

# 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

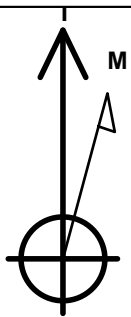
Ground Elevation: 4939.0

+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')

## WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape Point
BHL 500'FNL, 1155'FWL	6804.0	4524.6	466.7	Point



Azimuths to True North  
Magnetic North: 8.50°

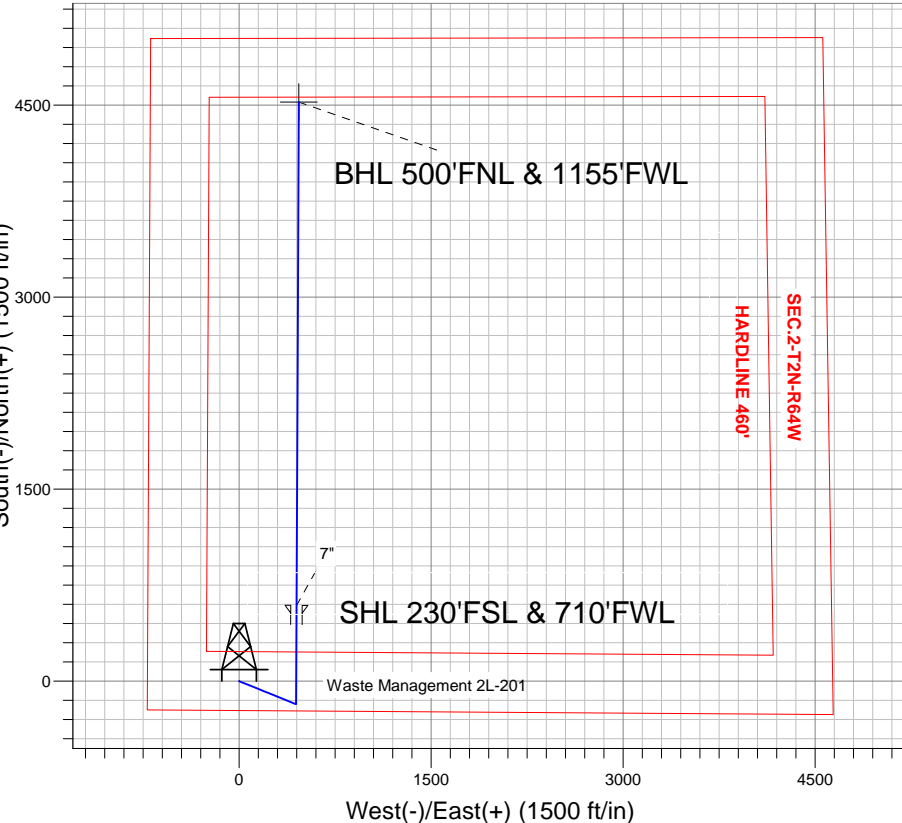
Magnetic Field  
Strength: 52860.7nT  
Dip Angle: 66.84°  
Date: 1/23/2013  
Model: IGRF2010

## ANNOTATIONS

TVD	MD	Annotation
200.0	200.0	KOP #1
6075.1	6100.1	KOP #2
6839.0	7306.9	End of Build

Waste Management 2IL-HZ Pad Sec.2-T2N-R64W  
Waste Management 2L-201  
Plan #1 (1-23-13)  
10:55, January 24 2013

South(-)/North(+) (1500 ft/in)



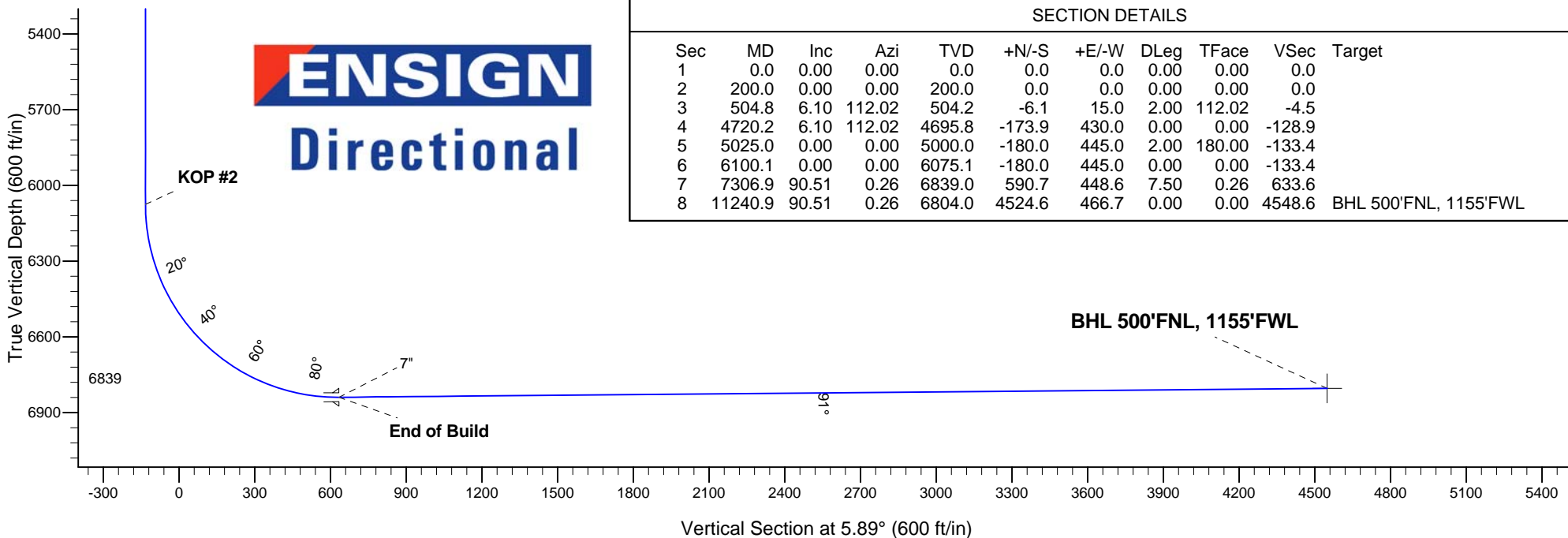
West(-)/East(+) (1500 ft/in)

