4775.0ft (Ensign Rig #132 - RKB - 13')
Site:	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	**North Reference:**	True
Well:	Wiedeman 29K-243	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3 (4-30-14)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,600.0	6.42	303.97	4,576.9	233.5	-346.6	-203.3	0.00	0.00	0.00
4,700.0	6.42	303.97	4,676.3	239.7	-355.9	-208.7	0.00	0.00	0.00
4,703.6	6.42	303.97	4,679.8	240.0	-356.2	-208.9	0.00	0.00	0.00
4,800.0	4.49	303.97	4,775.8	245.1	-363.8	-213.4	2.00	-2.00	0.00
4,814.2	4.20	303.97	4,790.0	245.7	-364.7	-213.9	2.00	-2.00	0.00
SHANNON									
4,900.0	2.49	303.97	4,875.6	248.5	-368.9	-216.4	2.00	-2.00	0.00
5,000.0	0.49	303.97	4,975.6	249.9	-371.0	-217.6	2.00	-2.00	0.00
5,024.4	0.00	0.00	5,000.0	250.0	-371.1	-217.7	2.00	-2.00	0.00
5,100.0	0.00	0.00	5,075.6	250.0	-371.1	-217.7	0.00	0.00	0.00
5,200.0	0.00	0.00	5,175.6	250.0	-371.1	-217.7	0.00	0.00	0.00
5,300.0	0.00	0.00	5,275.6	250.0	-371.1	-217.7	0.00	0.00	0.00
5,400.0	0.00	0.00	5,375.6	250.0	-371.1	-217.7	0.00	0.00	0.00
5,500.0	0.00	0.00	5,475.6	250.0	-371.1	-217.7	0.00	0.00	0.00
5,600.0	0.00	0.00	5,575.6	250.0	-371.1	-217.7	0.00	0.00	0.00
5,700.0	0.00	0.00	5,675.6	250.0	-371.1	-217.7	0.00	0.00	0.00
5,800.0	0.00	0.00	5,775.6	250.0	-371.1	-217.7	0.00	0.00	0.00
5,900.0	0.00	0.00	5,875.6	250.0	-371.1	-217.7	0.00	0.00	0.00
6,000.0	0.00	0.00	5,975.6	250.0	-371.1	-217.7	0.00	0.00	0.00
6,100.0	0.00	0.00	6,075.6	250.0	-371.1	-217.7	0.00	0.00	0.00
6,200.0	0.00	0.00	6,175.6	250.0	-371.1	-217.7	0.00	0.00	0.00
6,300.0	0.00	0.00	6,275.6	250.0	-371.1	-217.7	0.00	0.00	0.00
6,369.4	0.00	0.00	6,345.0	250.0	-371.1	-217.7	0.00	0.00	0.00
KOP #2									
6,400.0	2.29	180.00	6,375.6	249.4	-371.1	-217.1	7.50	7.50	0.00
6,500.0	9.79	180.00	6,475.0	238.9	-371.1	-206.6	7.50	7.50	0.00
6,600.0	17.29	180.00	6,572.1	215.5	-371.1	-183.2	7.50	7.50	0.00
6,700.0	24.79	180.00	6,665.4	179.6	-371.1	-147.5	7.50	7.50	0.00
6,800.0	32.29	180.00	6,753.1	131.8	-371.1	-99.9	7.50	7.50	0.00
6,900.0	39.79	180.00	6,833.9	73.0	-371.1	-41.3	7.50	7.50	0.00
6,993.6	46.81	180.00	6,902.0	8.9	-371.1	22.6	7.50	7.50	0.00
SHARON SPRINGS									
7,000.0	47.29	180.00	6,906.4	4.2	-371.1	27.3	7.50	7.50	0.00
7,100.0	54.79	180.00	6,969.2	-73.5	-371.1	104.7	7.50	7.50	0.00
7,122.7	56.49	180.00	6,982.0	-92.2	-371.1	123.3	7.50	7.50	0.00
NIOBRARA A									
7,200.0	62.29	180.00	7,021.4	-158.8	-371.1	189.6	7.50	7.50	0.00
7,294.5	69.38	180.00	7,060.0	-244.9	-371.1	275.5	7.50	7.50	0.00
NIOBRARA B									
7,300.0	69.79	180.00	7,061.9	-250.1	-371.1	280.6	7.50	7.50	0.00
7,400.0	77.29	180.00	7,090.2	-345.9	-371.1	376.1	7.50	7.50	0.00
7,500.0	84.79	180.00	7,105.8	-444.6	-371.1	474.5	7.50	7.50	0.00
7,577.1	90.58	180.00	7,108.9	-521.6	-371.1	551.2	7.50	7.50	0.00
End of Build - 7"									
7,600.0	90.58	180.00	7,108.7	-544.5	-371.1	574.0	0.01	0.01	0.00
7,700.0	90.58	180.00	7,107.7	-644.5	-371.1	673.7	0.00	0.00	0.00
7,800.0	90.58	180.00	7,106.6	-744.5	-371.1	773.3	0.00	0.00	0.00
7,900.0	90.58	180.00	7,105.6	-844.5	-371.1	872.9	0.00	0.00	0.00
8,000.0	90.58	180.00	7,104.6	-944.5	-371.1	972.6	0.00	0.00	0.00
8,100.0	90.58	180.00	7,103.6	-1,044.5	-371.1	1,072.2	0.00	0.00	0.00
8,200.0	90.58	180.00	7,102.6	-1,144.5	-371.1	1,171.8	0.00	0.00	0.00

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Well:	Wiedeman 29K-243	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3 (4-30-14)		

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	90.58	180.00	7,101.6	-1,244.5	-371.1	1,271.5	0.00	0.00	0.00
8,400.0	90.58	180.00	7,100.6	-1,344.5	-371.1	1,371.1	0.00	0.00	0.00
8,500.0	90.58	180.00	7,099.6	-1,444.5	-371.1	1,470.7	0.00	0.00	0.00
8,600.0	90.58	180.00	7,098.5	-1,544.5	-371.1	1,570.4	0.00	0.00	0.00
8,700.0	90.58	180.00	7,097.5	-1,644.5	-371.1	1,670.0	0.00	0.00	0.00
8,800.0	90.58	180.00	7,096.5	-1,744.5	-371.1	1,769.6	0.00	0.00	0.00
8,900.0	90.58	180.00	7,095.5	-1,844.5	-371.1	1,869.3	0.00	0.00	0.00
9,000.0	90.58	180.00	7,094.5	-1,944.5	-371.1	1,968.9	0.00	0.00	0.00
9,100.0	90.58	180.00	7,093.5	-2,044.5	-371.1	2,068.5	0.00	0.00	0.00
9,200.0	90.58	180.00	7,092.5	-2,144.5	-371.1	2,168.2	0.00	0.00	0.00
9,300.0	90.58	180.00	7,091.5	-2,244.5	-371.1	2,267.8	0.00	0.00	0.00
9,400.0	90.58	180.00	7,090.4	-2,344.4	-371.1	2,367.5	0.00	0.00	0.00
9,500.0	90.58	180.00	7,089.4	-2,444.4	-371.1	2,467.1	0.00	0.00	0.00
9,600.0	90.58	180.00	7,088.4	-2,544.4	-371.1	2,566.7	0.00	0.00	0.00
9,700.0	90.58	180.00	7,087.4	-2,644.4	-371.1	2,666.4	0.00	0.00	0.00
9,800.0	90.58	180.00	7,086.4	-2,744.4	-371.1	2,766.0	0.00	0.00	0.00
9,900.0	90.58	180.00	7,085.4	-2,844.4	-371.1	2,865.6	0.00	0.00	0.00
10,000.0	90.58	180.00	7,084.4	-2,944.4	-371.1	2,965.3	0.00	0.00	0.00
10,100.0	90.58	180.00	7,083.4	-3,044.4	-371.1	3,064.9	0.00	0.00	0.00
10,200.0	90.58	180.00	7,082.3	-3,144.4	-371.1	3,164.5	0.00	0.00	0.00
10,300.0	90.58	180.00	7,081.3	-3,244.4	-371.1	3,264.2	0.00	0.00	0.00
10,400.0	90.58	180.00	7,080.3	-3,344.4	-371.1	3,363.8	0.00	0.00	0.00
10,500.0	90.58	180.00	7,079.3	-3,444.4	-371.1	3,463.4	0.00	0.00	0.00
10,600.0	90.58	180.00	7,078.3	-3,544.4	-371.1	3,563.1	0.00	0.00	0.00
10,700.0	90.58	180.00	7,077.3	-3,644.4	-371.1	3,662.7	0.00	0.00	0.00
10,800.0	90.58	180.00	7,076.3	-3,744.4	-371.1	3,762.4	0.00	0.00	0.00
10,900.0	90.58	180.00	7,075.3	-3,844.4	-371.1	3,862.0	0.00	0.00	0.00
11,000.0	90.58	180.00	7,074.3	-3,944.4	-371.1	3,961.6	0.00	0.00	0.00
11,100.0	90.58	180.00	7,073.2	-4,044.4	-371.1	4,061.3	0.00	0.00	0.00
11,200.0	90.58	180.00	7,072.2	-4,144.4	-371.1	4,160.9	0.00	0.00	0.00
11,300.0	90.58	180.00	7,071.2	-4,244.3	-371.1	4,260.5	0.00	0.00	0.00
11,400.0	90.58	180.00	7,070.2	-4,344.3	-371.1	4,360.2	0.00	0.00	0.00
11,420.0	90.58	180.00	7,070.0	-4,364.3	-371.1	4,380.1	0.00	0.00	0.00

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
BHL 2133'FNL & 604'	0.00	0.00	7,070.0	-4,364.3	-371.1	1,341,768.48	3,192,891.85	40.269490	-104.808740
- plan hits target center									
- Point									
SHL 2233'FSL & 990'	0.00	0.00	1.0	0.0	-0.1	1,346,135.42	3,193,228.78	40.281470	-104.807410
- plan misses target center by 0.1ft at 1.0ft MD (1.0 TVD, 0.0 N, 0.0 E)									
- Point									

Database:	Landmark	**Local Co-ordinate Reference:**	Well Wiedeman 29K-243
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**TVD Reference:**	WELL @ 4775.0ft (Ensign Rig #132 - RKB - 13')
Project:	SEC.29-T4N-R66W	**MD Reference:**	WELL @ 4775.0ft (Ensign Rig #132 - RKB - 13')
Site:	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	**North Reference:**	True
Well:	Wiedeman 29K-243	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3 (4-30-14)		

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,577.1	7,108.9	7"	7	7-1/2

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,697.4	3,680.0	PARKMAN			
4,303.2	4,282.0	SUSSEX			
4,814.2	4,790.0	SHANNON			
6,993.6	6,902.0	SHARON SPRINGS			
7,122.7	6,982.0	NIOBRARA A			
7,294.5	7,060.0	NIOBRARA B			
	7,147.0	NIOBRARA C			

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
700.0	700.0	0.0	0.0	KOP #1
6,369.4	6,345.0	250.0	-371.1	KOP #2
7,577.1	7,108.9	-521.6	-371.1	End of Build

ENSIGN Directional

PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.29-T4N-R66W
Wiedeman 29K-HZ Pad Sec.29-T4N-R66W
Wiedeman 29K-243

Wellbore #1
Plan #3 (4-30-14)

Anticollision Report

30 April, 2014

PDC ENERGY
Growing E&P Value

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Wiedeman 29K-243
Project:	SEC.29-T4N-R66W	**TVD Reference:**	WELL @ 4775.0ft (Ensign Rig #132 - RKB - 13')
Reference Site:	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	**MD Reference:**	WELL @ 4775.0ft (Ensign Rig #132 - RKB - 13')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Wiedeman 29K-243	**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 #3 (4-30-14)	**Offset TVD Reference:**	Offset Datum

Reference Plan #3 (4-30-14)

Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	**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** 4/30/2014

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	11,420.0	Plan #3 (4-30-14) (Wellbore #1)	MWD	MWD - Standard

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Existing Wells Pad Sec.29-T4-R66W						
Frank #1 - Wellbore #1 - Wellbore #1	9,807.5	7,081.9	235.2	164.6	3.334	CC, ES, SF
Frank #5 - Wellbore #1 - Wellbore #1	10,581.6	7,173.0	722.1	630.3	7.866	CC
Frank #5 - Wellbore #1 - Wellbore #1	10,600.0	7,172.6	722.4	630.2	7.839	ES
Frank #5 - Wellbore #1 - Wellbore #1	10,700.0	7,170.1	731.8	637.7	7.783	SF
Frank 32-23 - Wellbore #1 - Wellbore #1	11,327.9	7,070.5	203.9	104.9	2.061	CC, ES, SF
Frank 6LL - Wellbore #1 - Wellbore #1	11,420.7	7,099.9	978.2	874.7	9.450	CC, ES, SF
Wiedeman #2 - Wellbore #1 - Wellbore #1	8,595.4	7,084.4	100.4	51.6	2.057	CC, ES
Wiedeman #2 - Wellbore #1 - Wellbore #1	8,600.0	7,084.3	100.6	51.7	2.056	SF
Wiedeman 29-2 - Wellbore #1 - Wellbore #1	7,089.2	6,950.9	95.9	66.0	3.205	CC, ES, SF
Wiedeman 29-29 - Wellbore #1 - Wellbore #1	3,144.7	3,147.9	95.8	80.4	6.225	CC, ES
Wiedeman 29-29 - Wellbore #1 - Wellbore #1	3,200.0	3,201.3	96.8	81.1	6.182	SF
Wiedeman 29K-HZ Pad Sec.29-T4N-R66W						
Wiedeman 29G-323 - Wellbore #1 - Plan #2 (4-24-14)	500.0	500.0	30.8	28.7	15.201	CC, ES
Wiedeman 29G-323 - Wellbore #1 - Plan #2 (4-24-14)	11,420.7	11,510.1	216.1	57.1	1.360	Level 3, SF
Wiedeman 29G-403 - Wellbore #1 - Plan #2 (4-24-14)	200.0	200.0	61.4	60.8	91.120	CC, ES
Wiedeman 29G-403 - Wellbore #1 - Plan #2 (4-24-14)	11,420.7	11,633.9	573.0	413.0	3.581	SF
Wiedeman 29K-403 - Wellbore #1 - Plan #2 (4-24-14)	700.0	700.0	259.6	256.7	88.862	CC, ES
Wiedeman 29K-403 - Wellbore #1 - Plan #2 (4-24-14)	11,420.7	11,583.2	946.0	778.0	5.633	SF

Offset Design Existing Wells Pad Sec.29-T4-R66W - Frank #1 - Wellbore #1 - Wellbore #1

