

# PETROLEUM DEVELOPMENT CORP Weld County CO

**Well Name: Carmichael 26R-203**

Surface Location: **Carmichael 26R-203 Pad Sec.26-T7N-R63W**

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

Ground Elevation: 4769.0

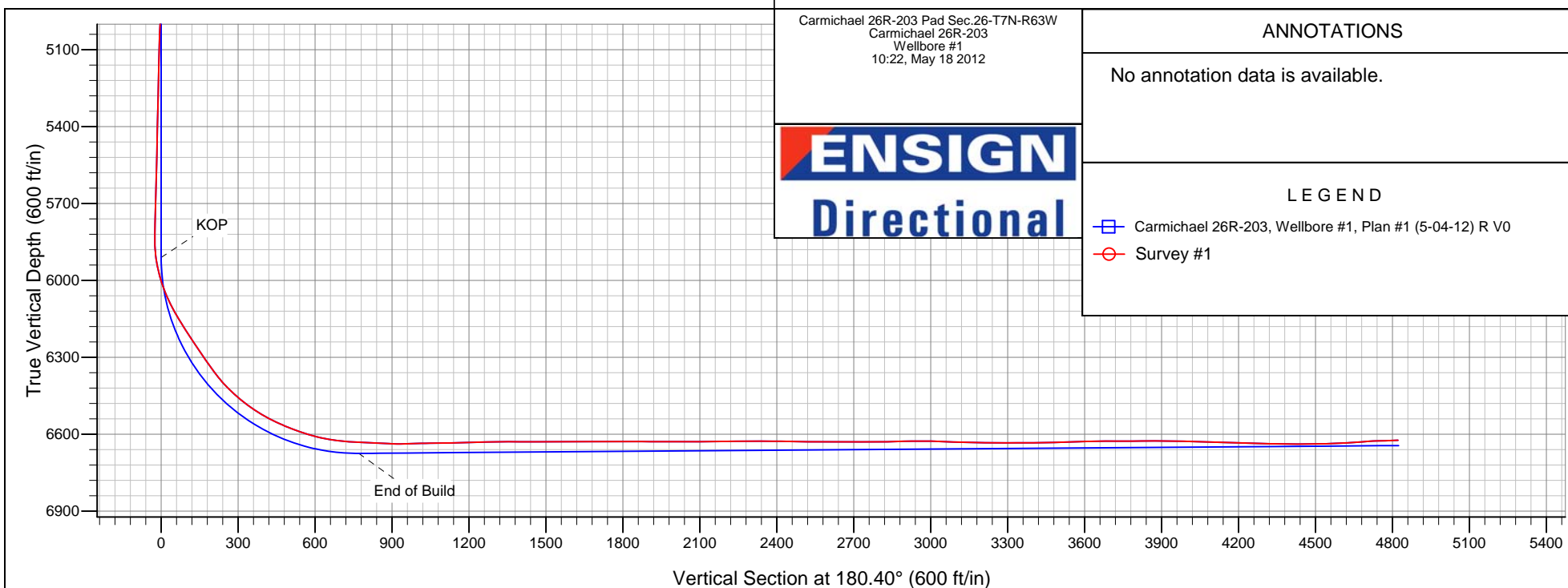
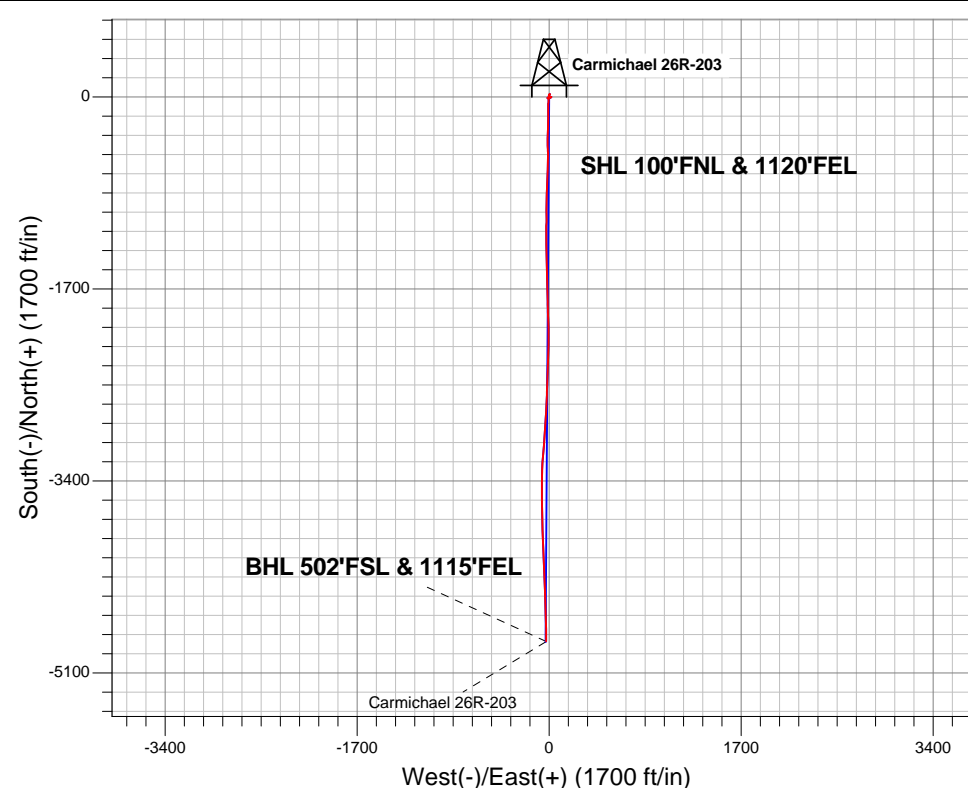
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1445815.88	3306258.77	40.551940	-104.397870	