**ENSIGN**  
Directional

## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	504.8	6.10	112.02	504.2	-6.1	15.0	2.00	112.02	-4.5	
4	4720.2	6.10	112.02	4695.8	-173.9	430.0	0.00	0.00	-128.9	
5	5025.0	0.00	0.00	5000.0	-180.0	445.0	2.00	180.00	-133.4	
6	6100.1	0.00	0.00	6075.1	-180.0	445.0	0.00	0.00	-133.4	
7	7306.9	90.51	0.26	6839.0	590.7	448.6	7.50	0.26	633.6	
8	11240.9	90.51	0.26	6804.0	4524.6	466.7	0.00	0.00	4548.6	BHL 500'FNL, 1155'FWL

BHL 500'FNL, 1155'FWL



Vertical Section at 5.89° (600 ft/in)



# **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**

**Plan: Plan #1 (1-23-13)**

## **Standard Planning Report**

**24 January, 2013**

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	
504.8	6.10	112.02	504.2	-6.1	15.0	2.00	2.00	0.00	112.02	
4,720.2	6.10	112.02	4,695.8	-173.9	430.0	0.00	0.00	0.00	0.00	
5,025.0	0.00	0.00	5,000.0	-180.0	445.0	2.00	-2.00	0.00	180.00	
6,100.1	0.00	0.00	6,075.1	-180.0	445.0	0.00	0.00	0.00	0.00	
7,306.9	90.51	0.26	6,839.0	590.7	448.6	7.50	7.50	0.00	0.26	
11,240.9	90.51	0.26	6,804.0	4,524.6	466.7	0.00	0.00	0.00	0.00	BHL 500°FNL, 1155

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Waste Management 2L-201
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4954.0ft (RKB - 15')
<b>Project:</b>	SEC.2-T2N-R64W	<b>MD Reference:</b>	WELL @ 4954.0ft (RKB - 15')
<b>Site:</b>	Waste Management 2IL-HZ Pad Sec.2-T2N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Waste Management 2L-201	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (1-23-13)		

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
240.0	0.80	112.02	240.0	-0.1	0.3	-0.1	2.00	2.00	0.00
280.0	1.60	112.02	280.0	-0.4	1.0	-0.3	2.00	2.00	0.00
320.0	2.40	112.02	320.0	-0.9	2.3	-0.7	2.00	2.00	0.00
360.0	3.20	112.02	359.9	-1.7	4.1	-1.2	2.00	2.00	0.00
400.0	4.00	112.02	399.8	-2.6	6.5	-1.9	2.00	2.00	0.00
440.0	4.80	112.02	439.7	-3.8	9.3	-2.8	2.00	2.00	0.00
480.0	5.60	112.02	479.6	-5.1	12.7	-3.8	2.00	2.00	0.00
504.8	6.10	112.02	504.2	-6.1	15.0	-4.5	2.00	2.00	0.00
520.0	6.10	112.02	519.3	-6.7	16.5	-5.0	0.00	0.00	0.00
560.0	6.10	112.02	559.1	-8.3	20.5	-6.1	0.00	0.00	0.00
600.0	6.10	112.02	598.9	-9.9	24.4	-7.3	0.00	0.00	0.00
640.0	6.10	112.02	638.7	-11.5	28.3	-8.5	0.00	0.00	0.00
680.0	6.10	112.02	678.4	-13.1	32.3	-9.7	0.00	0.00	0.00
720.0	6.10	112.02	718.2	-14.6	36.2	-10.9	0.00	0.00	0.00
760.0	6.10	112.02	758.0	-16.2	40.1	-12.0	0.00	0.00	0.00
800.0	6.10	112.02	797.8	-17.8	44.1	-13.2	0.00	0.00	0.00
840.0	6.10	112.02	837.5	-19.4	48.0	-14.4	0.00	0.00	0.00
880.0	6.10	112.02	877.3	-21.0	52.0	-15.6	0.00	0.00	0.00
920.0	6.10	112.02	917.1	-22.6	55.9	-16.8	0.00	0.00	0.00
960.0	6.10	112.02	956.9	-24.2	59.8	-17.9	0.00	0.00	0.00
1,000.0	6.10	112.02	996.6	-25.8	63.8	-19.1	0.00	0.00	0.00
1,040.0	6.10	112.02	1,036.4	-27.4	67.7	-20.3	0.00	0.00	0.00
1,080.0	6.10	112.02	1,076.2	-29.0	71.6	-21.5	0.00	0.00	0.00
1,120.0	6.10	112.02	1,115.9	-30.6	75.6	-22.7	0.00	0.00	0.00
1,160.0	6.10	112.02	1,155.7	-32.2	79.5	-23.8	0.00	0.00	0.00
1,200.0	6.10	112.02	1,195.5	-33.8	83.5	-25.0	0.00	0.00	0.00
1,240.0	6.10	112.02	1,235.3	-35.3	87.4	-26.2	0.00	0.00	0.00
1,280.0	6.10	112.02	1,275.0	-36.9	91.3	-27.4	0.00	0.00	0.00
1,320.0	6.10	112.02	1,314.8	-38.5	95.3	-28.6	0.00	0.00	0.00
1,360.0	6.10	112.02	1,354.6	-40.1	99.2	-29.7	0.00	0.00	0.00
1,400.0	6.10	112.02	1,394.4	-41.7	103.1	-30.9	0.00	0.00	0.00
1,440.0	6.10	112.02	1,434.1	-43.3	107.1	-32.1	0.00	0.00	0.00
1,480.0	6.10	112.02	1,473.9	-44.9	111.0	-33.3	0.00	0.00	0.00
1,520.0	6.10	112.02	1,513.7	-46.5	115.0	-34.5	0.00	0.00	0.00
1,560.0	6.10	112.02	1,553.5	-48.1	118.9	-35.6	0.00	0.00	0.00
1,600.0	6.10	112.02	1,593.2	-49.7	122.8	-36.8	0.00	0.00	0.00
1,640.0	6.10	112.02	1,633.0	-51.3	126.8	-38.0	0.00	0.00	0.00
1,680.0	6.10	112.02	1,672.8	-52.9	130.7	-39.2	0.00	0.00	0.00
1,720.0	6.10	112.02	1,712.6	-54.5	134.6	-40.4	0.00	0.00	0.00
1,760.0	6.10	112.02	1,752.3	-56.1	138.6	-41.5	0.00	0.00	0.00
1,800.0	6.10	112.02	1,792.1	-57.6	142.5	-42.7	0.00	0.00	0.00
1,840.0	6.10	112.02	1,831.9	-59.2	146.5	-43.9	0.00	0.00	0.00
1,880.0	6.10	112.02	1,871.6	-60.8	150.4	-45.1	0.00	0.00	0.00
1,920.0	6.10	112.02	1,911.4	-62.4	154.3	-46.3	0.00	0.00	0.00
1,960.0	6.10	112.02	1,951.2	-64.0	158.3	-47.4	0.00	0.00	0.00
2,000.0	6.10	112.02	1,991.0	-65.6	162.2	-48.6	0.00	0.00	0.00

