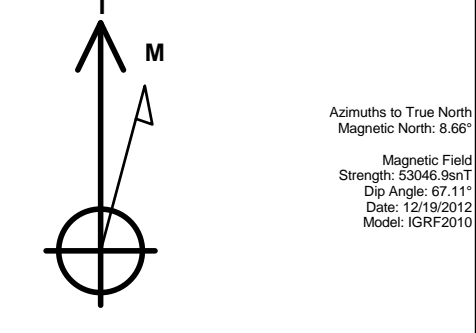


PETROLEUM DEVELOPMENT CORP Weld County CO

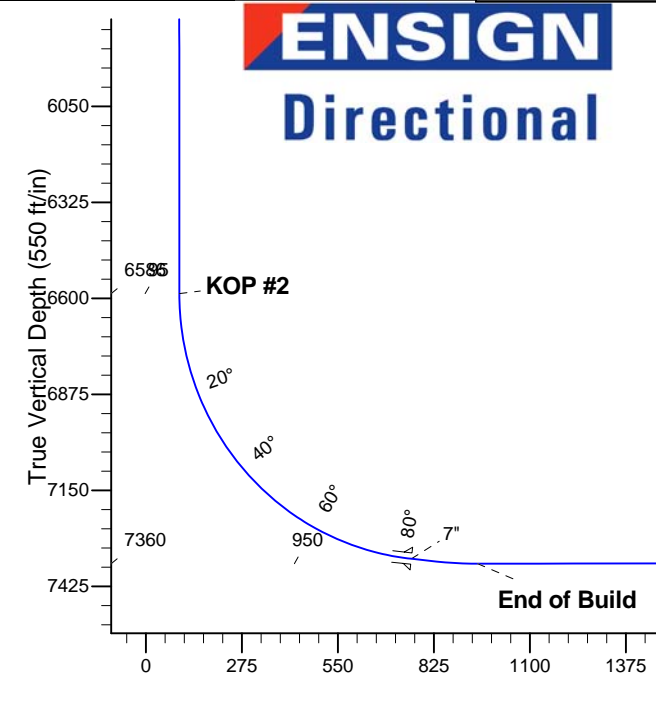
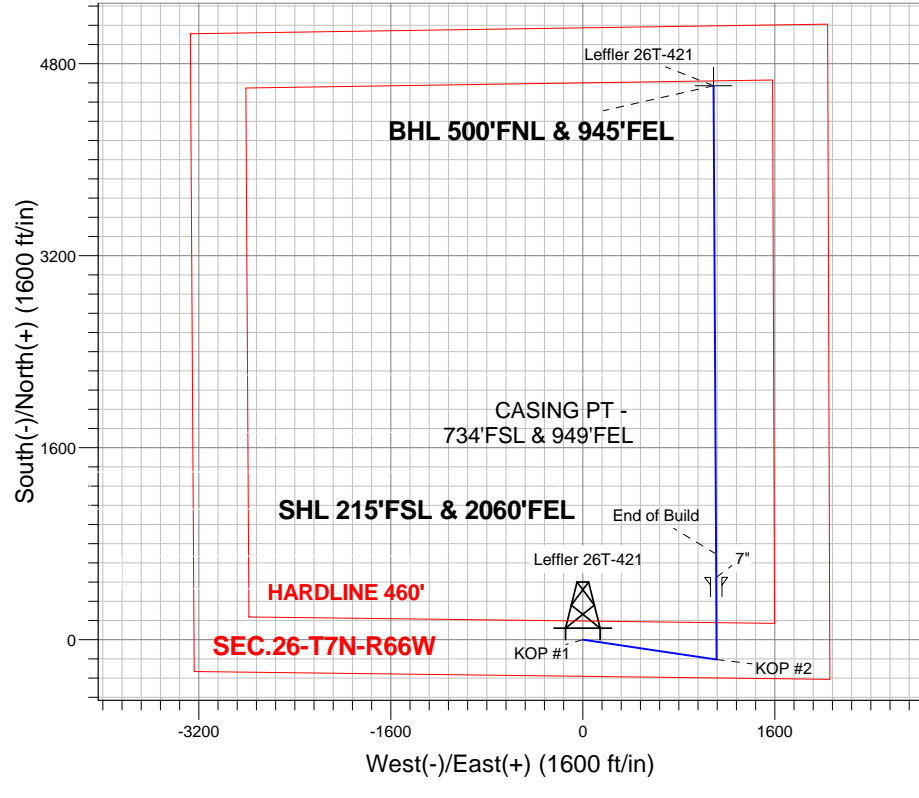
Well Name: **Leffler 26T-421**  
Surface Location: Leffler 26Q-421 Pad Sec.26-T7N-R66W  
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone  
Ground Elevation: 4865.0  
+N/-S +E/-W Northing Easting Latitude Longitude Slot  
0.0 0.0 1440279.84 3210532.13 40.539500 -104.742510  
RKB - 15' WELL @ 4880.0ft (RKB - 15')

WELLBORE TARGET DETAILS				
Name	TVD	+N/-S	+E/-W	Shape
BHL 500'FNL & 945'FEL	7355.0	4616.0	1089.3	Point

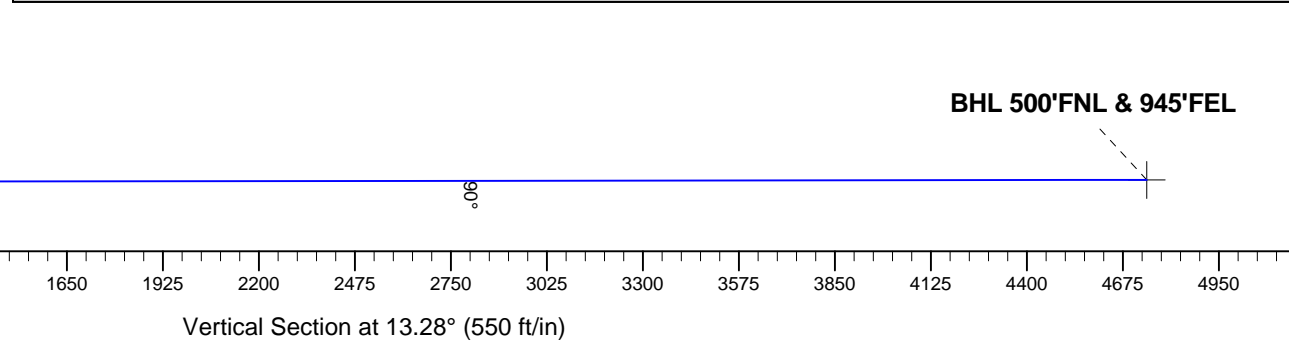


Leffler 26Q-421 Pad Sec.26-T7N-R66W  
Leffler 26T-421  
Plan #1 (12-19-12)  
13:22, December 20 2012

ANNOTATIONS		
TVD	MD	Annotation
200.0	200.0	KOP #1
6586.3	6702.7	KOP #2
7360.1	8018.2	End of Build



SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	813.3	12.27	98.42	808.6	-9.6	64.7	2.00	98.42	5.5	
4	5503.1	12.27	98.42	5391.4	-155.4	1050.3	0.00	0.00	90.0	
5	6116.4	0.00	0.00	6000.0	-165.0	1115.0	2.00	180.00	95.5	
6	6702.7	0.00	0.00	6586.3	-165.0	1115.0	0.00	0.00	95.5	
7	7822.7	84.00	359.69	7346.0	519.1	1111.3	7.50	359.69	760.5	
8	7896.7	84.00	359.69	7353.8	592.7	1110.9	0.00	0.00	832.0	
9	8018.2	90.07	359.69	7360.1	713.9	1110.2	5.00	0.03	949.9	
10	11920.3	90.07	359.69	7355.0	4616.0	1089.3	0.00	0.00	4742.8	BHL 500'FNL & 945'FEL





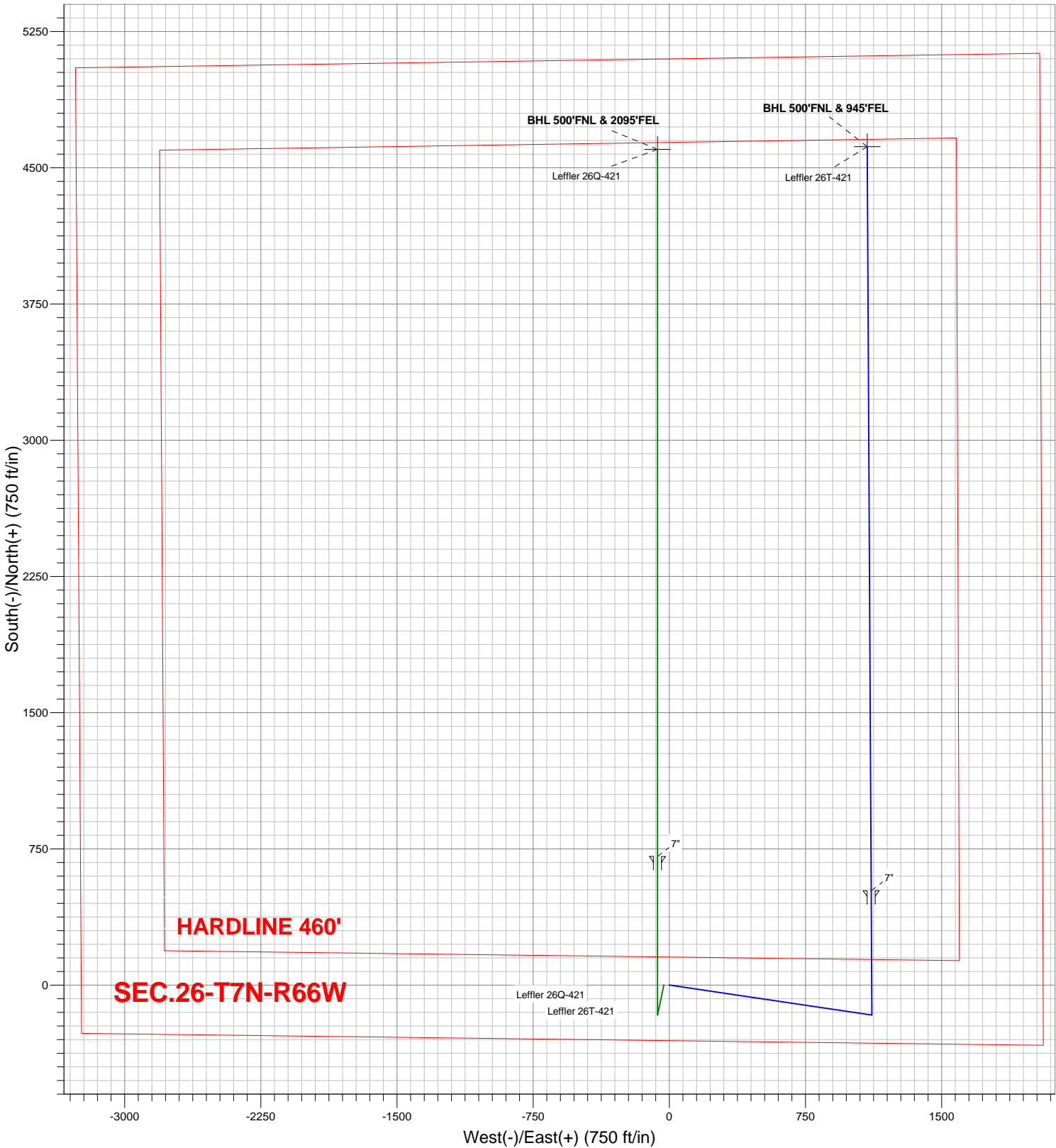
Surface Location: Leffler 26Q-421 Pad Sec.26-T7N-R66W