Original Well Elev WELL @ 4784.0ft (Original Well Elev)

## FINAL SURVEY

Projected Bottom Hole Location  
11122'MD 6623'TVD 4822'S & 28'W of SHL

91.70 degree Incl @ 180.00 degree AZM





# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.26-T7N-R63W**

**Carmichael 26R-203 Pad Sec.26-T7N-R63W**

**Carmichael 26R-203**

**Wellbore #1**

**Survey: Survey #1**

## **Standard Survey Report**

**18 May, 2012**

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Carmichael 26R-203
<b>Project:</b>	SEC.26-T7N-R63W	<b>TVD Reference:</b>	WELL @ 4784.0ft (Original Well Elev)
<b>Site:</b>	Carmichael 26R-203 Pad Sec.26-T7N-R63W	<b>MD Reference:</b>	WELL @ 4784.0ft (Original Well Elev)
<b>Well:</b>	Carmichael 26R-203	<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>	Landmark

<b>Project</b>	SEC.26-T7N-R63W, 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

Site		Carmichael 26R-203 Pad Sec.26-T7N-R63W			
Site Position:		Northing:	1,445,815.90ft	Latitude:	40.551940
From:	Lat/Long	Easting:	3,306,258.77ft	Longitude:	-104.397870
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.71 °

Well	Carmichael 26R-203					
Well Position	+N-S	0.0 ft	Northing:	1,445,815.88 ft	Latitude:	40.551940
	+E-W	0.0 ft	Easting:	3,306,258.77 ft	Longitude:	-104.397870
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,769.0 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	5/4/2012	8.56	67.20	53,157

<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>	
	6,644.0	0.0	0.0	180.40	

<b>Survey Program</b>	<b>Date</b> 5/18/2012				
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
944.0	11,122.0	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 (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Turn Rate (°/100ft)</b>
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>HARDLINE BHL 460'FSL - HARDLINE SHL 460'FNL</b>									
944.0	0.40	60.30	944.0	1.6	2.9	-1.7	0.04	0.04	0.00
1,036.0	0.60	86.60	1,036.0	1.8	3.6	-1.8	0.33	0.22	28.59
1,128.0	0.40	93.90	1,128.0	1.8	4.4	-1.9	0.23	-0.22	7.93
1,220.0	0.70	100.70	1,220.0	1.7	5.3	-1.7	0.33	0.33	7.39
1,313.0	0.60	107.20	1,313.0	1.5	6.3	-1.5	0.13	-0.11	6.99
1,406.0	0.90	98.00	1,406.0	1.2	7.5	-1.3	0.35	0.32	-9.89
1,499.0	0.90	101.10	1,499.0	1.0	8.9	-1.0	0.05	0.00	3.33
1,592.0	1.10	86.40	1,591.9	0.9	10.6	-1.0	0.35	0.22	-15.81
1,686.0	1.00	91.20	1,685.9	0.9	12.3	-1.0	0.14	-0.11	5.11
1,779.0	1.20	91.40	1,778.9	0.9	14.1	-1.0	0.22	0.22	0.22

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Carmichael 26R-203
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<b>Site:</b>	Carmichael 26R-203 Pad Sec.26-T7N-R63W	<b>MD Reference:</b>	WELL @ 4784.0ft (Original Well Elev)
<b>Well:</b>	Carmichael 26R-203	<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>	Landmark