Survey Program: 100-MWD

Offset Site Error: 0.0 ft

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,900.0	7,095.5	7,091.7	7,090.8	39.7	14.8	-93.04	-2,752.0	-136.1	937.4	883.3	54.13	17.319	
9,000.0	7,094.5	7,090.6	7,089.7	41.5	14.8	-92.78	-2,752.0	-136.1	841.0	785.1	55.90	15.045	
9,100.0	7,093.5	7,089.6	7,088.7	43.3	14.8	-92.53	-2,752.0	-136.0	745.5	687.9	57.68	12.925	
9,200.0	7,092.5	7,088.5	7,087.6	45.0	14.8	-92.27	-2,752.0	-136.0	651.4	591.9	59.47	10.953	
9,300.0	7,091.5	7,087.4	7,086.6	46.8	14.8	-92.01	-2,752.0	-136.0	559.3	498.0	61.28	9.128	
9,400.0	7,090.4	7,086.4	7,085.5	48.6	14.8	-91.74	-2,752.0	-136.0	470.5	407.4	63.09	7.457	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Wiedeman 29K-243
Project:	SEC.29-T4N-R66W	**TVD Reference:**	WELL @ 4775.0ft (Ensign Rig #132 - RKB - 13')
Reference Site:	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	**MD Reference:**	WELL @ 4775.0ft (Ensign Rig #132 - RKB - 13')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Wiedeman 29K-243	**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 #3 (4-30-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Pad Sec.29-T4-R66W - Frank #1 - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 100-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
9,500.0	7,089.4	7,085.3	7,084.4	50.4	14.8	-91.48	-2,752.0	-136.0	387.1	322.2	64.91	5.964	
9,600.0	7,088.4	7,084.2	7,083.3	52.3	14.8	-91.21	-2,752.0	-136.0	313.6	246.9	66.73	4.700	
9,700.0	7,087.4	7,083.1	7,082.2	54.1	14.8	-90.94	-2,752.0	-136.0	258.6	190.0	68.56	3.771	
9,800.0	7,086.4	7,081.9	7,081.1	55.9	14.7	-90.67	-2,752.0	-136.0	235.3	164.9	70.40	3.342	
9,807.5	7,086.3	7,081.9	7,081.0	56.1	14.7	-90.65	-2,752.0	-136.0	235.2	164.6	70.53	3.334	CC, ES, SF
9,900.0	7,085.4	7,080.8	7,079.9	57.8	14.7	-90.39	-2,752.0	-135.9	252.7	180.4	72.24	3.498	
10,000.0	7,084.4	7,079.7	7,078.8	59.6	14.7	-90.12	-2,752.0	-135.9	303.9	229.8	74.08	4.102	
10,100.0	7,083.4	7,078.5	7,077.7	61.4	14.7	-89.84	-2,752.0	-135.9	375.3	299.4	75.92	4.943	
10,200.0	7,082.3	7,077.4	7,076.5	63.3	14.7	-89.55	-2,752.0	-135.9	457.5	379.7	77.77	5.883	
10,300.0	7,081.3	7,076.2	7,075.3	65.2	14.7	-89.27	-2,752.0	-135.9	545.7	466.1	79.62	6.854	
10,400.0	7,080.3	7,075.0	7,074.1	67.0	14.7	-88.98	-2,752.0	-135.9	637.4	555.9	81.47	7.823	
10,500.0	7,079.3	7,073.8	7,073.0	68.9	14.7	-88.69	-2,752.0	-135.9	731.3	648.0	83.33	8.776	
10,600.0	7,078.3	7,072.6	7,071.8	70.7	14.7	-88.40	-2,752.0	-135.9	826.6	741.4	85.18	9.704	
10,700.0	7,077.3	7,071.4	7,070.5	72.6	14.7	-88.11	-2,752.0	-135.8	922.9	835.9	87.03	10.604	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Wiedeman 29K-243
Project:	SEC.29-T4N-R66W	**TVD Reference:**	WELL @ 4775.0ft (Ensign Rig #132 - RKB - 13')
Reference Site:	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	**MD Reference:**	WELL @ 4775.0ft (Ensign Rig #132 - RKB - 13')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Wiedeman 29K-243	**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 #3 (4-30-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Pad Sec.29-T4-R66W - Frank #5 - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 458-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
9,900.0	7,085.4	7,190.1	7,090.1	57.8	23.0	-91.63	-3,525.8	350.9	992.8	913.7	79.13	12.548	
10,000.0	7,084.4	7,187.6	7,087.6	59.6	23.0	-91.43	-3,525.8	350.9	927.1	846.1	80.98	11.449	
10,100.0	7,083.4	7,185.1	7,085.1	61.4	23.0	-91.24	-3,525.8	351.0	867.9	785.1	82.83	10.478	
10,200.0	7,082.3	7,182.6	7,082.6	63.3	23.0	-91.04	-3,525.9	351.0	816.7	732.0	84.69	9.643	
10,300.0	7,081.3	7,180.1	7,080.1	65.2	23.0	-90.84	-3,525.9	351.0	775.1	688.5	86.55	8.955	
10,400.0	7,080.3	7,177.6	7,077.6	67.0	23.0	-90.64	-3,525.9	351.0	744.6	656.2	88.41	8.422	
10,500.0	7,079.3	7,175.1	7,075.1	68.9	23.0	-90.44	-3,526.0	351.0	726.7	636.4	90.28	8.050	
10,581.6	7,078.5	7,173.0	7,073.0	70.4	23.0	-90.28	-3,526.0	351.0	722.1	630.3	91.80	7.866	CC
10,600.0	7,078.3	7,172.6	7,072.6	70.7	23.0	-90.24	-3,526.0	351.0	722.4	630.2	92.15	7.839	ES
10,700.0	7,077.3	7,170.1	7,070.1	72.6	22.9	-90.05	-3,526.1	351.0	731.8	637.7	94.02	7.783	SF
10,800.0	7,076.3	7,167.6	7,067.6	74.5	22.9	-89.85	-3,526.1	351.0	754.4	658.5	95.89	7.868	
10,900.0	7,075.3	7,165.1	7,065.1	76.3	22.9	-89.65	-3,526.1	351.1	789.2	691.4	97.76	8.073	
11,000.0	7,074.3	7,162.6	7,062.6	78.2	22.9	-89.45	-3,526.2	351.1	834.5	734.9	99.63	8.376	
11,100.0	7,073.2	7,160.1	7,060.1	80.1	22.9	-89.25	-3,526.2	351.1	888.8	787.3	101.51	8.757	
11,200.0	7,072.2	7,157.6	7,057.6	82.0	22.9	-89.06	-3,526.2	351.1	950.6	847.2	103.38	9.195	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Wiedeman 29K-243
Project:	SEC.29-T4N-R66W	**TVD Reference:**	WELL @ 4775.0ft (Ensign Rig #132 - RKB - 13')
Reference Site:	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	**MD Reference:**	WELL @ 4775.0ft (Ensign Rig #132 - RKB - 13')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Wiedeman 29K-243	**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 #3 (4-30-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Pad Sec.29-T4-R66W - Frank 32-23 - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 100-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,400.0	7,080.3	7,065.9	7,064.8	67.0	14.8	-89.41	-4,272.2	-167.2	950.0	868.5	81.48	11.660	
10,500.0	7,079.3	7,066.4	7,065.3	68.9	14.8	-89.55	-4,272.2	-167.2	852.6	769.2	83.35	10.229	
10,600.0	7,078.3	7,066.9	7,065.8	70.7	14.8	-89.69	-4,272.2	-167.2	755.9	670.6	85.23	8.869	
10,700.0	7,077.3	7,067.4	7,066.3	72.6	14.8	-89.82	-4,272.2	-167.2	660.1	573.0	87.11	7.579	
10,800.0	7,076.3	7,067.9	7,066.8	74.5	14.8	-89.96	-4,272.2	-167.2	565.9	476.9	88.99	6.359	
10,900.0	7,075.3	7,068.4	7,067.3	76.3	14.8	-90.10	-4,272.2	-167.2	474.0	383.1	90.87	5.216	
11,000.0	7,074.3	7,068.9	7,067.8	78.2	14.8	-90.25	-4,272.2	-167.2	386.1	293.3	92.75	4.163	
11,100.0	7,073.2	7,069.4	7,068.3	80.1	14.8	-90.39	-4,272.2	-167.2	305.8	211.1	94.64	3.231	
11,200.0	7,072.2	7,069.9	7,068.8	82.0	14.8	-90.53	-4,272.2	-167.2	240.7	144.1	96.52	2.493	
11,300.0	7,071.2	7,070.4	7,069.3	83.9	14.8	-90.67	-4,272.2	-167.2	205.8	107.4	98.41	2.091	
11,327.9	7,070.9	7,070.5	7,069.5	84.4	14.8	-90.71	-4,272.2	-167.2	203.9	104.9	98.94	2.061	CC, ES, SF
11,400.0	7,070.2	7,070.9	7,069.8	85.7	14.8	-90.82	-4,272.2	-167.2	216.3	116.0	100.30	2.156	
11,420.0	7,070.0	7,071.0	7,069.9	86.1	14.8	-90.85	-4,272.2	-167.2	223.7	123.1	100.67	2.222	
11,420.7	7,070.0	7,071.0	7,069.9	86.1	14.8	-90.85	-4,272.2	-167.2	224.0	123.3	100.68	2.225	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Wiedeman 29K-243
Project:	SEC.29-T4N-R66W	**TVD Reference:**	WELL @ 4775.0ft (Ensign Rig #132 - RKB - 13')
Reference Site:	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	**MD Reference:**	WELL @ 4775.0ft (Ensign Rig #132 - RKB - 13')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Wiedeman 29K-243	**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 #3 (4-30-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Pad Sec.29-T4-R66W - Frank 6LL - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 639-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
11,400.0	7,070.2	7,100.0	7,030.7	85.7	20.4	-87.99	-4,775.4	516.2	987.1	883.9	103.13	9.571	
11,420.0	7,070.0	7,099.9	7,030.7	86.1	20.4	-87.99	-4,775.4	516.2	978.5	875.0	103.51	9.453	
11,420.7	7,070.0	7,099.9	7,030.7	86.1	20.4	-87.99	-4,775.4	516.2	978.2	874.7	103.52	9.450	CC, ES, SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Wiedeman 29K-243
Project:	SEC.29-T4N-R66W	**TVD Reference:**	WELL @ 4775.0ft (Ensign Rig #132 - RKB - 13')
Reference Site:	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	**MD Reference:**	WELL @ 4775.0ft (Ensign Rig #132 - RKB - 13')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Wiedeman 29K-243	**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 #3 (4-30-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Pad Sec.29-T4-R66W - Wiedeman #2 - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 100-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
7,700.0	7,107.7	7,097.7	7,096.7	21.0	14.8	-97.41	-1,539.8	-270.6	900.9	865.8	35.10	25.667	
7,800.0	7,106.6	7,096.2	7,095.2	22.2	14.8	-96.57	-1,539.8	-270.6	801.6	765.2	36.41	22.019	
7,900.0	7,105.6	7,094.7	7,093.7	23.6	14.8	-95.72	-1,539.8	-270.6	702.6	664.8	37.80	18.588	
8,000.0	7,104.6	7,093.2	7,092.2	25.0	14.8	-94.88	-1,539.9	-270.6	603.8	564.5	39.26	15.380	
8,100.0	7,103.6	7,091.7	7,090.7	26.5	14.8	-94.03	-1,539.9	-270.6	505.4	464.7	40.77	12.396	
8,200.0	7,102.6	7,090.2	7,089.2	28.0	14.8	-93.18	-1,539.9	-270.6	407.9	365.6	42.34	9.635	
8,300.0	7,101.6	7,088.8	7,087.7	29.6	14.8	-92.33	-1,539.9	-270.6	312.0	268.1	43.94	7.101	
8,400.0	7,100.6	7,087.3	7,086.2	31.2	14.8	-91.48	-1,539.9	-270.6	219.7	174.1	45.57	4.821	
8,500.0	7,099.6	7,085.8	7,084.7	32.9	14.8	-90.64	-1,539.9	-270.6	138.5	91.3	47.23	2.933	
8,595.4	7,098.6	7,084.4	7,083.3	34.5	14.8	-89.82	-1,539.9	-270.7	100.4	51.6	48.82	2.057	CC, ES
8,600.0	7,098.5	7,084.3	7,083.2	34.6	14.8	-89.79	-1,539.9	-270.7	100.6	51.7	48.90	2.056	SF
8,700.0	7,097.5	7,082.8	7,081.7	36.3	14.8	-88.94	-1,539.9	-270.7	145.0	94.4	50.59	2.866	
8,800.0	7,096.5	7,081.3	7,080.2	38.0	14.8	-88.09	-1,539.9	-270.7	227.9	175.6	52.29	4.358	
8,900.0	7,095.5	7,079.8	7,078.8	39.7	14.8	-87.24	-1,539.9	-270.7	320.7	266.7	53.99	5.939	
9,000.0	7,094.5	7,078.3	7,077.3	41.5	14.8	-86.40	-1,539.9	-270.7	416.8	361.1	55.70	7.483	
9,100.0	7,093.5	7,076.9	7,075.8	43.3	14.8	-85.56	-1,539.9	-270.7	514.4	457.0	57.41	8.960	
9,200.0	7,092.5	7,075.4	7,074.3	45.0	14.8	-84.72	-1,539.9	-270.7	612.8	553.7	59.12	10.366	
9,300.0	7,091.5	7,073.9	7,072.8	46.8	14.8	-83.88	-1,539.9	-270.7	711.6	650.8	60.82	11.700	
9,400.0	7,090.4	7,072.4	7,071.3	48.6	14.8	-83.04	-1,540.0	-270.7	810.7	748.2	62.52	12.968	
9,500.0	7,089.4	7,070.9	7,069.9	50.4	14.8	-82.21	-1,540.0	-270.7	910.0	845.8	64.21	14.173	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Wiedeman 29K-243
Project:	SEC.29-T4N-R66W	**TVD Reference:**	WELL @ 4775.0ft (Ensign Rig #132 - RKB - 13')
Reference Site:	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	**MD Reference:**	WELL @ 4775.0ft (Ensign Rig #132 - RKB - 13')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Wiedeman 29K-243	**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 #3 (4-30-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Pad Sec.29-T4-R66W - Wiedeman 29-2 - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 100-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-107.07	-131.1	-426.9	446.8				
100.0	100.0	89.7	89.7	0.1	0.1	-107.06	-131.0	-426.8	446.5	446.3	0.21	2,094.951	
200.0	200.0	188.2	188.2	0.3	0.3	-107.05	-130.8	-426.6	446.2	445.6	0.63	708.363	
300.0	300.0	288.5	288.5	0.6	0.5	-107.06	-130.9	-426.5	446.2	445.1	1.06	419.584	
400.0	400.0	389.0	389.0	0.8	0.7	-107.07	-130.9	-426.4	446.0	444.5	1.50	296.932	
454.6	454.6	442.6	442.6	0.9	0.8	-107.06	-130.8	-426.3	445.9	444.2	1.74	256.823	
500.0	500.0	486.9	486.9	1.0	0.9	-107.05	-130.8	-426.4	446.0	444.0	1.93	231.075	
600.0	600.0	586.2	586.2	1.2	1.1	-107.04	-130.8	-426.7	446.3	444.0	2.36	189.118	