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<b>Site:</b>	Waste Management 2IL-HZ Pad Sec.2-T2N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Waste Management 2L-201	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (1-23-13)		

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	6.10	112.02	2,030.7	-67.2	166.1	-49.8	0.00	0.00	0.00
2,080.0	6.10	112.02	2,070.5	-68.8	170.1	-51.0	0.00	0.00	0.00
2,120.0	6.10	112.02	2,110.3	-70.4	174.0	-52.2	0.00	0.00	0.00
2,160.0	6.10	112.02	2,150.1	-72.0	178.0	-53.3	0.00	0.00	0.00
2,200.0	6.10	112.02	2,189.8	-73.6	181.9	-54.5	0.00	0.00	0.00
2,240.0	6.10	112.02	2,229.6	-75.2	185.8	-55.7	0.00	0.00	0.00
2,280.0	6.10	112.02	2,269.4	-76.8	189.8	-56.9	0.00	0.00	0.00
2,320.0	6.10	112.02	2,309.2	-78.4	193.7	-58.1	0.00	0.00	0.00
2,360.0	6.10	112.02	2,348.9	-79.9	197.6	-59.2	0.00	0.00	0.00
2,400.0	6.10	112.02	2,388.7	-81.5	201.6	-60.4	0.00	0.00	0.00
2,440.0	6.10	112.02	2,428.5	-83.1	205.5	-61.6	0.00	0.00	0.00
2,480.0	6.10	112.02	2,468.3	-84.7	209.5	-62.8	0.00	0.00	0.00
2,520.0	6.10	112.02	2,508.0	-86.3	213.4	-64.0	0.00	0.00	0.00
2,560.0	6.10	112.02	2,547.8	-87.9	217.3	-65.1	0.00	0.00	0.00
2,600.0	6.10	112.02	2,587.6	-89.5	221.3	-66.3	0.00	0.00	0.00
2,640.0	6.10	112.02	2,627.4	-91.1	225.2	-67.5	0.00	0.00	0.00
2,680.0	6.10	112.02	2,667.1	-92.7	229.1	-68.7	0.00	0.00	0.00
2,720.0	6.10	112.02	2,706.9	-94.3	233.1	-69.9	0.00	0.00	0.00
2,760.0	6.10	112.02	2,746.7	-95.9	237.0	-71.0	0.00	0.00	0.00
2,800.0	6.10	112.02	2,786.4	-97.5	241.0	-72.2	0.00	0.00	0.00
2,840.0	6.10	112.02	2,826.2	-99.1	244.9	-73.4	0.00	0.00	0.00
2,880.0	6.10	112.02	2,866.0	-100.7	248.8	-74.6	0.00	0.00	0.00
2,920.0	6.10	112.02	2,905.8	-102.2	252.8	-75.8	0.00	0.00	0.00
2,960.0	6.10	112.02	2,945.5	-103.8	256.7	-77.0	0.00	0.00	0.00
3,000.0	6.10	112.02	2,985.3	-105.4	260.6	-78.1	0.00	0.00	0.00
3,040.0	6.10	112.02	3,025.1	-107.0	264.6	-79.3	0.00	0.00	0.00
3,080.0	6.10	112.02	3,064.9	-108.6	268.5	-80.5	0.00	0.00	0.00
3,120.0	6.10	112.02	3,104.6	-110.2	272.5	-81.7	0.00	0.00	0.00
3,160.0	6.10	112.02	3,144.4	-111.8	276.4	-82.9	0.00	0.00	0.00
3,200.0	6.10	112.02	3,184.2	-113.4	280.3	-84.0	0.00	0.00	0.00
3,240.0	6.10	112.02	3,224.0	-115.0	284.3	-85.2	0.00	0.00	0.00
3,280.0	6.10	112.02	3,263.7	-116.6	288.2	-86.4	0.00	0.00	0.00
3,320.0	6.10	112.02	3,303.5	-118.2	292.1	-87.6	0.00	0.00	0.00
3,360.0	6.10	112.02	3,343.3	-119.8	296.1	-88.8	0.00	0.00	0.00
3,400.0	6.10	112.02	3,383.1	-121.4	300.0	-89.9	0.00	0.00	0.00
3,440.0	6.10	112.02	3,422.8	-123.0	304.0	-91.1	0.00	0.00	0.00
3,480.0	6.10	112.02	3,462.6	-124.5	307.9	-92.3	0.00	0.00	0.00
3,520.0	6.10	112.02	3,502.4	-126.1	311.8	-93.5	0.00	0.00	0.00
3,560.0	6.10	112.02	3,542.2	-127.7	315.8	-94.7	0.00	0.00	0.00
3,600.0	6.10	112.02	3,581.9	-129.3	319.7	-95.8	0.00	0.00	0.00
3,640.0	6.10	112.02	3,621.7	-130.9	323.6	-97.0	0.00	0.00	0.00
3,680.0	6.10	112.02	3,661.5	-132.5	327.6	-98.2	0.00	0.00	0.00
3,720.0	6.10	112.02	3,701.2	-134.1	331.5	-99.4	0.00	0.00	0.00
3,760.0	6.10	112.02	3,741.0	-135.7	335.5	-100.6	0.00	0.00	0.00
3,800.0	6.10	112.02	3,780.8	-137.3	339.4	-101.7	0.00	0.00	0.00
3,840.0	6.10	112.02	3,820.6	-138.9	343.3	-102.9	0.00	0.00	0.00
3,880.0	6.10	112.02	3,860.3	-140.5	347.3	-104.1	0.00	0.00	0.00
3,920.0	6.10	112.02	3,900.1	-142.1	351.2	-105.3	0.00	0.00	0.00
3,960.0	6.10	112.02	3,939.9	-143.7	355.1	-106.5	0.00	0.00	0.00
4,000.0	6.10	112.02	3,979.7	-145.2	359.1	-107.6	0.00	0.00	0.00
4,040.0	6.10	112.02	4,019.4	-146.8	363.0	-108.8	0.00	0.00	0.00
4,080.0	6.10	112.02	4,059.2	-148.4	367.0	-110.0	0.00	0.00	0.00

