

# PETROLEUM DEVELOPMENT CORP DJ Basin

Well Name: **Wiedeman 28G-314**

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

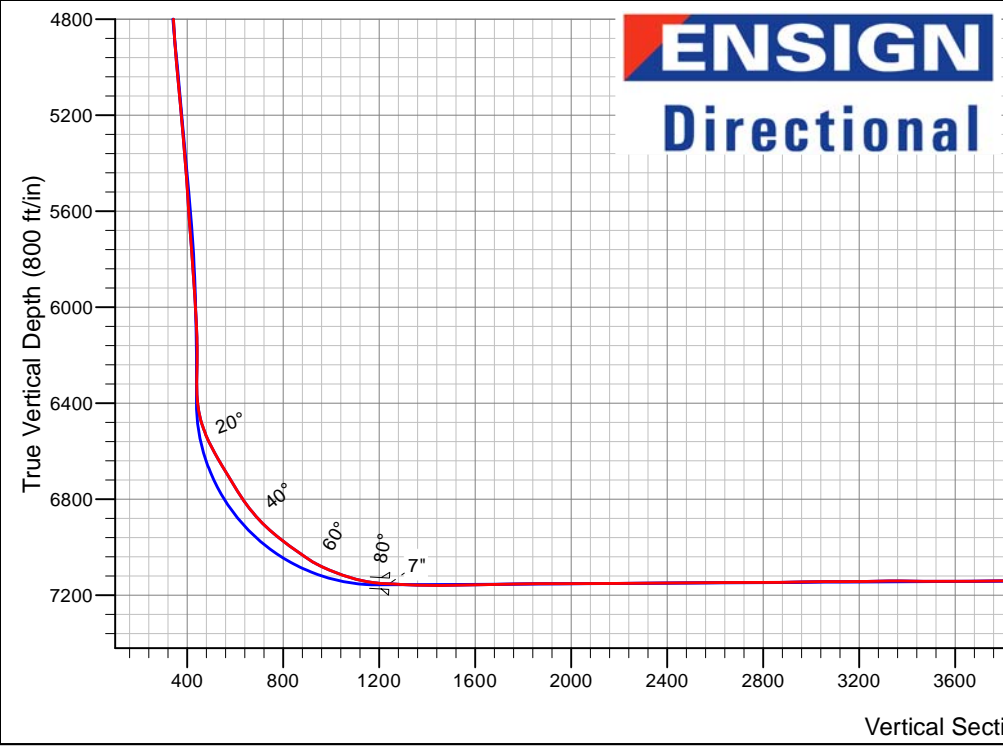
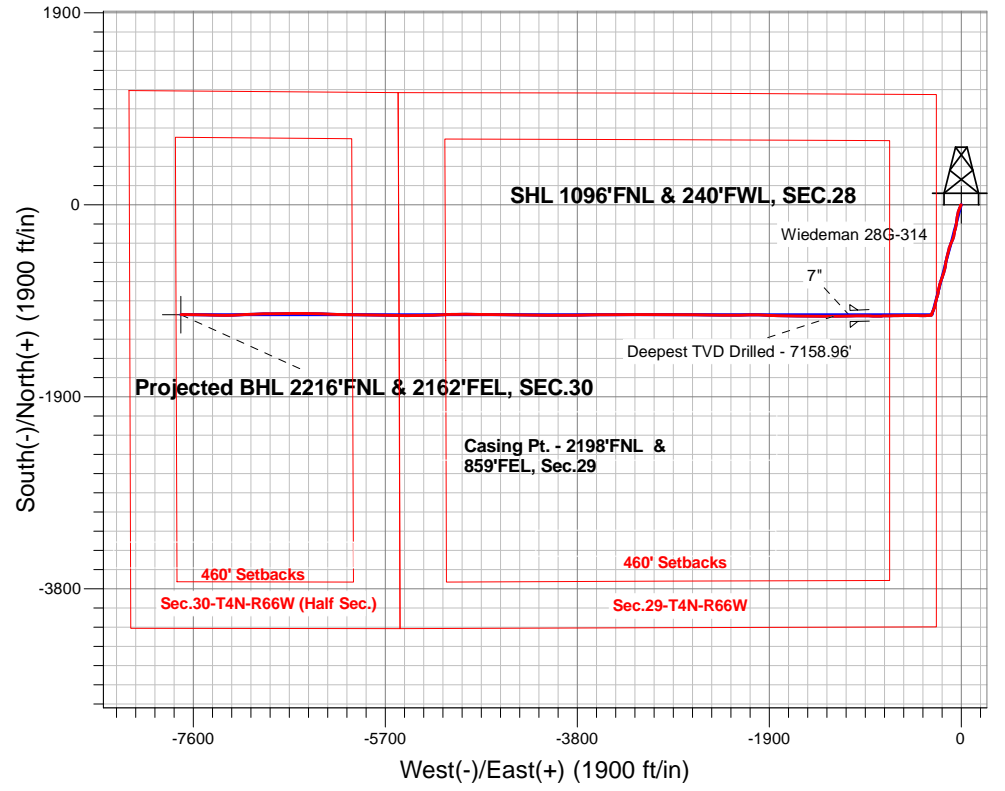
Ground Elevation: 4763.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1348127.613197777.39	40.286840	-104.791050		