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)
1,872.0	0.90	95.50	1,871.9	0.8	15.8	-0.9	0.33	-0.32	4.41
1,966.0	1.00	94.40	1,965.9	0.7	17.3	-0.8	0.11	0.11	-1.17
2,059.0	0.90	225.60	2,058.9	0.1	17.6	-0.2	1.86	-0.11	141.08
2,152.0	1.40	223.40	2,151.9	-1.3	16.3	1.1	0.54	0.54	-2.37
2,245.0	1.60	230.50	2,244.8	-2.9	14.5	2.8	0.29	0.22	7.63
2,338.0	1.50	222.70	2,337.8	-4.6	12.7	4.5	0.25	-0.11	-8.39
2,431.0	1.70	204.10	2,430.8	-6.8	11.3	6.7	0.60	0.22	-20.00
2,525.0	1.00	270.50	2,524.7	-8.1	9.9	8.0	1.69	-0.74	70.64
2,618.0	1.10	278.80	2,617.7	-7.9	8.2	7.9	0.20	0.11	8.92
2,711.0	1.10	276.50	2,710.7	-7.7	6.4	7.6	0.05	0.00	-2.47
2,804.0	1.10	272.40	2,803.7	-7.5	4.7	7.5	0.08	0.00	-4.41
2,897.0	1.10	312.20	2,896.7	-6.9	3.1	6.9	0.81	0.00	42.80
2,990.0	0.90	271.30	2,989.7	-6.3	1.7	6.3	0.78	-0.22	-43.98
3,083.0	1.10	272.60	3,082.6	-6.2	0.1	6.2	0.22	0.22	1.40
3,176.0	1.30	259.30	3,175.6	-6.4	-1.8	6.4	0.37	0.22	-14.30
3,270.0	1.20	260.50	3,269.6	-6.7	-3.8	6.8	0.11	-0.11	1.28
3,363.0	1.40	255.30	3,362.6	-7.2	-5.9	7.2	0.25	0.22	-5.59
3,455.0	1.50	257.40	3,454.5	-7.7	-8.2	7.8	0.12	0.11	2.28
3,548.0	1.60	255.60	3,547.5	-8.3	-10.6	8.4	0.12	0.11	-1.94
3,642.0	1.90	252.00	3,641.5	-9.1	-13.4	9.2	0.34	0.32	-3.83
3,735.0	0.40	180.40	3,734.4	-9.9	-14.8	10.0	1.95	-1.61	-76.99
3,828.0	1.10	125.00	3,827.4	-10.8	-14.1	10.9	1.00	0.75	-59.57
3,921.0	1.40	110.20	3,920.4	-11.7	-12.3	11.8	0.47	0.32	-15.91
4,014.0	1.60	111.80	4,013.4	-12.5	-10.0	12.6	0.22	0.22	1.72
4,108.0	1.90	103.10	4,107.3	-13.4	-7.3	13.4	0.43	0.32	-9.26
4,200.0	0.40	36.30	4,199.3	-13.5	-5.6	13.5	1.94	-1.63	-72.61
4,294.0	0.90	319.60	4,293.3	-12.6	-5.9	12.7	0.95	0.53	-81.60
4,388.0	0.60	317.50	4,387.3	-11.7	-6.7	11.8	0.32	-0.32	-2.23
4,481.0	0.80	347.70	4,480.3	-10.7	-7.2	10.8	0.44	0.22	32.47
4,575.0	1.50	10.60	4,574.3	-8.9	-7.1	8.9	0.88	0.74	24.36
4,668.0	1.60	2.60	4,667.2	-6.4	-6.8	6.4	0.26	0.11	-8.60
4,762.0	1.90	6.30	4,761.2	-3.5	-6.6	3.6	0.34	0.32	3.94
4,856.0	2.00	13.90	4,855.2	-0.4	-6.0	0.4	0.29	0.11	8.09
4,946.0	2.00	10.20	4,945.1	2.7	-5.4	-2.6	0.14	0.00	-4.11
5,039.0	2.00	15.20	5,038.0	5.8	-4.7	-5.8	0.19	0.00	5.38
5,132.0	1.60	18.90	5,131.0	8.6	-3.8	-8.6	0.45	-0.43	3.98
5,225.0	1.40	21.10	5,224.0	10.9	-3.0	-10.9	0.22	-0.22	2.37
5,318.0	1.30	31.10	5,316.9	12.9	-2.0	-12.9	0.27	-0.11	10.75
5,411.0	1.50	33.30	5,409.9	14.8	-0.8	-14.8	0.22	0.22	2.37
5,504.0	1.40	23.80	5,502.9	16.9	0.3	-16.9	0.28	-0.11	-10.22
5,598.0	1.50	16.10	5,596.8	19.1	1.1	-19.1	0.23	0.11	-8.19
5,690.0	1.50	14.40	5,688.8	21.4	1.8	-21.4	0.05	0.00	-1.85
5,784.0	1.50	17.50	5,782.8	23.8	2.4	-23.8	0.09	0.00	3.30
5,787.0	1.60	15.50	5,785.8	23.9	2.5	-23.9	3.79	3.33	-66.67
5,818.0	1.40	22.50	5,816.8	24.6	2.7	-24.7	0.87	-0.65	22.58
5,849.0	0.70	156.90	5,847.8	24.8	2.9	-24.8	6.31	-2.26	433.55
5,880.0	3.70	193.50	5,878.7	23.7	2.8	-23.7	10.21	9.68	118.06
5,911.0	7.60	197.10	5,909.6	20.7	1.9	-20.7	12.63	12.58	11.61
5,942.0	11.70	194.80	5,940.1	15.7	0.5	-15.7	13.28	13.23	-7.42
5,973.0	14.50	190.70	5,970.3	8.9	-1.0	-8.9	9.51	9.03	-13.23
6,004.0	17.20	188.90	6,000.2	0.5	-2.4	-0.5	8.85	8.71	-5.81
6,035.0	20.10	186.70	6,029.5	-9.3	-3.8	9.3	9.62	9.35	-7.10
6,066.0	23.20	186.10	6,058.3	-20.6	-5.0	20.7	10.03	10.00	-1.94
6,097.0	25.60	185.80	6,086.6	-33.4	-6.3	33.4	7.75	7.74	-0.97