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

Ground Elevation: 4865.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1440279.84	3210532.13	40.539500	-104.742510	

Design Version: Plan #1 (12-19-12)





# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.26-T7N-R66W**

**Leffler 26Q-421 Pad Sec.26-T7N-R66W**

**Leffler 26T-421**

**Wellbore #1**

**Plan: Plan #1 (12-19-12)**

## **Standard Planning Report**

**20 December, 2012**

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Leffler 26T-421
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4880.0ft (RKB - 15')
<b>Project:</b>	SEC.26-T7N-R66W	<b>MD Reference:</b>	WELL @ 4880.0ft (RKB - 15')
<b>Site:</b>	Leffler 26Q-421 Pad Sec.26-T7N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Leffler 26T-421	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (12-19-12)		

<b>Project</b>	SEC.26-T7N-R66W, Weld County, CO		
<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>	Leffler 26Q-421 Pad Sec.26-T7N-R66W		
<b>Site Position:</b>		<b>Northing:</b>	1,440,279.60 ft
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,210,501.55 ft
<b>Position Uncertainty:</b>	0.0 ft	<b>Slot Radius:</b>	"
		<b>Latitude:</b>	40.539500
		<b>Longitude:</b>	-104.742620
		<b>Grid Convergence:</b>	0.49 °

<b>Well</b>	Leffler 26T-421		
<b>Well Position</b>	<b>+N/-S</b>	0.0 ft	<b>Northing:</b>
	<b>+E/-W</b>	30.6 ft	<b>Easting:</b>
<b>Position Uncertainty</b>		0.0 ft	<b>Wellhead Elevation:</b>
			<b>Latitude:</b>
			<b>Longitude:</b>
			<b>Ground Level:</b>

<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	12/19/2012	8.66	67.11	53,047

<b>Design</b>	Plan #1 (12-19-12)			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<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	13.28

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
813.3	12.27	98.42	808.6	-9.6	64.7	2.00	2.00	0.00	98.42	
5,503.1	12.27	98.42	5,391.4	-155.4	1,050.3	0.00	0.00	0.00	0.00	
6,116.4	0.00	0.00	6,000.0	-165.0	1,115.0	2.00	-2.00	0.00	180.00	
6,702.7	0.00	0.00	6,586.3	-165.0	1,115.0	0.00	0.00	0.00	0.00	
7,822.7	84.00	359.69	7,346.0	519.1	1,111.3	7.50	7.50	0.00	359.69	
7,896.7	84.00	359.69	7,353.8	592.7	1,110.9	0.00	0.00	0.00	0.00	
8,018.2	90.07	359.69	7,360.1	713.9	1,110.2	5.00	5.00	0.00	0.03	
11,920.3	90.07	359.69	7,355.0	4,616.0	1,089.3	0.00	0.00	0.00	0.00	BHL 500'FNL & 94°

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Leffler 26T-421
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4880.0ft (RKB - 15')
<b>Project:</b>	SEC.26-T7N-R66W	<b>MD Reference:</b>	WELL @ 4880.0ft (RKB - 15')
<b>Site:</b>	Leffler 26Q-421 Pad Sec.26-T7N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Leffler 26T-421	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (12-19-12)		

## 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
40.0	0.00	0.00	40.0	0.0	0.0	0.0	0.00	0.00	0.00
80.0	0.00	0.00	80.0	0.0	0.0	0.0	0.00	0.00	0.00
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.00	0.00	0.00
160.0	0.00	0.00	160.0	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
<b>KOP #1</b>									
240.0	0.80	98.42	240.0	0.0	0.3	0.0	2.00	2.00	0.00
280.0	1.60	98.42	280.0	-0.2	1.1	0.1	2.00	2.00	0.00
320.0	2.40	98.42	320.0	-0.4	2.5	0.2	2.00	2.00	0.00
360.0	3.20	98.42	359.9	-0.7	4.4	0.4	2.00	2.00	0.00
400.0	4.00	98.42	399.8	-1.0	6.9	0.6	2.00	2.00	0.00
440.0	4.80	98.42	439.7	-1.5	9.9	0.9	2.00	2.00	0.00
480.0	5.60	98.42	479.6	-2.0	13.5	1.2	2.00	2.00	0.00
520.0	6.40	98.42	519.3	-2.6	17.7	1.5	2.00	2.00	0.00
560.0	7.20	98.42	559.1	-3.3	22.3	1.9	2.00	2.00	0.00
600.0	8.00	98.42	598.7	-4.1	27.6	2.4	2.00	2.00	0.00
640.0	8.80	98.42	638.3	-4.9	33.4	2.9	2.00	2.00	0.00
680.0	9.60	98.42	677.8	-5.9	39.7	3.4	2.00	2.00	0.00
720.0	10.40	98.42	717.1	-6.9	46.6	4.0	2.00	2.00	0.00
760.0	11.20	98.42	756.4	-8.0	54.0	4.6	2.00	2.00	0.00
800.0	12.00	98.42	795.6	-9.2	61.9	5.3	2.00	2.00	0.00
813.3	12.27	98.42	808.6	-9.6	64.7	5.5	2.00	2.00	0.00
840.0	12.27	98.42	834.7	-10.4	70.3	6.0	0.00	0.00	0.00
880.0	12.27	98.42	873.8	-11.6	78.7	6.7	0.00	0.00	0.00
920.0	12.27	98.42	912.9	-12.9	87.1	7.5	0.00	0.00	0.00
960.0	12.27	98.42	952.0	-14.1	95.5	8.2	0.00	0.00	0.00
1,000.0	12.27	98.42	991.1	-15.4	103.9	8.9	0.00	0.00	0.00
1,040.0	12.27	98.42	1,030.2	-16.6	112.3	9.6	0.00	0.00	0.00
1,080.0	12.27	98.42	1,069.2	-17.9	120.7	10.3	0.00	0.00	0.00
1,120.0	12.27	98.42	1,108.3	-19.1	129.1	11.1	0.00	0.00	0.00
1,160.0	12.27	98.42	1,147.4	-20.4	137.6	11.8	0.00	0.00	0.00
1,200.0	12.27	98.42	1,186.5	-21.6	146.0	12.5	0.00	0.00	0.00
1,240.0	12.27	98.42	1,225.6	-22.8	154.4	13.2	0.00	0.00	0.00
1,280.0	12.27	98.42	1,264.7	-24.1	162.8	13.9	0.00	0.00	0.00
1,320.0	12.27	98.42	1,303.8	-25.3	171.2	14.7	0.00	0.00	0.00
1,360.0	12.27	98.42	1,342.8	-26.6	179.6	15.4	0.00	0.00	0.00
1,400.0	12.27	98.42	1,381.9	-27.8	188.0	16.1	0.00	0.00	0.00
1,440.0	12.27	98.42	1,421.0	-29.1	196.4	16.8	0.00	0.00	0.00
1,480.0	12.27	98.42	1,460.1	-30.3	204.8	17.5	0.00	0.00	0.00
1,520.0	12.27	98.42	1,499.2	-31.6	213.2	18.3	0.00	0.00	0.00
1,560.0	12.27	98.42	1,538.3	-32.8	221.6	19.0	0.00	0.00	0.00
1,600.0	12.27	98.42	1,577.4	-34.0	230.0	19.7	0.00	0.00	0.00
1,640.0	12.27	98.42	1,616.5	-35.3	238.4	20.4	0.00	0.00	0.00
1,680.0	12.27	98.42	1,655.5	-36.5	246.8	21.1	0.00	0.00	0.00
1,720.0	12.27	98.42	1,694.6	-37.8	255.2	21.9	0.00	0.00	0.00
1,760.0	12.27	98.42	1,733.7	-39.0	263.7	22.6	0.00	0.00	0.00
1,800.0	12.27	98.42	1,772.8	-40.3	272.1	23.3	0.00	0.00	0.00
1,840.0	12.27	98.42	1,811.9	-41.5	280.5	24.0	0.00	0.00	0.00
1,880.0	12.27	98.42	1,851.0	-42.7	288.9	24.7	0.00	0.00	0.00
1,920.0	12.27	98.42	1,890.1	-44.0	297.3	25.5	0.00	0.00	0.00
1,960.0	12.27	98.42	1,929.1	-45.2	305.7	26.2	0.00	0.00	0.00
2,000.0	12.27	98.42	1,968.2	-46.5	314.1	26.9	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Leffler 26T-421
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4880.0ft (RKB - 15')
<b>Project:</b>	SEC.26-T7N-R66W	<b>MD Reference:</b>	WELL @ 4880.0ft (RKB - 15')
<b>Site:</b>	Leffler 26Q-421 Pad Sec.26-T7N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Leffler 26T-421	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (12-19-12)		