Ensign Rig #121 RKB - 13.5'WELL @ 4776.5ft (Ensign Rig #121 RKB - 13.5')

## FINAL SURVEY

**Projected Bottom Hole Location**  
**14326'MD 7113TVD 1086'S & 7721'W of SHL**  
**91.8 degree Incl @ 271.1 degree AZM**



Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W  
 Wiedeman 28G-314  
 Wellbore #1  
 10:56, October 21 2015

### ANNOTATIONS

TVD	MD	Annotation
7159.0	7867.0	Deepest TVD Drilled - 7158.96'

### LEGEND

- ◆ Wiedeman 28G-314, Wellbore #1, Plan #2 (10-09-15)R V0
- Wellbore #1
- Survey #1

**BHL 2216'FNL & 2162'FEL, SEC.30**



# **PETROLEUM DEVELOPMENT CORP DJ Basin**

**SEC.28-T4N-R66W**

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

**Wiedeman 28G-314**

**Wellbore #1**

**Survey: Survey #1**

## **Standard Survey Report**

**21 October, 2015**



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Wiedeman 28G-314
<b>Project:</b>	SEC.28-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4776.5ft (Ensign Rig #121 RKB - 13.5')
<b>Site:</b>	Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W	<b>MD Reference:</b>	WELL @ 4776.5ft (Ensign Rig #121 RKB - 13.5')
<b>Well:</b>	Wiedeman 28G-314	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	US_EDM

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

<b>Site</b>	Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W				
<b>Site Position:</b>		<b>Northing:</b>	1,348,277.01 usft	<b>Latitude:</b>	40.287250
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,197,776.20 usft	<b>Longitude:</b>	-104.791050
<b>Position Uncertainty:</b>	0.0 ft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	0.46 °

<b>Well</b>	Wiedeman 28G-314					
<b>Well Position</b>	<b>+N/-S</b>	0.0 ft	<b>Northing:</b>	1,348,127.61 usft	<b>Latitude:</b>	40.286840
	<b>+E/-W</b>	0.0 ft	<b>Easting:</b>	3,197,777.39 usft	<b>Longitude:</b>	-104.791050
<b>Position Uncertainty</b>		0.0 ft	<b>Wellhead Elevation:</b>	ft	<b>Ground Level:</b>	4,763.0 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	10/9/2015	8.29	66.81	52,615

<b>Design</b>	Wellbore #1				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	0.0	0.0	0.0	261.97	

<b>Survey Program</b>	<b>Date</b>	10/21/2015			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
167.0	14,326.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	

<b>Survey</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
1.0	0.00	296.60	1.0	0.0	0.0	0.0	0.24	0.24	0.00	
<b>SHL 1096'FNL &amp; 240'FWL, SEC.28</b>										
167.0	0.40	296.60	167.0	0.3	-0.5	0.5	0.24	0.24	0.00	
260.0	0.40	248.20	260.0	0.3	-1.1	1.1	0.35	0.00	-52.04	
354.0	0.40	240.70	354.0	0.0	-1.7	1.7	0.06	0.00	-7.98	
447.0	1.10	235.40	447.0	-0.7	-2.7	2.8	0.76	0.75	-5.70	
541.0	1.60	214.70	541.0	-2.3	-4.2	4.5	0.73	0.53	-22.02	
634.0	1.90	204.30	633.9	-4.7	-5.6	6.2	0.47	0.32	-11.18	
728.0	3.90	198.30	727.8	-9.2	-7.2	8.4	2.15	2.13	-6.38	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Wiedeman 28G-314
<b>Project:</b>	SEC.28-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4776.5ft (Ensign Rig #121 RKB - 13.5')
<b>Site:</b>	Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W	<b>MD Reference:</b>	WELL @ 4776.5ft (Ensign Rig #121 RKB - 13.5')
<b>Well:</b>	Wiedeman 28G-314	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	US_EDM