700.0	700.0	686.6	686.6	1.5	1.3	-107.05	-131.0	-427.1	446.7	443.9	2.79	159.835	
800.0	800.0	784.7	784.7	1.7	1.5	-51.19	-131.1	-427.5	446.1	442.9	3.22	138.593	
900.0	899.8	885.6	885.6	1.9	1.8	-51.77	-131.3	-428.2	443.5	439.9	3.65	121.630	
1,000.0	999.5	983.8	983.8	2.1	2.0	-52.71	-131.4	-428.8	438.8	434.7	4.08	107.629	
1,020.8	1,020.2	1,004.3	1,004.3	2.2	2.0	-52.95	-131.4	-429.0	437.6	433.4	4.17	104.992	
1,100.0	1,098.8	1,083.6	1,083.6	2.4	2.2	-53.86	-131.4	-429.7	432.9	428.4	4.52	95.712	
1,200.0	1,198.2	1,184.4	1,184.4	2.7	2.4	-55.00	-131.1	-430.4	427.0	422.0	4.98	85.675	
1,300.0	1,297.6	1,284.6	1,284.6	2.9	2.6	-56.05	-129.8	-431.3	421.0	415.6	5.45	77.189	
1,400.0	1,397.0	1,390.0	1,389.9	3.2	2.8	-57.11	-127.7	-431.7	414.4	408.5	5.94	69.723	
1,500.0	1,496.3	1,489.2	1,489.1	3.5	3.0	-58.10	-125.0	-431.5	407.2	400.7	6.42	63.374	
1,600.0	1,595.7	1,589.5	1,589.3	3.8	3.2	-59.13	-122.4	-431.3	400.0	393.1	6.91	57.904	
1,700.0	1,695.1	1,690.0	1,689.9	4.1	3.5	-60.24	-119.8	-430.8	392.8	385.4	7.40	53.076	
1,800.0	1,794.4	1,788.5	1,788.3	4.4	3.7	-61.34	-117.2	-430.3	385.7	377.8	7.89	48.875	
1,900.0	1,893.8	1,888.8	1,888.6	4.6	3.9	-62.54	-114.8	-429.7	378.8	370.4	8.39	45.157	
2,000.0	1,993.2	1,990.5	1,990.2	4.9	4.1	-63.82	-112.2	-428.7	371.6	362.7	8.90	41.770	
2,100.0	2,092.6	2,089.2	2,088.9	5.2	4.3	-65.11	-109.5	-427.6	364.4	355.0	9.40	38.766	
2,200.0	2,191.9	2,187.7	2,187.4	5.5	4.5	-66.48	-107.1	-426.5	357.6	347.7	9.90	36.115	
2,300.0	2,291.3	2,285.7	2,285.3	5.8	4.7	-67.94	-105.3	-425.5	351.3	340.9	10.40	33.764	
2,400.0	2,390.7	2,382.9	2,382.6	6.1	4.9	-69.45	-103.7	-424.9	345.8	334.9	10.91	31.694	
2,500.0	2,490.1	2,481.3	2,480.9	6.4	5.1	-71.04	-102.4	-424.7	341.0	329.6	11.42	29.857	
2,600.0	2,589.4	2,581.3	2,580.9	6.7	5.3	-72.71	-101.3	-424.4	336.6	324.7	11.94	28.190	
2,700.0	2,688.8	2,681.3	2,680.9	7.0	5.5	-74.41	-99.9	-424.1	332.3	319.9	12.46	26.662	
2,800.0	2,788.2	2,779.3	2,778.9	7.3	5.7	-76.05	-98.4	-424.0	328.4	315.4	12.98	25.291	
2,900.0	2,887.6	2,878.5	2,878.1	7.6	6.0	-77.66	-96.7	-424.6	325.1	311.6	13.51	24.066	
3,000.0	2,986.9	2,979.4	2,979.0	7.9	6.2	-79.26	-94.6	-425.3	321.8	307.8	14.04	22.929	
3,100.0	3,086.3	3,081.7	3,081.2	8.2	6.4	-80.89	-91.8	-425.6	318.2	303.6	14.57	21.840	
3,200.0	3,185.7	3,183.3	3,182.8	8.6	6.6	-82.55	-88.4	-425.4	314.0	298.9	15.10	20.793	
3,300.0	3,285.1	3,283.2	3,282.6	8.9	6.8	-84.24	-84.9	-424.9	309.7	294.0	15.63	19.814	
3,400.0	3,384.4	3,384.4	3,383.7	9.2	7.0	-86.12	-81.5	-423.7	305.3	289.2	16.16	18.900	
3,500.0	3,483.8	3,483.7	3,482.9	9.5	7.3	-88.25	-78.6	-421.3	301.0	284.3	16.68	18.050	
3,600.0	3,583.2	3,582.7	3,581.9	9.8	7.5	-90.60	-76.4	-418.3	297.2	280.0	17.19	17.288	
3,700.0	3,682.5	3,677.3	3,676.4	10.1	7.7	-92.92	-74.8	-415.6	294.7	277.0	17.70	16.651	
3,787.0	3,769.0	3,760.7	3,759.8	10.3	7.8	-94.93	-74.3	-414.1	294.1	276.0	18.13	16.224	
3,800.0	3,781.9	3,773.3	3,772.4	10.4	7.9	-95.23	-74.3	-414.0	294.1	275.9	18.19	16.167	
3,900.0	3,881.3	3,872.5	3,871.6	10.7	8.1	-97.56	-74.1	-412.8	294.7	276.0	18.69	15.762	
4,000.0	3,980.7	3,972.2	3,971.3	11.0	8.3	-99.86	-73.7	-411.7	295.5	276.3	19.19	15.397	
4,100.0	4,080.0	4,069.1	4,068.1	11.3	8.5	-102.02	-73.4	-411.0	297.1	277.4	19.68	15.095	
4,200.0	4,179.4	4,163.3	4,162.4	11.6	8.7	-104.01	-74.1	-411.1	300.3	280.2	20.16	14.901	
4,300.0	4,278.8	4,261.1	4,260.2	11.9	8.9	-105.87	-75.9	-412.5	305.4	284.8	20.64	14.801	
4,400.0	4,378.2	4,361.6	4,360.6	12.2	9.1	-107.61	-77.3	-414.4	310.7	289.5	21.12	14.710	
4,500.0	4,477.5	4,461.7	4,460.8	12.5	9.3	-109.25	-78.5	-416.5	315.9	294.3	21.60	14.622	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Wiedeman 29K-243
Project:	SEC.29-T4N-R66W	**TVD Reference:**	WELL @ 4775.0ft (Ensign Rig #132 - RKB - 13')
Reference Site:	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	**MD Reference:**	WELL @ 4775.0ft (Ensign Rig #132 - RKB - 13')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Wiedeman 29K-243	**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 #3 (4-30-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Pad Sec.29-T4-R66W - Wiedeman 29-2 - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 100-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
4,600.0	4,576.9	4,563.0	4,561.9	12.8	9.5	-110.84	-79.3	-418.6	321.0	298.9	22.08	14.537	
4,703.6	4,679.8	4,667.9	4,666.9	13.1	9.7	-112.35	-79.4	-421.0	325.9	303.3	22.58	14.433	
4,800.0	4,775.8	4,764.0	4,762.9	13.4	9.9	-113.45	-79.1	-423.5	329.7	306.7	23.00	14.336	
4,900.0	4,875.6	4,864.1	4,863.0	13.6	10.1	-114.02	-78.9	-426.2	332.4	309.0	23.37	14.221	
5,000.0	4,975.6	4,965.5	4,964.4	13.7	10.3	-114.03	-78.5	-428.6	333.5	309.7	23.74	14.045	
5,024.4	5,000.0	4,990.4	4,989.2	13.8	10.4	-169.99	-78.4	-429.1	333.4	309.6	23.83	13.991	
5,100.0	5,075.6	5,066.7	5,065.5	13.9	10.6	-169.72	-77.7	-430.6	333.1	308.9	24.12	13.806	
5,200.0	5,175.6	5,166.8	5,165.6	14.1	10.8	-169.37	-76.7	-432.4	332.4	307.9	24.52	13.555	
5,300.0	5,275.6	5,266.0	5,264.8	14.2	11.0	-169.06	-75.9	-434.1	331.9	307.0	24.92	13.319	
5,350.3	5,325.9	5,315.1	5,313.9	14.3	11.1	-168.95	-75.6	-434.7	331.8	306.7	25.12	13.210	
5,400.0	5,375.6	5,362.2	5,361.0	14.4	11.2	-168.90	-75.8	-435.0	332.0	306.7	25.30	13.119	
5,500.0	5,475.6	5,458.2	5,456.9	14.6	11.4	-168.96	-77.2	-435.0	333.4	307.8	25.68	12.982	
5,600.0	5,575.6	5,555.2	5,553.9	14.8	11.6	-168.98	-79.6	-435.3	335.9	309.8	26.07	12.885	
5,700.0	5,675.6	5,653.2	5,651.9	15.0	11.8	-168.77	-82.4	-437.1	339.1	312.6	26.46	12.815	
5,800.0	5,775.6	5,754.7	5,753.2	15.1	12.0	-168.18	-85.1	-441.2	342.5	315.7	26.88	12.745	
5,900.0	5,875.6	5,862.8	5,861.2	15.3	12.2	-167.65	-86.7	-444.8	344.6	317.3	27.30	12.623	
6,000.0	5,975.6	5,968.4	5,966.9	15.5	12.4	-167.35	-85.9	-446.5	344.2	316.5	27.72	12.417	
6,100.0	6,075.6	6,070.0	6,068.5	15.7	12.6	-167.11	-84.3	-447.6	343.0	314.9	28.13	12.191	
6,200.0	6,175.6	6,171.0	6,169.4	15.9	12.9	-166.87	-82.4	-448.7	341.4	312.9	28.55	11.961	
6,300.0	6,275.6	6,271.0	6,269.4	16.1	13.1	-166.56	-80.3	-450.0	339.7	310.7	28.95	11.731	
6,369.4	6,345.0	6,340.1	6,338.5	16.2	13.2	-166.31	-78.8	-451.2	338.5	309.3	29.24	11.578	
6,400.0	6,375.6	6,370.6	6,368.9	16.2	13.3	13.87	-78.2	-451.8	337.4	308.1	29.32	11.506	
6,450.0	6,425.4	6,420.2	6,418.5	16.3	13.4	14.32	-77.1	-453.0	333.1	303.8	29.38	11.339	
6,500.0	6,475.0	6,469.5	6,467.8	16.4	13.5	15.01	-76.1	-454.1	325.7	296.4	29.34	11.103	
6,550.0	6,523.9	6,518.2	6,516.5	16.4	13.6	15.95	-75.0	-455.2	315.2	286.0	29.21	10.794	
6,600.0	6,572.1	6,566.3	6,564.5	16.4	13.7	17.22	-74.0	-456.3	301.8	272.8	28.99	10.409	
6,650.0	6,619.3	6,613.1	6,611.3	16.4	13.8	18.90	-72.9	-457.5	285.4	256.7	28.70	9.942	
6,700.0	6,665.4	6,658.3	6,656.5	16.5	13.9	21.13	-71.9	-458.8	266.3	237.9	28.36	9.389	
6,750.0	6,710.0	6,702.1	6,700.2	16.5	14.0	24.09	-70.9	-460.2	244.8	216.8	28.00	8.742	
6,800.0	6,753.1	6,744.4	6,742.5	16.5	14.1	28.03	-70.0	-461.5	221.1	193.4	27.67	7.991	
6,850.0	6,794.5	6,785.0	6,783.1	16.5	14.2	33.32	-69.1	-462.7	195.7	168.2	27.46	7.126	
6,900.0	6,833.9	6,823.8	6,821.9	16.5	14.3	40.48	-68.4	-463.9	169.2	141.7	27.50	6.152	
6,950.0	6,871.3	6,860.7	6,858.7	16.5	14.3	50.12	-67.8	-464.9	142.7	114.8	27.92	5.110	
7,000.0	6,906.4	6,895.2	6,893.3	16.5	14.4	62.53	-67.2	-465.7	118.5	89.8	28.75	4.123	
7,050.0	6,939.1	6,927.4	6,925.5	16.5	14.5	77.03	-66.6	-466.5	100.9	71.3	29.61	3.409	
7,089.2	6,962.9	6,950.9	6,948.9	16.6	14.5	88.51	-66.2	-467.0	95.9	66.0	29.94	3.205	CC, ES, SF
7,100.0	6,969.2	6,957.0	6,955.1	16.6	14.5	91.50	-66.1	-467.1	96.3	66.4	29.94	3.218	
7,150.0	6,996.7	6,983.9	6,981.9	16.6	14.6	103.70	-65.7	-467.7	108.6	79.0	29.59	3.670	
7,200.0	7,021.4	7,007.9	7,005.9	16.8	14.6	112.61	-65.2	-468.1	134.8	105.9	28.91	4.664	
7,250.0	7,043.1	7,029.0	7,027.0	16.9	14.7	118.37	-64.9	-468.5	169.7	141.4	28.27	6.003	
7,300.0	7,061.9	7,047.2	7,045.2	17.2	14.7	121.37	-64.6	-468.9	209.7	181.8	27.91	7.514	
7,350.0	7,077.6	7,062.4	7,060.4	17.5	14.8	121.87	-64.4	-469.2	253.0	225.0	28.00	9.037	
7,400.0	7,090.2	7,074.4	7,072.4	17.9	14.8	119.79	-64.2	-469.5	298.4	269.8	28.64	10.421	
7,450.0	7,099.6	7,083.3	7,081.3	18.3	14.8	114.68	-64.1	-469.6	345.3	315.4	29.92	11.543	
7,500.0	7,105.8	7,089.0	7,086.9	18.7	14.8	105.69	-64.0	-469.8	393.2	361.5	31.72	12.396	
7,550.0	7,108.7	7,091.3	7,089.3	19.3	14.8	92.04	-64.0	-469.8	441.8	408.4	33.37	13.239	
7,577.1	7,108.9	7,091.2	7,089.1	19.5	14.8	82.85	-64.0	-469.8	468.3	434.6	33.68	13.902	
7,600.0	7,108.7	7,090.6	7,088.6	19.8	14.8	82.54	-64.0	-469.8	490.6	456.7	33.92	14.462	
7,700.0	7,107.7	7,088.3	7,086.3	21.0	14.8	81.21	-64.0	-469.7	588.9	553.8	35.04	16.807	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Wiedeman 29K-243
Project:	SEC.29-T4N-R66W	**TVD Reference:**	WELL @ 4775.0ft (Ensign Rig #132 - RKB - 13')
Reference Site:	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	**MD Reference:**	WELL @ 4775.0ft (Ensign Rig #132 - RKB - 13')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Wiedeman 29K-243	**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 #3 (4-30-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Pad Sec.29-T4-R66W - Wiedeman 29-2 - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 100-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
7,800.0	7,106.6	7,085.9	7,083.9	22.2	14.8	79.88	-64.1	-469.7	687.6	651.4	36.24	18.977	
7,900.0	7,105.6	7,083.6	7,081.5	23.6	14.8	78.53	-64.1	-469.6	786.7	749.2	37.49	20.983	
8,000.0	7,104.6	7,081.1	7,079.1	25.0	14.8	77.18	-64.1	-469.6	886.0	847.2	38.80	22.837	
8,100.0	7,103.6	7,078.7	7,076.7	26.5	14.8	75.83	-64.2	-469.5	985.4	945.3	40.13	24.558	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Wiedeman 29K-243
Project:	SEC.29-T4N-R66W	**TVD Reference:**	WELL @ 4775.0ft (Ensign Rig #132 - RKB - 13')
Reference Site:	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	**MD Reference:**	WELL @ 4775.0ft (Ensign Rig #132 - RKB - 13')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Wiedeman 29K-243	**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 #3 (4-30-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Pad Sec.29-T4-R66W - Wiedeman 29-29 - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 447-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-108.91	-134.8	-393.5	416.1				
100.0	100.0	86.5	86.5	0.1	0.1	-108.90	-134.8	-393.5	416.0	415.7	0.21	1,981.599	
200.0	200.0	185.9	185.9	0.3	0.2	-108.89	-134.7	-393.7	416.1	415.6	0.55	761.405	
300.0	300.0	285.4	285.4	0.6	0.3	-108.86	-134.7	-394.1	416.5	415.6	0.88	471.550	
400.0	400.0	384.8	384.8	0.8	0.4	-108.83	-134.6	-394.6	416.9	415.7	1.22	341.791	
500.0	500.0	484.1	484.1	1.0	0.6	-108.79	-134.5	-395.3	417.5	415.9	1.59	261.907	
600.0	600.0	583.6	583.6	1.2	0.8	-108.78	-134.6	-396.0	418.3	416.3	2.03	206.040	
700.0	700.0	685.4	685.4	1.5	1.0	-108.76	-134.7	-396.6	418.9	416.5	2.46	170.507	
800.0	800.0	790.8	790.8	1.7	1.2	-52.94	-134.7	-396.6	417.8	414.9	2.88	144.861	
900.0	899.8	898.0	897.9	1.9	1.4	-53.80	-135.1	-394.3	412.8	409.5	3.32	124.439	
1,000.0	999.5	1,002.4	1,002.3	2.1	1.6	-55.11	-134.7	-390.8	404.4	400.7	3.76	107.447	
1,020.8	1,020.2	1,024.0	1,023.9	2.2	1.7	-55.42	-134.4	-390.0	402.3	398.4	3.86	104.255	
1,100.0	1,098.8	1,102.7	1,102.5	2.4	1.8	-56.45	-133.0	-386.9	393.9	389.7	4.22	93.427	