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<b>Well:</b>	Carmichael 26R-203	<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>	Landmark

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)
6,128.0	28.50	184.20	6,114.2	-47.4	-7.6	47.5	9.64	9.35	-5.16
6,159.0	30.80	182.20	6,141.1	-62.7	-8.4	62.8	8.08	7.42	-6.45
6,190.0	31.60	180.80	6,167.6	-78.8	-8.8	78.8	3.48	2.58	-4.52
6,221.0	32.90	179.20	6,193.8	-95.3	-8.8	95.4	5.02	4.19	-5.16
6,253.0	33.20	179.70	6,220.7	-112.8	-8.7	112.8	1.27	0.94	1.56
6,284.0	33.40	180.00	6,246.6	-129.8	-8.6	129.9	0.84	0.65	0.97
6,315.0	34.50	179.80	6,272.3	-147.1	-8.6	147.2	3.57	3.55	-0.65
6,346.0	34.90	180.00	6,297.8	-164.8	-8.6	164.8	1.34	1.29	0.65
6,377.0	34.90	179.20	6,323.2	-182.5	-8.4	182.5	1.48	0.00	-2.58
6,408.0	35.90	182.50	6,348.5	-200.4	-8.7	200.5	6.96	3.23	10.65
6,439.0	38.20	182.70	6,373.2	-219.1	-9.6	219.2	7.43	7.42	0.65
6,470.0	41.30	181.60	6,397.0	-238.9	-10.3	239.0	10.25	10.00	-3.55
6,501.0	44.70	180.60	6,419.7	-260.0	-10.7	260.1	11.19	10.97	-3.23
6,532.0	48.00	180.90	6,441.1	-282.5	-11.0	282.5	10.67	10.65	0.97
6,564.0	50.00	182.50	6,462.1	-306.6	-11.7	306.7	7.30	6.25	5.00
6,595.0	52.10	183.20	6,481.6	-330.7	-12.9	330.8	7.00	6.77	2.26
6,626.0	55.40	182.40	6,499.9	-355.6	-14.1	355.7	10.85	10.65	-2.58
6,657.0	58.70	181.00	6,516.8	-381.6	-14.9	381.7	11.30	10.65	-4.52
6,688.0	61.60	178.50	6,532.2	-408.5	-14.8	408.6	11.68	9.35	-8.06
6,719.0	64.20	177.10	6,546.3	-436.1	-13.7	436.2	9.30	8.39	-4.52
6,750.0	65.60	177.10	6,559.5	-464.1	-12.3	464.2	4.52	4.52	0.00
6,781.0	67.30	178.50	6,571.9	-492.5	-11.2	492.6	6.87	5.48	4.52
6,812.0	69.30	179.80	6,583.3	-521.3	-10.8	521.4	7.54	6.45	4.19
6,843.0	72.00	181.00	6,593.6	-550.6	-11.0	550.6	9.44	8.71	3.87
6,874.0	74.00	182.20	6,602.7	-580.2	-11.8	580.3	7.44	6.45	3.87
6,905.0	76.30	181.70	6,610.6	-610.2	-12.8	610.2	7.58	7.42	-1.61
6,936.0	78.80	182.20	6,617.3	-640.4	-13.9	640.5	8.22	8.06	1.61
6,967.0	81.40	182.30	6,622.6	-670.9	-15.1	671.0	8.39	8.39	0.32
6,998.0	84.30	181.50	6,626.5	-701.7	-16.1	701.7	9.70	9.35	-2.58
7,029.0	86.90	182.20	6,628.8	-732.5	-17.1	732.6	8.68	8.39	2.26
7,119.0	87.20	182.80	6,633.5	-822.3	-21.0	822.5	0.74	0.33	0.67
7,151.0	86.90	182.90	6,635.1	-854.3	-22.6	854.4	0.99	-0.94	0.31
7,183.0	87.70	181.50	6,636.6	-886.2	-23.8	886.3	5.03	2.50	-4.38
7,215.0	89.40	180.80	6,637.4	-918.2	-24.4	918.3	5.74	5.31	-2.19
7,247.0	91.10	180.40	6,637.3	-950.2	-24.8	950.3	5.46	5.31	-1.25
7,279.0	91.70	179.50	6,636.5	-982.2	-24.8	982.3	3.38	1.88	-2.81
7,311.0	91.70	179.40	6,635.6	-1,014.1	-24.4	1,014.3	0.31	0.00	-0.31
7,343.0	90.50	180.30	6,635.0	-1,046.1	-24.4	1,046.3	4.69	-3.75	2.81
7,375.0	90.50	180.40	6,634.7	-1,078.1	-24.6	1,078.3	0.31	0.00	0.31
7,407.0	90.70	180.80	6,634.3	-1,110.1	-24.9	1,110.3	1.40	0.63	1.25
7,439.0	91.60	180.90	6,633.7	-1,142.1	-25.4	1,142.3	2.83	2.81	0.31
7,470.0	91.80	180.20	6,632.8	-1,173.1	-25.7	1,173.3	2.35	0.65	-2.26
7,502.0	92.00	179.90	6,631.7	-1,205.1	-25.7	1,205.2	1.13	0.63	-0.94
7,534.0	91.80	179.80	6,630.7	-1,237.1	-25.6	1,237.2	0.70	-0.63	-0.31
7,566.0	90.70	179.30	6,630.0	-1,269.1	-25.4	1,269.2	3.78	-3.44	-1.56
7,598.0	90.50	180.60	6,629.6	-1,301.1	-25.3	1,301.2	4.11	-0.63	4.06
7,630.0	90.50	179.30	6,629.3	-1,333.1	-25.3	1,333.2	4.06	0.00	-4.06
7,662.0	89.90	178.90	6,629.2	-1,365.1	-24.8	1,365.2	2.25	-1.88	-1.25
7,694.0	89.80	177.90	6,629.3	-1,397.0	-23.9	1,397.2	3.14	-0.31	-3.13
7,726.0	90.00	178.50	6,629.4	-1,429.0	-22.9	1,429.2	1.98	0.63	1.88
7,758.0	90.10	178.80	6,629.3	-1,461.0	-22.1	1,461.1	0.99	0.31	0.94
7,789.0	90.10	178.00	6,629.3	-1,492.0	-21.3	1,492.1	2.58	0.00	-2.58
7,820.0	90.20	178.50	6,629.2	-1,523.0	-20.3	1,523.1	1.64	0.32	1.61

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<b>Design:</b>	Wellbore #1	<b>Database:</b>	Landmark