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
821.0	5.00	192.50	820.5	-16.1	-9.1	11.3	1.28	1.18	-6.24
870.0	4.90	196.70	869.3	-20.2	-10.2	12.9	0.77	-0.20	8.57
1,003.0	4.40	196.20	1,001.9	-30.6	-13.2	17.4	0.38	-0.38	-0.38
1,096.0	7.30	211.80	1,094.4	-39.0	-17.3	22.6	3.53	3.12	16.77
1,189.0	9.40	202.70	1,186.4	-51.1	-23.4	30.3	2.66	2.26	-9.78
1,282.0	10.60	192.70	1,278.0	-66.4	-28.2	37.2	2.27	1.29	-10.75
1,376.0	10.40	191.50	1,370.4	-83.2	-31.8	43.1	0.32	-0.21	-1.28
1,469.0	11.30	191.30	1,461.8	-100.3	-35.2	48.9	0.97	0.97	-0.22
1,563.0	12.20	191.80	1,553.8	-119.1	-39.1	55.3	0.96	0.96	0.53
1,656.0	13.20	192.20	1,644.5	-139.1	-43.3	62.3	1.08	1.08	0.43
1,749.0	14.60	188.60	1,734.8	-161.0	-47.3	69.3	1.77	1.51	-3.87
1,842.0	13.50	182.10	1,825.0	-183.5	-49.5	74.6	2.07	-1.18	-6.99
1,938.0	12.80	183.90	1,918.5	-205.3	-50.6	78.8	0.84	-0.73	1.88
2,033.0	13.40	199.40	2,011.1	-226.2	-55.0	86.0	3.74	0.63	16.32
2,129.0	12.60	197.30	2,104.6	-246.7	-61.8	95.6	0.97	-0.83	-2.19
2,224.0	11.60	191.50	2,197.5	-265.9	-66.8	103.3	1.66	-1.05	-6.11
2,320.0	12.00	186.90	2,291.5	-285.3	-69.9	109.1	1.06	0.42	-4.79
2,415.0	13.50	192.20	2,384.1	-305.9	-73.4	115.4	2.00	1.58	5.58
2,511.0	14.00	196.70	2,477.4	-328.0	-79.1	124.2	1.23	0.52	4.69
2,606.0	15.10	204.60	2,569.3	-350.3	-87.6	135.6	2.39	1.16	8.32
2,701.0	14.40	203.10	2,661.2	-372.4	-97.4	148.4	0.84	-0.74	-1.58
2,797.0	14.80	201.80	2,754.1	-394.7	-106.6	160.7	0.54	0.42	-1.35
2,892.0	14.00	199.40	2,846.1	-416.8	-114.9	172.0	1.05	-0.84	-2.53
2,987.0	13.70	195.30	2,938.4	-438.5	-121.7	181.8	1.08	-0.32	-4.32
3,082.0	12.80	193.00	3,030.8	-459.6	-127.1	190.0	1.10	-0.95	-2.42
3,178.0	12.50	192.70	3,124.5	-480.1	-131.7	197.5	0.32	-0.31	-0.31
3,273.0	12.30	194.30	3,217.3	-500.0	-136.5	205.0	0.42	-0.21	1.68
3,368.0	12.70	194.40	3,310.0	-519.9	-141.6	212.8	0.42	0.42	0.11
3,464.0	14.20	193.00	3,403.4	-541.6	-146.9	221.1	1.60	1.56	-1.46
3,559.0	12.30	189.90	3,495.9	-562.9	-151.2	228.4	2.13	-2.00	-3.26
3,645.0	12.40	189.30	3,579.9	-581.0	-154.3	233.9	0.19	0.12	-0.70
3,750.0	11.20	181.80	3,682.7	-602.4	-156.4	239.0	1.85	-1.14	-7.14
3,845.0	11.30	192.20	3,775.8	-620.7	-158.7	243.8	2.14	0.11	10.95
3,941.0	13.80	196.40	3,869.5	-640.9	-163.9	251.8	2.77	2.60	4.38
4,036.0	14.30	198.00	3,961.7	-662.9	-170.7	261.6	0.67	0.53	1.68
4,131.0	13.50	196.40	4,053.9	-684.7	-177.5	271.4	0.93	-0.84	-1.68
4,227.0	12.10	198.80	4,147.5	-705.0	-183.9	280.5	1.56	-1.46	2.50
4,322.0	14.50	199.70	4,240.0	-725.6	-191.1	290.6	2.54	2.53	0.95
4,418.0	13.30	200.60	4,333.2	-747.2	-199.1	301.5	1.27	-1.25	0.94
4,513.0	13.60	196.20	4,425.6	-768.2	-206.0	311.3	1.12	0.32	-4.63
4,609.0	13.50	195.30	4,518.9	-789.8	-212.1	320.3	0.24	-0.10	-0.94
4,704.0	12.20	193.40	4,611.5	-810.3	-217.4	328.4	1.44	-1.37	-2.00

