

# PETROLEUM DEVELOPMENT CORP Weld County CO

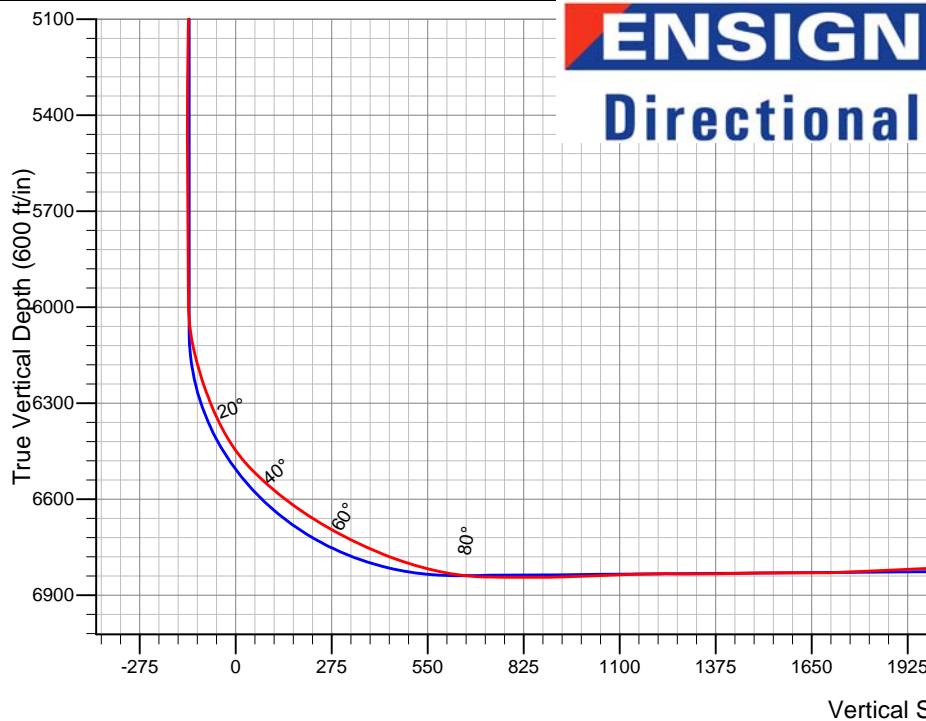
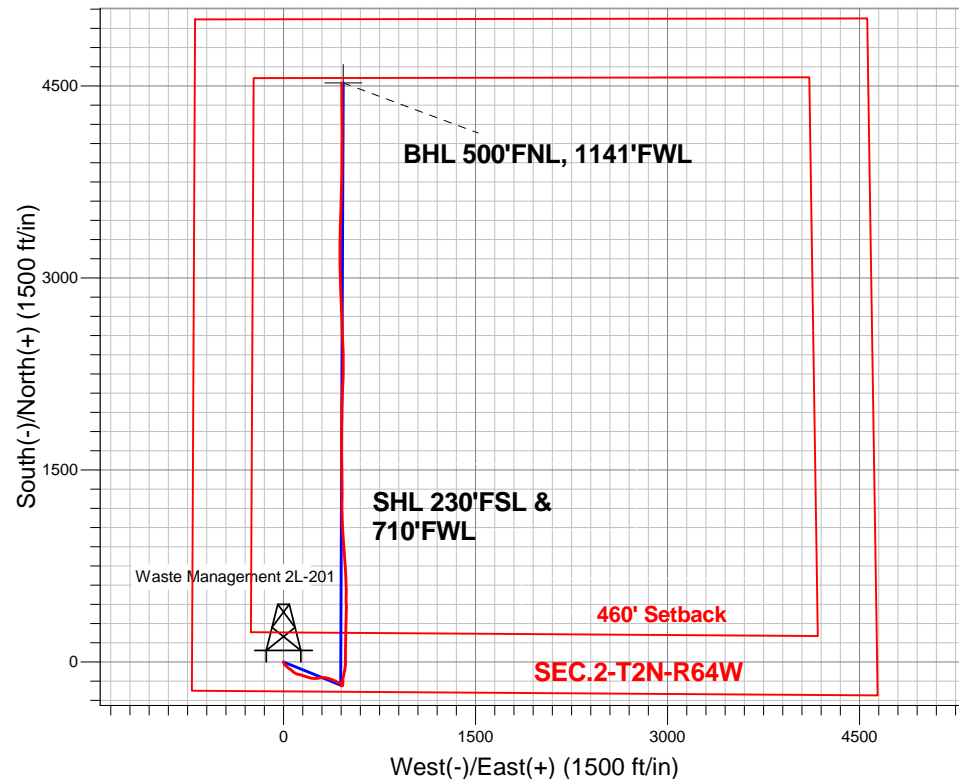
Well Name: **Waste Management 2L-201**