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)
7,852.0	90.30	179.40	6,629.1	-1,555.0	-19.7	1,555.1	2.83	0.31	2.81
7,884.0	90.50	179.40	6,628.9	-1,587.0	-19.4	1,587.1	0.63	0.63	0.00
7,916.0	90.70	179.60	6,628.5	-1,619.0	-19.1	1,619.1	0.88	0.63	0.63
7,948.0	90.00	178.20	6,628.3	-1,651.0	-18.5	1,651.1	4.89	-2.19	-4.38
7,980.0	89.90	177.80	6,628.3	-1,683.0	-17.4	1,683.0	1.29	-0.31	-1.25
8,012.0	89.90	178.70	6,628.4	-1,714.9	-16.4	1,715.0	2.81	0.00	2.81
8,043.0	90.10	179.10	6,628.4	-1,745.9	-15.8	1,746.0	1.44	0.65	1.29
8,075.0	90.10	178.90	6,628.3	-1,777.9	-15.3	1,778.0	0.63	0.00	-0.63
8,107.0	90.00	178.90	6,628.3	-1,809.9	-14.7	1,810.0	0.31	-0.31	0.00
8,139.0	90.00	177.80	6,628.3	-1,841.9	-13.7	1,842.0	3.44	0.00	-3.44
8,171.0	89.90	178.20	6,628.3	-1,873.9	-12.6	1,873.9	1.29	-0.31	1.25
8,203.0	89.80	178.30	6,628.4	-1,905.9	-11.6	1,905.9	0.44	-0.31	0.31
8,235.0	89.90	177.70	6,628.5	-1,937.9	-10.5	1,937.9	1.90	0.31	-1.88
8,266.0	89.90	177.90	6,628.6	-1,968.8	-9.3	1,968.8	0.65	0.00	0.65
8,298.0	90.00	178.10	6,628.6	-2,000.8	-8.2	2,000.8	0.70	0.31	0.63
8,331.0	90.00	177.90	6,628.6	-2,033.8	-7.1	2,033.8	0.61	0.00	-0.61
8,363.0	90.20	179.20	6,628.5	-2,065.8	-6.3	2,065.8	4.11	0.63	4.06
8,394.0	90.20	180.20	6,628.4	-2,096.8	-6.1	2,096.8	3.23	0.00	3.23
8,426.0	90.10	180.30	6,628.4	-2,128.8	-6.2	2,128.8	0.44	-0.31	0.31
8,458.0	90.20	181.00	6,628.3	-2,160.8	-6.6	2,160.8	2.21	0.31	2.19
8,490.0	90.50	180.90	6,628.1	-2,192.8	-7.1	2,192.8	0.99	0.94	-0.31
8,522.0	90.50	181.50	6,627.8	-2,224.8	-7.8	2,224.8	1.87	0.00	1.88
8,554.0	90.80	180.80	6,627.4	-2,256.8	-8.4	2,256.8	2.38	0.94	-2.19
8,586.0	90.80	181.70	6,627.0	-2,288.7	-9.1	2,288.8	2.81	0.00	2.81
8,618.0	90.00	180.60	6,626.8	-2,320.7	-9.8	2,320.7	4.25	-2.50	-3.44
8,650.0	89.30	182.10	6,627.0	-2,352.7	-10.5	2,352.7	5.17	-2.19	4.69