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<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4954.0ft (RKB - 15')
<b>Project:</b>	SEC.2-T2N-R64W	<b>MD Reference:</b>	WELL @ 4954.0ft (RKB - 15')
<b>Site:</b>	Waste Management 2IL-HZ Pad Sec.2-T2N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Waste Management 2L-201	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (1-23-13)		

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)
4,120.0	6.10	112.02	4,099.0	-150.0	370.9	-111.2	0.00	0.00	0.00
4,160.0	6.10	112.02	4,138.8	-151.6	374.8	-112.4	0.00	0.00	0.00
4,200.0	6.10	112.02	4,178.5	-153.2	378.8	-113.5	0.00	0.00	0.00
4,240.0	6.10	112.02	4,218.3	-154.8	382.7	-114.7	0.00	0.00	0.00
4,280.0	6.10	112.02	4,258.1	-156.4	386.7	-115.9	0.00	0.00	0.00
4,320.0	6.10	112.02	4,297.9	-158.0	390.6	-117.1	0.00	0.00	0.00
4,360.0	6.10	112.02	4,337.6	-159.6	394.5	-118.3	0.00	0.00	0.00
4,400.0	6.10	112.02	4,377.4	-161.2	398.5	-119.4	0.00	0.00	0.00
4,440.0	6.10	112.02	4,417.2	-162.8	402.4	-120.6	0.00	0.00	0.00
4,480.0	6.10	112.02	4,456.9	-164.4	406.3	-121.8	0.00	0.00	0.00
4,520.0	6.10	112.02	4,496.7	-166.0	410.3	-123.0	0.00	0.00	0.00
4,560.0	6.10	112.02	4,536.5	-167.5	414.2	-124.2	0.00	0.00	0.00
4,600.0	6.10	112.02	4,576.3	-169.1	418.2	-125.3	0.00	0.00	0.00
4,640.0	6.10	112.02	4,616.0	-170.7	422.1	-126.5	0.00	0.00	0.00
4,680.0	6.10	112.02	4,655.8	-172.3	426.0	-127.7	0.00	0.00	0.00
4,720.0	6.10	112.02	4,695.6	-173.9	430.0	-128.9	0.00	0.00	0.00
4,720.2	6.10	112.02	4,695.8	-173.9	430.0	-128.9	0.00	0.00	0.00
4,760.0	5.30	112.02	4,735.4	-175.4	433.6	-130.0	2.00	-2.00	0.00
4,800.0	4.50	112.02	4,775.2	-176.7	436.8	-130.9	2.00	-2.00	0.00
4,840.0	3.70	112.02	4,815.1	-177.8	439.5	-131.7	2.00	-2.00	0.00
4,880.0	2.90	112.02	4,855.1	-178.6	441.6	-132.4	2.00	-2.00	0.00
4,920.0	2.10	112.02	4,895.0	-179.3	443.2	-132.9	2.00	-2.00	0.00
4,960.0	1.30	112.02	4,935.0	-179.7	444.3	-133.2	2.00	-2.00	0.00
5,000.0	0.50	112.02	4,975.0	-180.0	444.9	-133.4	2.00	-2.00	0.00
5,025.0	0.00	0.00	5,000.0	-180.0	445.0	-133.4	2.00	-2.00	0.00
5,040.0	0.00	0.00	5,015.0	-180.0	445.0	-133.4	0.00	0.00	0.00
5,080.0	0.00	0.00	5,055.0	-180.0	445.0	-133.4	0.00	0.00	0.00
5,120.0	0.00	0.00	5,095.0	-180.0	445.0	-133.4	0.00	0.00	0.00
5,160.0	0.00	0.00	5,135.0	-180.0	445.0	-133.4	0.00	0.00	0.00
5,200.0	0.00	0.00	5,175.0	-180.0	445.0	-133.4	0.00	0.00	0.00
5,240.0	0.00	0.00	5,215.0	-180.0	445.0	-133.4	0.00	0.00	0.00
5,280.0	0.00	0.00	5,255.0	-180.0	445.0	-133.4	0.00	0.00	0.00
5,320.0	0.00	0.00	5,295.0	-180.0	445.0	-133.4	0.00	0.00	0.00
5,360.0	0.00	0.00	5,335.0	-180.0	445.0	-133.4	0.00	0.00	0.00
5,400.0	0.00	0.00	5,375.0	-180.0	445.0	-133.4	0.00	0.00	0.00
5,440.0	0.00	0.00	5,415.0	-180.0	445.0	-133.4	0.00	0.00	0.00
5,480.0	0.00	0.00	5,455.0	-180.0	445.0	-133.4	0.00	0.00	0.00
5,520.0	0.00	0.00	5,495.0	-180.0	445.0	-133.4	0.00	0.00	0.00
5,560.0	0.00	0.00	5,535.0	-180.0	445.0	-133.4	0.00	0.00	0.00
5,600.0	0.00	0.00	5,575.0	-180.0	445.0	-133.4	0.00	0.00	0.00
5,640.0	0.00	0.00	5,615.0	-180.0	445.0	-133.4	0.00	0.00	0.00
5,680.0	0.00	0.00	5,655.0	-180.0	445.0	-133.4	0.00	0.00	0.00
5,720.0	0.00	0.00	5,695.0	-180.0	445.0	-133.4	0.00	0.00	0.00
5,760.0	0.00	0.00	5,735.0	-180.0	445.0	-133.4	0.00	0.00	0.00
5,800.0	0.00	0.00	5,775.0	-180.0	445.0	-133.4	0.00	0.00	0.00
5,840.0	0.00	0.00	5,815.0	-180.0	445.0	-133.4	0.00	0.00	0.00
5,880.0	0.00	0.00	5,855.0	-180.0	445.0	-133.4	0.00	0.00	0.00
5,920.0	0.00	0.00	5,895.0	-180.0	445.0	-133.4	0.00	0.00	0.00
5,960.0	0.00	0.00	5,935.0	-180.0	445.0	-133.4	0.00	0.00	0.00
6,000.0	0.00	0.00	5,975.0	-180.0	445.0	-133.4	0.00	0.00	0.00
6,040.0	0.00	0.00	6,015.0	-180.0	445.0	-133.4	0.00	0.00	0.00
6,080.0	0.00	0.00	6,055.0	-180.0	445.0	-133.4	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Waste Management 2L-201
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4954.0ft (RKB - 15')
<b>Project:</b>	SEC.2-T2N-R64W	<b>MD Reference:</b>	WELL @ 4954.0ft (RKB - 15')
<b>Site:</b>	Waste Management 2IL-HZ Pad Sec.2-T2N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Waste Management 2L-201	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (1-23-13)		