Surface Location: Waste Management 2IL-HZ Pad Sec.2-T2N-R64W  
 North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone  
 Ground Elevation: 4939.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1302933.01	3272293.23	40.160840	-104.525740	
RKB - 15' WELL @ 4954.0ft (RKB - 15')						

## FINAL SURVEY

Projected Bottom Hole Location  
 11213'MD 6797'TVD 4524'N & 453'E of SHL  
 92.20 degree Incl @ 359.10 degree AZM



Waste Management 2IL-HZ Pad Sec.2-T2N-R64W  
 14:37, July 08 2013  
 Waste Management 2L-201  
 Wellbore #1

### ANNOTATIONS

No annotation data is available.

### LEGEND

- ✕ Waste Management 2L-201, Wellbore #1, Plan #1 (6-25-13)R V0
- Wellbore #1

Projected BHL 500'FNL, 1141'FWL



# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.2-T2N-R64W**

**Waste Management 2IL-HZ Pad Sec.2-T2N-R64W**

**Waste Management 2L-201**

**Wellbore #1**

**Survey: Survey #1**

## **Standard Survey Report**

**08 July, 2013**

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Waste Management 2L-201
<b>Project:</b>	SEC.2-T2N-R64W	<b>TVD Reference:</b>	WELL @ 4954.0ft (RKB - 15')
<b>Site:</b>	Waste Management 2IL-HZ Pad Sec.2-T2N-R64W	<b>MD Reference:</b>	WELL @ 4954.0ft (RKB - 15')
<b>Well:</b>	Waste Management 2L-201	<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.2-T2N-R64W, 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

Site		Waste Management 2IL-HZ Pad Sec.2-T2N-R64W			
Site Position:		Northing:	1,302,936.01 ft	Latitude:	40.160850
From:	Lat/Long	Easting:	3,272,234.50 ft	Longitude:	-104.525950
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.63 °

Well	Waste Management 2L-201					
Well Position	+N/-S	0.0 ft	Northing:	1,302,933.01 ft	Latitude:	40.160840
	+E/-W	0.0 ft	Easting:	3,272,293.23 ft	Longitude:	-104.525740
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,939.0 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	6/25/2013	8.44	66.83	52,816

<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	5.89	

<b>Survey Program</b>	<b>Date</b>	7/8/2013			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
121.0	11,213.0	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
121.0	0.70	214.70	121.0	-0.6	-0.4	-0.6	0.58	0.58	0.00
181.0	1.50	176.90	181.0	-1.7	-0.6	-1.7	1.73	1.33	-63.00
270.0	4.20	154.40	269.9	-5.8	0.9	-5.7	3.23	3.03	-25.28
396.0	5.50	147.20	395.4	-15.0	6.1	-14.3	1.14	1.03	-5.71
520.0	7.70	136.60	518.6	-26.1	15.1	-24.4	2.02	1.77	-8.55
645.0	8.50	134.70	642.3	-38.6	27.4	-35.6	0.67	0.64	-1.52
772.0	9.00	124.70	767.9	-50.9	42.2	-46.3	1.26	0.39	-7.87
885.0	9.10	127.00	879.5	-61.3	56.6	-55.2	0.33	0.09	2.04
967.0	9.40	129.20	960.4	-69.5	67.0	-62.2	0.57	0.37	2.68
1,060.0	9.00	128.30	1,052.2	-78.8	78.6	-70.3	0.46	-0.43	-0.97