8,681.0	89.30	182.20	6,627.3	-2,383.7	-11.7	2,383.7	0.32	0.00	0.32
8,682.0	89.30	182.20	6,627.3	-2,384.7	-11.7	2,384.7	0.00	0.00	0.00
8,714.0	89.40	182.40	6,627.7	-2,416.7	-13.0	2,416.7	0.70	0.31	0.63
8,746.0	89.40	181.90	6,628.0	-2,448.6	-14.2	2,448.7	1.56	0.00	-1.56
8,778.0	89.30	182.00	6,628.4	-2,480.6	-15.3	2,480.7	0.44	-0.31	0.31
8,809.0	89.40	182.40	6,628.8	-2,511.6	-16.5	2,511.7	1.33	0.32	1.29
8,841.0	89.60	182.50	6,629.0	-2,543.6	-17.9	2,543.6	0.70	0.63	0.31
8,873.0	89.60	181.60	6,629.3	-2,575.5	-19.0	2,575.6	2.81	0.00	-2.81
8,905.0	89.50	181.80	6,629.5	-2,607.5	-20.0	2,607.6	0.70	-0.31	0.63
8,937.0	89.70	181.70	6,629.7	-2,639.5	-20.9	2,639.6	0.70	0.63	-0.31
8,969.0	90.00	182.20	6,629.8	-2,671.5	-22.0	2,671.6	1.82	0.94	1.56
9,001.0	90.20	183.30	6,629.8	-2,703.5	-23.6	2,703.6	3.49	0.63	3.44
9,033.0	90.10	182.90	6,629.7	-2,735.4	-25.3	2,735.5	1.29	-0.31	-1.25
9,064.0	90.20	182.50	6,629.6	-2,766.4	-26.8	2,766.5	1.33	0.32	-1.29
9,096.0	90.30	182.90	6,629.5	-2,798.3	-28.3	2,798.5	1.29	0.31	1.25
9,128.0	91.20	183.10	6,629.0	-2,830.3	-29.9	2,830.4	2.88	2.81	0.63
9,159.0	91.80	184.30	6,628.2	-2,861.2	-31.9	2,861.4	4.33	1.94	3.87
9,191.0	90.90	184.60	6,627.5	-2,893.1	-34.4	2,893.3	2.96	-2.81	0.94
9,223.0	90.50	183.50	6,627.1	-2,925.0	-36.7	2,925.2	3.66	-1.25	-3.44
9,255.0	90.30	182.50	6,626.9	-2,957.0	-38.4	2,957.2	3.19	-0.63	-3.13
9,286.0	89.70	183.80	6,626.9	-2,987.9	-40.1	2,988.1	4.62	-1.94	4.19
9,317.0	88.20	185.00	6,627.4	-3,018.8	-42.4	3,019.1	6.20	-4.84	3.87
9,348.0	87.90	184.50	6,628.5	-3,049.7	-45.0	3,050.0	1.88	-0.97	-1.61
9,380.0	88.00	184.20	6,629.6	-3,081.6	-47.4	3,081.9	0.99	0.31	-0.94
9,411.0	88.00	184.50	6,630.7	-3,112.5	-49.8	3,112.8	0.97	0.00	0.97
9,443.0	87.90	184.40	6,631.9	-3,144.4	-52.3	3,144.7	0.44	-0.31	-0.31
9,474.0	89.00	184.20	6,632.7	-3,175.3	-54.6	3,175.6	3.61	3.55	-0.65