1,200.0	1,198.2	1,201.1	1,200.9	2.7	2.1	-57.71	-130.8	-383.4	383.7	379.0	4.68	82.052	
1,300.0	1,297.6	1,303.4	1,303.0	2.9	2.3	-58.99	-127.7	-379.8	373.3	368.1	5.15	72.421	
1,400.0	1,397.0	1,405.2	1,404.6	3.2	2.5	-60.28	-123.9	-375.6	362.3	356.6	5.64	64.219	
1,500.0	1,496.3	1,506.7	1,505.9	3.5	2.8	-61.51	-119.1	-371.1	350.7	344.6	6.13	57.168	
1,600.0	1,595.7	1,609.0	1,608.0	3.8	3.0	-62.78	-113.5	-365.9	338.5	331.9	6.64	50.998	
1,700.0	1,695.1	1,711.0	1,709.6	4.1	3.2	-64.16	-107.6	-359.9	325.5	318.4	7.14	45.562	
1,800.0	1,794.4	1,812.6	1,810.7	4.4	3.5	-65.72	-101.5	-353.0	311.8	304.1	7.65	40.735	
1,900.0	1,893.8	1,916.0	1,913.7	4.6	3.8	-67.40	-94.4	-345.0	297.1	288.9	8.18	36.330	
2,000.0	1,993.2	2,019.1	2,015.9	4.9	4.1	-68.95	-85.1	-336.5	281.0	272.3	8.71	32.265	
2,100.0	2,092.6	2,120.0	2,116.0	5.2	4.3	-70.76	-75.5	-326.7	263.8	254.5	9.24	28.558	
2,200.0	2,191.9	2,217.9	2,212.9	5.5	4.6	-72.97	-66.8	-316.5	246.5	236.8	9.75	25.286	
2,300.0	2,291.3	2,318.4	2,312.4	5.8	4.9	-75.27	-56.6	-306.3	229.2	218.9	10.28	22.288	
2,400.0	2,390.7	2,419.8	2,412.5	6.1	5.2	-77.90	-45.2	-295.3	210.9	200.0	10.83	19.468	
2,500.0	2,490.1	2,521.0	2,512.1	6.4	5.6	-81.36	-33.2	-282.2	191.3	179.9	11.40	16.782	
2,600.0	2,589.4	2,620.8	2,610.1	6.7	5.9	-86.14	-21.4	-267.0	170.9	159.0	11.98	14.268	
2,700.0	2,688.8	2,720.6	2,707.7	7.0	6.3	-91.99	-7.7	-251.2	150.2	137.6	12.59	11.929	
2,800.0	2,788.2	2,816.1	2,800.8	7.3	6.7	-98.98	6.8	-236.1	130.0	116.8	13.21	9.845	
2,900.0	2,887.6	2,911.3	2,894.1	7.6	7.0	-107.56	20.0	-222.6	114.2	100.3	13.84	8.250	
3,000.0	2,986.9	3,008.0	2,988.8	7.9	7.4	-119.39	32.5	-207.6	102.6	88.1	14.51	7.074	
3,100.0	3,086.3	3,104.7	3,083.5	8.2	7.8	-133.18	45.1	-192.8	96.5	81.3	15.14	6.372	
3,144.7	3,130.8	3,147.9	3,125.9	8.4	7.9	-139.59	50.6	-186.3	95.8	80.4	15.39	6.225	CC, ES
3,200.0	3,185.7	3,201.3	3,178.3	8.6	8.1	-147.28	57.3	-178.7	96.8	81.1	15.66	6.182	SF
3,300.0	3,285.1	3,299.1	3,274.5	8.9	8.4	-159.98	69.2	-165.6	102.9	86.8	16.10	6.390	
3,400.0	3,384.4	3,397.1	3,371.0	9.2	8.8	-170.68	81.4	-153.3	112.7	96.2	16.51	6.826	
3,500.0	3,483.8	3,494.6	3,467.1	9.5	9.1	-179.13	93.2	-141.7	125.5	108.6	16.92	7.414	
3,600.0	3,583.2	3,592.3	3,563.5	9.8	9.5	174.23	104.6	-130.3	140.5	123.2	17.36	8.095	
3,700.0	3,682.5	3,689.1	3,658.9	10.1	9.8	168.87	116.0	-118.8	157.3	139.4	17.83	8.820	
3,800.0	3,781.9	3,781.6	3,749.7	10.4	10.2	164.23	127.9	-105.8	176.7	158.4	18.32	9.649	
3,900.0	3,881.3	3,873.4	3,839.3	10.7	10.5	160.13	140.1	-90.2	200.0	181.2	18.82	10.625	
4,000.0	3,980.7	3,969.5	3,932.8	11.0	11.0	156.60	153.2	-72.4	225.4	206.1	19.35	11.652	
4,100.0	4,080.0	4,066.0	4,026.8	11.3	11.4	153.85	166.0	-55.1	251.1	231.2	19.87	12.639	
4,200.0	4,179.4	4,165.9	4,124.5	11.6	11.8	151.63	178.9	-37.8	276.6	256.2	20.40	13.557	
4,300.0	4,278.8	4,262.0	4,218.4	11.9	12.2	149.93	191.1	-21.9	301.6	280.6	20.92	14.413	
4,400.0	4,378.2	4,365.0	4,319.3	12.2	12.6	148.35	204.4	-5.9	325.8	304.4	21.47	15.176	
4,500.0	4,477.5	4,459.5	4,411.9	12.5	13.0	147.01	217.1	8.2	349.7	327.7	22.00	15.896	
4,600.0	4,576.9	4,552.8	4,503.0	12.8	13.3	145.74	230.5	23.0	374.6	352.0	22.54	16.620	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Wiedeman 29K-243
Project:	SEC.29-T4N-R66W	**TVD Reference:**	WELL @ 4775.0ft (Ensign Rig #132 - RKB - 13')
Reference Site:	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	**MD Reference:**	WELL @ 4775.0ft (Ensign Rig #132 - RKB - 13')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Wiedeman 29K-243	**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 #3 (4-30-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Pad Sec.29-T4-R66W - Wiedeman 29-29 - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 447-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
4,703.6	4,679.8	4,657.1	4,604.9	13.1	13.8	144.42	245.9	39.4	400.5	377.3	23.12	17.322	
4,800.0	4,775.8	4,758.4	4,703.9	13.4	14.2	143.33	261.4	53.6	421.8	398.1	23.69	17.808	
4,900.0	4,875.6	4,855.4	4,799.0	13.6	14.6	142.16	276.0	66.2	440.6	416.4	24.19	18.213	
5,000.0	4,975.6	4,945.9	4,887.6	13.7	15.0	141.00	289.2	79.2	458.1	433.5	24.63	18.598	
5,024.4	5,000.0	4,969.5	4,910.7	13.8	15.1	84.64	292.6	82.8	462.2	437.5	24.74	18.683	
5,100.0	5,075.6	5,043.8	4,983.3	13.9	15.4	83.44	303.5	94.0	474.9	449.8	25.07	18.939	
5,200.0	5,175.6	5,146.0	5,083.4	14.1	15.8	81.96	317.8	109.0	491.3	465.8	25.53	19.245	
5,300.0	5,275.6	5,244.5	5,180.1	14.2	16.2	80.74	330.5	122.8	507.2	481.3	25.96	19.536	
5,400.0	5,375.6	5,342.2	5,275.9	14.4	16.6	79.66	342.8	137.2	524.0	497.6	26.40	19.850	
5,500.0	5,475.6	5,443.8	5,375.7	14.6	16.9	78.55	355.8	151.3	540.0	513.2	26.83	20.123	
5,600.0	5,575.6	5,545.1	5,475.3	14.8	17.3	77.60	367.9	165.3	556.1	528.8	27.27	20.395	
5,700.0	5,675.6	5,647.3	5,576.0	15.0	17.7	76.81	378.9	178.8	571.4	543.7	27.70	20.631	
5,800.0	5,775.6	5,752.6	5,679.9	15.1	18.1	76.10	389.4	192.2	586.2	558.0	28.13	20.838	
5,900.0	5,875.6	5,859.6	5,785.7	15.3	18.4	75.50	398.9	204.6	599.6	571.1	28.56	20.995	
6,000.0	5,975.6	5,962.0	5,887.2	15.5	18.7	75.04	406.8	216.0	612.3	583.4	28.98	21.132	
6,100.0	6,075.6	6,081.4	6,005.9	15.7	19.1	74.68	413.8	226.9	622.6	593.2	29.42	21.164	
6,200.0	6,175.6	6,196.6	6,120.6	15.9	19.4	74.37	419.6	235.3	631.0	601.2	29.85	21.142	
6,300.0	6,275.6	6,307.5	6,231.3	16.1	19.6	74.14	423.7	240.3	636.3	606.1	30.26	21.030	
6,369.4	6,345.0	6,375.9	6,299.7	16.2	19.7	74.04	425.7	243.2	639.7	609.2	30.53	20.956	
6,400.0	6,375.6	6,405.7	6,329.4	16.2	19.8	-105.93	426.6	244.5	641.5	610.8	30.63	20.943	
6,450.0	6,425.4	6,454.1	6,377.8	16.3	19.9	-106.06	428.3	246.7	645.1	614.4	30.76	20.972	
6,500.0	6,475.0	6,502.1	6,425.7	16.4	20.0	-106.42	430.5	248.8	649.8	619.0	30.86	21.060	
6,550.0	6,523.9	6,551.4	6,474.9	16.4	20.1	-107.02	433.3	250.8	655.6	624.7	30.92	21.205	
6,600.0	6,572.1	6,600.7	6,524.0	16.4	20.2	-107.81	436.3	252.6	662.5	631.6	30.95	21.409	
6,650.0	6,619.3	6,650.7	6,573.9	16.4	20.3	-108.79	439.4	254.1	670.6	639.7	30.94	21.677	
6,700.0	6,665.4	6,699.9	6,623.0	16.5	20.5	-109.86	442.4	255.3	680.0	649.1	30.89	22.012	
6,750.0	6,710.0	6,745.2	6,668.2	16.5	20.5	-110.86	445.0	256.3	690.9	660.1	30.82	22.419	
6,800.0	6,753.1	6,788.5	6,711.4	16.5	20.6	-111.80	447.2	257.2	703.6	672.9	30.72	22.902	
6,850.0	6,794.5	6,830.4	6,753.3	16.5	20.7	-112.67	449.3	258.0	718.3	687.7	30.62	23.459	
6,900.0	6,833.9	6,870.0	6,792.8	16.5	20.8	-113.41	451.3	258.6	735.1	704.6	30.52	24.085	
6,950.0	6,871.3	6,908.5	6,831.2	16.5	20.9	-114.05	453.4	259.0	754.2	723.8	30.44	24.774	
7,000.0	6,906.4	6,946.4	6,869.1	16.5	20.9	-114.57	455.3	259.2	775.5	745.1	30.40	25.513	
7,050.0	6,939.1	6,981.8	6,904.5	16.5	21.0	-114.83	457.0	259.3	799.1	768.7	30.42	26.271	
7,100.0	6,969.2	7,012.0	6,934.6	16.6	21.1	-114.63	458.3	259.2	825.0	794.4	30.56	27.000	
7,150.0	6,996.7	7,038.8	6,961.4	16.6	21.1	-114.02	459.4	259.2	853.3	822.4	30.83	27.680	
7,200.0	7,021.4	7,062.7	6,985.3	16.8	21.2	-113.00	460.4	259.1	883.8	852.5	31.25	28.283	
7,250.0	7,043.1	7,083.5	7,006.1	16.9	21.2	-111.49	461.3	258.9	916.4	884.6	31.84	28.787	
7,300.0	7,061.9	7,101.2	7,023.7	17.2	21.2	-109.44	462.1	258.8	951.1	918.5	32.59	29.185	
7,350.0	7,077.6	7,115.6	7,038.1	17.5	21.2	-106.78	462.7	258.7	987.6	954.1	33.49	29.492	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Wiedeman 29K-243
Project:	SEC.29-T4N-R66W	**TVD Reference:**	WELL @ 4775.0ft (Ensign Rig #132 - RKB - 13')
Reference Site:	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	**MD Reference:**	WELL @ 4775.0ft (Ensign Rig #132 - RKB - 13')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Wiedeman 29K-243	**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 #3 (4-30-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Wiedeman 29K-HZ Pad Sec.29-T4N-R66W - Wiedeman 29G-323 - Wellbore #1 - Plan #2 (4-24-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-89.97	0.0	-30.8	30.8				
100.0	100.0	100.0	100.0	0.1	0.1	-89.97	0.0	-30.8	30.8	30.5	0.22	136.813	
200.0	200.0	200.0	200.0	0.3	0.3	-89.97	0.0	-30.8	30.8	30.1	0.67	45.604	
300.0	300.0	300.0	300.0	0.6	0.6	-89.97	0.0	-30.8	30.8	29.6	1.12	27.363	
400.0	400.0	400.0	400.0	0.8	0.8	-89.97	0.0	-30.8	30.8	29.2	1.57	19.545	
500.0	500.0	500.0	500.0	1.0	1.0	-89.97	0.0	-30.8	30.8	28.7	2.02	15.201	CC, ES
600.0	600.0	599.0	599.0	1.2	1.2	-88.69	0.7	-32.3	32.3	29.9	2.46	13.120	
700.0	700.0	697.8	697.6	1.5	1.4	-85.52	2.9	-36.9	37.1	34.2	2.91	12.774	
800.0	800.0	796.2	795.7	1.7	1.7	-26.65	6.5	-44.6	43.7	40.4	3.34	13.103	
900.0	899.8	895.5	894.4	1.9	1.9	-25.40	11.2	-54.8	49.8	46.0	3.77	13.203	
1,000.0	999.5	995.5	993.7	2.1	2.2	-25.94	16.0	-65.1	52.9	48.7	4.21	12.559	
1,020.8	1,020.2	1,016.3	1,014.4	2.2	2.3	-26.26	17.0	-67.2	53.1	48.8	4.30	12.345	
1,100.0	1,098.8	1,095.5	1,093.0	2.4	2.5	-27.58	20.8	-75.4	53.8	49.2	4.67	11.533	
1,200.0	1,198.2	1,195.5	1,192.3	2.7	2.8	-29.21	25.6	-85.8	54.8	49.6	5.14	10.659	
1,300.0	1,297.6	1,295.4	1,291.7	2.9	3.1	-30.77	30.4	-96.1	55.8	50.1	5.62	9.922	
1,400.0	1,397.0	1,395.4	1,391.0	3.2	3.4	-32.28	35.2	-106.5	56.8	50.7	6.11	9.294	
1,500.0	1,496.3	1,495.4	1,490.3	3.5	3.7	-33.74	40.0	-116.8	57.8	51.2	6.61	8.754	
1,600.0	1,595.7	1,595.4	1,589.7	3.8	4.0	-35.15	44.8	-127.2	58.9	51.8	7.11	8.285	
1,700.0	1,695.1	1,695.4	1,689.0	4.1	4.3	-36.50	49.6	-137.5	60.0	52.4	7.62	7.875	
1,800.0	1,794.4	1,795.4	1,788.3	4.4	4.6	-37.80	54.4	-147.8	61.2	53.1	8.14	7.515	
1,900.0	1,893.8	1,895.3	1,887.7	4.6	4.9	-39.06	59.2	-158.2	62.4	53.7	8.67	7.195	
2,000.0	1,993.2	1,995.3	1,987.0	4.9	5.2	-40.26	64.0	-168.5	63.6	54.4	9.20	6.911	
2,100.0	2,092.6	2,095.3	2,086.3	5.2	5.5	-41.42	68.8	-178.9	64.8	55.1	9.74	6.657	
2,200.0	2,191.9	2,195.3	2,185.7	5.5	5.8	-42.54	73.6	-189.2	66.1	55.8	10.29	6.428	
2,300.0	2,291.3	2,295.3	2,285.0	5.8	6.1	-43.61	78.4	-199.6	67.4	56.6	10.84	6.221	
2,400.0	2,390.7	2,395.3	2,384.3	6.1	6.4	-44.65	83.2	-209.9	68.7	57.3	11.39	6.034	
2,500.0	2,490.1	2,495.2	2,483.7	6.4	6.7	-45.64	88.0	-220.2	70.1	58.1	11.95	5.864	
2,600.0	2,589.4	2,595.2	2,583.0	6.7	7.0	-46.60	92.8	-230.6	71.4	58.9	12.51	5.709	
2,700.0	2,688.8	2,695.2	2,682.3	7.0	7.3	-47.52	97.6	-240.9	72.8	59.7	13.08	5.567	
2,800.0	2,788.2	2,795.2	2,781.6	7.3	7.6	-48.41	102.4	-251.3	74.2	60.5	13.65	5.437	
2,900.0	2,887.6	2,895.2	2,881.0	7.6	7.9	-49.26	107.2	-261.6	75.6	61.4	14.22	5.317	
3,000.0	2,986.9	2,995.2	2,980.3	7.9	8.2	-50.08	112.0	-272.0	77.0	62.2	14.80	5.206	
3,100.0	3,086.3	3,095.2	3,079.6	8.2	8.6	-50.87	116.8	-282.3	78.5	63.1	15.38	5.104	
3,200.0	3,185.7	3,195.1	3,179.0	8.6	8.9	-51.63	121.6	-292.7	79.9	64.0	15.96	5.009	
3,300.0	3,285.1	3,295.1	3,278.3	8.9	9.2	-52.37	126.4	-303.0	81.4	64.9	16.54	4.921	
3,400.0	3,384.4	3,395.1	3,377.6	9.2	9.5	-53.08	131.2	-313.3	82.9	65.8	17.13	4.839	
3,500.0	3,483.8	3,495.1	3,477.0	9.5	9.8	-53.76	136.0	-323.7	84.4	66.7	17.72	4.763	
3,600.0	3,583.2	3,595.1	3,576.3	9.8	10.1	-54.42	140.8	-334.0	85.9	67.6	18.31	4.692	
3,700.0	3,682.5	3,695.1	3,675.6	10.1	10.4	-55.06	145.6	-344.4	87.4	68.5	18.90	4.625	
3,800.0	3,781.9	3,795.0	3,775.0	10.4	10.7	-55.68	150.4	-354.7	89.0	69.5	19.50	4.563	
3,900.0	3,881.3	3,895.0	3,874.3	10.7	11.0	-56.27	155.2	-365.1	90.5	70.4	20.09	4.504	
4,000.0	3,980.7	3,995.0	3,973.6	11.0	11.3	-56.85	160.0	-375.4	92.0	71.4	20.69	4.449	