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Waste Management 2L-201
<b>Project:</b>	SEC.2-T2N-R64W	<b>TVD Reference:</b>	WELL @ 4954.0ft (RKB - 15')
<b>Site:</b>	Waste Management 2IL-HZ Pad Sec.2-T2N-R64W	<b>MD Reference:</b>	WELL @ 4954.0ft (RKB - 15')
<b>Well:</b>	Waste Management 2L-201	<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)
1,152.0	9.30	121.50	1,143.0	-87.1	90.6	-77.3	1.22	0.33	-7.39
1,276.0	10.30	103.50	1,265.3	-94.9	109.9	-83.2	2.59	0.81	-14.52
1,398.0	10.50	106.20	1,385.3	-100.6	131.2	-86.6	0.43	0.16	2.21
1,521.0	10.10	107.40	1,506.3	-106.9	152.3	-90.7	0.37	-0.33	0.98
1,643.0	9.70	108.80	1,626.5	-113.4	172.2	-95.2	0.38	-0.33	1.15
1,796.0	9.10	107.80	1,777.4	-121.3	195.9	-100.6	0.41	-0.39	-0.65
1,953.0	9.60	96.90	1,932.3	-126.7	220.7	-103.3	1.17	0.32	-6.94
2,111.0	9.00	92.30	2,088.2	-128.7	246.2	-102.8	0.60	-0.38	-2.91
2,270.0	8.10	80.90	2,245.5	-127.5	269.6	-99.1	1.20	-0.57	-7.17
2,428.0	7.90	78.80	2,402.0	-123.6	291.3	-93.1	0.22	-0.13	-1.33
2,586.0	8.30	89.10	2,558.4	-121.3	313.3	-88.5	0.95	0.25	6.52
2,744.0	7.60	103.70	2,714.9	-123.6	334.9	-88.6	1.35	-0.44	9.24
2,903.0	7.80	106.70	2,872.4	-129.2	355.5	-92.0	0.28	0.13	1.89
3,060.0	8.20	114.40	3,027.9	-136.9	375.9	-97.6	0.73	0.25	4.90
3,218.0	6.90	112.20	3,184.6	-145.1	394.9	-103.8	0.84	-0.82	-1.39
3,345.0	5.50	121.30	3,310.8	-151.2	407.2	-108.6	1.34	-1.10	7.17
3,504.0	3.70	118.50	3,469.3	-157.6	418.2	-113.8	1.14	-1.13	-1.76
3,662.0	2.50	101.30	3,627.1	-160.7	426.0	-116.1	0.95	-0.76	-10.89
3,821.0	2.50	109.00	3,785.9	-162.5	432.7	-117.2	0.21	0.00	4.84
3,979.0	2.60	118.80	3,943.8	-165.3	439.1	-119.4	0.28	0.06	6.20
4,137.0	4.00	102.10	4,101.5	-168.2	447.7	-121.4	1.07	0.89	-10.57
4,201.0	2.20	104.90	4,165.4	-169.0	451.0	-121.8	2.82	-2.81	4.38
4,264.0	1.60	96.70	4,228.4	-169.4	453.1	-122.0	1.04	-0.95	-13.02
4,327.0	1.80	94.20	4,291.3	-169.6	454.9	-122.0	0.34	0.32	-3.97