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)
6,100.1	0.00	0.00	6,075.1	-180.0	445.0	-133.4	0.00	0.00	0.00
6,120.0	1.49	0.26	6,095.0	-179.7	445.0	-133.1	7.50	7.50	0.00
6,160.0	4.49	0.26	6,135.0	-177.7	445.0	-131.1	7.50	7.50	0.00
6,200.0	7.49	0.26	6,174.7	-173.5	445.0	-126.9	7.50	7.50	0.00
6,240.0	10.49	0.26	6,214.2	-167.2	445.1	-120.7	7.50	7.50	0.00
6,280.0	13.49	0.26	6,253.4	-158.9	445.1	-112.4	7.50	7.50	0.00
6,320.0	16.49	0.26	6,292.0	-148.6	445.1	-102.1	7.50	7.50	0.00
6,360.0	19.49	0.26	6,330.0	-136.2	445.2	-89.8	7.50	7.50	0.00
6,400.0	22.49	0.26	6,367.4	-121.9	445.3	-75.6	7.50	7.50	0.00
6,440.0	25.49	0.26	6,403.9	-105.6	445.3	-59.4	7.50	7.50	0.00
6,480.0	28.49	0.26	6,439.5	-87.5	445.4	-41.3	7.50	7.50	0.00
6,520.0	31.49	0.26	6,474.2	-67.5	445.5	-21.4	7.50	7.50	0.00
6,560.0	34.49	0.26	6,507.7	-45.7	445.6	0.3	7.50	7.50	0.00
6,600.0	37.49	0.26	6,540.1	-22.2	445.7	23.7	7.50	7.50	0.00
6,640.0	40.49	0.26	6,571.2	3.0	445.8	48.7	7.50	7.50	0.00
6,680.0	43.49	0.26	6,600.9	29.7	446.0	75.3	7.50	7.50	0.00
6,720.0	46.49	0.26	6,629.2	58.0	446.1	103.5	7.50	7.50	0.00
6,760.0	49.49	0.26	6,656.0	87.7	446.2	133.1	7.50	7.50	0.00
6,800.0	52.49	0.26	6,681.1	118.8	446.4	164.0	7.50	7.50	0.00
6,840.0	55.49	0.26	6,704.6	151.2	446.5	196.2	7.50	7.50	0.00
6,880.0	58.49	0.26	6,726.4	184.7	446.7	229.6	7.50	7.50	0.00
6,920.0	61.49	0.26	6,746.4	219.3	446.8	264.0	7.50	7.50	0.00
6,960.0	64.49	0.26	6,764.6	255.0	447.0	299.5	7.50	7.50	0.00
7,000.0	67.49	0.26	6,780.9	291.5	447.2	335.9	7.50	7.50	0.00
7,040.0	70.49	0.26	6,795.2	328.8	447.3	373.0	7.50	7.50	0.00
7,080.0	73.49	0.26	6,807.6	366.9	447.5	410.9	7.50	7.50	0.00
7,120.0	76.49	0.26	6,817.9	405.5	447.7	449.3	7.50	7.50	0.00
7,160.0	79.49	0.26	6,826.2	444.6	447.9	488.2	7.50	7.50	0.00
7,200.0	82.49	0.26	6,832.5	484.1	448.1	527.6	7.50	7.50	0.00
7,240.0	85.49	0.26	6,836.7	523.9	448.2	567.1	7.50	7.50	0.00
7,280.0	88.49	0.26	6,838.8	563.9	448.4	606.9	7.50	7.50	0.00
7,306.9	90.51	0.26	6,839.0	590.7	448.6	633.6	7.50	7.50	0.00
7,320.0	90.51	0.26	6,838.9	603.8	448.6	646.7	0.00	0.00	0.00
7,360.0	90.51	0.26	6,838.5	643.8	448.8	686.5	0.00	0.00	0.00
7,400.0	90.51	0.26	6,838.2	683.8	449.0	726.3	0.00	0.00	0.00
7,440.0	90.51	0.26	6,837.8	723.8	449.2	766.1	0.00	0.00	0.00
7,480.0	90.51	0.26	6,837.5	763.8	449.4	805.9	0.00	0.00	0.00
7,520.0	90.51	0.26	6,837.1	803.8	449.5	845.7	0.00	0.00	0.00
7,560.0	90.51	0.26	6,836.8	843.8	449.7	885.5	0.00	0.00	0.00
7,600.0	90.51	0.26	6,836.4	883.8	449.9	925.3	0.00	0.00	0.00
7,640.0	90.51	0.26	6,836.1	923.8	450.1	965.1	0.00	0.00	0.00
7,680.0	90.51	0.26	6,835.7	963.8	450.3	1,004.9	0.00	0.00	0.00
7,720.0	90.51	0.26	6,835.3	1,003.8	450.5	1,044.7	0.00	0.00	0.00
7,760.0	90.51	0.26	6,835.0	1,043.8	450.6	1,084.6	0.00	0.00	0.00
7,800.0	90.51	0.26	6,834.6	1,083.8	450.8	1,124.4	0.00	0.00	0.00
7,840.0	90.51	0.26	6,834.3	1,123.8	451.0	1,164.2	0.00	0.00	0.00
7,880.0	90.51	0.26	6,833.9	1,163.8	451.2	1,204.0	0.00	0.00	0.00
7,920.0	90.51	0.26	6,833.6	1,203.8	451.4	1,243.8	0.00	0.00	0.00
7,960.0	90.51	0.26	6,833.2	1,243.8	451.6	1,283.6	0.00	0.00	0.00
8,000.0	90.51	0.26	6,832.8	1,283.8	451.7	1,323.4	0.00	0.00	0.00
8,040.0	90.51	0.26	6,832.5	1,323.8	451.9	1,363.2	0.00	0.00	0.00
8,080.0	90.51	0.26	6,832.1	1,363.8	452.1	1,403.0	0.00	0.00	0.00