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Carmichael 26R-203
<b>Project:</b>	SEC.26-T7N-R63W	<b>TVD Reference:</b>	WELL @ 4784.0ft (Original Well Elev)
<b>Site:</b>	Carmichael 26R-203 Pad Sec.26-T7N-R63W	<b>MD Reference:</b>	WELL @ 4784.0ft (Original Well Elev)
<b>Well:</b>	Carmichael 26R-203	<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>	Landmark

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)
9,506.0	89.40	184.10	6,633.1	-3,207.2	-56.9	3,207.5	1.29	1.25	-0.31
9,538.0	89.50	184.20	6,633.4	-3,239.1	-59.2	3,239.4	0.44	0.31	0.31
9,570.0	89.50	183.70	6,633.7	-3,271.0	-61.4	3,271.4	1.56	0.00	-1.56
9,603.0	90.40	183.30	6,633.8	-3,304.0	-63.4	3,304.3	2.98	2.73	-1.21
9,636.0	89.90	181.30	6,633.7	-3,336.9	-64.8	3,337.3	6.25	-1.52	-6.06
9,669.0	89.80	180.80	6,633.8	-3,369.9	-65.4	3,370.3	1.55	-0.30	-1.52
9,700.0	90.50	180.60	6,633.7	-3,400.9	-65.7	3,401.3	2.35	2.26	-0.65
9,733.0	91.20	180.00	6,633.2	-3,433.9	-65.9	3,434.3	2.79	2.12	-1.82
9,764.0	92.20	179.90	6,632.3	-3,464.9	-65.9	3,465.3	3.24	3.23	-0.32
9,796.0	92.20	179.40	6,631.0	-3,496.9	-65.7	3,497.3	1.56	0.00	-1.56
9,828.0	91.30	179.20	6,630.1	-3,528.9	-65.3	3,529.2	2.88	-2.81	-0.63
9,860.0	91.40	179.70	6,629.3	-3,560.9	-65.0	3,561.2	1.59	0.31	1.56
9,892.0	91.50	179.80	6,628.5	-3,592.9	-64.9	3,593.2	0.44	0.31	0.31
9,924.0	91.60	179.60	6,627.6	-3,624.8	-64.7	3,625.2	0.70	0.31	-0.63
9,956.0	90.10	177.60	6,627.2	-3,656.8	-63.9	3,657.2	7.81	-4.69	-6.25
9,988.0	90.30	178.60	6,627.0	-3,688.8	-62.8	3,689.2	3.19	0.63	3.13
10,020.0	90.50	177.70	6,626.8	-3,720.8	-61.8	3,721.1	2.88	0.63	-2.81
10,052.0	90.00	178.10	6,626.7	-3,752.8	-60.6	3,753.1	2.00	-1.56	1.25
10,084.0	90.20	178.70	6,626.6	-3,784.8	-59.7	3,785.1	1.98	0.63	1.88
10,116.0	90.60	179.10	6,626.4	-3,816.7	-59.1	3,817.1	1.77	1.25	1.25
10,148.0	89.20	178.30	6,626.5	-3,848.7	-58.4	3,849.0	5.04	-4.38	-2.50
10,180.0	89.40	177.90	6,626.8	-3,880.7	-57.3	3,881.0	1.40	0.63	-1.25
10,211.0	89.60	177.90	6,627.1	-3,911.7	-56.2	3,912.0	0.65	0.65	0.00
10,243.0	89.50	178.40	6,627.4	-3,943.7	-55.2	3,944.0	1.59	-0.31	1.56
10,276.0	89.40	177.80	6,627.7	-3,976.7	-54.1	3,976.9	1.84	-0.30	-1.82
10,307.0	89.00	177.40	6,628.1	-4,007.6	-52.8	4,007.9	1.82	-1.29	-1.29