4,391.0	1.70	148.70	4,355.3	-170.5	456.4	-122.8	2.51	-0.16	85.16
4,454.0	1.10	208.00	4,418.3	-171.8	456.6	-124.1	2.35	-0.95	94.13
4,581.0	1.60	218.70	4,545.3	-174.3	454.9	-126.7	0.44	0.39	8.43
4,708.0	0.50	239.60	4,672.2	-175.9	453.4	-128.5	0.90	-0.87	16.46
4,867.0	0.90	162.40	4,831.2	-177.5	453.1	-130.0	0.58	0.25	-48.55
5,025.0	1.80	160.80	4,989.2	-181.0	454.3	-133.4	0.57	0.57	-1.01
5,183.0	0.90	242.80	5,147.1	-183.9	454.0	-136.4	1.20	-0.57	51.90
5,342.0	0.80	242.60	5,306.1	-185.0	451.9	-137.7	0.06	-0.06	-0.13
5,501.0	0.90	93.50	5,465.1	-185.6	452.2	-138.2	1.03	0.06	-93.77
5,659.0	1.00	71.40	5,623.1	-185.2	454.7	-137.6	0.24	0.06	-13.99
5,818.0	1.10	79.50	5,782.1	-184.5	457.6	-136.6	0.11	0.06	5.09
5,976.0	0.60	54.70	5,940.1	-183.7	459.7	-135.6	0.39	-0.32	-15.70
6,008.0	0.80	78.20	5,972.1	-183.6	460.1	-135.4	1.08	0.63	73.44
6,040.0	1.60	26.90	6,004.0	-183.2	460.5	-134.9	3.95	2.50	-160.31
6,071.0	4.00	12.70	6,035.0	-181.7	460.9	-133.5	8.00	7.74	-45.81
6,103.0	6.60	9.50	6,066.9	-178.8	461.5	-130.5	8.17	8.13	-10.00
6,135.0	9.10	8.10	6,098.6	-174.5	462.2	-126.2	7.83	7.81	-4.38
6,166.0	10.90	7.00	6,129.1	-169.2	462.9	-120.8	5.84	5.81	-3.55
6,198.0	12.90	3.20	6,160.4	-162.6	463.4	-114.2	6.71	6.25	-11.88
6,230.0	14.90	359.80	6,191.5	-154.9	463.6	-106.5	6.75	6.25	-10.63
6,262.0	17.00	358.80	6,222.2	-146.1	463.5	-97.8	6.62	6.56	-3.13
6,294.0	17.90	2.50	6,252.8	-136.5	463.6	-88.2	4.46	2.81	11.56
6,326.0	19.00	8.30	6,283.1	-126.5	464.6	-78.1	6.68	3.44	18.13
6,357.0	20.60	13.20	6,312.3	-116.1	466.6	-67.7	7.43	5.16	15.81
6,389.0	23.00	13.00	6,342.0	-104.6	469.2	-55.9	7.50	7.50	-0.63
6,420.0	25.80	10.40	6,370.2	-92.0	471.8	-43.1	9.67	9.03	-8.39
6,452.0	27.70	11.30	6,398.8	-77.9	474.5	-28.8	6.07	5.94	2.81
6,484.0	30.40	10.00	6,426.8	-62.6	477.4	-13.3	8.66	8.44	-4.06
6,515.0	33.70	7.90	6,453.0	-46.4	479.9	3.1	11.23	10.65	-6.77