4,100.0	4,080.0	4,095.0	4,073.0	11.3	11.6	-57.40	164.8	-385.7	93.6	72.3	21.29	4.397	
4,200.0	4,179.4	4,195.0	4,172.3	11.6	12.0	-57.94	169.6	-396.1	95.2	73.3	21.89	4.348	
4,300.0	4,278.8	4,295.0	4,271.6	11.9	12.3	-58.46	174.4	-406.4	96.7	74.3	22.49	4.302	
4,400.0	4,378.2	4,394.9	4,370.9	12.2	12.6	-58.96	179.2	-416.8	98.3	75.2	23.09	4.259	
4,500.0	4,477.5	4,494.9	4,470.3	12.5	12.9	-59.45	184.0	-427.1	99.9	76.2	23.69	4.217	
4,600.0	4,576.9	4,594.9	4,569.6	12.8	13.2	-59.92	188.8	-437.5	101.5	77.2	24.30	4.178	
4,703.6	4,679.8	4,698.5	4,672.5	13.1	13.5	-60.40	193.8	-448.2	103.2	78.3	24.92	4.140	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Wiedeman 29K-243
Project:	SEC.29-T4N-R66W	**TVD Reference:**	WELL @ 4775.0ft (Ensign Rig #132 - RKB - 13')
Reference Site:	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	**MD Reference:**	WELL @ 4775.0ft (Ensign Rig #132 - RKB - 13')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Wiedeman 29K-243	**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 #3 (4-30-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Wiedeman 29K-HZ Pad Sec.29-T4N-R66W - Wiedeman 29G-323 - Wellbore #1 - Plan #2 (4-24-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
4,800.0	4,775.8	4,794.9	4,768.3	13.4	13.8	-60.09	198.4	-458.2	105.5	80.1	25.40	4.154	
4,900.0	4,875.6	4,894.7	4,867.4	13.6	14.1	-58.28	203.2	-468.5	109.7	84.0	25.71	4.268	
5,000.0	4,975.6	4,994.3	4,966.4	13.7	14.4	-55.21	208.0	-478.8	116.0	90.1	25.87	4.485	
5,024.4	5,000.0	5,018.6	4,990.5	13.8	14.5	-110.34	209.1	-481.3	117.9	92.0	25.89	4.555	
5,100.0	5,075.6	5,093.7	5,065.1	13.9	14.7	-107.52	212.8	-489.1	124.1	98.2	25.96	4.782	
5,200.0	5,175.6	5,193.0	5,163.8	14.1	15.0	-104.21	217.5	-499.3	132.8	106.7	26.10	5.088	
5,300.0	5,275.6	5,292.4	5,262.5	14.2	15.4	-101.31	222.3	-509.6	141.9	115.6	26.28	5.398	
5,400.0	5,375.6	5,391.7	5,361.2	14.4	15.7	-98.76	227.1	-519.9	151.2	124.7	26.50	5.708	
5,500.0	5,475.6	5,491.0	5,459.9	14.6	16.0	-96.51	231.8	-530.2	160.9	134.1	26.74	6.016	
5,600.0	5,575.6	5,590.4	5,558.6	14.8	16.3	-94.52	236.6	-540.5	170.7	143.7	27.01	6.321	
5,700.0	5,675.6	5,689.7	5,657.3	15.0	16.6	-92.75	241.4	-550.7	180.8	153.5	27.31	6.620	
5,800.0	5,775.6	5,794.4	5,761.4	15.1	16.9	-91.26	245.8	-560.3	189.8	162.2	27.61	6.873	
5,900.0	5,875.6	5,900.6	5,867.4	15.3	17.1	-90.37	248.7	-566.6	195.6	167.7	27.94	7.003	
6,000.0	5,975.6	6,007.2	5,974.0	15.5	17.2	-90.01	250.0	-569.2	198.1	169.9	28.29	7.004	
6,100.0	6,075.6	6,108.8	6,075.6	15.7	17.4	-89.99	250.0	-569.3	198.2	169.6	28.67	6.914	
6,200.0	6,175.6	6,208.8	6,175.6	15.9	17.6	-89.99	250.0	-569.3	198.2	169.2	29.07	6.820	
6,300.0	6,275.6	6,308.8	6,275.6	16.1	17.7	-89.99	250.0	-569.3	198.2	168.8	29.47	6.728	
6,369.4	6,345.0	6,378.3	6,345.0	16.2	17.8	-89.99	250.0	-569.3	198.2	168.5	29.74	6.666	
6,373.4	6,349.0	6,382.3	6,349.0	16.2	17.8	90.01	250.0	-569.3	198.2	168.5	29.76	6.662	
6,400.0	6,375.6	6,408.8	6,375.6	16.2	17.9	90.18	250.0	-569.3	198.3	168.4	29.84	6.643	
6,450.0	6,425.4	6,458.7	6,425.4	16.3	18.0	91.23	250.0	-569.3	198.3	168.4	29.93	6.626	
6,500.0	6,475.0	6,508.9	6,475.6	16.4	18.0	92.75	248.4	-569.3	198.5	168.5	29.94	6.628	
6,550.0	6,523.9	6,559.4	6,525.9	16.4	18.1	94.27	243.5	-569.3	198.8	168.9	29.94	6.641	
6,600.0	6,572.1	6,610.3	6,576.1	16.4	18.1	95.77	235.2	-569.3	199.3	169.4	29.91	6.662	
6,650.0	6,619.3	6,661.5	6,625.9	16.4	18.2	97.24	223.5	-569.3	199.9	170.0	29.87	6.690	
6,700.0	6,665.4	6,713.2	6,675.3	16.5	18.2	98.67	208.3	-569.3	200.6	170.7	29.83	6.723	
6,750.0	6,710.0	6,765.2	6,723.8	16.5	18.2	100.07	189.7	-569.3	201.4	171.6	29.79	6.760	
6,800.0	6,753.1	6,817.5	6,771.3	16.5	18.2	101.41	167.7	-569.3	202.3	172.5	29.75	6.799	
6,850.0	6,794.5	6,870.2	6,817.5	16.5	18.2	102.69	142.3	-569.3	203.3	173.5	29.73	6.837	
6,900.0	6,833.9	6,923.3	6,862.1	16.5	18.2	103.92	113.5	-569.3	204.3	174.6	29.72	6.873	
6,950.0	6,871.3	6,976.7	6,904.9	16.5	18.2	105.07	81.6	-569.3	205.4	175.6	29.74	6.905	
7,000.0	6,906.4	7,030.5	6,945.5	16.5	18.3	106.16	46.4	-569.3	206.4	176.7	29.79	6.929	
7,050.0	6,939.1	7,084.5	6,983.9	16.5	18.3	107.16	8.3	-569.3	207.5	177.6	29.89	6.944	
7,100.0	6,969.2	7,138.9	7,019.6	16.6	18.3	108.08	-32.7	-569.3	208.6	178.6	30.02	6.949	
7,150.0	6,996.7	7,193.6	7,052.5	16.6	18.4	108.92	-76.3	-569.3	209.6	179.4	30.21	6.939	
7,200.0	7,021.4	7,248.5	7,082.3	16.8	18.5	109.67	-122.4	-569.3	210.6	180.1	30.46	6.912	
7,250.0	7,043.1	7,303.6	7,108.8	16.9	18.6	110.33	-170.7	-569.3	211.4	180.7	30.79	6.867	
7,300.0	7,061.9	7,359.0	7,131.9	17.2	18.7	110.89	-221.1	-569.3	212.2	181.0	31.19	6.804	
7,350.0	7,077.6	7,414.5	7,151.3	17.5	19.0	111.36	-273.1	-569.3	212.9	181.2	31.67	6.722	
7,400.0	7,090.2	7,470.2	7,166.9	17.9	19.3	111.74	-326.5	-569.3	213.4	181.2	32.23	6.622	
7,450.0	7,099.6	7,526.0	7,178.6	18.3	19.6	112.02	-381.1	-569.3	213.9	181.0	32.88	6.505	
7,500.0	7,105.8	7,581.9	7,186.3	18.7	20.1	112.21	-436.4	-569.3	214.1	180.5	33.60	6.372	
7,550.0	7,108.7	7,637.9	7,189.9	19.3	20.6	112.29	-492.2	-569.3	214.3	179.8	34.41	6.226	
7,577.1	7,108.9	7,668.0	7,190.2	19.5	20.9	112.30	-522.4	-569.3	214.3	179.4	34.88	6.143	
7,600.0	7,108.7	7,690.9	7,190.0	19.8	21.1	112.31	-545.3	-569.3	214.3	178.9	35.34	6.063	
7,700.0	7,107.7	7,790.9	7,189.1	21.0	22.2	112.34	-645.3	-569.3	214.3	176.8	37.50	5.715	
7,800.0	7,106.6	7,890.9	7,188.2	22.2	23.4	112.37	-745.3	-569.3	214.4	174.5	39.86	5.378	
7,900.0	7,105.6	7,990.9	7,187.3	23.6	24.6	112.40	-845.3	-569.3	214.4	172.0	42.39	5.058	
8,000.0	7,104.6	8,090.9	7,186.4	25.0	26.0	112.43	-945.2	-569.3	214.5	169.4	45.07	4.759	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Wiedeman 29K-243
Project:	SEC.29-T4N-R66W	**TVD Reference:**	WELL @ 4775.0ft (Ensign Rig #132 - RKB - 13')
Reference Site:	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	**MD Reference:**	WELL @ 4775.0ft (Ensign Rig #132 - RKB - 13')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Wiedeman 29K-243	**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 #3 (4-30-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Wiedeman 29K-HZ Pad Sec.29-T4N-R66W - Wiedeman 29G-323 - Wellbore #1 - Plan #2 (4-24-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,100.0	7,103.6	8,190.9	7,185.5	26.5	27.4	112.46	-1,045.2	-569.3	214.5	166.7	47.86	4.482	
8,200.0	7,102.6	8,290.9	7,184.7	28.0	28.9	112.49	-1,145.2	-569.3	214.6	163.8	50.75	4.228	
8,300.0	7,101.6	8,390.9	7,183.8	29.6	30.5	112.52	-1,245.2	-569.3	214.6	160.9	53.72	3.995	
8,400.0	7,100.6	8,490.9	7,182.9	31.2	32.1	112.55	-1,345.2	-569.3	214.7	157.9	56.77	3.781	
8,500.0	7,099.6	8,590.9	7,182.0	32.9	33.7	112.58	-1,445.2	-569.3	214.7	154.8	59.87	3.586	
8,600.0	7,098.5	8,690.9	7,181.1	34.6	35.3	112.61	-1,545.2	-569.3	214.7	151.7	63.02	3.408	
8,700.0	7,097.5	8,790.9	7,180.2	36.3	37.0	112.64	-1,645.2	-569.3	214.8	148.6	66.21	3.244	
8,800.0	7,096.5	8,890.9	7,179.3	38.0	38.7	112.67	-1,745.2	-569.3	214.8	145.4	69.44	3.094	
8,900.0	7,095.5	8,990.9	7,178.4	39.7	40.4	112.70	-1,845.2	-569.3	214.9	142.2	72.70	2.956	
9,000.0	7,094.5	9,090.9	7,177.5	41.5	42.1	112.73	-1,945.2	-569.3	214.9	138.9	75.99	2.828	
9,100.0	7,093.5	9,190.9	7,176.6	43.3	43.9	112.76	-2,045.2	-569.3	215.0	135.7	79.30	2.711	
9,200.0	7,092.5	9,290.9	7,175.8	45.0	45.6	112.79	-2,145.2	-569.3	215.0	132.4	82.63	2.602	
9,300.0	7,091.5	9,390.9	7,174.9	46.8	47.4	112.82	-2,245.2	-569.3	215.1	129.1	85.98	2.501	
9,400.0	7,090.4	9,490.9	7,174.0	48.6	49.2	112.85	-2,345.2	-569.3	215.1	125.8	89.35	2.408	
9,500.0	7,089.4	9,590.9	7,173.1	50.4	51.0	112.88	-2,445.2	-569.3	215.2	122.4	92.73	2.320	
9,600.0	7,088.4	9,690.9	7,172.2	52.3	52.8	112.91	-2,545.2	-569.3	215.2	119.1	96.12	2.239	
9,700.0	7,087.4	9,790.9	7,171.3	54.1	54.6	112.94	-2,645.2	-569.3	215.3	115.7	99.52	2.163	
9,800.0	7,086.4	9,890.9	7,170.4	55.9	56.4	112.97	-2,745.2	-569.3	215.3	112.4	102.93	2.092	
9,900.0	7,085.4	9,990.9	7,169.5	57.8	58.2	113.00	-2,845.2	-569.3	215.4	109.0	106.35	2.025	
10,000.0	7,084.4	10,090.9	7,168.6	59.6	60.1	113.03	-2,945.2	-569.3	215.4	105.6	109.78	1.962	
10,100.0	7,083.4	10,190.9	7,167.7	61.4	61.9	113.06	-3,045.2	-569.3	215.5	102.2	113.22	1.903	
10,200.0	7,082.3	10,290.9	7,166.9	63.3	63.7	113.09	-3,145.2	-569.3	215.5	98.8	116.66	1.847	
10,300.0	7,081.3	10,390.9	7,166.0	65.2	65.6	113.12	-3,245.2	-569.3	215.5	95.4	120.11	1.795	
10,400.0	7,080.3	10,490.9	7,165.1	67.0	67.4	113.15	-3,345.1	-569.3	215.6	92.0	123.56	1.745	
10,500.0	7,079.3	10,590.9	7,164.2	68.9	69.3	113.18	-3,445.1	-569.3	215.6	88.6	127.01	1.698	
10,600.0	7,078.3	10,690.9	7,163.3	70.7	71.1	113.21	-3,545.1	-569.3	215.7	85.2	130.47	1.653	
10,700.0	7,077.3	10,790.9	7,162.4	72.6	73.0	113.24	-3,645.1	-569.3	215.7	81.8	133.94	1.611	
10,800.0	7,076.3	10,890.9	7,161.5	74.5	74.9	113.27	-3,745.1	-569.3	215.8	78.4	137.40	1.570	
10,900.0	7,075.3	10,990.9	7,160.6	76.3	76.7	113.30	-3,845.1	-569.3	215.8	75.0	140.87	1.532	
11,000.0	7,074.3	11,090.9	7,159.7	78.2	78.6	113.33	-3,945.1	-569.3	215.9	71.5	144.34	1.496	Level 3
11,100.0	7,073.2	11,190.9	7,158.8	80.1	80.5	113.36	-4,045.1	-569.3	215.9	68.1	147.82	1.461	Level 3
11,200.0	7,072.2	11,290.9	7,158.0	82.0	82.3	113.39	-4,145.1	-569.3	216.0	64.7	151.30	1.428	Level 3
11,300.0	7,071.2	11,390.9	7,157.1	83.9	84.2	113.42	-4,245.1	-569.3	216.0	61.3	154.77	1.396	Level 3
11,400.0	7,070.2	11,490.9	7,156.2	85.7	86.1	113.45	-4,345.1	-569.3	216.1	57.8	158.25	1.365	Level 3
11,405.9	7,070.1	11,496.8	7,156.1	85.9	86.2	113.45	-4,351.0	-569.3	216.1	57.6	158.46	1.364	Level 3
11,420.0	7,070.0	11,510.1	7,156.0	86.1	86.4	113.45	-4,364.3	-569.3	216.1	57.2	158.93	1.360	Level 3
11,420.7	7,070.0	11,510.1	7,156.0	86.1	86.4	113.45	-4,364.3	-569.3	216.1	57.1	158.94	1.360	Level 3, SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Wiedeman 29K-243
Project:	SEC.29-T4N-R66W	**TVD Reference:**	WELL @ 4775.0ft (Ensign Rig #132 - RKB - 13')
Reference Site:	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	**MD Reference:**	WELL @ 4775.0ft (Ensign Rig #132 - RKB - 13')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Wiedeman 29K-243	**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 #3 (4-30-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Wiedeman 29K-HZ Pad Sec.29-T4N-R66W - Wiedeman 29G-403 - Wellbore #1 - Plan #2 (4-24-14) — **Offset Site Error:** 0.0 ft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-90.00	0.0	-61.4	61.4				
100.0	100.0	100.0	100.0	0.1	0.1	-90.00	0.0	-61.4	61.4	61.2	0.22	273.360	
200.0	200.0	200.0	200.0	0.3	0.3	-90.00	0.0	-61.4	61.4	60.8	0.67	91.120	CC, ES
300.0	300.0	297.9	297.9	0.6	0.6	-89.56	0.5	-63.0	63.1	62.0	1.11	56.649	
400.0	400.0	395.7	395.5	0.8	0.8	-88.39	1.9	-67.8	68.0	66.5	1.56	43.570	
500.0	500.0	492.9	492.4	1.0	1.0	-86.77	4.3	-75.8	76.3	74.3	2.02	37.689	
600.0	600.0	589.5	588.3	1.2	1.3	-85.03	7.5	-86.8	87.9	85.4	2.51	35.059	
700.0	700.0	687.1	684.9	1.5	1.6	-83.40	11.6	-100.5	102.3	99.3	3.02	33.938	
800.0	800.0	786.2	782.8	1.7	1.9	-26.35	15.9	-114.8	115.6	112.2	3.37	34.263	
900.0	899.8	885.7	881.2	1.9	2.3	-26.25	20.1	-129.1	125.8	122.0	3.82	32.942	
1,000.0	999.5	985.4	979.8	2.1	2.6	-26.85	24.4	-143.5	132.9	128.6	4.27	31.087	
1,020.8	1,020.2	1,006.2	1,000.3	2.2	2.7	-27.05	25.3	-146.5	134.0	129.6	4.37	30.651	