10,339.0	89.00	178.50	6,628.7	-4,039.6	-51.6	4,039.9	3.44	0.00	3.44
10,371.0	88.70	177.80	6,629.3	-4,071.6	-50.6	4,071.8	2.38	-0.94	-2.19
10,403.0	88.60	178.00	6,630.1	-4,103.5	-49.4	4,103.8	0.70	-0.31	0.63
10,434.0	88.10	177.50	6,631.0	-4,134.5	-48.2	4,134.7	2.28	-1.61	-1.61
10,466.0	88.00	178.10	6,632.1	-4,166.5	-47.0	4,166.7	1.90	-0.31	1.88
10,498.0	88.20	178.60	6,633.1	-4,198.4	-46.1	4,198.7	1.68	0.63	1.56
10,530.0	88.40	177.60	6,634.1	-4,230.4	-45.0	4,230.6	3.19	0.63	-3.13
10,562.0	88.30	177.40	6,635.0	-4,262.4	-43.6	4,262.6	0.70	-0.31	-0.63
10,594.0	88.10	177.00	6,636.0	-4,294.3	-42.0	4,294.5	1.40	-0.63	-1.25
10,626.0	88.00	178.20	6,637.1	-4,326.3	-40.7	4,326.4	3.76	-0.31	3.75
10,658.0	88.70	177.50	6,638.0	-4,358.2	-39.5	4,358.4	3.09	2.19	-2.19
10,690.0	89.10	177.60	6,638.6	-4,390.2	-38.1	4,390.3	1.29	1.25	0.31
10,722.0	89.80	177.00	6,638.9	-4,422.2	-36.6	4,422.3	2.88	2.19	-1.88
10,754.0	90.80	178.20	6,638.8	-4,454.1	-35.3	4,454.3	4.88	3.13	3.75
10,786.0	91.30	178.10	6,638.2	-4,486.1	-34.3	4,486.2	1.59	1.56	-0.31
10,818.0	91.70	177.10	6,637.3	-4,518.1	-32.9	4,518.2	3.36	1.25	-3.13
10,850.0	91.60	178.10	6,636.4	-4,550.0	-31.6	4,550.1	3.14	-0.31	3.13
10,882.0	92.50	178.40	6,635.3	-4,582.0	-30.6	4,582.1	2.96	2.81	0.94
10,913.0	93.40	178.80	6,633.7	-4,612.9	-29.8	4,613.0	3.18	2.90	1.29
10,945.0	94.20	179.00	6,631.5	-4,644.9	-29.2	4,644.9	2.58	2.50	0.63
10,977.0	93.70	179.10	6,629.3	-4,676.8	-28.7	4,676.9	1.59	-1.56	0.31
11,009.0	93.40	179.30	6,627.4	-4,708.7	-28.3	4,708.8	1.13	-0.94	0.63
11,040.0	92.10	179.80	6,625.9	-4,739.7	-28.0	4,739.8	4.49	-4.19	1.61
11,072.0	91.70	180.00	6,624.8	-4,771.7	-28.0	4,771.7	1.40	-1.25	0.63
11,122.0	91.70	180.00	6,623.3	-4,821.6	-28.0	4,821.7	0.00	0.00	0.00
BHL 500'FSL & 1120'FEL									



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Carmichael 26R-203
<b>Project:</b>	SEC.26-T7N-R63W	<b>TVD Reference:</b>	WELL @ 4784.0ft (Original Well Elev)
<b>Site:</b>	Carmichael 26R-203 Pad Sec.26-T7N-R63W	<b>MD Reference:</b>	WELL @ 4784.0ft (Original Well Elev)
<b>Well:</b>	Carmichael 26R-203	<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>	Landmark

Checked By: _____	Approved By: _____	Date: _____
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