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)
2,040.0	12.27	98.42	2,007.3	-47.7	322.5	27.6	0.00	0.00	0.00
2,080.0	12.27	98.42	2,046.4	-49.0	330.9	28.3	0.00	0.00	0.00
2,120.0	12.27	98.42	2,085.5	-50.2	339.3	29.1	0.00	0.00	0.00
2,160.0	12.27	98.42	2,124.6	-51.5	347.7	29.8	0.00	0.00	0.00
2,200.0	12.27	98.42	2,163.7	-52.7	356.1	30.5	0.00	0.00	0.00
2,240.0	12.27	98.42	2,202.8	-53.9	364.5	31.2	0.00	0.00	0.00
2,280.0	12.27	98.42	2,241.8	-55.2	372.9	31.9	0.00	0.00	0.00
2,320.0	12.27	98.42	2,280.9	-56.4	381.3	32.7	0.00	0.00	0.00
2,360.0	12.27	98.42	2,320.0	-57.7	389.7	33.4	0.00	0.00	0.00
2,400.0	12.27	98.42	2,359.1	-58.9	398.2	34.1	0.00	0.00	0.00
2,440.0	12.27	98.42	2,398.2	-60.2	406.6	34.8	0.00	0.00	0.00
2,480.0	12.27	98.42	2,437.3	-61.4	415.0	35.5	0.00	0.00	0.00
2,520.0	12.27	98.42	2,476.4	-62.7	423.4	36.3	0.00	0.00	0.00
2,560.0	12.27	98.42	2,515.5	-63.9	431.8	37.0	0.00	0.00	0.00
2,600.0	12.27	98.42	2,554.5	-65.1	440.2	37.7	0.00	0.00	0.00
2,640.0	12.27	98.42	2,593.6	-66.4	448.6	38.4	0.00	0.00	0.00
2,680.0	12.27	98.42	2,632.7	-67.6	457.0	39.1	0.00	0.00	0.00
2,720.0	12.27	98.42	2,671.8	-68.9	465.4	39.9	0.00	0.00	0.00
2,760.0	12.27	98.42	2,710.9	-70.1	473.8	40.6	0.00	0.00	0.00
2,800.0	12.27	98.42	2,750.0	-71.4	482.2	41.3	0.00	0.00	0.00
2,840.0	12.27	98.42	2,789.1	-72.6	490.6	42.0	0.00	0.00	0.00
2,880.0	12.27	98.42	2,828.1	-73.8	499.0	42.7	0.00	0.00	0.00
2,920.0	12.27	98.42	2,867.2	-75.1	507.4	43.5	0.00	0.00	0.00
2,960.0	12.27	98.42	2,906.3	-76.3	515.8	44.2	0.00	0.00	0.00
3,000.0	12.27	98.42	2,945.4	-77.6	524.3	44.9	0.00	0.00	0.00
3,040.0	12.27	98.42	2,984.5	-78.8	532.7	45.6	0.00	0.00	0.00
3,080.0	12.27	98.42	3,023.6	-80.1	541.1	46.3	0.00	0.00	0.00
3,120.0	12.27	98.42	3,062.7	-81.3	549.5	47.1	0.00	0.00	0.00
3,160.0	12.27	98.42	3,101.8	-82.6	557.9	47.8	0.00	0.00	0.00
3,200.0	12.27	98.42	3,140.8	-83.8	566.3	48.5	0.00	0.00	0.00
3,240.0	12.27	98.42	3,179.9	-85.0	574.7	49.2	0.00	0.00	0.00
3,280.0	12.27	98.42	3,219.0	-86.3	583.1	49.9	0.00	0.00	0.00
3,320.0	12.27	98.42	3,258.1	-87.5	591.5	50.7	0.00	0.00	0.00
3,360.0	12.27	98.42	3,297.2	-88.8	599.9	51.4	0.00	0.00	0.00
3,400.0	12.27	98.42	3,336.3	-90.0	608.3	52.1	0.00	0.00	0.00
3,440.0	12.27	98.42	3,375.4	-91.3	616.7	52.8	0.00	0.00	0.00
3,480.0	12.27	98.42	3,414.5	-92.5	625.1	53.5	0.00	0.00	0.00
3,520.0	12.27	98.42	3,453.5	-93.8	633.5	54.3	0.00	0.00	0.00
3,560.0	12.27	98.42	3,492.6	-95.0	641.9	55.0	0.00	0.00	0.00
3,600.0	12.27	98.42	3,531.7	-96.2	650.3	55.7	0.00	0.00	0.00
3,640.0	12.27	98.42	3,570.8	-97.5	658.8	56.4	0.00	0.00	0.00
3,680.0	12.27	98.42	3,609.9	-98.7	667.2	57.1	0.00	0.00	0.00
3,720.0	12.27	98.42	3,649.0	-100.0	675.6	57.9	0.00	0.00	0.00
3,760.0	12.27	98.42	3,688.1	-101.2	684.0	58.6	0.00	0.00	0.00
3,800.0	12.27	98.42	3,727.1	-102.5	692.4	59.3	0.00	0.00	0.00
3,840.0	12.27	98.42	3,766.2	-103.7	700.8	60.0	0.00	0.00	0.00
3,880.0	12.27	98.42	3,805.3	-104.9	709.2	60.7	0.00	0.00	0.00
3,920.0	12.27	98.42	3,844.4	-106.2	717.6	61.5	0.00	0.00	0.00
3,960.0	12.27	98.42	3,883.5	-107.4	726.0	62.2	0.00	0.00	0.00
4,000.0	12.27	98.42	3,922.6	-108.7	734.4	62.9	0.00	0.00	0.00
4,040.0	12.27	98.42	3,961.7	-109.9	742.8	63.6	0.00	0.00	0.00
4,080.0	12.27	98.42	4,000.8	-111.2	751.2	64.3	0.00	0.00	0.00
4,120.0	12.27	98.42	4,039.8	-112.4	759.6	65.1	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Leffler 26T-421
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4880.0ft (RKB - 15')
<b>Project:</b>	SEC.26-T7N-R66W	<b>MD Reference:</b>	WELL @ 4880.0ft (RKB - 15')
<b>Site:</b>	Leffler 26Q-421 Pad Sec.26-T7N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Leffler 26T-421	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (12-19-12)		

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)
4,160.0	12.27	98.42	4,078.9	-113.7	768.0	65.8	0.00	0.00	0.00
4,200.0	12.27	98.42	4,118.0	-114.9	776.4	66.5	0.00	0.00	0.00
4,240.0	12.27	98.42	4,157.1	-116.1	784.9	67.2	0.00	0.00	0.00
4,280.0	12.27	98.42	4,196.2	-117.4	793.3	67.9	0.00	0.00	0.00
4,320.0	12.27	98.42	4,235.3	-118.6	801.7	68.7	0.00	0.00	0.00
4,360.0	12.27	98.42	4,274.4	-119.9	810.1	69.4	0.00	0.00	0.00
4,400.0	12.27	98.42	4,313.4	-121.1	818.5	70.1	0.00	0.00	0.00
4,440.0	12.27	98.42	4,352.5	-122.4	826.9	70.8	0.00	0.00	0.00
4,480.0	12.27	98.42	4,391.6	-123.6	835.3	71.5	0.00	0.00	0.00
4,520.0	12.27	98.42	4,430.7	-124.9	843.7	72.3	0.00	0.00	0.00
4,560.0	12.27	98.42	4,469.8	-126.1	852.1	73.0	0.00	0.00	0.00
4,600.0	12.27	98.42	4,508.9	-127.3	860.5	73.7	0.00	0.00	0.00
4,640.0	12.27	98.42	4,548.0	-128.6	868.9	74.4	0.00	0.00	0.00
4,680.0	12.27	98.42	4,587.1	-129.8	877.3	75.2	0.00	0.00	0.00
4,720.0	12.27	98.42	4,626.1	-131.1	885.7	75.9	0.00	0.00	0.00
4,760.0	12.27	98.42	4,665.2	-132.3	894.1	76.6	0.00	0.00	0.00
4,800.0	12.27	98.42	4,704.3	-133.6	902.5	77.3	0.00	0.00	0.00
4,840.0	12.27	98.42	4,743.4	-134.8	910.9	78.0	0.00	0.00	0.00
4,880.0	12.27	98.42	4,782.5	-136.0	919.4	78.8	0.00	0.00	0.00
4,920.0	12.27	98.42	4,821.6	-137.3	927.8	79.5	0.00	0.00	0.00
4,960.0	12.27	98.42	4,860.7	-138.5	936.2	80.2	0.00	0.00	0.00
5,000.0	12.27	98.42	4,899.8	-139.8	944.6	80.9	0.00	0.00	0.00
5,040.0	12.27	98.42	4,938.8	-141.0	953.0	81.6	0.00	0.00	0.00
5,080.0	12.27	98.42	4,977.9	-142.3	961.4	82.4	0.00	0.00	0.00
5,120.0	12.27	98.42	5,017.0	-143.5	969.8	83.1	0.00	0.00	0.00
5,160.0	12.27	98.42	5,056.1	-144.8	978.2	83.8	0.00	0.00	0.00
5,200.0	12.27	98.42	5,095.2	-146.0	986.6	84.5	0.00	0.00	0.00
5,240.0	12.27	98.42	5,134.3	-147.2	995.0	85.2	0.00	0.00	0.00
5,280.0	12.27	98.42	5,173.4	-148.5	1,003.4	86.0	0.00	0.00	0.00
5,320.0	12.27	98.42	5,212.4	-149.7	1,011.8	86.7	0.00	0.00	0.00
5,360.0	12.27	98.42	5,251.5	-151.0	1,020.2	87.4	0.00	0.00	0.00
5,400.0	12.27	98.42	5,290.6	-152.2	1,028.6	88.1	0.00	0.00	0.00
5,440.0	12.27	98.42	5,329.7	-153.5	1,037.0	88.8	0.00	0.00	0.00
5,480.0	12.27	98.42	5,368.8	-154.7	1,045.5	89.6	0.00	0.00	0.00
5,503.1	12.27	98.42	5,391.4	-155.4	1,050.3	90.0	0.00	0.00	0.00
5,520.0	11.93	98.42	5,407.9	-155.9	1,053.8	90.3	2.00	-2.00	0.00
5,560.0	11.13	98.42	5,447.1	-157.1	1,061.7	90.9	2.00	-2.00	0.00
5,600.0	10.33	98.42	5,486.4	-158.2	1,069.1	91.6	2.00	-2.00	0.00
5,640.0	9.53	98.42	5,525.8	-159.2	1,075.9	92.2	2.00	-2.00	0.00
5,680.0	8.73	98.42	5,565.3	-160.1	1,082.2	92.7	2.00	-2.00	0.00
5,720.0	7.93	98.42	5,604.9	-161.0	1,087.9	93.2	2.00	-2.00	0.00
5,760.0	7.13	98.42	5,644.5	-161.8	1,093.1	93.6	2.00	-2.00	0.00
5,800.0	6.33	98.42	5,684.2	-162.4	1,097.7	94.0	2.00	-2.00	0.00
5,840.0	5.53	98.42	5,724.0	-163.0	1,101.8	94.4	2.00	-2.00	0.00
5,880.0	4.73	98.42	5,763.9	-163.6	1,105.4	94.7	2.00	-2.00	0.00
5,920.0	3.93	98.42	5,803.7	-164.0	1,108.3	94.9	2.00	-2.00	0.00
5,960.0	3.13	98.42	5,843.7	-164.4	1,110.8	95.1	2.00	-2.00	0.00
6,000.0	2.33	98.42	5,883.6	-164.7	1,112.7	95.3	2.00	-2.00	0.00
6,040.0	1.53	98.42	5,923.6	-164.9	1,114.0	95.4	2.00	-2.00	0.00
6,080.0	0.73	98.42	5,963.6	-165.0	1,114.8	95.5	2.00	-2.00	0.00
6,116.4	0.00	0.00	6,000.0	-165.0	1,115.0	95.5	2.00	-2.00	0.00
6,120.0	0.00	0.00	6,003.6	-165.0	1,115.0	95.5	0.00	0.00	0.00
6,160.0	0.00	0.00	6,043.6	-165.0	1,115.0	95.5	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Leffler 26T-421
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4880.0ft (RKB - 15')
<b>Project:</b>	SEC.26-T7N-R66W	<b>MD Reference:</b>	WELL @ 4880.0ft (RKB - 15')
<b>Site:</b>	Leffler 26Q-421 Pad Sec.26-T7N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Leffler 26T-421	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (12-19-12)		