1,100.0	1,098.8	1,085.3	1,078.5	2.4	3.0	-27.89	28.7	-157.9	137.9	133.1	4.75	29.039	
1,200.0	1,198.2	1,185.1	1,177.2	2.7	3.3	-28.88	33.0	-172.2	142.8	137.6	5.23	27.303	
1,300.0	1,297.6	1,285.0	1,275.9	2.9	3.7	-29.81	37.3	-186.6	147.8	142.1	5.72	25.841	
1,400.0	1,397.0	1,384.8	1,374.6	3.2	4.1	-30.67	41.5	-201.0	152.8	146.6	6.22	24.584	
1,500.0	1,496.3	1,484.7	1,473.3	3.5	4.4	-31.48	45.8	-215.4	157.9	151.2	6.72	23.501	
1,600.0	1,595.7	1,584.5	1,572.1	3.8	4.8	-32.24	50.1	-229.8	163.0	155.7	7.22	22.557	
1,700.0	1,695.1	1,684.3	1,670.8	4.1	5.1	-32.95	54.4	-244.1	168.1	160.3	7.74	21.728	
1,800.0	1,794.4	1,784.2	1,769.5	4.4	5.5	-33.62	58.7	-258.5	173.2	165.0	8.25	20.994	
1,900.0	1,893.8	1,884.0	1,868.2	4.6	5.9	-34.25	62.9	-272.9	178.4	169.6	8.77	20.341	
2,000.0	1,993.2	1,983.9	1,966.9	4.9	6.2	-34.85	67.2	-287.3	183.6	174.3	9.29	19.755	
2,100.0	2,092.6	2,083.7	2,065.6	5.2	6.6	-35.42	71.5	-301.6	188.8	179.0	9.82	19.228	
2,200.0	2,191.9	2,183.6	2,164.3	5.5	6.9	-35.95	75.8	-316.0	194.0	183.6	10.35	18.751	
2,300.0	2,291.3	2,283.4	2,263.1	5.8	7.3	-36.45	80.1	-330.4	199.2	188.3	10.88	18.318	
2,400.0	2,390.7	2,383.3	2,361.8	6.1	7.7	-36.93	84.3	-344.8	204.5	193.1	11.41	17.922	
2,500.0	2,490.1	2,483.1	2,460.5	6.4	8.0	-37.39	88.6	-359.2	209.7	197.8	11.94	17.560	
2,600.0	2,589.4	2,583.0	2,559.2	6.7	8.4	-37.82	92.9	-373.5	215.0	202.5	12.48	17.227	
2,700.0	2,688.8	2,682.8	2,657.9	7.0	8.8	-38.23	97.2	-387.9	220.3	207.3	13.02	16.920	
2,800.0	2,788.2	2,782.7	2,756.6	7.3	9.1	-38.63	101.4	-402.3	225.6	212.0	13.56	16.635	
2,900.0	2,887.6	2,882.5	2,855.3	7.6	9.5	-39.00	105.7	-416.7	230.9	216.8	14.10	16.372	
3,000.0	2,986.9	2,982.4	2,954.1	7.9	9.8	-39.36	110.0	-431.1	236.2	221.6	14.65	16.127	
3,100.0	3,086.3	3,082.2	3,052.8	8.2	10.2	-39.70	114.3	-445.4	241.5	226.4	15.19	15.899	
3,200.0	3,185.7	3,182.1	3,151.5	8.6	10.6	-40.03	118.6	-459.8	246.9	231.1	15.74	15.685	
3,300.0	3,285.1	3,281.9	3,250.2	8.9	10.9	-40.34	122.8	-474.2	252.2	235.9	16.29	15.486	
3,400.0	3,384.4	3,381.8	3,348.9	9.2	11.3	-40.65	127.1	-488.6	257.6	240.7	16.84	15.298	
3,500.0	3,483.8	3,481.6	3,447.6	9.5	11.7	-40.93	131.4	-502.9	262.9	245.5	17.39	15.122	
3,600.0	3,583.2	3,581.5	3,546.3	9.8	12.0	-41.21	135.7	-517.3	268.3	250.4	17.94	14.956	
3,700.0	3,682.5	3,681.3	3,645.1	10.1	12.4	-41.48	140.0	-531.7	273.7	255.2	18.49	14.800	
3,800.0	3,781.9	3,781.2	3,743.8	10.4	12.7	-41.73	144.2	-546.1	279.0	260.0	19.04	14.652	
3,900.0	3,881.3	3,881.0	3,842.5	10.7	13.1	-41.98	148.5	-560.5	284.4	264.8	19.60	14.513	
4,000.0	3,980.7	3,980.8	3,941.2	11.0	13.5	-42.22	152.8	-574.8	289.8	269.6	20.15	14.380	
4,100.0	4,080.0	4,080.7	4,039.9	11.3	13.8	-42.44	157.1	-589.2	295.2	274.5	20.71	14.255	
4,200.0	4,179.4	4,180.5	4,138.6	11.6	14.2	-42.66	161.4	-603.6	300.6	279.3	21.26	14.136	
4,300.0	4,278.8	4,280.4	4,237.3	11.9	14.6	-42.88	165.6	-618.0	306.0	284.2	21.82	14.022	
4,400.0	4,378.2	4,380.2	4,336.1	12.2	14.9	-43.08	169.9	-632.3	311.4	289.0	22.38	13.914	
4,500.0	4,477.5	4,480.1	4,434.8	12.5	15.3	-43.28	174.2	-646.7	316.8	293.9	22.94	13.811	
4,600.0	4,576.9	4,579.9	4,533.5	12.8	15.6	-43.47	178.5	-661.1	322.2	298.7	23.50	13.713	
4,703.6	4,679.8	4,683.4	4,635.7	13.1	16.0	-43.66	182.9	-676.0	327.8	303.7	24.08	13.616	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Wiedeman 29K-243
Project:	SEC.29-T4N-R66W	**TVD Reference:**	WELL @ 4775.0ft (Ensign Rig #132 - RKB - 13')
Reference Site:	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	**MD Reference:**	WELL @ 4775.0ft (Ensign Rig #132 - RKB - 13')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Wiedeman 29K-243	**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 #3 (4-30-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Wiedeman 29K-HZ Pad Sec.29-T4N-R66W - Wiedeman 29G-403 - Wellbore #1 - Plan #2 (4-24-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
4,800.0	4,775.8	4,779.6	4,730.9	13.4	16.4	-43.73	187.0	-689.8	334.2	309.6	24.55	13.611	
4,900.0	4,875.6	4,879.1	4,829.3	13.6	16.7	-43.44	191.3	-704.2	343.3	318.4	24.95	13.758	
5,000.0	4,975.6	4,978.3	4,927.3	13.7	17.1	-42.82	195.5	-718.5	355.0	329.7	25.28	14.040	
5,024.4	5,000.0	5,002.5	4,951.2	13.8	17.2	-98.66	196.6	-721.9	358.2	332.9	25.35	14.129	
5,100.0	5,075.6	5,077.2	5,025.1	13.9	17.5	-97.91	199.8	-732.7	368.5	342.9	25.60	14.397	
5,200.0	5,175.6	5,176.1	5,122.8	14.1	17.8	-96.97	204.0	-746.9	382.3	356.3	25.95	14.734	
5,300.0	5,275.6	5,274.9	5,220.6	14.2	18.2	-96.11	208.3	-761.2	396.1	369.8	26.30	15.062	
5,400.0	5,375.6	5,373.8	5,318.3	14.4	18.5	-95.30	212.5	-775.4	410.1	383.4	26.66	15.378	
5,500.0	5,475.6	5,472.7	5,416.1	14.6	18.9	-94.54	216.7	-789.6	424.1	397.0	27.04	15.685	
5,600.0	5,575.6	5,571.5	5,513.8	14.8	19.3	-93.84	221.0	-803.9	438.1	410.7	27.41	15.983	
5,700.0	5,675.6	5,670.4	5,611.6	15.0	19.6	-93.17	225.2	-818.1	452.3	424.5	27.80	16.271	
5,800.0	5,775.6	5,769.2	5,709.3	15.1	20.0	-92.55	229.4	-832.4	466.4	438.3	28.18	16.550	
5,900.0	5,875.6	5,868.1	5,807.0	15.3	20.3	-91.97	233.7	-846.6	480.7	452.1	28.58	16.820	
6,000.0	5,975.6	5,967.0	5,904.8	15.5	20.7	-91.41	237.9	-860.8	495.0	466.0	28.98	17.081	
6,100.0	6,075.6	6,072.6	6,009.3	15.7	21.1	-90.87	242.4	-875.8	509.1	479.7	29.38	17.325	
6,200.0	6,175.6	6,192.6	6,128.4	15.9	21.3	-90.41	246.3	-889.1	520.1	490.3	29.78	17.465	
6,300.0	6,275.6	6,313.5	6,249.0	16.1	21.6	-90.12	248.9	-897.6	527.2	497.0	30.17	17.471	
6,369.4	6,345.0	6,397.7	6,333.1	16.2	21.7	-90.02	249.8	-900.7	529.7	499.3	30.45	17.397	
6,400.0	6,375.6	6,434.9	6,370.3	16.2	21.7	90.04	250.0	-901.3	530.2	499.7	30.56	17.351	
6,450.0	6,425.4	6,490.0	6,425.4	16.3	21.8	90.46	250.0	-901.4	530.3	499.7	30.68	17.289	
6,500.0	6,475.0	6,539.5	6,475.0	16.4	21.9	91.19	250.0	-901.4	530.4	499.7	30.74	17.254	
6,550.0	6,523.9	6,588.6	6,524.1	16.4	22.0	92.23	250.0	-901.4	530.8	500.0	30.77	17.250	
6,600.0	6,572.1	6,639.1	6,574.5	16.4	22.0	93.42	247.9	-901.4	531.3	500.6	30.76	17.272	
6,650.0	6,619.3	6,690.4	6,625.5	16.4	22.1	94.61	242.5	-901.4	532.1	501.4	30.74	17.310	
6,700.0	6,665.4	6,742.5	6,676.8	16.5	22.1	95.78	233.4	-901.4	533.2	502.5	30.71	17.360	
6,750.0	6,710.0	6,795.5	6,728.2	16.5	22.1	96.93	220.6	-901.4	534.4	503.7	30.68	17.418	
6,800.0	6,753.1	6,849.3	6,779.4	16.5	22.1	98.06	204.0	-901.4	535.9	505.2	30.66	17.480	
6,850.0	6,794.5	6,904.1	6,830.2	16.5	22.2	99.16	183.5	-901.4	537.5	506.8	30.64	17.542	
6,900.0	6,833.9	6,959.8	6,880.1	16.5	22.2	100.22	159.0	-901.4	539.2	508.6	30.64	17.598	
6,950.0	6,871.3	7,016.4	6,929.0	16.5	22.2	101.24	130.3	-901.4	541.1	510.4	30.67	17.643	
7,000.0	6,906.4	7,074.0	6,976.3	16.5	22.2	102.21	97.6	-901.4	543.0	512.3	30.73	17.672	
7,050.0	6,939.1	7,132.5	7,021.7	16.5	22.2	103.13	60.8	-901.4	545.0	514.2	30.83	17.679	
7,100.0	6,969.2	7,191.9	7,064.9	16.6	22.2	103.98	19.9	-901.4	546.9	516.0	30.97	17.658	
7,150.0	6,996.7	7,252.2	7,105.2	16.6	22.2	104.77	-24.8	-901.4	548.8	517.7	31.18	17.604	
7,200.0	7,021.4	7,313.3	7,142.5	16.8	22.3	105.49	-73.2	-901.4	550.7	519.2	31.45	17.508	
7,250.0	7,043.1	7,375.1	7,176.1	16.9	22.4	106.13	-125.2	-901.4	552.4	520.6	31.80	17.369	
7,300.0	7,061.9	7,437.7	7,205.7	17.2	22.5	106.69	-180.3	-901.4	553.9	521.7	32.23	17.186	
7,350.0	7,077.6	7,500.9	7,230.9	17.5	22.6	107.16	-238.2	-901.4	555.2	522.5	32.74	16.957	
7,400.0	7,090.2	7,564.7	7,251.4	17.9	22.8	107.54	-298.6	-901.4	556.3	522.9	33.35	16.679	
7,450.0	7,099.6	7,628.8	7,266.9	18.3	23.1	107.83	-360.8	-901.4	557.1	523.1	34.05	16.361	
7,500.0	7,105.8	7,693.3	7,277.1	18.7	23.4	108.01	-424.4	-901.4	557.7	522.8	34.84	16.006	
7,550.0	7,108.7	7,745.4	7,282.6	19.3	23.8	108.20	-476.3	-901.4	558.4	522.8	35.59	15.689	
7,577.1	7,108.9	7,772.4	7,285.5	19.5	24.0	108.39	-503.1	-901.4	559.3	523.3	35.98	15.545	
7,600.0	7,108.7	7,798.5	7,288.0	19.8	24.1	108.67	-529.1	-901.4	560.0	523.6	36.40	15.385	
7,700.0	7,107.7	7,914.3	7,292.2	21.0	25.1	109.19	-644.8	-901.4	561.5	522.9	38.60	14.545	
7,800.0	7,106.6	8,014.3	7,292.1	22.2	26.1	109.27	-744.8	-901.4	561.8	520.8	40.95	13.718	
7,900.0	7,105.6	8,114.3	7,291.9	23.6	27.2	109.35	-844.8	-901.4	562.1	518.6	43.48	12.927	
8,000.0	7,104.6	8,214.3	7,291.8	25.0	28.4	109.44	-944.8	-901.4	562.4	516.2	46.15	12.185	
8,100.0	7,103.6	8,314.3	7,291.6	26.5	29.7	109.52	-1,044.8	-901.4	562.7	513.7	48.95	11.495	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Wiedeman 29K-243
Project:	SEC.29-T4N-R66W	**TVD Reference:**	WELL @ 4775.0ft (Ensign Rig #132 - RKB - 13')
Reference Site:	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	**MD Reference:**	WELL @ 4775.0ft (Ensign Rig #132 - RKB - 13')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Wiedeman 29K-243	**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 #3 (4-30-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Wiedeman 29K-HZ Pad Sec.29-T4N-R66W - Wiedeman 29G-403 - Wellbore #1 - Plan #2 (4-24-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,200.0	7,102.6	8,414.3	7,291.5	28.0	31.1	109.61	-1,144.8	-901.4	563.0	511.1	51.84	10.859	
8,300.0	7,101.6	8,514.3	7,291.4	29.6	32.5	109.69	-1,244.8	-901.4	563.3	508.4	54.82	10.274	
8,400.0	7,100.6	8,614.3	7,291.2	31.2	34.0	109.77	-1,344.8	-901.4	563.6	505.7	57.87	9.738	
8,500.0	7,099.6	8,714.3	7,291.1	32.9	35.5	109.86	-1,444.8	-901.4	563.8	502.9	60.98	9.246	
8,600.0	7,098.5	8,814.3	7,290.9	34.6	37.1	109.94	-1,544.8	-901.4	564.1	500.0	64.15	8.795	
8,700.0	7,097.5	8,914.3	7,290.8	36.3	38.7	110.02	-1,644.8	-901.4	564.4	497.1	67.35	8.381	
8,800.0	7,096.5	9,014.3	7,290.7	38.0	40.3	110.11	-1,744.8	-901.4	564.7	494.1	70.59	8.000	
8,900.0	7,095.5	9,114.3	7,290.5	39.7	42.0	110.19	-1,844.7	-901.4	565.0	491.2	73.86	7.650	
9,000.0	7,094.5	9,214.3	7,290.4	41.5	43.6	110.27	-1,944.7	-901.4	565.3	488.2	77.16	7.327	
9,100.0	7,093.5	9,314.3	7,290.2	43.3	45.3	110.35	-2,044.7	-901.4	565.6	485.2	80.48	7.028	
9,200.0	7,092.5	9,414.3	7,290.1	45.0	47.0	110.44	-2,144.7	-901.4	565.9	482.1	83.82	6.752	
9,300.0	7,091.5	9,514.3	7,290.0	46.8	48.7	110.52	-2,244.7	-901.4	566.3	479.1	87.18	6.495	
9,400.0	7,090.4	9,614.3	7,289.8	48.6	50.5	110.60	-2,344.7	-901.4	566.6	476.0	90.56	6.256	
9,500.0	7,089.4	9,714.3	7,289.7	50.4	52.2	110.69	-2,444.7	-901.4	566.9	472.9	93.94	6.034	
9,600.0	7,088.4	9,814.3	7,289.5	52.3	54.0	110.77	-2,544.7	-901.4	567.2	469.8	97.34	5.827	
9,700.0	7,087.4	9,914.3	7,289.4	54.1	55.8	110.85	-2,644.7	-901.4	567.5	466.7	100.75	5.633	
9,800.0	7,086.4	10,014.3	7,289.3	55.9	57.5	110.93	-2,744.7	-901.4	567.8	463.6	104.16	5.451	
9,900.0	7,085.4	10,114.3	7,289.1	57.8	59.3	111.01	-2,844.7	-901.4	568.1	460.5	107.58	5.281	
10,000.0	7,084.4	10,214.3	7,289.0	59.6	61.1	111.10	-2,944.7	-901.4	568.4	457.4	111.01	5.120	
10,100.0	7,083.4	10,314.3	7,288.8	61.4	62.9	111.18	-3,044.7	-901.4	568.7	454.3	114.45	4.969	
10,200.0	7,082.3	10,414.2	7,288.7	63.3	64.7	111.26	-3,144.7	-901.4	569.0	451.2	117.89	4.827	
10,300.0	7,081.3	10,514.2	7,288.6	65.2	66.6	111.34	-3,244.7	-901.4	569.4	448.0	121.33	4.693	
10,400.0	7,080.3	10,614.2	7,288.4	67.0	68.4	111.42	-3,344.7	-901.4	569.7	444.9	124.77	4.566	
10,500.0	7,079.3	10,714.2	7,288.3	68.9	70.2	111.51	-3,444.7	-901.4	570.0	441.8	128.22	4.445	
10,600.0	7,078.3	10,814.2	7,288.1	70.7	72.0	111.59	-3,544.7	-901.4	570.3	438.7	131.67	4.331	