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<b>Site:</b>	Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W	<b>MD Reference:</b>	WELL @ 4776.5ft (Ensign Rig #121 RKB - 13.5')
<b>Well:</b>	Wiedeman 28G-314	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	US_EDM

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
4,799.0	12.10	193.20	4,704.4	-829.8	-222.0	335.7	0.11	-0.11	-0.21	
4,895.0	13.10	189.50	4,798.1	-850.3	-226.1	342.6	1.34	1.04	-3.85	
4,989.0	13.40	187.90	4,889.6	-871.6	-229.3	348.8	0.50	0.32	-1.70	
5,084.0	12.70	193.40	4,982.1	-892.7	-233.3	355.6	1.50	-0.74	5.79	
5,180.0	12.40	201.10	5,075.8	-912.5	-239.4	364.5	1.77	-0.31	8.02	
5,275.0	12.70	191.50	5,168.6	-932.3	-245.2	373.0	2.22	0.32	-10.11	
5,370.0	14.70	194.10	5,260.9	-954.2	-250.2	381.0	2.20	2.11	2.74	
5,466.0	11.80	191.60	5,354.3	-975.6	-255.1	388.9	3.08	-3.02	-2.60	
5,561.0	11.90	195.30	5,447.3	-994.6	-259.7	396.0	0.81	0.11	3.89	
5,657.0	9.10	193.60	5,541.7	-1,011.5	-264.1	402.7	2.93	-2.92	-1.77	
5,752.0	8.10	203.20	5,635.6	-1,025.0	-268.5	409.0	1.84	-1.05	10.11	
5,847.0	7.80	207.50	5,729.7	-1,036.9	-274.1	416.2	0.70	-0.32	4.53	
5,943.0	8.20	199.00	5,824.7	-1,049.1	-279.3	423.1	1.30	0.42	-8.85	
6,038.0	8.40	202.40	5,918.8	-1,061.9	-284.2	429.7	0.56	0.21	3.58	
6,133.0	6.00	199.90	6,013.0	-1,073.0	-288.5	435.5	2.55	-2.53	-2.63	
6,228.0	4.60	208.20	6,107.6	-1,081.0	-292.0	440.1	1.68	-1.47	8.74	
6,324.0	1.60	147.20	6,203.5	-1,085.6	-293.1	441.8	4.24	-3.13	-63.54	
6,419.0	1.80	128.50	6,298.4	-1,087.6	-291.2	440.2	0.62	0.21	-19.68	
6,515.0	5.20	241.60	6,394.3	-1,090.6	-293.9	443.3	6.39	3.54	117.81	
6,610.0	17.70	263.30	6,487.2	-1,094.4	-312.1	461.8	13.69	13.16	22.84	
6,706.0	27.20	267.40	6,575.9	-1,097.1	-348.6	498.3	10.02	9.90	4.27	
6,801.0	31.90	272.00	6,658.5	-1,097.2	-395.4	544.7	5.49	4.95	4.84	
6,896.0	30.60	271.60	6,739.7	-1,095.6	-444.6	593.3	1.39	-1.37	-0.42	
6,992.0	36.30	269.50	6,819.8	-1,095.2	-497.5	645.6	6.06	5.94	-2.19	
7,087.0	43.80	269.00	6,892.5	-1,096.0	-558.6	706.2	7.90	7.89	-0.53	
7,183.0	52.10	268.30	6,956.7	-1,097.7	-629.8	776.9	8.66	8.65	-0.73	
7,230.0	53.90	268.80	6,985.0	-1,098.7	-667.3	814.2	3.92	3.83	1.06	
7,278.0	54.30	269.90	7,013.1	-1,099.1	-706.2	852.8	2.03	0.83	2.29	
7,325.0	54.50	268.60	7,040.5	-1,099.6	-744.4	890.7	2.29	0.43	-2.77	
7,373.0	61.20	267.60	7,066.0	-1,101.0	-785.0	931.1	14.07	13.96	-2.08	
7,420.0	66.00	269.30	7,086.9	-1,102.1	-827.1	972.9	10.71	10.21	3.62	
7,469.0	69.10	271.30	7,105.6	-1,101.9	-872.3	1,017.7	7.37	6.33	4.08	
7,516.0	72.00	272.10	7,121.3	-1,100.5	-916.6	1,061.3	6.38	6.17	1.70	
7,564.0	75.60	271.40	7,134.7	-1,099.1	-962.7	1,106.8	7.63	7.50	-1.46	
7,611.0	80.60	269.10	7,144.4	-1,098.9	-1,008.7	1,152.3	11.67	10.64	-4.89	
7,672.0	86.30	267.70	7,151.3	-1,100.6	-1,069.2	1,212.4	9.62	9.34	-2.30	
7,702.0	86.60	268.18	7,153.2	-1,101.7	-1,099.1	1,242.2	1.88	1.00	1.60	
<b>7"</b>										
7,772.0	87.30	269.30	7,156.9	-1,103.2	-1,169.0	1,311.6	1.88	1.00	1.60	
7,867.0	90.20	270.90	7,159.0	-1,103.1	-1,264.0	1,405.7	3.49	3.05	1.68	
<b>Deepest TVD Drilled - 7158.96'</b>										
7,963.0	90.40	270.60	7,158.5	-1,101.8	-1,360.0	1,500.5	0.38	0.21	-0.31	
8,055.0	90.70	270.20	7,157.6	-1,101.2	-1,452.0	1,591.5	0.54	0.33	-0.43	