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)
6,200.0	0.00	0.00	6,083.6	-165.0	1,115.0	95.5	0.00	0.00	0.00
6,240.0	0.00	0.00	6,123.6	-165.0	1,115.0	95.5	0.00	0.00	0.00
6,280.0	0.00	0.00	6,163.6	-165.0	1,115.0	95.5	0.00	0.00	0.00
6,320.0	0.00	0.00	6,203.6	-165.0	1,115.0	95.5	0.00	0.00	0.00
6,360.0	0.00	0.00	6,243.6	-165.0	1,115.0	95.5	0.00	0.00	0.00
6,400.0	0.00	0.00	6,283.6	-165.0	1,115.0	95.5	0.00	0.00	0.00
6,440.0	0.00	0.00	6,323.6	-165.0	1,115.0	95.5	0.00	0.00	0.00
6,480.0	0.00	0.00	6,363.6	-165.0	1,115.0	95.5	0.00	0.00	0.00
6,520.0	0.00	0.00	6,403.6	-165.0	1,115.0	95.5	0.00	0.00	0.00
6,560.0	0.00	0.00	6,443.6	-165.0	1,115.0	95.5	0.00	0.00	0.00
6,600.0	0.00	0.00	6,483.6	-165.0	1,115.0	95.5	0.00	0.00	0.00
6,640.0	0.00	0.00	6,523.6	-165.0	1,115.0	95.5	0.00	0.00	0.00
6,680.0	0.00	0.00	6,563.6	-165.0	1,115.0	95.5	0.00	0.00	0.00
6,702.7	0.00	0.00	6,586.3	-165.0	1,115.0	95.5	0.00	0.00	0.00
<b>KOP #2</b>									
6,720.0	1.30	359.69	6,603.6	-164.8	1,115.0	95.7	7.50	7.50	0.00
6,760.0	4.30	359.69	6,643.5	-162.9	1,115.0	97.6	7.50	7.50	0.00
6,800.0	7.30	359.69	6,683.3	-158.8	1,115.0	101.5	7.50	7.50	0.00
6,840.0	10.30	359.69	6,722.9	-152.7	1,114.9	107.5	7.50	7.50	0.00
6,880.0	13.30	359.69	6,762.0	-144.5	1,114.9	115.4	7.50	7.50	0.00
6,920.0	16.30	359.69	6,800.7	-134.3	1,114.8	125.3	7.50	7.50	0.00
6,960.0	19.30	359.69	6,838.8	-122.1	1,114.8	137.2	7.50	7.50	0.00
7,000.0	22.30	359.69	6,876.1	-107.9	1,114.7	151.0	7.50	7.50	0.00
7,040.0	25.30	359.69	6,912.7	-91.7	1,114.6	166.7	7.50	7.50	0.00
7,080.0	28.30	359.69	6,948.4	-73.7	1,114.5	184.2	7.50	7.50	0.00
7,120.0	31.30	359.69	6,983.1	-53.8	1,114.4	203.6	7.50	7.50	0.00
7,160.0	34.30	359.69	7,016.8	-32.2	1,114.3	224.6	7.50	7.50	0.00
7,200.0	37.30	359.69	7,049.2	-8.8	1,114.2	247.4	7.50	7.50	0.00
7,240.0	40.30	359.69	7,080.4	16.3	1,114.0	271.7	7.50	7.50	0.00
7,280.0	43.30	359.69	7,110.2	42.9	1,113.9	297.6	7.50	7.50	0.00
7,320.0	46.30	359.69	7,138.6	71.1	1,113.7	325.0	7.50	7.50	0.00
7,360.0	49.30	359.69	7,165.4	100.8	1,113.6	353.8	7.50	7.50	0.00
7,400.0	52.30	359.69	7,190.7	131.7	1,113.4	384.0	7.50	7.50	0.00
7,440.0	55.30	359.69	7,214.3	164.0	1,113.2	415.3	7.50	7.50	0.00
7,480.0	58.30	359.69	7,236.2	197.5	1,113.0	447.9	7.50	7.50	0.00
7,520.0	61.30	359.69	7,256.4	232.0	1,112.9	481.5	7.50	7.50	0.00
7,560.0	64.30	359.69	7,274.6	267.6	1,112.7	516.0	7.50	7.50	0.00
7,600.0	67.30	359.69	7,291.0	304.1	1,112.5	551.5	7.50	7.50	0.00
7,640.0	70.30	359.69	7,305.5	341.4	1,112.3	587.7	7.50	7.50	0.00
7,680.0	73.30	359.69	7,318.0	379.4	1,112.1	624.7	7.50	7.50	0.00
7,720.0	76.30	359.69	7,328.5	418.0	1,111.8	662.2	7.50	7.50	0.00
7,760.0	79.30	359.69	7,336.9	457.1	1,111.6	700.2	7.50	7.50	0.00
7,800.0	82.30	359.69	7,343.3	496.5	1,111.4	738.5	7.50	7.50	0.00
7,822.7	84.00	359.69	7,346.0	519.1	1,111.3	760.5	7.50	7.50	0.00
<b>7"</b>									
7,840.0	84.00	359.69	7,347.9	536.3	1,111.2	777.2	0.00	0.00	0.00
7,880.0	84.00	359.69	7,352.0	576.1	1,111.0	815.8	0.00	0.00	0.00
7,896.7	84.00	359.69	7,353.8	592.7	1,110.9	832.0	0.00	0.00	0.00
7,920.0	85.17	359.69	7,356.0	615.9	1,110.8	854.5	5.00	5.00	0.00
7,960.0	87.17	359.69	7,358.7	655.8	1,110.6	893.3	5.00	5.00	0.00
8,000.0	89.17	359.69	7,359.9	695.8	1,110.3	932.2	5.00	5.00	0.00
8,018.2	90.07	359.69	7,360.1	714.0	1,110.2	949.9	5.00	5.00	0.00
<b>End of Build</b>									



<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Leffler 26T-421
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4880.0ft (RKB - 15')
<b>Project:</b>	SEC.26-T7N-R66W	<b>MD Reference:</b>	WELL @ 4880.0ft (RKB - 15')
<b>Site:</b>	Leffler 26Q-421 Pad Sec.26-T7N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Leffler 26T-421	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (12-19-12)		