<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Waste Management 2L-201
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4954.0ft (RKB - 15')
<b>Project:</b>	SEC.2-T2N-R64W	<b>MD Reference:</b>	WELL @ 4954.0ft (RKB - 15')
<b>Site:</b>	Waste Management 2IL-HZ Pad Sec.2-T2N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Waste Management 2L-201	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (1-23-13)		

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)
8,120.0	90.51	0.26	6,831.8	1,403.8	452.3	1,442.8	0.00	0.00	0.00
8,160.0	90.51	0.26	6,831.4	1,443.8	452.5	1,482.6	0.00	0.00	0.00
8,200.0	90.51	0.26	6,831.1	1,483.8	452.7	1,522.4	0.00	0.00	0.00
8,240.0	90.51	0.26	6,830.7	1,523.8	452.9	1,562.2	0.00	0.00	0.00
8,280.0	90.51	0.26	6,830.4	1,563.8	453.0	1,602.0	0.00	0.00	0.00
8,320.0	90.51	0.26	6,830.0	1,603.8	453.2	1,641.8	0.00	0.00	0.00
8,360.0	90.51	0.26	6,829.6	1,643.8	453.4	1,681.6	0.00	0.00	0.00
8,400.0	90.51	0.26	6,829.3	1,683.8	453.6	1,721.4	0.00	0.00	0.00
8,440.0	90.51	0.26	6,828.9	1,723.8	453.8	1,761.3	0.00	0.00	0.00
8,480.0	90.51	0.26	6,828.6	1,763.8	454.0	1,801.1	0.00	0.00	0.00
8,520.0	90.51	0.26	6,828.2	1,803.8	454.1	1,840.9	0.00	0.00	0.00
8,560.0	90.51	0.26	6,827.9	1,843.8	454.3	1,880.7	0.00	0.00	0.00
8,600.0	90.51	0.26	6,827.5	1,883.8	454.5	1,920.5	0.00	0.00	0.00
8,640.0	90.51	0.26	6,827.2	1,923.8	454.7	1,960.3	0.00	0.00	0.00
8,680.0	90.51	0.26	6,826.8	1,963.8	454.9	2,000.1	0.00	0.00	0.00
8,720.0	90.51	0.26	6,826.4	2,003.8	455.1	2,039.9	0.00	0.00	0.00
8,760.0	90.51	0.26	6,826.1	2,043.8	455.3	2,079.7	0.00	0.00	0.00
8,800.0	90.51	0.26	6,825.7	2,083.8	455.4	2,119.5	0.00	0.00	0.00
8,840.0	90.51	0.26	6,825.4	2,123.8	455.6	2,159.3	0.00	0.00	0.00
8,880.0	90.51	0.26	6,825.0	2,163.8	455.8	2,199.1	0.00	0.00	0.00
8,920.0	90.51	0.26	6,824.7	2,203.8	456.0	2,238.9	0.00	0.00	0.00
8,960.0	90.51	0.26	6,824.3	2,243.8	456.2	2,278.7	0.00	0.00	0.00
9,000.0	90.51	0.26	6,823.9	2,283.8	456.4	2,318.5	0.00	0.00	0.00
9,040.0	90.51	0.26	6,823.6	2,323.8	456.5	2,358.3	0.00	0.00	0.00
9,080.0	90.51	0.26	6,823.2	2,363.8	456.7	2,398.1	0.00	0.00	0.00
9,120.0	90.51	0.26	6,822.9	2,403.8	456.9	2,438.0	0.00	0.00	0.00
9,160.0	90.51	0.26	6,822.5	2,443.8	457.1	2,477.8	0.00	0.00	0.00
9,200.0	90.51	0.26	6,822.2	2,483.8	457.3	2,517.6	0.00	0.00	0.00
9,240.0	90.51	0.26	6,821.8	2,523.8	457.5	2,557.4	0.00	0.00	0.00
9,280.0	90.51	0.26	6,821.5	2,563.7	457.6	2,597.2	0.00	0.00	0.00
9,320.0	90.51	0.26	6,821.1	2,603.7	457.8	2,637.0	0.00	0.00	0.00
9,360.0	90.51	0.26	6,820.7	2,643.7	458.0	2,676.8	0.00	0.00	0.00
9,400.0	90.51	0.26	6,820.4	2,683.7	458.2	2,716.6	0.00	0.00	0.00
9,440.0	90.51	0.26	6,820.0	2,723.7	458.4	2,756.4	0.00	0.00	0.00
9,480.0	90.51	0.26	6,819.7	2,763.7	458.6	2,796.2	0.00	0.00	0.00
9,520.0	90.51	0.26	6,819.3	2,803.7	458.8	2,836.0	0.00	0.00	0.00
9,560.0	90.51	0.26	6,819.0	2,843.7	458.9	2,875.8	0.00	0.00	0.00
9,600.0	90.51	0.26	6,818.6	2,883.7	459.1	2,915.6	0.00	0.00	0.00
9,640.0	90.51	0.26	6,818.3	2,923.7	459.3	2,955.4	0.00	0.00	0.00
9,680.0	90.51	0.26	6,817.9	2,963.7	459.5	2,995.2	0.00	0.00	0.00
9,720.0	90.51	0.26	6,817.5	3,003.7	459.7	3,035.0	0.00	0.00	0.00
9,760.0	90.51	0.26	6,817.2	3,043.7	459.9	3,074.8	0.00	0.00	0.00
9,800.0	90.51	0.26	6,816.8	3,083.7	460.0	3,114.7	0.00	0.00	0.00
9,840.0	90.51	0.26	6,816.5	3,123.7	460.2	3,154.5	0.00	0.00	0.00
9,880.0	90.51	0.26	6,816.1	3,163.7	460.4	3,194.3	0.00	0.00	0.00
9,920.0	90.51	0.26	6,815.8	3,203.7	460.6	3,234.1	0.00	0.00	0.00
9,960.0	90.51	0.26	6,815.4	3,243.7	460.8	3,273.9	0.00	0.00	0.00
10,000.0	90.51	0.26	6,815.0	3,283.7	461.0	3,313.7	0.00	0.00	0.00
10,040.0	90.51	0.26	6,814.7	3,323.7	461.2	3,353.5	0.00	0.00	0.00
10,080.0	90.51	0.26	6,814.3	3,363.7	461.3	3,393.3	0.00	0.00	0.00
10,120.0	90.51	0.26	6,814.0	3,403.7	461.5	3,433.1	0.00	0.00	0.00
10,160.0	90.51	0.26	6,813.6	3,443.7	461.7	3,472.9	0.00	0.00	0.00



Plan Annotations					
	Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
			+N/-S	+E/-W	
			(ft)	(ft)	
	200.0	200.0	0.0	0.0	KOP #1
	6,100.1	6,075.1	-180.0	445.0	KOP #2
	7,306.9	6,839.0	590.7	448.6	End of Build