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<b>Project:</b>	SEC.2-T2N-R64W	<b>TVD Reference:</b>	WELL @ 4954.0ft (RKB - 15')
<b>Site:</b>	Waste Management 2IL-HZ Pad Sec.2-T2N-R64W	<b>MD Reference:</b>	WELL @ 4954.0ft (RKB - 15')
<b>Well:</b>	Waste Management 2L-201	<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)
6,547.0	37.50	5.10	6,479.1	-27.9	482.0	21.7	12.92	11.88	-8.75
6,579.0	41.40	1.10	6,503.8	-7.6	483.1	42.0	14.54	12.19	-12.50
6,611.0	44.50	359.30	6,527.2	14.2	483.2	63.7	10.42	9.69	-5.63
6,642.0	45.70	359.30	6,549.1	36.2	482.9	85.5	3.87	3.87	0.00
6,674.0	47.00	359.30	6,571.2	59.3	482.6	108.5	4.06	4.06	0.00
6,705.0	49.40	0.00	6,591.8	82.4	482.5	131.5	7.92	7.74	2.26
6,737.0	51.40	359.70	6,612.2	107.1	482.4	156.0	6.29	6.25	-0.94
6,768.0	53.60	1.20	6,631.1	131.7	482.6	180.5	8.07	7.10	4.84
6,800.0	55.00	1.80	6,649.8	157.7	483.3	206.4	4.63	4.38	1.88
6,832.0	55.80	2.80	6,667.9	184.0	484.4	232.7	3.59	2.50	3.13
6,863.0	56.50	3.00	6,685.2	209.7	485.7	258.4	2.32	2.26	0.65
6,895.0	59.20	1.40	6,702.2	236.8	486.7	285.4	9.44	8.44	-5.00
6,928.0	61.30	0.70	6,718.6	265.4	487.2	314.0	6.62	6.36	-2.12
6,959.0	62.90	0.20	6,733.1	292.8	487.4	341.3	5.35	5.16	-1.61
6,991.0	63.80	1.20	6,747.5	321.4	487.8	369.7	3.96	2.81	3.13
7,023.0	64.70	1.90	6,761.4	350.2	488.6	398.5	3.43	2.81	2.19
7,054.0	66.40	1.10	6,774.2	378.4	489.3	426.6	5.97	5.48	-2.58
7,086.0	68.70	0.40	6,786.4	408.0	489.7	456.1	7.47	7.19	-2.19
7,118.0	70.80	359.80	6,797.5	438.0	489.7	485.9	6.79	6.56	-1.88
7,150.0	72.30	359.80	6,807.6	468.4	489.6	516.1	4.69	4.69	0.00
7,182.0	74.00	0.00	6,816.9	499.0	489.6	546.6	5.35	5.31	0.63
7,214.0	76.60	359.30	6,825.0	529.9	489.4	577.3	8.40	8.13	-2.19
7,245.0	79.50	359.10	6,831.4	560.3	489.0	607.5	9.38	9.35	-0.65
7,277.0	81.60	359.30	6,836.7	591.8	488.5	638.8	6.59	6.56	0.63
7,299.0	82.90	358.80	6,839.6	613.6	488.2	660.5	6.32	5.91	-2.27
7,318.0	85.20	358.10	6,841.6	632.5	487.6	679.2	12.65	12.11	-3.68
7,350.0	88.50	358.10	6,843.4	664.4	486.6	710.8	10.31	10.31	0.00
7,381.0	89.00	356.70	6,844.0	695.4	485.2	741.5	4.79	1.61	-4.52
7,413.0	89.30	356.10	6,844.5	727.3	483.2	773.1	2.10	0.94	-1.88
7,445.0	89.90	356.00	6,844.7	759.2	481.0	804.6	1.90	1.88	-0.31
7,476.0	90.10	356.00	6,844.7	790.2	478.8	835.1	0.65	0.65	0.00
7,508.0	90.30	355.60	6,844.6	822.1	476.5	866.6	1.40	0.63	-1.25
7,540.0	91.20	355.60	6,844.2	854.0	474.0	898.1	2.81	2.81	0.00
7,572.0	91.80	355.40	6,843.4	885.9	471.5	929.6	1.98	1.88	-0.63
7,603.0	92.20	355.40	6,842.3	916.8	469.0	960.0	1.29	1.29	0.00
7,635.0	92.00	356.10	6,841.1	948.6	466.6	991.5	2.27	-0.63	2.19
7,667.0	92.30	356.10	6,839.9	980.6	464.5	1,023.0	0.94	0.94	0.00
7,699.0	92.60	356.70	6,838.6	1,012.5	462.5	1,054.6	2.09	0.94	1.88
7,731.0	92.40	357.00	6,837.2	1,044.4	460.7	1,086.1	1.13	-0.63	0.94
7,762.0	92.30	357.90	6,835.9	1,075.3	459.3	1,116.8	2.92	-0.32	2.90
7,794.0	92.20	358.40	6,834.6	1,107.3	458.3	1,148.5	1.59	-0.31	1.56
7,826.0	91.70	358.80	6,833.5	1,139.3	457.5	1,180.2	2.00	-1.56	1.25
7,857.0	90.70	358.10	6,832.9	1,170.2	456.7	1,210.9	3.94	-3.23	-2.26
7,889.0	89.40	0.40	6,832.9	1,202.2	456.3	1,242.7	8.26	-4.06	7.19
7,921.0	89.40	0.40	6,833.2	1,234.2	456.5	1,274.5	0.00	0.00	0.00
7,953.0	89.50	359.80	6,833.5	1,266.2	456.5	1,306.4	1.90	0.31	-1.88
7,985.0	90.00	0.00	6,833.6	1,298.2	456.5	1,338.2	1.68	1.56	0.63
8,016.0	90.50	359.80	6,833.5	1,329.2	456.4	1,369.0	1.74	1.61	-0.65
8,048.0	91.00	0.40	6,833.1	1,361.2	456.5	1,400.9	2.44	1.56	1.88
8,080.0	91.50	0.00	6,832.4	1,393.2	456.6	1,432.7	2.00	1.56	-1.25
8,112.0	91.30	359.80	6,831.6	1,425.2	456.5	1,464.5	0.88	-0.63	-0.63
8,144.0	91.50	359.50	6,830.8	1,457.2	456.3	1,496.3	1.13	0.63	-0.94