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<b>Well:</b>	Wiedeman 28G-314	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	US_EDM

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
8,147.0	91.00	268.80	7,156.2	-1,102.0	-1,544.0	1,682.7	1.56	0.33	-1.52	
8,240.0	91.90	271.60	7,153.9	-1,101.7	-1,636.9	1,774.7	3.16	0.97	3.01	
8,332.0	90.00	271.40	7,152.3	-1,099.3	-1,728.9	1,865.4	2.08	-2.07	-0.22	
8,424.0	90.30	271.40	7,152.1	-1,097.0	-1,820.8	1,956.2	0.33	0.33	0.00	
8,516.0	90.30	272.00	7,151.6	-1,094.3	-1,912.8	2,046.9	0.65	0.00	0.65	
8,609.0	90.70	272.10	7,150.8	-1,091.0	-2,005.7	2,138.4	0.44	0.43	0.11	
8,701.0	89.50	269.10	7,150.6	-1,090.0	-2,097.7	2,229.4	3.51	-1.30	-3.26	
8,793.0	90.10	269.30	7,151.0	-1,091.3	-2,189.7	2,320.6	0.69	0.65	0.22	
8,885.0	90.80	269.30	7,150.2	-1,092.4	-2,281.7	2,411.9	0.76	0.76	0.00	
8,978.0	91.20	271.60	7,148.6	-1,091.7	-2,374.7	2,503.9	2.51	0.43	2.47	
9,070.0	90.00	270.40	7,147.6	-1,090.1	-2,466.7	2,594.7	1.84	-1.30	-1.30	
9,162.0	90.40	270.40	7,147.3	-1,089.4	-2,558.6	2,685.7	0.43	0.43	0.00	
9,254.0	90.00	270.40	7,147.0	-1,088.8	-2,650.6	2,776.7	0.43	-0.43	0.00	
9,347.0	90.40	270.00	7,146.7	-1,088.5	-2,743.6	2,868.8	0.61	0.43	-0.43	
9,439.0	91.40	269.50	7,145.2	-1,088.9	-2,835.6	2,959.9	1.22	1.09	-0.54	
9,531.0	90.50	270.90	7,143.7	-1,088.5	-2,927.6	3,050.9	1.81	-0.98	1.52	
9,624.0	89.90	270.60	7,143.4	-1,087.3	-3,020.6	3,142.8	0.72	-0.65	-0.32	
9,716.0	91.00	270.90	7,142.7	-1,086.1	-3,112.6	3,233.8	1.24	1.20	0.33	
9,808.0	90.50	269.30	7,141.5	-1,086.0	-3,204.6	3,324.8	1.82	-0.54	-1.74	
9,900.0	89.20	269.70	7,141.7	-1,086.8	-3,296.6	3,416.0	1.48	-1.41	0.43	
9,992.0	89.70	269.70	7,142.6	-1,087.2	-3,388.6	3,507.2	0.54	0.54	0.00	
10,085.0	90.00	269.30	7,142.8	-1,088.0	-3,481.6	3,599.4	0.54	0.32	-0.43	
10,177.0	90.60	269.50	7,142.3	-1,089.0	-3,573.6	3,690.6	0.69	0.65	0.22	