# **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**

**Plan #1 (1-23-13)**

## **Anticollision Report**

**24 January, 2013**



Offset Design				Waste Management 2IL-HZ Pad Sec.2-T2N-R64W - Waste Management 2L-441 - Wellbore #1 - Plan #										Offset Site Error:		0.0 ft
Survey Program: 0-MWD														Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance									
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning			
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)					
2,300.0	2,289.3	2,289.3	2,289.3	6.4	5.0	177.18	0.0	-30.7	235.6	225.4	10.21	23.068				
2,400.0	2,388.7	2,388.7	2,388.7	6.7	5.3	177.30	0.0	-30.7	246.2	235.5	10.67	23.070				
2,500.0	2,488.1	2,488.1	2,488.1	7.0	5.5	177.41	0.0	-30.7	256.8	245.7	11.13	23.072				
2,600.0	2,587.6	2,587.6	2,587.6	7.3	5.7	177.51	0.0	-30.7	267.4	255.8	11.59	23.074				
2,700.0	2,687.0	2,687.0	2,687.0	7.6	5.9	177.61	0.0	-30.7	278.0	266.0	12.05	23.076				
2,800.0	2,786.4	2,786.4	2,786.4	7.9	6.2	177.70	0.0	-30.7	288.7	276.1	12.51	23.077				
2,900.0	2,885.9	2,885.9	2,885.9	8.2	6.4	177.78	0.0	-30.7	299.3	286.3	12.97	23.079				
3,000.0	2,985.3	2,985.3	2,985.3	8.5	6.6	177.85	0.0	-30.7	309.9	296.4	13.43	23.080				
3,100.0	3,084.8	3,093.6	3,093.6	8.8	6.8	177.78	-1.2	-29.8	319.3	305.4	13.88	23.005				
3,200.0	3,184.2	3,203.8	3,203.7	9.1	7.0	177.33	-5.7	-26.3	325.6	311.3	14.31	22.749				
3,300.0	3,283.6	3,314.3	3,313.6	9.4	7.2	176.48	-13.6	-20.2	328.6	313.9	14.75	22.280				
3,400.0	3,383.1	3,415.6	3,414.3	9.7	7.4	175.48	-22.8	-13.0	329.7	314.5	15.18	21.719				
3,500.0	3,482.5	3,515.5	3,513.5	10.0	7.6	174.49	-31.8	-6.0	330.9	315.3	15.62	21.188				
3,600.0	3,581.9	3,615.3	3,612.7	10.3	7.8	173.51	-40.9	1.1	332.1	316.1	16.06	20.682				
3,700.0	3,681.4	3,715.1	3,711.8	10.6	8.0	172.54	-50.0	8.1	333.5	317.0	16.51	20.200				
3,800.0	3,780.8	3,814.9	3,811.0	10.9	8.3	171.58	-59.0	15.2	334.9	318.0	16.97	19.740				
3,900.0	3,880.2	3,914.8	3,910.2	11.2	8.5	170.63	-68.1	22.2	336.5	319.0	17.43	19.302				
4,000.0	3,979.7	4,014.6	4,009.3	11.5	8.7	169.68	-77.2	29.3	338.1	320.2	17.90	18.885				
4,100.0	4,079.1	4,114.4	4,108.5	11.8	9.0	168.75	-86.2	36.3	339.8	321.4	18.38	18.487				
4,200.0	4,178.5	4,214.3	4,207.7	12.1	9.2	167.82	-95.3	43.4	341.6	322.8	18.87	18.107				
4,300.0	4,278.0	4,314.1	4,306.8	12.4	9.4	166.90	-104.3	50.4	343.5	324.2	19.36	17.745				
4,400.0	4,377.4	4,413.9	4,406.0	12.7	9.7	166.00	-113.4	57.5	345.5	325.7	19.86	17.400				
4,500.0	4,476.8	4,513.8	4,505.2	13.0	10.0	165.10	-122.5	64.5	347.6	327.2	20.36	17.070				