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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)
8,175.0	91.10	359.70	6,830.1	1,488.2	456.1	1,527.1	1.44	-1.29	0.65
8,207.0	90.00	359.30	6,829.8	1,520.2	455.8	1,558.9	3.66	-3.44	-1.25
8,238.0	89.70	359.10	6,829.9	1,551.2	455.4	1,589.7	1.16	-0.97	-0.65
8,270.0	89.70	358.80	6,830.1	1,583.2	454.8	1,621.5	0.94	0.00	-0.94
8,302.0	89.90	358.60	6,830.2	1,615.2	454.1	1,653.2	0.88	0.63	-0.63
8,333.0	90.40	358.90	6,830.1	1,646.2	453.4	1,684.0	1.88	1.61	0.97
8,365.0	91.60	358.20	6,829.5	1,678.1	452.6	1,715.7	4.34	3.75	-2.19
8,397.0	92.30	358.80	6,828.5	1,710.1	451.8	1,747.4	2.88	2.19	1.88
8,428.0	93.00	359.50	6,827.0	1,741.1	451.3	1,778.2	3.19	2.26	2.26
8,460.0	93.10	0.50	6,825.3	1,773.0	451.3	1,810.0	3.14	0.31	3.13
8,492.0	93.30	0.50	6,823.5	1,805.0	451.6	1,841.8	0.63	0.63	0.00
8,523.0	92.90	1.60	6,821.9	1,835.9	452.2	1,872.6	3.77	-1.29	3.55
8,555.0	92.30	1.60	6,820.4	1,867.9	453.1	1,904.5	1.88	-1.88	0.00
8,587.0	92.50	1.20	6,819.1	1,899.8	453.8	1,936.4	1.40	0.63	-1.25
8,619.0	92.40	1.10	6,817.7	1,931.8	454.5	1,968.2	0.44	-0.31	-0.31
8,650.0	92.10	1.20	6,816.5	1,962.8	455.1	1,999.1	1.02	-0.97	0.32
8,682.0	91.50	1.80	6,815.5	1,994.7	455.9	2,031.0	2.65	-1.88	1.88
8,714.0	91.10	2.30	6,814.7	2,026.7	457.1	2,062.9	2.00	-1.25	1.56
8,745.0	90.40	2.10	6,814.3	2,057.7	458.3	2,093.9	2.35	-2.26	-0.65
8,777.0	89.70	2.30	6,814.3	2,089.7	459.5	2,125.8	2.28	-2.19	0.63
8,809.0	89.80	2.30	6,814.5	2,121.6	460.8	2,157.7	0.31	0.31	0.00
8,840.0	90.70	2.80	6,814.3	2,152.6	462.2	2,188.7	3.32	2.90	1.61
8,872.0	91.40	2.80	6,813.7	2,184.6	463.7	2,220.6	2.19	2.19	0.00
8,904.0	91.70	2.30	6,812.9	2,216.5	465.1	2,252.6	1.82	0.94	-1.56
8,936.0	91.50	1.40	6,812.0	2,248.5	466.2	2,284.5	2.88	-0.63	-2.81
8,967.0	90.80	0.70	6,811.4	2,279.5	466.7	2,315.3	3.19	-2.26	-2.26
8,999.0	91.20	0.40	6,810.8	2,311.5	467.1	2,347.2	1.56	1.25	-0.94
9,031.0	90.00	359.30	6,810.5	2,343.5	467.0	2,379.0	5.09	-3.75	-3.44
9,062.0	89.00	358.60	6,810.7	2,374.5	466.4	2,409.8	3.94	-3.23	-2.26
9,094.0	89.10	357.90	6,811.3	2,406.4	465.4	2,441.5	2.21	0.31	-2.19
9,126.0	89.70	358.20	6,811.6	2,438.4	464.3	2,473.2	2.10	1.88	0.94
9,158.0	90.40	357.90	6,811.6	2,470.4	463.2	2,504.9	2.38	2.19	-0.94
9,189.0	90.80	357.40	6,811.2	2,501.4	462.0	2,535.6	2.07	1.29	-1.61
9,221.0	90.70	357.50	6,810.8	2,533.3	460.6	2,567.2	0.44	-0.31	0.31
9,253.0	90.40	357.70	6,810.5	2,565.3	459.2	2,598.9	1.13	-0.94	0.63
9,285.0	90.00	357.70	6,810.4	2,597.3	457.9	2,630.6	1.25	-1.25	0.00
9,317.0	89.50	358.20	6,810.5	2,629.3	456.8	2,662.3	2.21	-1.56	1.56
9,348.0	89.60	358.10	6,810.8	2,660.3	455.8	2,693.0	0.46	0.32	-0.32
9,380.0	89.80	357.50	6,811.0	2,692.2	454.6	2,724.7	1.98	0.63	-1.88
9,412.0	90.10	357.40	6,811.0	2,724.2	453.1	2,756.3	0.99	0.94	-0.31
9,443.0	90.20	358.10	6,810.9	2,755.2	451.9	2,787.0	2.28	0.32	2.26
9,475.0	90.20	358.10	6,810.8	2,787.2	450.9	2,818.7	0.00	0.00	0.00
9,507.0	90.30	358.10	6,810.6	2,819.1	449.8	2,850.4	0.31	0.31	0.00
9,539.0	90.20	357.90	6,810.5	2,851.1	448.7	2,882.1	0.70	-0.31	-0.63
9,571.0	90.00	357.50	6,810.5	2,883.1	447.4	2,913.8	1.40	-0.63	-1.25
9,602.0	90.00	357.50	6,810.5	2,914.1	446.0	2,944.4	0.00	0.00	0.00
9,634.0	90.20	357.70	6,810.4	2,946.0	444.7	2,976.1	0.88	0.63	0.63
9,666.0	90.90	358.40	6,810.1	2,978.0	443.6	3,007.8	3.09	2.19	2.19
9,698.0	91.50	358.80	6,809.4	3,010.0	442.8	3,039.5	2.25	1.88	1.25
9,729.0	91.60	358.80	6,808.6	3,041.0	442.2	3,070.3	0.32	0.32	0.00
9,761.0	91.50	358.60	6,807.7	3,073.0	441.5	3,102.0	0.70	-0.31	-0.63
9,793.0	91.30	359.10	6,806.9	3,104.9	440.8	3,133.8	1.68	-0.63	1.56
9,825.0	91.20	358.90	6,806.2	3,136.9	440.3	3,165.5	0.70	-0.31	-0.63