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)
8,040.0	90.07	359.69	7,360.0	735.8	1,110.1	971.1	0.00	0.00	0.00
8,080.0	90.07	359.69	7,360.0	775.8	1,109.9	1,009.9	0.00	0.00	0.00
8,120.0	90.07	359.69	7,359.9	815.8	1,109.7	1,048.8	0.00	0.00	0.00
8,160.0	90.07	359.69	7,359.9	855.8	1,109.5	1,087.7	0.00	0.00	0.00
8,200.0	90.07	359.69	7,359.8	895.8	1,109.3	1,126.6	0.00	0.00	0.00
8,240.0	90.07	359.69	7,359.8	935.8	1,109.1	1,165.5	0.00	0.00	0.00
8,280.0	90.07	359.69	7,359.7	975.8	1,108.8	1,204.4	0.00	0.00	0.00
8,320.0	90.07	359.69	7,359.7	1,015.8	1,108.6	1,243.2	0.00	0.00	0.00
8,360.0	90.07	359.69	7,359.6	1,055.8	1,108.4	1,282.1	0.00	0.00	0.00
8,400.0	90.07	359.69	7,359.6	1,095.8	1,108.2	1,321.0	0.00	0.00	0.00
8,440.0	90.07	359.69	7,359.5	1,135.8	1,108.0	1,359.9	0.00	0.00	0.00
8,480.0	90.07	359.69	7,359.5	1,175.8	1,107.8	1,398.8	0.00	0.00	0.00
8,520.0	90.07	359.69	7,359.4	1,215.7	1,107.6	1,437.6	0.00	0.00	0.00
8,560.0	90.07	359.69	7,359.4	1,255.7	1,107.3	1,476.5	0.00	0.00	0.00
8,600.0	90.07	359.69	7,359.3	1,295.7	1,107.1	1,515.4	0.00	0.00	0.00
8,640.0	90.07	359.69	7,359.3	1,335.7	1,106.9	1,554.3	0.00	0.00	0.00
8,680.0	90.07	359.69	7,359.2	1,375.7	1,106.7	1,593.2	0.00	0.00	0.00
8,720.0	90.07	359.69	7,359.1	1,415.7	1,106.5	1,632.0	0.00	0.00	0.00
8,760.0	90.07	359.69	7,359.1	1,455.7	1,106.3	1,670.9	0.00	0.00	0.00
8,800.0	90.07	359.69	7,359.0	1,495.7	1,106.1	1,709.8	0.00	0.00	0.00
8,840.0	90.07	359.69	7,359.0	1,535.7	1,105.8	1,748.7	0.00	0.00	0.00
8,880.0	90.07	359.69	7,358.9	1,575.7	1,105.6	1,787.6	0.00	0.00	0.00
8,920.0	90.07	359.69	7,358.9	1,615.7	1,105.4	1,826.4	0.00	0.00	0.00
8,960.0	90.07	359.69	7,358.8	1,655.7	1,105.2	1,865.3	0.00	0.00	0.00
9,000.0	90.07	359.69	7,358.8	1,695.7	1,105.0	1,904.2	0.00	0.00	0.00
9,040.0	90.07	359.69	7,358.7	1,735.7	1,104.8	1,943.1	0.00	0.00	0.00
9,080.0	90.07	359.69	7,358.7	1,775.7	1,104.6	1,982.0	0.00	0.00	0.00
9,120.0	90.07	359.69	7,358.6	1,815.7	1,104.3	2,020.8	0.00	0.00	0.00
9,160.0	90.07	359.69	7,358.6	1,855.7	1,104.1	2,059.7	0.00	0.00	0.00
9,200.0	90.07	359.69	7,358.5	1,895.7	1,103.9	2,098.6	0.00	0.00	0.00
9,240.0	90.07	359.69	7,358.5	1,935.7	1,103.7	2,137.5	0.00	0.00	0.00
9,280.0	90.07	359.69	7,358.4	1,975.7	1,103.5	2,176.4	0.00	0.00	0.00
9,320.0	90.07	359.69	7,358.4	2,015.7	1,103.3	2,215.3	0.00	0.00	0.00
9,360.0	90.07	359.69	7,358.3	2,055.7	1,103.1	2,254.1	0.00	0.00	0.00
9,400.0	90.07	359.69	7,358.3	2,095.7	1,102.8	2,293.0	0.00	0.00	0.00
9,440.0	90.07	359.69	7,358.2	2,135.7	1,102.6	2,331.9	0.00	0.00	0.00
9,480.0	90.07	359.69	7,358.2	2,175.7	1,102.4	2,370.8	0.00	0.00	0.00
9,520.0	90.07	359.69	7,358.1	2,215.7	1,102.2	2,409.7	0.00	0.00	0.00
9,560.0	90.07	359.69	7,358.1	2,255.7	1,102.0	2,448.5	0.00	0.00	0.00
9,600.0	90.07	359.69	7,358.0	2,295.7	1,101.8	2,487.4	0.00	0.00	0.00
9,640.0	90.07	359.69	7,358.0	2,335.7	1,101.6	2,526.3	0.00	0.00	0.00
9,680.0	90.07	359.69	7,357.9	2,375.7	1,101.3	2,565.2	0.00	0.00	0.00
9,720.0	90.07	359.69	7,357.9	2,415.7	1,101.1	2,604.1	0.00	0.00	0.00
9,760.0	90.07	359.69	7,357.8	2,455.7	1,100.9	2,642.9	0.00	0.00	0.00
9,800.0	90.07	359.69	7,357.7	2,495.7	1,100.7	2,681.8	0.00	0.00	0.00
9,840.0	90.07	359.69	7,357.7	2,535.7	1,100.5	2,720.7	0.00	0.00	0.00
9,880.0	90.07	359.69	7,357.6	2,575.7	1,100.3	2,759.6	0.00	0.00	0.00
9,920.0	90.07	359.69	7,357.6	2,615.7	1,100.1	2,798.5	0.00	0.00	0.00
9,960.0	90.07	359.69	7,357.5	2,655.7	1,099.8	2,837.3	0.00	0.00	0.00
10,000.0	90.07	359.69	7,357.5	2,695.7	1,099.6	2,876.2	0.00	0.00	0.00
10,040.0	90.07	359.69	7,357.4	2,735.7	1,099.4	2,915.1	0.00	0.00	0.00
10,080.0	90.07	359.69	7,357.4	2,775.7	1,099.2	2,954.0	0.00	0.00	0.00
10,120.0	90.07	359.69	7,357.3	2,815.7	1,099.0	2,992.9	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Leffler 26T-421
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4880.0ft (RKB - 15')
<b>Project:</b>	SEC.26-T7N-R66W	<b>MD Reference:</b>	WELL @ 4880.0ft (RKB - 15')
<b>Site:</b>	Leffler 26Q-421 Pad Sec.26-T7N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Leffler 26T-421	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (12-19-12)		

## 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)
10,160.0	90.07	359.69	7,357.3	2,855.7	1,098.8	3,031.7	0.00	0.00	0.00
10,200.0	90.07	359.69	7,357.2	2,895.7	1,098.6	3,070.6	0.00	0.00	0.00
10,240.0	90.07	359.69	7,357.2	2,935.7	1,098.3	3,109.5	0.00	0.00	0.00
10,280.0	90.07	359.69	7,357.1	2,975.7	1,098.1	3,148.4	0.00	0.00	0.00
10,320.0	90.07	359.69	7,357.1	3,015.7	1,097.9	3,187.3	0.00	0.00	0.00
10,360.0	90.07	359.69	7,357.0	3,055.7	1,097.7	3,226.2	0.00	0.00	0.00
10,400.0	90.07	359.69	7,357.0	3,095.7	1,097.5	3,265.0	0.00	0.00	0.00
10,440.0	90.07	359.69	7,356.9	3,135.7	1,097.3	3,303.9	0.00	0.00	0.00
10,480.0	90.07	359.69	7,356.9	3,175.7	1,097.1	3,342.8	0.00	0.00	0.00
10,520.0	90.07	359.69	7,356.8	3,215.7	1,096.8	3,381.7	0.00	0.00	0.00
10,560.0	90.07	359.69	7,356.8	3,255.7	1,096.6	3,420.6	0.00	0.00	0.00
10,600.0	90.07	359.69	7,356.7	3,295.7	1,096.4	3,459.4	0.00	0.00	0.00
10,640.0	90.07	359.69	7,356.7	3,335.7	1,096.2	3,498.3	0.00	0.00	0.00
10,680.0	90.07	359.69	7,356.6	3,375.7	1,096.0	3,537.2	0.00	0.00	0.00
10,720.0	90.07	359.69	7,356.6	3,415.7	1,095.8	3,576.1	0.00	0.00	0.00
10,760.0	90.07	359.69	7,356.5	3,455.7	1,095.6	3,615.0	0.00	0.00	0.00
10,800.0	90.07	359.69	7,356.5	3,495.7	1,095.3	3,653.8	0.00	0.00	0.00
10,840.0	90.07	359.69	7,356.4	3,535.7	1,095.1	3,692.7	0.00	0.00	0.00
10,880.0	90.07	359.69	7,356.3	3,575.7	1,094.9	3,731.6	0.00	0.00	0.00
10,920.0	90.07	359.69	7,356.3	3,615.7	1,094.7	3,770.5	0.00	0.00	0.00
10,960.0	90.07	359.69	7,356.2	3,655.7	1,094.5	3,809.4	0.00	0.00	0.00
11,000.0	90.07	359.69	7,356.2	3,695.7	1,094.3	3,848.2	0.00	0.00	0.00
11,040.0	90.07	359.69	7,356.1	3,735.7	1,094.1	3,887.1	0.00	0.00	0.00
11,080.0	90.07	359.69	7,356.1	3,775.7	1,093.8	3,926.0	0.00	0.00	0.00
11,120.0	90.07	359.69	7,356.0	3,815.7	1,093.6	3,964.9	0.00	0.00	0.00
11,160.0	90.07	359.69	7,356.0	3,855.7	1,093.4	4,003.8	0.00	0.00	0.00
11,200.0	90.07	359.69	7,355.9	3,895.7	1,093.2	4,042.6	0.00	0.00	0.00
11,240.0	90.07	359.69	7,355.9	3,935.7	1,093.0	4,081.5	0.00	0.00	0.00
11,280.0	90.07	359.69	7,355.8	3,975.7	1,092.8	4,120.4	0.00	0.00	0.00
11,320.0	90.07	359.69	7,355.8	4,015.7	1,092.6	4,159.3	0.00	0.00	0.00
11,360.0	90.07	359.69	7,355.7	4,055.7	1,092.3	4,198.2	0.00	0.00	0.00
11,400.0	90.07	359.69	7,355.7	4,095.7	1,092.1	4,237.1	0.00	0.00	0.00
11,440.0	90.07	359.69	7,355.6	4,135.7	1,091.9	4,275.9	0.00	0.00	0.00
11,480.0	90.07	359.69	7,355.6	4,175.7	1,091.7	4,314.8	0.00	0.00	0.00
11,520.0	90.07	359.69	7,355.5	4,215.7	1,091.5	4,353.7	0.00	0.00	0.00
11,560.0	90.07	359.69	7,355.5	4,255.7	1,091.3	4,392.6	0.00	0.00	0.00
11,600.0	90.07	359.69	7,355.4	4,295.7	1,091.1	4,431.5	0.00	0.00	0.00
11,640.0	90.07	359.69	7,355.4	4,335.7	1,090.8	4,470.3	0.00	0.00	0.00
11,680.0	90.07	359.69	7,355.3	4,375.7	1,090.6	4,509.2	0.00	0.00	0.00
11,720.0	90.07	359.69	7,355.3	4,415.7	1,090.4	4,548.1	0.00	0.00	0.00
11,760.0	90.07	359.69	7,355.2	4,455.7	1,090.2	4,587.0	0.00	0.00	0.00
11,800.0	90.07	359.69	7,355.2	4,495.7	1,090.0	4,625.9	0.00	0.00	0.00
11,840.0	90.07	359.69	7,355.1	4,535.7	1,089.8	4,664.7	0.00	0.00	0.00
11,880.0	90.07	359.69	7,355.1	4,575.7	1,089.6	4,703.6	0.00	0.00	0.00
11,920.0	90.07	359.69	7,355.0	4,615.7	1,089.3	4,742.5	0.00	0.00	0.00
11,920.3	90.07	359.69	7,355.0	4,616.0	1,089.3	4,742.8	0.00	0.00	0.00
BHL 500°FNL & 945°FEL									

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Leffler 26T-421
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4880.0ft (RKB - 15')
<b>Project:</b>	SEC.26-T7N-R66W	<b>MD Reference:</b>	WELL @ 4880.0ft (RKB - 15')
<b>Site:</b>	Leffler 26Q-421 Pad Sec.26-T7N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Leffler 26T-421	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (12-19-12)		

#### Targets

##### Target Name

- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
BHL 500'FNL & 945'F	0.00	0.00	7,355.0	4,616.0	1,089.3	1,444,904.82	3,211,581.97	40.552170	-104.738590
- plan hits target center									
- Point									

#### Casing Points

Measured Depth	Vertical Depth	Name	Casing Diameter	Hole Diameter
(ft)	(ft)		(")	(")
7,822.7	7,346.0	7"	7	7-1/2

#### Plan Annotations

Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
200.0	200.0	0.0	0.0	KOP #1
6,702.7	6,586.3	-165.0	1,115.0	KOP #2
8,018.2	7,360.1	714.0	1,110.2	End of Build



# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.26-T7N-R66W**

**Leffler 26Q-421 Pad Sec.26-T7N-R66W**

**Leffler 26T-421**

**Wellbore #1**

**Plan #1 (12-19-12)**

## **Anticollision Report**

**20 December, 2012**



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Leffler 26T-421
<b>Project:</b>	SEC.26-T7N-R66W	<b>TVD Reference:</b>	WELL @ 4880.0ft (RKB - 15')
<b>Reference Site:</b>	Leffler 26Q-421 Pad Sec.26-T7N-R66W	<b>MD Reference:</b>	WELL @ 4880.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Leffler 26T-421	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (12-19-12)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Plan #1 (12-19-12)		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	Stations	<b>Error Model:</b>	ISCWSA
<b>Depth Range:</b>	Unlimited	<b>Scan Method:</b>	Closest Approach 3D
<b>Results Limited by:</b>	Maximum center-center distance of 10,000.0ft	<b>Error Surface:</b>	Elliptical Conic
<b>Warning Levels Evaluated at:</b>	2.00 Sigma		

<b>Survey Tool Program</b>	<b>Date</b>	12/19/2012		
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.0	11,920.3	Plan #1 (12-19-12) (Wellbore #1)	MWD	MWD - Standard

<b>Summary</b>						
<b>Site Name</b>	<b>Reference Measured Depth (ft)</b>	<b>Offset Measured Depth (ft)</b>	<b>Distance Between Centres (ft)</b>	<b>Separation Factor</b>	<b>Warning</b>	
<b>Offset Well - Wellbore - Design</b>						
Leffler 26Q-421 Pad Sec.26-T7N-R66W						
Leffler 26Q-421 - Wellbore #1 - Plan #2 (10-10-12)	200.0	200.0	30.6	29.9	45.342	CC, ES
Leffler 26Q-421 - Wellbore #1 - Plan #2 (10-10-12)	11,920.3	11,781.4	1,154.8	973.6	6.374	SF

<b>Offset Design</b>	Leffler 26Q-421 Pad Sec.26-T7N-R66W - Leffler 26Q-421 - Wellbore #1 - Plan #2 (10-10-12)												<b>Offset Site Error:</b>	0.0ft
<b>Survey Program:</b>	0-MWD												<b>Offset Well Error:</b>	0.0ft
<b>Reference Measured Depth (ft)</b>	<b>Vertical Depth (ft)</b>	<b>Offset Measured Depth (ft)</b>	<b>Vertical Depth (ft)</b>	<b>Semi Major Axis Reference (ft)</b>	<b>Offset (ft)</b>	<b>Highside Toolface (°)</b>	<b>Offset Wellbore Centre +N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Distance Between Centres (ft)</b>	<b>Between Ellipses (ft)</b>	<b>Minimum Separation (ft)</b>	<b>Separation Factor</b>	<b>Warning</b>	
0.0	0.0	0.0	0.0	0.0	0.0	-89.98	0.0	-30.6	30.6					
100.0	100.0	100.0	100.0	0.1	0.1	-89.98	0.0	-30.6	30.6	30.3	0.22	136.026		
200.0	200.0	200.0	200.0	0.3	0.3	-89.98	0.0	-30.6	30.6	29.9	0.67	45.342	CC, ES	
300.0	300.0	300.0	300.0	0.6	0.6	172.05	0.0	-30.6	32.3	31.2	1.12	28.890		
400.0	399.8	399.8	399.8	0.8	0.8	173.14	0.0	-30.6	37.5	35.9	1.56	23.965		
500.0	499.5	499.5	499.5	1.0	1.0	174.41	0.0	-30.6	46.2	44.1	2.02	22.871		
600.0	598.7	598.7	598.7	1.3	1.2	175.56	0.0	-30.6	58.3	55.8	2.48	23.550		
700.0	697.5	697.5	697.5	1.6	1.5	176.48	0.0	-30.6	73.9	71.0	2.94	25.176		
800.0	795.6	795.6	795.6	2.0	1.7	177.18	0.0	-30.6	93.0	89.6	3.40	27.357		
813.3	808.6	808.6	808.6	2.1	1.7	177.26	0.0	-30.6	95.7	92.3	3.46	27.677		
900.0	893.3	893.3	893.3	2.5	1.9	177.70	0.0	-30.6	114.2	110.3	3.86	29.576		
1,000.0	991.1	991.1	991.1	2.9	2.1	178.06	0.0	-30.6	135.4	131.1	4.33	31.294		
1,100.0	1,088.8	1,088.8	1,088.8	3.4	2.3	178.33	0.0	-30.6	156.6	151.8	4.80	32.651		
1,200.0	1,186.5	1,186.5	1,186.5	3.8	2.6	178.53	0.0	-30.6	177.9	172.6	5.27	33.748		
1,300.0	1,284.2	1,284.2	1,284.2	4.3	2.8	178.68	0.0	-30.6	199.1	193.3	5.75	34.652		
1,400.0	1,381.9	1,381.9	1,381.9	4.7	3.0	178.81	0.0	-30.6	220.3	214.1	6.22	35.409		
1,500.0	1,479.7	1,479.7	1,479.7	5.2	3.2	178.92	0.0	-30.6	241.6	234.9	6.70	36.051		
1,600.0	1,577.4	1,577.4	1,577.4	5.7	3.4	179.00	0.0	-30.6	262.8	255.6	7.18	36.602		
1,700.0	1,675.1	1,675.1	1,675.1	6.1	3.7	179.08	0.0	-30.6	284.1	276.4	7.66	37.081		
1,800.0	1,772.8	1,772.8	1,772.8	6.6	3.9	179.14	0.0	-30.6	305.3	297.2	8.14	37.499		
1,900.0	1,870.5	1,870.5	1,870.5	7.1	4.1	179.20	0.0	-30.6	326.5	317.9	8.62	37.869		
2,000.0	1,968.2	1,968.2	1,968.2	7.5	4.3	179.25	0.0	-30.6	347.8	338.7	9.11	38.197		
2,100.0	2,066.0	2,065.3	2,065.3	8.0	4.5	179.17	-0.7	-30.7	369.1	359.5	9.57	38.575		
2,200.0	2,163.7	2,161.9	2,161.8	8.5	4.7	178.64	-4.5	-31.5	390.6	380.6	10.01	39.028		

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Leffler 26T-421
<b>Project:</b>	SEC.26-T7N-R66W	<b>TVD Reference:</b>	WELL @ 4880.0ft (RKB - 15')
<b>Reference Site:</b>	Leffler 26Q-421 Pad Sec.26-T7N-R66W	<b>MD Reference:</b>	WELL @ 4880.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Leffler 26T-421	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (12-19-12)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference														
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
2,300.0	2,261.4	2,258.0	2,257.7	8.9	4.9	177.71	-11.4	-33.0	412.5	402.1	10.45	39.476		
2,400.0	2,359.1	2,354.8	2,354.0	9.4	5.0	176.56	-20.5	-34.9	434.8	423.9	10.91	39.858		
2,500.0	2,456.8	2,452.0	2,450.7	9.9	5.2	175.51	-29.8	-36.9	457.2	445.8	11.38	40.180		
2,600.0	2,554.5	2,549.1	2,547.3	10.3	5.4	174.56	-39.1	-38.8	479.8	467.9	11.86	40.449		
2,700.0	2,652.3	2,646.2	2,644.0	10.8	5.6	173.69	-48.3	-40.8	502.4	490.1	12.35	40.672		
2,800.0	2,750.0	2,743.3	2,740.7	11.3	5.8	172.90	-57.6	-42.7	525.2	512.4	12.85	40.860		
2,900.0	2,847.7	2,840.5	2,837.3	11.8	6.0	172.17	-66.9	-44.7	548.1	534.7	13.36	41.015		
3,000.0	2,945.4	2,937.6	2,934.0	12.2	6.3	171.50	-76.2	-46.6	571.0	557.1	13.88	41.144		
3,100.0	3,043.1	3,034.7	3,030.7	12.7	6.5	170.88	-85.4	-48.6	594.0	579.6	14.40	41.251		
3,200.0	3,140.8	3,131.8	3,127.3	13.2	6.7	170.31	-94.7	-50.6	617.1	602.2	14.93	41.340		
3,300.0	3,238.6	3,229.0	3,224.0	13.6	7.0	169.78	-104.0	-52.5	640.2	624.7	15.46	41.412		
3,400.0	3,336.3	3,326.1	3,320.6	14.1	7.2	169.28	-113.3	-54.5	663.4	647.4	16.00	41.472		
3,500.0	3,434.0	3,423.2	3,417.3	14.6	7.5	168.82	-122.5	-56.4	686.6	670.0	16.54	41.521		
3,600.0	3,531.7	3,520.3	3,514.0	15.0	7.7	168.39	-131.8	-58.4	709.8	692.8	17.08	41.560		
3,700.0	3,629.4	3,617.4	3,610.6	15.5	7.9	167.99	-141.1	-60.3	733.1	715.5	17.63	41.591		
3,800.0	3,727.1	3,714.6	3,707.3	16.0	8.2	167.61	-150.4	-62.3	756.4	738.3	18.18	41.616		
3,900.0	3,824.9	3,818.5	3,810.8	16.5	8.5	167.33	-158.9	-64.1	779.4	760.7	18.72	41.627		
4,000.0	3,922.6	3,924.0	3,916.2	16.9	8.7	167.34	-163.8	-65.1	801.5	782.2	19.23	41.668		
4,100.0	4,020.3	4,028.1	4,020.3	17.4	8.9	167.60	-165.0	-65.4	822.5	802.8	19.71	41.732		
4,200.0	4,118.0	4,125.8	4,118.0	17.9	9.1	167.91	-165.0	-65.4	843.3	823.1	20.16	41.824		
4,300.0	4,215.7	4,223.5	4,215.7	18.3	9.3	168.20	-165.0	-65.4	864.1	843.5	20.62	41.909		
4,400.0	4,313.4	4,321.3	4,313.4	18.8	9.5	168.48	-165.0	-65.4	884.9	863.9	21.08	41.989		
4,500.0	4,411.2	4,419.0	4,411.2	19.3	9.7	168.75	-165.0	-65.4	905.8	884.3	21.53	42.064		
4,600.0	4,508.9	4,516.7	4,508.9	19.8	9.9	169.01	-165.0	-65.4	926.6	904.7	21.99	42.134		
4,700.0	4,606.6	4,614.4	4,606.6	20.2	10.1	169.25	-165.0	-65.4	947.5	925.1	22.45	42.201		
4,800.0	4,704.3	4,712.1	4,704.3	20.7	10.3	169.49	-165.0	-65.4	968.4	945.5	22.91	42.263		
4,900.0	4,802.0	4,809.8	4,802.0	21.2	10.5	169.71	-165.0	-65.4	989.3	966.0	23.38	42.322		
5,000.0	4,899.8	4,907.6	4,899.8	21.6	10.7	169.93	-165.0	-65.4	1,010.3	986.4	23.84	42.378		
5,100.0	4,997.5	5,005.3	4,997.5	22.1	10.9	170.13	-165.0	-65.4	1,031.2	1,006.9	24.30	42.430		
5,200.0	5,095.2	5,103.0	5,095.2	22.6	11.1	170.33	-165.0	-65.4	1,052.2	1,027.4	24.77	42.480		
5,300.0	5,192.9	5,200.7	5,192.9	23.0	11.3	170.52	-165.0	-65.4	1,073.1	1,047.9	25.23	42.526		
5,400.0	5,290.6	5,298.4	5,290.6	23.5	11.5	170.70	-165.0	-65.4	1,094.1	1,068.4	25.70	42.571		
5,503.1	5,391.4	5,399.2	5,391.4	24.0	11.7	170.89	-165.0	-65.4	1,115.7	1,089.5	26.18	42.614		
5,600.0	5,486.4	5,494.2	5,486.4	24.4	11.9	171.10	-165.0	-65.4	1,134.5	1,107.8	26.66	42.551		
5,700.0	5,585.1	5,592.9	5,585.1	24.7	12.1	171.27	-165.0	-65.4	1,150.5	1,123.4	27.10	42.459		
5,800.0	5,684.2	5,692.0	5,684.2	24.9	12.3	171.41	-165.0	-65.4	1,163.1	1,135.6	27.50	42.297		
5,900.0	5,783.8	5,791.6	5,783.8	25.1	12.5	171.50	-165.0	-65.4	1,172.3	1,144.4	27.87	42.068		
6,000.0	5,883.6	5,891.4	5,883.6	25.3	12.7	171.56	-165.0	-65.4	1,178.0	1,149.8	28.20	41.777		
6,100.0	5,983.6	5,991.4	5,983.6	25.4	12.9	171.58	-165.0	-65.4	1,180.3	1,151.8	28.49	41.424		
6,116.4	6,000.0	6,007.8	6,000.0	25.4	13.0	-90.00	-165.0	-65.4	1,180.4	1,151.9	28.52	41.390		
6,200.0	6,083.6	6,091.4	6,083.6	25.5	13.1	-90.00	-165.0	-65.4	1,180.4	1,151.5	28.83	40.938		
6,300.0	6,183.6	6,191.4	6,183.6	25.6	13.4	-90.00	-165.0	-65.4	1,180.4	1,151.2	29.21	40.410		
6,400.0	6,283.6	6,291.4	6,283.6	25.7	13.6	-90.00	-165.0	-65.4	1,180.4	1,150.8	29.59	39.893		
6,500.0	6,383.6	6,391.4	6,383.6	25.8	13.8	-90.00	-165.0	-65.4	1,180.4	1,150.4	29.97	39.387		
6,600.0	6,483.6	6,491.4	6,483.6	25.9	14.0	-90.00	-165.0	-65.4	1,180.4	1,150.0	30.35	38.891		
6,665.6	6,549.2	6,557.0	6,549.2	26.0	14.1	-90.00	-165.0	-65.4	1,180.4	1,149.8	30.60	38.571		
6,702.7	6,586.3	6,594.1	6,586.3	26.1	14.2	-89.99	-164.8	-65.4	1,180.4	1,149.6	30.74	38.394		
6,750.0	6,633.6	6,641.3	6,633.6	26.1	14.3	-89.64	-162.4	-65.4	1,180.4	1,149.4	30.93	38.163		
6,800.0	6,683.3	6,691.2	6,683.3	26.2	14.4	-89.59	-156.8	-65.4	1,180.3	1,149.3	31.08	37.972		
6,850.0	6,732.7	6,741.1	6,732.0	26.2	14.5	-89.55	-147.9	-65.4	1,180.3	1,149.1	31.22	37.803		
6,900.0	6,781.4	6,790.8	6,780.3	26.2	14.5	-89.51	-135.8	-65.4	1,180.2	1,148.9	31.35	37.652		