10,700.0	7,077.3	10,914.2	7,288.0	72.6	73.9	111.67	-3,644.7	-901.4	570.6	435.5	135.12	4.223	
10,800.0	7,076.3	11,014.2	7,287.9	74.5	75.7	111.75	-3,744.7	-901.4	571.0	432.4	138.57	4.120	
10,900.0	7,075.3	11,114.2	7,287.7	76.3	77.6	111.83	-3,844.7	-901.4	571.3	429.3	142.03	4.022	
11,000.0	7,074.3	11,214.2	7,287.6	78.2	79.4	111.91	-3,944.7	-901.4	571.6	426.1	145.48	3.929	
11,100.0	7,073.2	11,314.2	7,287.4	80.1	81.3	111.99	-4,044.7	-901.4	571.9	423.0	148.94	3.840	
11,200.0	7,072.2	11,414.2	7,287.3	82.0	83.1	112.08	-4,144.7	-901.4	572.3	419.9	152.39	3.755	
11,300.0	7,071.2	11,514.2	7,287.2	83.9	85.0	112.16	-4,244.7	-901.4	572.6	416.7	155.85	3.674	
11,400.0	7,070.2	11,614.2	7,287.0	85.7	86.8	112.24	-4,344.6	-901.4	572.9	413.6	159.30	3.597	
11,420.0	7,070.0	11,633.9	7,287.0	86.1	87.2	112.25	-4,364.3	-901.4	573.0	413.0	159.98	3.582	
11,420.7	7,070.0	11,633.9	7,287.0	86.1	87.2	112.25	-4,364.3	-901.4	573.0	413.0	159.99	3.581	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Wiedeman 29K-243
Project:	SEC.29-T4N-R66W	**TVD Reference:**	WELL @ 4775.0ft (Ensign Rig #132 - RKB - 13')
Reference Site:	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	**MD Reference:**	WELL @ 4775.0ft (Ensign Rig #132 - RKB - 13')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Wiedeman 29K-243	**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 #3 (4-30-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Wiedeman 29K-HZ Pad Sec.29-T4N-R66W - Wiedeman 29K-403 - Wellbore #1 - Plan #2 (4-24-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	92.41	-10.9	259.4	259.6				
100.0	100.0	100.0	100.0	0.1	0.1	92.41	-10.9	259.4	259.6	259.4	0.22	1,155.201	
200.0	200.0	200.0	200.0	0.3	0.3	92.41	-10.9	259.4	259.6	259.0	0.67	385.067	
300.0	300.0	300.0	300.0	0.6	0.6	92.41	-10.9	259.4	259.6	258.5	1.12	231.040	
400.0	400.0	400.0	400.0	0.8	0.8	92.41	-10.9	259.4	259.6	258.1	1.57	165.029	
500.0	500.0	500.0	500.0	1.0	1.0	92.41	-10.9	259.4	259.6	257.6	2.02	128.356	
600.0	600.0	600.0	600.0	1.2	1.2	92.41	-10.9	259.4	259.6	257.2	2.47	105.018	
700.0	700.0	700.0	700.0	1.5	1.5	92.41	-10.9	259.4	259.6	256.7	2.92	88.862	CC, ES
800.0	800.0	800.0	800.0	1.7	1.7	148.63	-10.9	259.4	261.1	257.8	3.37	77.586	
900.0	899.8	899.8	899.8	1.9	1.9	149.17	-10.9	259.4	265.6	261.8	3.81	69.805	
1,000.0	999.5	999.5	999.5	2.1	2.1	150.03	-10.9	259.4	273.1	268.9	4.25	64.327	
1,020.8	1,020.2	1,020.2	1,020.2	2.2	2.2	150.25	-10.9	259.4	275.1	270.8	4.34	63.414	
1,100.0	1,098.8	1,098.8	1,098.8	2.4	2.4	151.14	-10.9	259.4	282.8	278.1	4.69	60.271	
1,200.0	1,198.2	1,198.2	1,198.2	2.7	2.6	152.19	-10.9	259.4	292.7	287.5	5.14	56.898	
1,300.0	1,297.6	1,291.1	1,291.1	2.9	2.8	152.91	-10.0	260.5	303.7	298.1	5.58	54.410	
1,400.0	1,397.0	1,383.5	1,383.4	3.2	3.0	153.17	-7.1	263.9	316.8	310.8	6.02	52.638	
1,500.0	1,496.3	1,475.4	1,475.0	3.5	3.2	153.02	-2.3	269.4	332.1	325.7	6.46	51.400	
1,600.0	1,595.7	1,570.9	1,569.9	3.8	3.4	152.57	4.3	277.2	349.2	342.3	6.92	50.465	
1,700.0	1,695.1	1,669.3	1,667.8	4.1	3.7	152.11	11.4	285.3	366.5	359.1	7.39	49.608	
1,800.0	1,794.4	1,767.8	1,765.7	4.4	3.9	151.70	18.4	293.4	383.8	375.9	7.86	48.818	
1,900.0	1,893.8	1,866.3	1,863.5	4.6	4.2	151.32	25.4	301.6	401.1	392.7	8.34	48.088	
2,000.0	1,993.2	1,964.7	1,961.4	4.9	4.4	150.97	32.4	309.7	418.4	409.6	8.82	47.417	
2,100.0	2,092.6	2,063.2	2,059.3	5.2	4.7	150.65	39.4	317.9	435.7	426.4	9.31	46.795	
2,200.0	2,191.9	2,161.6	2,157.1	5.5	5.0	150.36	46.4	326.0	453.1	443.3	9.80	46.224	
2,300.0	2,291.3	2,260.1	2,255.0	5.8	5.2	150.08	53.5	334.2	470.4	460.2	10.30	45.696	
2,400.0	2,390.7	2,358.5	2,352.9	6.1	5.5	149.83	60.5	342.3	487.8	477.0	10.79	45.208	
2,500.0	2,490.1	2,457.0	2,450.7	6.4	5.8	149.59	67.5	350.5	505.2	493.9	11.29	44.755	
2,600.0	2,589.4	2,555.5	2,548.6	6.7	6.1	149.37	74.5	358.6	522.6	510.8	11.79	44.335	
2,700.0	2,688.8	2,653.9	2,646.5	7.0	6.3	149.17	81.5	366.8	540.0	527.7	12.29	43.944	
2,800.0	2,788.2	2,752.4	2,744.3	7.3	6.6	148.97	88.6	374.9	557.4	544.6	12.79	43.580	
2,900.0	2,887.6	2,850.8	2,842.2	7.6	6.9	148.79	95.6	383.1	574.8	561.5	13.29	43.240	
3,000.0	2,986.9	2,949.3	2,940.1	7.9	7.2	148.62	102.6	391.2	592.2	578.4	13.80	42.921	
3,100.0	3,086.3	3,047.7	3,037.9	8.2	7.5	148.46	109.6	399.4	609.6	595.3	14.30	42.623	
3,200.0	3,185.7	3,146.2	3,135.8	8.6	7.8	148.30	116.6	407.5	627.1	612.2	14.81	42.343	
3,300.0	3,285.1	3,244.7	3,233.7	8.9	8.0	148.16	123.6	415.7	644.5	629.2	15.32	42.080	
3,400.0	3,384.4	3,343.1	3,331.5	9.2	8.3	148.02	130.7	423.8	661.9	646.1	15.82	41.832	
3,500.0	3,483.8	3,441.6	3,429.4	9.5	8.6	147.89	137.7	432.0	679.3	663.0	16.33	41.598	
3,600.0	3,583.2	3,540.0	3,527.3	9.8	8.9	147.77	144.7	440.1	696.8	679.9	16.84	41.378	
3,700.0	3,682.5	3,638.5	3,625.2	10.1	9.2	147.65	151.7	448.3	714.2	696.9	17.35	41.169	
3,800.0	3,781.9	3,736.9	3,723.0	10.4	9.5	147.54	158.7	456.4	731.7	713.8	17.86	40.971	
3,900.0	3,881.3	3,835.4	3,820.9	10.7	9.8	147.44	165.8	464.5	749.1	730.7	18.37	40.783	
4,000.0	3,980.7	3,933.9	3,918.8	11.0	10.1	147.33	172.8	472.7	766.6	747.7	18.88	40.604	
4,100.0	4,080.0	4,032.3	4,016.6	11.3	10.4	147.24	179.8	480.8	784.0	764.6	19.39	40.435	
4,200.0	4,179.4	4,130.8	4,114.5	11.6	10.6	147.14	186.8	489.0	801.5	781.6	19.90	40.273	
4,300.0	4,278.8	4,229.2	4,212.4	11.9	10.9	147.06	193.8	497.1	818.9	798.5	20.41	40.119	
4,400.0	4,378.2	4,327.7	4,310.2	12.2	11.2	146.97	200.8	505.3	836.4	815.5	20.92	39.973	
4,500.0	4,477.5	4,426.1	4,408.1	12.5	11.5	146.89	207.9	513.4	853.8	832.4	21.44	39.832	
4,600.0	4,576.9	4,524.6	4,506.0	12.8	11.8	146.81	214.9	521.6	871.3	849.3	21.95	39.698	
4,703.6	4,679.8	4,626.6	4,607.3	13.1	12.1	146.73	222.2	530.0	889.4	866.9	22.48	39.565	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Wiedeman 29K-243
Project:	SEC.29-T4N-R66W	**TVD Reference:**	WELL @ 4775.0ft (Ensign Rig #132 - RKB - 13')
Reference Site:	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	**MD Reference:**	WELL @ 4775.0ft (Ensign Rig #132 - RKB - 13')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Wiedeman 29K-243	**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 #3 (4-30-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Wiedeman 29K-HZ Pad Sec.29-T4N-R66W - Wiedeman 29K-403 - Wellbore #1 - Plan #2 (4-24-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
4,800.0	4,775.8	4,726.3	4,706.5	13.4	12.4	146.77	229.2	538.2	904.8	881.9	22.98	39.367	
4,900.0	4,875.6	4,856.7	4,836.5	13.6	12.7	146.73	236.0	546.1	915.9	892.4	23.47	39.026	
5,000.0	4,975.6	4,988.2	4,967.8	13.7	12.9	146.71	238.9	549.5	920.6	896.7	23.88	38.550	
5,024.4	5,000.0	5,020.4	5,000.0	13.8	13.0	90.68	239.1	549.6	920.8	896.8	23.97	38.408	
5,100.0	5,075.6	5,095.9	5,075.6	13.9	13.1	90.68	239.1	549.6	920.8	896.6	24.25	37.974	
5,200.0	5,175.6	5,195.9	5,175.6	14.1	13.3	90.68	239.1	549.6	920.8	896.2	24.64	37.369	
5,300.0	5,275.6	5,295.9	5,275.6	14.2	13.5	90.68	239.1	549.6	920.8	895.8	25.04	36.779	
5,400.0	5,375.6	5,395.9	5,375.6	14.4	13.7	90.68	239.1	549.6	920.8	895.4	25.43	36.205	
5,500.0	5,475.6	5,495.9	5,475.6	14.6	13.9	90.68	239.1	549.6	920.8	895.0	25.83	35.647	
5,600.0	5,575.6	5,595.9	5,575.6	14.8	14.1	90.68	239.1	549.6	920.8	894.6	26.23	35.103	
5,700.0	5,675.6	5,695.9	5,675.6	15.0	14.2	90.68	239.1	549.6	920.8	894.2	26.63	34.573	
5,800.0	5,775.6	5,795.9	5,775.6	15.1	14.4	90.68	239.1	549.6	920.8	893.8	27.04	34.057	
5,900.0	5,875.6	5,895.9	5,875.6	15.3	14.6	90.68	239.1	549.6	920.8	893.4	27.44	33.555	
6,000.0	5,975.6	5,995.9	5,975.6	15.5	14.8	90.68	239.1	549.6	920.8	893.0	27.85	33.065	
6,100.0	6,075.6	6,095.9	6,075.6	15.7	15.0	90.68	239.1	549.6	920.8	892.6	28.26	32.588	
6,200.0	6,175.6	6,195.9	6,175.6	15.9	15.2	90.68	239.1	549.6	920.8	892.1	28.66	32.124	
6,300.0	6,275.6	6,295.9	6,275.6	16.1	15.4	90.68	239.1	549.6	920.8	891.7	29.07	31.671	
6,369.4	6,345.0	6,365.3	6,345.0	16.2	15.5	90.68	239.1	549.6	920.8	891.5	29.36	31.363	
6,400.0	6,375.6	6,395.9	6,375.6	16.2	15.6	-89.36	239.1	549.6	920.8	891.3	29.48	31.238	
6,450.0	6,425.4	6,445.8	6,425.4	16.3	15.7	-89.59	239.1	549.6	920.8	891.1	29.65	31.056	
6,498.8	6,473.8	6,494.1	6,473.8	16.4	15.8	-90.00	239.1	549.6	920.7	890.9	29.80	30.896	
6,500.0	6,475.0	6,495.3	6,475.0	16.4	15.8	-90.01	239.1	549.6	920.7	890.9	29.80	30.892	
6,550.0	6,523.9	6,544.3	6,523.9	16.4	15.9	-90.62	239.1	549.6	920.8	890.9	29.95	30.749	
6,600.0	6,572.1	6,594.0	6,573.6	16.4	16.0	-91.32	237.3	549.6	921.0	891.0	30.05	30.650	
6,650.0	6,619.3	6,644.5	6,623.8	16.4	16.0	-92.03	232.2	549.6	921.4	891.2	30.13	30.584	
6,700.0	6,665.4	6,695.7	6,674.4	16.5	16.1	-92.72	223.7	549.6	921.8	891.7	30.18	30.544	
6,750.0	6,710.0	6,747.9	6,725.1	16.5	16.1	-93.41	211.5	549.6	922.5	892.3	30.22	30.527	
6,800.0	6,753.1	6,800.9	6,775.6	16.5	16.1	-94.10	195.6	549.6	923.2	893.0	30.25	30.525	
6,850.0	6,794.5	6,854.9	6,825.8	16.5	16.2	-94.77	175.9	549.6	924.1	893.8	30.27	30.529	
6,900.0	6,833.9	6,909.7	6,875.3	16.5	16.2	-95.42	152.3	549.6	925.1	894.8	30.30	30.530	
6,950.0	6,871.3	6,965.5	6,923.8	16.5	16.2	-96.06	124.6	549.6	926.1	895.8	30.35	30.514	
7,000.0	6,906.4	7,022.3	6,971.0	16.5	16.2	-96.67	93.0	549.6	927.3	896.8	30.43	30.470	
7,050.0	6,939.1	7,080.1	7,016.3	16.5	16.2	-97.26	57.3	549.6	928.4	897.9	30.56	30.383	
7,100.0	6,969.2	7,138.8	7,059.6	16.6	16.2	-97.81	17.6	549.6	929.6	898.9	30.74	30.240	
7,150.0	6,996.7	7,198.4	7,100.2	16.6	16.2	-98.34	-26.0	549.6	930.8	899.9	31.00	30.030	
7,200.0	7,021.4	7,259.0	7,137.9	16.8	16.3	-98.82	-73.4	549.6	932.0	900.7	31.34	29.737	
7,250.0	7,043.1	7,320.4	7,172.2	16.9	16.4	-99.26	-124.3	549.6	933.1	901.3	31.79	29.355	
7,300.0	7,061.9	7,382.6	7,202.6	17.2	16.6	-99.66	-178.5	549.6	934.2	901.8	32.34	28.886	
7,350.0	7,077.6	7,445.5	7,228.8	17.5	16.9	-100.01	-235.7	549.6	935.1	902.1	33.01	28.332	
7,400.0	7,090.2	7,509.1	7,250.4	17.9	17.3	-100.30	-295.5	549.6	935.9	902.1	33.79	27.695	
7,450.0	7,099.6	7,573.2	7,267.0	18.3	17.8	-100.54	-357.4	549.6	936.6	901.9	34.70	26.990	
7,500.0	7,105.8	7,637.7	7,278.5	18.7	18.4	-100.71	-420.9	549.6	937.1	901.4	35.72	26.236	
7,550.0	7,108.7	7,693.2	7,284.7	19.3	18.9	-100.85	-476.0	549.6	937.6	900.9	36.74	25.517	
7,577.1	7,108.9	7,720.2	7,287.5	19.5	19.2	-100.97	-502.9	549.6	938.1	900.8	37.30	25.151	
7,600.0	7,108.7	7,744.3	7,290.0	19.8	19.5	-101.13	-526.8	549.6	938.6	900.8	37.78	24.841	
7,700.0	7,107.7	7,862.6	7,295.4	21.0	20.8	-101.53	-645.0	549.6	939.7	899.5	40.24	23.354	
7,800.0	7,106.6	7,962.6	7,295.2	22.2	22.1	-101.57	-745.0	549.6	939.9	897.1	42.75	21.987	
7,900.0	7,105.6	8,062.6	7,295.0	23.6	23.4	-101.62	-845.0	549.6	940.0	894.6	45.42	20.697	
8,000.0	7,104.6	8,162.6	7,294.8	25.0	24.8	-101.67	-945.0	549.6	940.2	891.9	48.24	19.491	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Wiedeman 29K-243
Project:	SEC.29-T4N-R66W	**TVD Reference:**	WELL @ 4775.0ft (Ensign Rig #132 - RKB - 13')
Reference Site:	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	**MD Reference:**	WELL @ 4775.0ft (Ensign Rig #132 - RKB - 13')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Wiedeman 29K-243	**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 #3 (4-30-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Wiedeman 29K-HZ Pad Sec.29-T4N-R66W - Wiedeman 29K-403 - Wellbore #1 - Plan #2 (4-24-14)