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Waste Management 2L-201
<b>Project:</b>	SEC.2-T2N-R64W	<b>TVD Reference:</b>	WELL @ 4954.0ft (RKB - 15')
<b>Site:</b>	Waste Management 2IL-HZ Pad Sec.2-T2N-R64W	<b>MD Reference:</b>	WELL @ 4954.0ft (RKB - 15')
<b>Well:</b>	Waste Management 2L-201	<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)
9,856.0	90.80	359.10	6,805.7	3,167.9	439.7	3,196.3	1.44	-1.29	0.65
9,888.0	90.40	359.50	6,805.4	3,199.9	439.3	3,228.1	1.77	-1.25	1.25
9,920.0	90.20	0.00	6,805.2	3,231.9	439.2	3,259.9	1.68	-0.63	1.56
9,952.0	90.30	1.20	6,805.1	3,263.9	439.5	3,291.8	3.76	0.31	3.75
9,983.0	90.00	1.90	6,805.0	3,294.9	440.4	3,322.7	2.46	-0.97	2.26
10,015.0	89.50	1.90	6,805.1	3,326.9	441.4	3,354.6	1.56	-1.56	0.00
10,047.0	89.30	2.10	6,805.4	3,358.9	442.5	3,386.5	0.88	-0.63	0.63
10,079.0	89.10	1.90	6,805.9	3,390.8	443.7	3,418.5	0.88	-0.63	-0.63
10,111.0	88.80	1.60	6,806.5	3,422.8	444.6	3,450.4	1.33	-0.94	-0.94
10,143.0	88.50	1.80	6,807.2	3,454.8	445.6	3,482.3	1.13	-0.94	0.63
10,175.0	88.20	1.60	6,808.2	3,486.8	446.5	3,514.2	1.13	-0.94	-0.63
10,206.0	88.50	1.80	6,809.0	3,517.7	447.4	3,545.1	1.16	0.97	0.65
10,238.0	89.00	1.40	6,809.7	3,549.7	448.3	3,577.0	2.00	1.56	-1.25
10,270.0	89.50	1.40	6,810.2	3,581.7	449.1	3,608.9	1.56	1.56	0.00
10,302.0	89.60	1.60	6,810.4	3,613.7	450.0	3,640.8	0.70	0.31	0.63
10,334.0	89.70	1.60	6,810.6	3,645.7	450.9	3,672.7	0.31	0.31	0.00
10,365.0	90.00	1.20	6,810.7	3,676.7	451.6	3,703.6	1.61	0.97	-1.29
10,397.0	90.20	1.20	6,810.6	3,708.7	452.3	3,735.5	0.63	0.63	0.00
10,429.0	90.70	1.10	6,810.4	3,740.7	452.9	3,767.4	1.59	1.56	-0.31
10,460.0	91.00	1.10	6,809.9	3,771.7	453.5	3,798.3	0.97	0.97	0.00
10,492.0	91.70	0.90	6,809.2	3,803.6	454.1	3,830.2	2.27	2.19	-0.63
10,524.0	91.60	1.10	6,808.3	3,835.6	454.6	3,862.0	0.70	-0.31	0.63
10,555.0	91.10	0.90	6,807.5	3,866.6	455.2	3,892.9	1.74	-1.61	-0.65
10,587.0	90.60	0.40	6,807.0	3,898.6	455.5	3,924.8	2.21	-1.56	-1.56
10,619.0	89.80	0.20	6,806.9	3,930.6	455.7	3,956.6	2.58	-2.50	-0.63