10,269.0	91.40	269.50	7,140.7	-1,089.8	-3,665.5	3,781.8	0.87	0.87	0.00	
10,361.0	89.80	269.30	7,139.8	-1,090.8	-3,757.5	3,873.0	1.75	-1.74	-0.22	
10,457.0	90.80	269.30	7,139.3	-1,091.9	-3,853.5	3,968.2	1.04	1.04	0.00	
10,552.0	90.60	269.10	7,138.1	-1,093.3	-3,948.5	4,062.5	0.30	-0.21	-0.21	
10,647.0	90.00	269.70	7,137.6	-1,094.3	-4,043.5	4,156.7	0.89	-0.63	0.63	
10,743.0	90.10	270.60	7,137.5	-1,094.0	-4,139.5	4,251.7	0.94	0.10	0.94	
10,838.0	90.80	271.10	7,136.8	-1,092.6	-4,234.5	4,345.6	0.91	0.74	0.53	
10,934.0	88.60	270.60	7,137.3	-1,091.2	-4,330.5	4,440.4	2.35	-2.29	-0.52	
11,029.0	89.30	270.60	7,139.0	-1,090.2	-4,425.4	4,534.3	0.74	0.74	0.00	
11,124.0	90.10	271.30	7,139.5	-1,088.6	-4,520.4	4,628.2	1.12	0.84	0.74	
11,220.0	90.70	270.90	7,138.9	-1,086.8	-4,616.4	4,722.9	0.75	0.63	-0.42	
11,315.0	92.40	270.90	7,136.3	-1,085.3	-4,711.4	4,816.7	1.79	1.79	0.00	
11,410.0	90.80	270.90	7,133.6	-1,083.8	-4,806.3	4,910.6	1.68	-1.68	0.00	
11,506.0	89.10	269.70	7,133.7	-1,083.3	-4,902.3	5,005.5	2.17	-1.77	-1.25	
11,601.0	89.50	269.30	7,134.9	-1,084.1	-4,997.3	5,099.7	0.60	0.42	-0.42	
11,697.0	89.90	267.90	7,135.4	-1,086.5	-5,093.2	5,195.1	1.52	0.42	-1.46	
11,792.0	90.50	267.60	7,135.1	-1,090.2	-5,188.2	5,289.6	0.71	0.63	-0.32	
11,888.0	91.00	267.40	7,133.8	-1,094.4	-5,284.1	5,385.1	0.56	0.52	-0.21	
11,983.0	89.30	268.40	7,133.5	-1,097.9	-5,379.0	5,479.6	2.08	-1.79	1.05	
12,079.0	90.70	271.40	7,133.5	-1,098.0	-5,475.0	5,574.7	3.45	1.46	3.13	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Wiedeman 28G-314
<b>Project:</b>	SEC.28-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4776.5ft (Ensign Rig #121 RKB - 13.5')
<b>Site:</b>	Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W	<b>MD Reference:</b>	WELL @ 4776.5ft (Ensign Rig #121 RKB - 13.5')
<b>Well:</b>	Wiedeman 28G-314	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	US_EDM