Offset Site Error: 0.0 ft

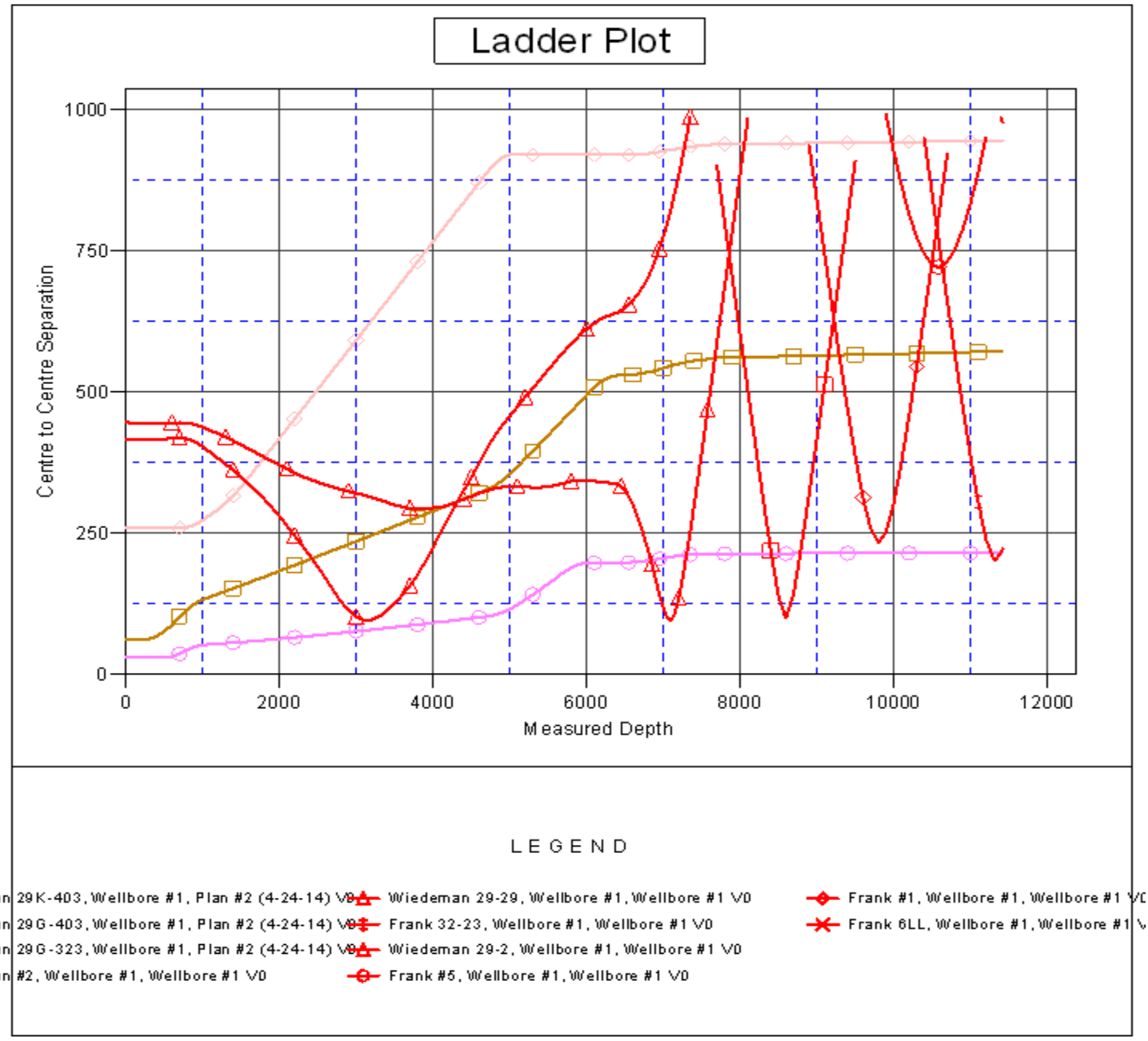
Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,100.0	7,103.6	8,262.6	7,294.5	26.5	26.3	-101.71	-1,044.9	549.6	940.3	889.2	51.17	18.375	
8,200.0	7,102.6	8,362.6	7,294.3	28.0	27.9	-101.76	-1,144.9	549.6	940.5	886.3	54.22	17.347	
8,300.0	7,101.6	8,462.6	7,294.1	29.6	29.4	-101.81	-1,244.9	549.6	940.7	883.3	57.34	16.405	
8,400.0	7,100.6	8,562.6	7,293.9	31.2	31.0	-101.86	-1,344.9	549.6	940.8	880.3	60.54	15.541	
8,500.0	7,099.6	8,662.6	7,293.6	32.9	32.7	-101.90	-1,444.9	549.6	941.0	877.2	63.80	14.750	
8,600.0	7,098.5	8,762.6	7,293.4	34.6	34.4	-101.95	-1,544.9	549.6	941.1	874.0	67.10	14.025	
8,700.0	7,097.5	8,862.6	7,293.2	36.3	36.1	-102.00	-1,644.9	549.6	941.3	870.8	70.46	13.360	
8,800.0	7,096.5	8,962.6	7,293.0	38.0	37.8	-102.04	-1,744.9	549.6	941.5	867.6	73.85	12.748	
8,900.0	7,095.5	9,062.6	7,292.7	39.7	39.5	-102.09	-1,844.9	549.6	941.6	864.4	77.27	12.185	
9,000.0	7,094.5	9,162.6	7,292.5	41.5	41.3	-102.14	-1,944.9	549.6	941.8	861.1	80.73	11.666	
9,100.0	7,093.5	9,262.6	7,292.3	43.3	43.0	-102.18	-2,044.9	549.6	942.0	857.8	84.21	11.186	
9,200.0	7,092.5	9,362.6	7,292.0	45.0	44.8	-102.23	-2,144.9	549.6	942.1	854.4	87.70	10.742	
9,300.0	7,091.5	9,462.5	7,291.8	46.8	46.6	-102.28	-2,244.9	549.6	942.3	851.1	91.22	10.330	
9,400.0	7,090.4	9,562.5	7,291.6	48.6	48.4	-102.32	-2,344.9	549.6	942.5	847.7	94.76	9.946	
9,500.0	7,089.4	9,662.5	7,291.4	50.4	50.2	-102.37	-2,444.9	549.6	942.6	844.3	98.31	9.589	
9,600.0	7,088.4	9,762.5	7,291.1	52.3	52.1	-102.42	-2,544.9	549.6	942.8	840.9	101.87	9.255	
9,700.0	7,087.4	9,862.5	7,290.9	54.1	53.9	-102.46	-2,644.9	549.6	943.0	837.5	105.45	8.943	
9,800.0	7,086.4	9,962.5	7,290.7	55.9	55.7	-102.51	-2,744.9	549.6	943.1	834.1	109.03	8.650	
9,900.0	7,085.4	10,062.5	7,290.5	57.8	57.5	-102.56	-2,844.9	549.6	943.3	830.7	112.63	8.376	
10,000.0	7,084.4	10,162.5	7,290.2	59.6	59.4	-102.60	-2,944.9	549.6	943.5	827.2	116.23	8.117	
10,100.0	7,083.4	10,262.5	7,290.0	61.4	61.2	-102.65	-3,044.9	549.6	943.6	823.8	119.84	7.874	
10,200.0	7,082.3	10,362.5	7,289.8	63.3	63.1	-102.70	-3,144.9	549.6	943.8	820.4	123.46	7.645	
10,300.0	7,081.3	10,462.5	7,289.5	65.2	64.9	-102.74	-3,244.9	549.6	944.0	816.9	127.08	7.428	
10,400.0	7,080.3	10,562.5	7,289.3	67.0	66.8	-102.79	-3,344.9	549.6	944.2	813.5	130.71	7.224	
10,500.0	7,079.3	10,662.5	7,289.1	68.9	68.7	-102.83	-3,444.9	549.6	944.3	810.0	134.34	7.030	
10,600.0	7,078.3	10,762.5	7,288.9	70.7	70.5	-102.88	-3,544.9	549.6	944.5	806.5	137.98	6.845	
10,700.0	7,077.3	10,862.5	7,288.6	72.6	72.4	-102.93	-3,644.9	549.6	944.7	803.1	141.62	6.671	
10,800.0	7,076.3	10,962.5	7,288.4	74.5	74.3	-102.97	-3,744.9	549.6	944.9	799.6	145.26	6.505	
10,900.0	7,075.3	11,062.5	7,288.2	76.3	76.1	-103.02	-3,844.9	549.6	945.0	796.1	148.91	6.346	
11,000.0	7,074.3	11,162.5	7,288.0	78.2	78.0	-103.07	-3,944.9	549.6	945.2	792.7	152.56	6.196	
11,100.0	7,073.2	11,262.5	7,287.7	80.1	79.9	-103.11	-4,044.8	549.6	945.4	789.2	156.21	6.052	
11,200.0	7,072.2	11,362.5	7,287.5	82.0	81.8	-103.16	-4,144.8	549.6	945.6	785.7	159.87	5.915	
11,300.0	7,071.2	11,462.5	7,287.3	83.9	83.7	-103.21	-4,244.8	549.6	945.8	782.2	163.53	5.783	
11,400.0	7,070.2	11,562.5	7,287.1	85.7	85.5	-103.25	-4,344.8	549.6	945.9	778.7	167.19	5.658	
11,420.0	7,070.0	11,582.5	7,287.0	86.1	85.9	-103.26	-4,364.8	549.6	946.0	778.1	167.92	5.634	
11,420.7	7,070.0	11,583.2	7,287.0	86.1	85.9	-103.26	-4,365.5	549.6	946.0	778.0	167.94	5.633	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Wiedeman 29K-243
Project:	SEC.29-T4N-R66W	**TVD Reference:**	WELL @ 4775.0ft (Ensign Rig #132 - RKB - 13')
Reference Site:	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	**MD Reference:**	WELL @ 4775.0ft (Ensign Rig #132 - RKB - 13')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Wiedeman 29K-243	**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 #3 (4-30-14)	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 4775.0ft (Ensign Rig #132 - Coordinates are relative to: Wiedeman 29K-243
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: 0.45°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Wiedeman 29K-243
Project:	SEC.29-T4N-R66W	**TVD Reference:**	WELL @ 4775.0ft (Ensign Rig #132 - RKB - 13')
Reference Site:	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	**MD Reference:**	WELL @ 4775.0ft (Ensign Rig #132 - RKB - 13')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Wiedeman 29K-243	**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 #3 (4-30-14)	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 4775.0ft (Ensign Rig #132 - Coordinates are relative to: Wiedeman 29K-243
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: 0.45°