10,651.0	89.30	0.50	6,807.2	3,962.6	455.9	3,988.5	1.82	-1.56	0.94
10,682.0	89.40	0.50	6,807.5	3,993.6	456.2	4,019.3	0.32	0.32	0.00
10,714.0	89.80	0.70	6,807.8	4,025.6	456.5	4,051.2	1.40	1.25	0.63
10,746.0	89.90	0.40	6,807.8	4,057.6	456.8	4,083.0	0.99	0.31	-0.94
10,777.0	90.50	0.20	6,807.7	4,088.6	457.0	4,113.9	2.04	1.94	-0.65
10,809.0	90.70	0.00	6,807.4	4,120.6	457.0	4,145.7	0.88	0.63	-0.63
10,841.0	91.30	0.00	6,806.8	4,152.6	457.0	4,177.6	1.88	1.88	0.00
10,873.0	92.10	0.00	6,805.9	4,184.6	457.0	4,209.4	2.50	2.50	0.00
10,904.0	92.20	359.80	6,804.7	4,215.5	457.0	4,240.2	0.72	0.32	-0.65
10,936.0	91.90	359.30	6,803.6	4,247.5	456.7	4,272.0	1.82	-0.94	-1.56
10,968.0	91.50	359.10	6,802.6	4,279.5	456.3	4,303.7	1.40	-1.25	-0.63
10,999.0	90.70	359.30	6,802.0	4,310.5	455.8	4,334.5	2.66	-2.58	0.65
11,031.0	90.20	359.30	6,801.8	4,342.5	455.5	4,366.3	1.56	-1.56	0.00
11,063.0	90.40	359.50	6,801.6	4,374.5	455.1	4,398.1	0.88	0.63	0.63
11,095.0	91.00	359.30	6,801.2	4,406.5	454.8	4,429.9	1.98	1.88	-0.63
11,126.0	91.80	359.10	6,800.5	4,437.5	454.4	4,460.7	2.66	2.58	-0.65
11,162.0	92.20	359.10	6,799.2	4,473.4	453.8	4,496.4	1.11	1.11	0.00
11,212.7	92.20	359.10	6,797.3	4,524.1	453.0	4,546.7	0.00	0.00	0.00
<b>BHL 500'FNL, 1155'FWL</b>									
11,213.0	92.20	359.10	6,797.3	4,524.4	453.0	4,547.0	0.00	0.00	0.00



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Waste Management 2L-201
<b>Project:</b>	SEC.2-T2N-R64W	<b>TVD Reference:</b>	WELL @ 4954.0ft (RKB - 15')
<b>Site:</b>	Waste Management 2IL-HZ Pad Sec.2-T2N-R64W	<b>MD Reference:</b>	WELL @ 4954.0ft (RKB - 15')
<b>Well:</b>	Waste Management 2L-201	<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

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
- Shape									
BHL 500'FNL, 1155'F <sup>1</sup>	0.00	0.00	6,804.0	4,524.6	466.7	1,307,462.25	3,272,710.17	40.173260	-104.524070
- survey misses target center by 15.3ft at 11212.7ft MD (6797.3 TVD, 4524.1 N, 453.0 E)									
- Point									

Checked By: _____	Approved By: _____	Date: _____
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