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Leffler 26T-421
<b>Project:</b>	SEC.26-T7N-R66W	<b>TVD Reference:</b>	WELL @ 4880.0ft (RKB - 15')
<b>Reference Site:</b>	Leffler 26Q-421 Pad Sec.26-T7N-R66W	<b>MD Reference:</b>	WELL @ 4880.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Leffler 26T-421	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (12-19-12)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference														
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
6,950.0	6,829.3	6,840.5	6,827.6	26.3	14.6	-89.47	-89.47	-120.7	-65.4	1,180.2	1,148.7	31.46	37.514	
7,000.0	6,876.1	6,890.2	6,873.8	26.3	14.7	-89.43	-89.43	-102.5	-65.4	1,180.1	1,148.5	31.57	37.380	
7,050.0	6,921.8	6,939.7	6,918.7	26.3	14.7	-89.39	-89.39	-81.4	-65.4	1,180.0	1,148.3	31.68	37.243	
7,100.0	6,965.9	6,989.3	6,962.0	26.4	14.8	-89.36	-89.36	-57.5	-65.4	1,179.9	1,148.0	31.81	37.093	
7,150.0	7,008.5	7,038.7	7,003.7	26.4	14.9	-89.33	-89.33	-30.8	-65.4	1,179.7	1,147.8	31.95	36.921	
7,200.0	7,049.2	7,088.2	7,043.5	26.4	15.0	-89.30	-89.30	-1.5	-65.4	1,179.6	1,147.4	32.12	36.719	
7,250.0	7,088.0	7,137.5	7,081.3	26.4	15.1	-89.28	-89.28	30.2	-65.4	1,179.4	1,147.1	32.33	36.476	
7,300.0	7,124.6	7,186.9	7,116.9	26.4	15.2	-89.26	-89.26	64.3	-65.4	1,179.2	1,146.6	32.59	36.185	
7,350.0	7,158.9	7,236.1	7,150.2	26.5	15.4	-89.24	-89.24	100.6	-65.4	1,179.0	1,146.1	32.90	35.840	
7,400.0	7,190.7	7,285.4	7,181.1	26.5	15.6	-89.23	-89.23	139.0	-65.4	1,178.8	1,145.6	33.27	35.434	
7,450.0	7,220.0	7,334.6	7,209.5	26.6	15.8	-89.22	-89.22	179.2	-65.4	1,178.6	1,144.9	33.71	34.967	
7,500.0	7,246.5	7,383.8	7,235.2	26.6	16.1	-89.21	-89.21	221.1	-65.4	1,178.4	1,144.2	34.22	34.439	
7,550.0	7,270.3	7,432.9	7,258.1	26.7	16.4	-89.20	-89.20	264.6	-65.4	1,178.2	1,143.4	34.80	33.851	
7,600.0	7,291.0	7,482.0	7,278.1	26.8	16.8	-89.20	-89.20	309.4	-65.4	1,177.9	1,142.4	35.47	33.209	
7,650.0	7,308.8	7,531.1	7,295.3	26.9	17.2	-89.20	-89.20	355.4	-65.4	1,177.7	1,141.5	36.21	32.520	
7,700.0	7,323.5	7,580.2	7,309.4	27.1	17.6	-89.21	-89.21	402.4	-65.4	1,177.4	1,140.4	37.03	31.793	
7,750.0	7,335.0	7,629.2	7,320.5	27.2	18.1	-89.22	-89.22	450.1	-65.4	1,177.2	1,139.2	37.93	31.037	
7,800.0	7,343.3	7,678.3	7,328.5	27.4	18.6	-89.23	-89.23	498.5	-65.4	1,176.9	1,138.0	38.89	30.263	
7,822.7	7,346.0	7,700.6	7,331.1	27.5	18.8	-89.24	-89.24	520.7	-65.4	1,176.8	1,137.4	39.34	29.910	
7,896.7	7,353.8	7,774.5	7,338.9	27.9	19.6	-89.24	-89.24	594.2	-65.4	1,176.4	1,135.4	40.95	28.728	
7,900.0	7,354.1	7,777.8	7,339.2	27.9	19.7	-89.24	-89.24	597.5	-65.4	1,176.4	1,135.3	41.02	28.675	
8,000.0	7,359.9	7,876.5	7,344.9	28.6	20.9	-89.26	-89.26	696.0	-65.4	1,175.8	1,132.4	43.37	27.110	
8,018.2	7,360.1	7,894.5	7,345.0	28.7	21.1	-89.27	-89.27	714.0	-65.4	1,175.7	1,131.9	43.82	26.833	
8,100.0	7,360.0	7,976.3	7,345.3	29.4	22.2	-89.29	-89.29	795.8	-65.4	1,175.3	1,129.3	45.93	25.589	
8,200.0	7,359.8	8,076.3	7,345.7	30.3	23.6	-89.31	-89.31	895.8	-65.4	1,174.7	1,126.1	48.66	24.144	
8,300.0	7,359.7	8,176.3	7,346.1	31.4	25.1	-89.34	-89.34	995.8	-65.4	1,174.2	1,122.7	51.53	22.789	
8,400.0	7,359.6	8,276.3	7,346.5	32.5	26.6	-89.36	-89.36	1,095.8	-65.4	1,173.6	1,119.1	54.52	21.528	
8,500.0	7,359.4	8,376.3	7,346.8	33.7	28.2	-89.39	-89.39	1,195.8	-65.4	1,173.1	1,115.5	57.61	20.363	
8,600.0	7,359.3	8,476.3	7,347.2	35.1	29.8	-89.41	-89.41	1,295.8	-65.4	1,172.6	1,111.8	60.79	19.289	
8,700.0	7,359.2	8,576.3	7,347.6	36.4	31.5	-89.44	-89.44	1,395.8	-65.4	1,172.0	1,108.0	64.04	18.301	
8,800.0	7,359.0	8,676.3	7,348.0	37.9	33.2	-89.46	-89.46	1,495.8	-65.4	1,171.5	1,104.1	67.36	17.392	
8,900.0	7,358.9	8,776.3	7,348.4	39.4	34.9	-89.49	-89.49	1,595.8	-65.4	1,170.9	1,100.2	70.73	16.555	
9,000.0	7,358.8	8,876.3	7,348.8	40.9	36.6	-89.51	-89.51	1,695.8	-65.4	1,170.4	1,096.3	74.15	15.785	
9,100.0	7,358.7	8,976.3	7,349.2	42.4	38.4	-89.54	-89.54	1,795.8	-65.4	1,169.9	1,092.3	77.60	15.075	
9,200.0	7,358.5	9,076.3	7,349.6	44.0	40.1	-89.56	-89.56	1,895.8	-65.4	1,169.3	1,088.2	81.10	14.419	
9,300.0	7,358.4	9,176.3	7,349.9	45.7	41.9	-89.59	-89.59	1,995.8	-65.4	1,168.8	1,084.2	84.62	13.812	
9,400.0	7,358.3	9,276.3	7,350.3	47.3	43.7	-89.61	-89.61	2,095.8	-65.4	1,168.2	1,080.1	88.17	13.249	
9,500.0	7,358.1	9,376.3	7,350.7	49.0	45.5	-89.64	-89.64	2,195.8	-65.4	1,167.7	1,076.0	91.75	12.727	
9,600.0	7,358.0	9,476.3	7,351.1	50.7	47.3	-89.66	-89.66	2,295.8	-65.4	1,167.2	1,071.8	95.35	12.241	
9,700.0	7,357.9	9,576.3	7,351.5	52.4	49.1	-89.69	-89.69	2,395.8	-65.4	1,166.6	1,067.7	98.97	11.788	
9,800.0	7,357.7	9,676.3	7,351.9	54.1	51.0	-89.71	-89.71	2,495.8	-65.4	1,166.1	1,063.5	102.60	11.366	
9,900.0	7,357.6	9,776.3	7,352.3	55.8	52.8	-89.74	-89.74	2,595.8	-65.4	1,165.6	1,059.3	106.25	10.970	
10,000.0	7,357.5	9,876.3	7,352.6	57.6	54.6	-89.76	-89.76	2,695.7	-65.4	1,165.0	1,055.1	109.91	10.600	
10,100.0	7,357.4	9,976.3	7,353.0	59.3	56.5	-89.79	-89.79	2,795.7	-65.4	1,164.5	1,050.9	113.59	10.252	
10,200.0	7,357.2	10,076.3	7,353.4	61.1	58.3	-89.81	-89.81	2,895.7	-65.4	1,163.9	1,046.7	117.27	9.925	
10,300.0	7,357.1	10,176.3	7,353.8	62.9	60.2	-89.84	-89.84	2,995.7	-65.4	1,163.4	1,042.4	120.97	9.617	
10,400.0	7,357.0	10,276.3	7,354.2	64.7	62.1	-89.86	-89.86	3,095.7	-65.4	1,162.9	1,038.2	124.68	9.327	
10,500.0	7,356.8	10,376.3	7,354.6	66.5	63.9	-89.89	-89.89	3,195.7	-65.4	1,162.3	1,033.9	128.39	9.053	
10,600.0	7,356.7	10,476.3	7,355.0	68.3	65.8	-89.91	-89.91	3,295.7	-65.4	1,161.8	1,029.7	132.11	8.794	
10,700.0	7,356.6	10,576.3	7,355.3	70.1	67.7	-89.94	-89.94	3,395.7	-65.4	1,161.3	1,025.4	135.84	8.548	
10,800.0	7,356.5	10,676.3	7,355.7	71.9	69.5	-89.96	-89.96	3,495.7	-65.4	1,160.7	1,021.1	139.58	8.316	