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,174.0	91.50	270.70	7,131.7	-1,096.3	-5,570.0	5,668.5	1.12	0.84	-0.74
12,269.0	90.00	271.40	7,130.5	-1,094.5	-5,664.9	5,762.3	1.74	-1.58	0.74
12,365.0	91.50	270.90	7,129.2	-1,092.6	-5,760.9	5,857.0	1.65	1.56	-0.52
12,460.0	89.70	271.40	7,128.2	-1,090.7	-5,855.9	5,950.8	1.97	-1.89	0.53
12,556.0	90.50	269.70	7,128.1	-1,089.8	-5,951.9	6,045.7	1.96	0.83	-1.77
12,651.0	89.60	271.30	7,128.0	-1,089.0	-6,046.9	6,139.7	1.93	-0.95	1.68
12,746.0	90.50	272.00	7,127.9	-1,086.2	-6,141.8	6,233.3	1.20	0.95	0.74
12,842.0	89.90	272.10	7,127.6	-1,082.8	-6,237.8	6,327.8	0.63	-0.63	0.10
12,936.0	89.80	272.30	7,127.8	-1,079.2	-6,331.7	6,420.3	0.24	-0.11	0.21
13,031.0	90.10	270.60	7,127.9	-1,076.8	-6,426.6	6,514.0	1.82	0.32	-1.79
13,127.0	91.40	270.40	7,126.6	-1,075.9	-6,522.6	6,609.0	1.37	1.35	-0.21
13,222.0	90.00	269.70	7,125.5	-1,075.9	-6,617.6	6,703.0	1.65	-1.47	-0.74
13,317.0	91.30	269.10	7,124.4	-1,076.9	-6,712.6	6,797.2	1.51	1.37	-0.63
13,413.0	89.90	269.50	7,123.4	-1,078.0	-6,808.6	6,892.4	1.52	-1.46	0.42
13,508.0	90.10	268.60	7,123.4	-1,079.6	-6,903.6	6,986.7	0.97	0.21	-0.95
13,603.0	90.30	267.70	7,123.1	-1,082.7	-6,998.5	7,081.1	0.97	0.21	-0.95
13,699.0	90.00	266.70	7,122.8	-1,087.4	-7,094.4	7,176.7	1.09	-0.31	-1.04
13,794.0	90.50	268.30	7,122.4	-1,091.5	-7,189.3	7,271.3	1.76	0.53	1.68
13,889.0	90.40	269.70	7,121.6	-1,093.2	-7,284.3	7,365.6	1.48	-0.11	1.47
13,985.0	90.80	271.10	7,120.6	-1,092.5	-7,380.3	7,460.5	1.52	0.42	1.46
14,080.0	91.10	271.10	7,119.1	-1,090.7	-7,475.3	7,554.3	0.32	0.32	0.00
14,176.0	91.40	271.30	7,117.0	-1,088.7	-7,571.2	7,649.1	0.38	0.31	0.21
14,271.0	91.80	271.10	7,114.3	-1,086.7	-7,666.2	7,742.8	0.47	0.42	-0.21
14,326.0	91.80	271.10	7,112.6	-1,085.6	-7,721.1	7,797.1	0.00	0.00	0.00
<b>BHL 2220'FNL &amp; 2164'FEL, SEC.30</b>									

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SHL 1096'FNL & 240'FM - hit/miss target - Shape - Point	0.00	0.00	1.0	0.0	0.0	1,348,127.65	3,197,777.39	40.286840	-104.791050
BHL 2220'FNL & 2164'F - survey misses target center by 6.7ft at 14326.0ft MD (7112.6 TVD, -1085.6 N, -7721.1 E) - Point	0.00	0.00	7,118.0	-1,089.2	-7,722.7	1,346,976.79	3,190,064.00	40.283847	-104.818730

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,702.0	7,153.2	7"	7	8-3/4

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Wiedeman 28G-314
<b>Project:</b>	SEC.28-T4N-R66W	<b>TVD Reference:</b>	WELL @ 4776.5ft (Ensign Rig #121 RKB - 13.5')
<b>Site:</b>	Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W	<b>MD Reference:</b>	WELL @ 4776.5ft (Ensign Rig #121 RKB - 13.5')
<b>Well:</b>	Wiedeman 28G-314	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	US_EDM

Survey Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
7,867.0	7,159.0	-1,103.1	-1,264.0	Deepest TVD Drilled - 7158.96'

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_