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



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Leffler 26T-421
<b>Project:</b>	SEC.26-T7N-R66W	<b>TVD Reference:</b>	WELL @ 4880.0ft (RKB - 15')
<b>Reference Site:</b>	Leffler 26Q-421 Pad Sec.26-T7N-R66W	<b>MD Reference:</b>	WELL @ 4880.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Leffler 26T-421	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (12-19-12)	<b>Offset TVD Reference:</b>	Offset Datum

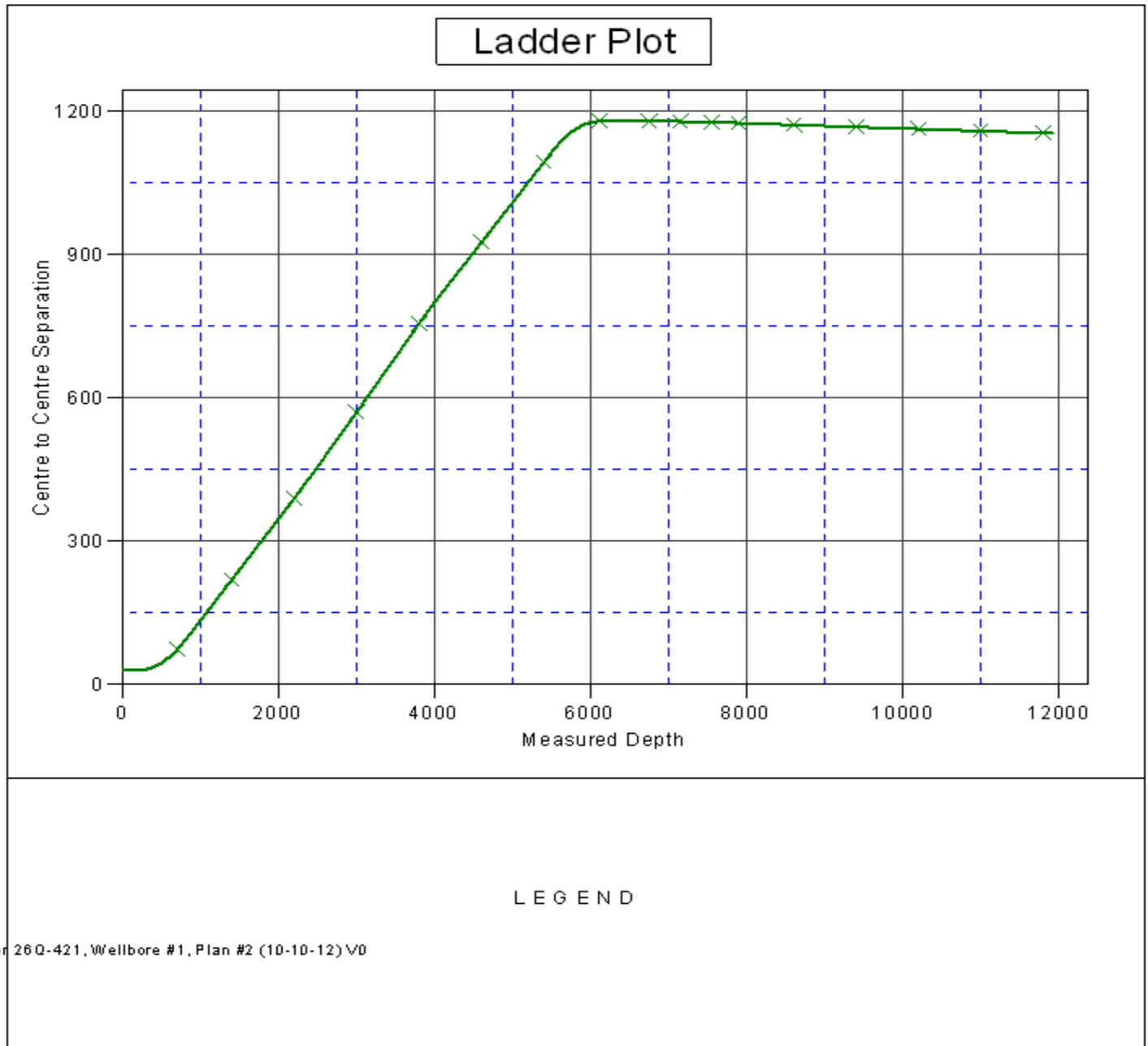
<b>Offset Design</b> Leffler 26Q-421 Pad Sec.26-T7N-R66W - Leffler 26Q-421 - Wellbore #1 - Plan #2 (10-10-12)													<b>Offset Site Error:</b>	0.0 ft
<b>Survey Program:</b> 0-MWD													<b>Offset Well Error:</b>	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
10,900.0	7,356.3	10,776.3	7,356.1	73.7	71.4	-89.99	3,595.7	-65.4	1,160.2	1,016.9	143.32	8.095		
11,000.0	7,356.2	10,876.3	7,356.5	75.5	73.3	-90.02	3,695.7	-65.4	1,159.6	1,012.6	147.07	7.885		
11,100.0	7,356.1	10,976.3	7,356.9	77.4	75.2	-90.04	3,795.7	-65.4	1,159.1	1,008.3	150.82	7.685		
11,200.0	7,355.9	11,076.3	7,357.3	79.2	77.1	-90.07	3,895.7	-65.4	1,158.6	1,004.0	154.58	7.495		
11,300.0	7,355.8	11,176.3	7,357.7	81.0	78.9	-90.09	3,995.7	-65.4	1,158.0	999.7	158.34	7.313		
11,400.0	7,355.7	11,276.3	7,358.0	82.9	80.8	-90.12	4,095.7	-65.4	1,157.5	995.4	162.11	7.140		
11,500.0	7,355.5	11,376.2	7,358.4	84.7	82.7	-90.14	4,195.7	-65.4	1,157.0	991.1	165.88	6.975		
11,600.0	7,355.4	11,476.2	7,358.8	86.6	84.6	-90.17	4,295.7	-65.4	1,156.4	986.8	169.66	6.816		
11,700.0	7,355.3	11,576.2	7,359.2	88.4	86.5	-90.19	4,395.7	-65.4	1,155.9	982.5	173.43	6.665		
11,800.0	7,355.2	11,676.2	7,359.6	90.3	88.4	-90.22	4,495.7	-65.4	1,155.4	978.2	177.21	6.520		
11,900.0	7,355.0	11,776.2	7,360.0	92.1	90.0	-90.25	4,595.7	-65.4	1,154.8	974.1	180.72	6.390		
11,911.4	7,355.0	11,781.4	7,360.0	92.3	90.1	-90.25	4,600.9	-65.4	1,154.8	973.8	181.02	6.379		
11,920.3	7,355.0	11,781.4	7,360.0	92.5	90.1	-90.25	4,600.9	-65.4	1,154.8	973.6	181.19	6.374 SF		



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Leffler 26T-421
<b>Project:</b>	SEC.26-T7N-R66W	<b>TVD Reference:</b>	WELL @ 4880.0ft (RKB - 15')
<b>Reference Site:</b>	Leffler 26Q-421 Pad Sec.26-T7N-R66W	<b>MD Reference:</b>	WELL @ 4880.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Leffler 26T-421	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (12-19-12)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4880.0ft (RKB - 15')  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000 °

Coordinates are relative to: Leffler 26T-421  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.49°



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Leffler 26T-421
<b>Project:</b>	SEC.26-T7N-R66W	<b>TVD Reference:</b>	WELL @ 4880.0ft (RKB - 15')
<b>Reference Site:</b>	Leffler 26Q-421 Pad Sec.26-T7N-R66W	<b>MD Reference:</b>	WELL @ 4880.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Leffler 26T-421	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (12-19-12)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4880.0ft (RKB - 15')  
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