4,600.0	4,576.3	4,613.6	4,604.3	13.3	10.2	164.22	-131.5	71.6	349.8	328.9	20.88	16.755				
4,700.0	4,675.7	4,713.4	4,703.5	13.7	10.5	163.34	-140.6	78.6	352.0	330.6	21.39	16.454				
4,720.2	4,695.8	4,733.6	4,723.5	13.7	10.5	163.17	-142.4	80.0	352.5	331.0	21.50	16.395				
4,800.0	4,775.2	4,813.3	4,802.7	13.9	10.7	162.43	-149.7	85.7	353.3	331.4	21.90	16.128				
4,900.0	4,875.1	4,913.0	4,901.8	14.1	11.0	161.34	-158.7	92.7	351.4	329.0	22.37	15.709				
5,000.0	4,975.0	5,010.4	4,998.5	14.2	11.3	160.06	-167.5	99.5	346.4	323.6	22.81	15.188				
5,025.0	5,000.0	5,033.4	5,021.5	14.3	11.3	-88.22	-169.3	100.9	344.9	322.0	22.93	15.044				
5,100.0	5,075.0	5,100.0	5,087.8	14.4	11.5	-88.96	-173.8	104.4	340.9	317.6	23.25	14.659				
5,200.0	5,175.0	5,195.9	5,183.5	14.5	11.7	-89.68	-178.1	107.8	337.3	313.6	23.68	14.247				
5,300.0	5,275.0	5,289.1	5,276.7	14.7	11.9	-89.99	-179.9	109.2	335.8	311.7	24.06	13.957				
5,344.4	5,319.4	5,331.9	5,319.4	14.8	12.0	-90.00	-180.0	109.3	335.7	311.5	24.23	13.859				
5,400.0	5,375.0	5,387.4	5,375.0	14.9	12.1	-90.00	-180.0	109.3	335.7	311.3	24.43	13.741				
5,500.0	5,475.0	5,487.4	5,475.0	15.0	12.3	-90.00	-180.0	109.3	335.7	310.9	24.82	13.528				
5,600.0	5,575.0	5,587.4	5,575.0	15.2	12.5	-90.00	-180.0	109.3	335.7	310.5	25.20	13.321				
5,700.0	5,675.0	5,687.4	5,675.0	15.3	12.7	-90.00	-180.0	109.3	335.7	310.2	25.59	13.118				
5,800.0	5,775.0	5,787.4	5,775.0	15.5	12.9	-90.00	-180.0	109.3	335.7	309.8	25.98	12.921				
5,900.0	5,875.0	5,887.4	5,875.0	15.7	13.1	-90.00	-180.0	109.3	335.7	309.4	26.38	12.728				
6,000.0	5,975.0	5,987.4	5,975.0	15.8	13.3	-90.00	-180.0	109.3	335.7	309.0	26.77	12.541				
6,100.1	6,075.1	6,087.5	6,075.1	16.0	13.5	-90.00	-180.0	109.3	335.7	308.6	27.17	12.358				
6,150.0	6,125.0	6,137.4	6,125.0	16.1	13.6	-90.54	-180.0	109.3	335.8	308.4	27.36	12.271				
6,200.0	6,174.7	6,187.2	6,174.7	16.1	13.7	-91.37	-180.0	109.3	335.8	308.3	27.58	12.176				
6,250.0	6,224.1	6,236.5	6,224.1	16.2	13.8	-92.71	-180.0	109.3	336.1	308.3	27.81	12.085				
6,300.0	6,272.7	6,285.3	6,272.8	16.2	13.9	-94.54	-180.0	109.3	336.9	308.8	28.06	12.007				
6,350.0	6,320.6	6,335.9	6,323.4	16.3	14.0	-96.62	-178.2	109.3	338.2	309.9	28.29	11.955				
6,400.0	6,367.4	6,387.4	6,374.6	16.3	14.1	-98.69	-172.8	109.3	339.9	311.4	28.48	11.933				
6,450.0	6,412.9	6,439.8	6,426.3	16.4	14.2	-100.71	-163.9	109.3	342.1	313.4	28.64	11.943				
6,500.0	6,457.0	6,493.3	6,478.2	16.4	14.3	-102.69	-151.2	109.4	344.7	315.9	28.76	11.984				
6,550.0	6,499.5	6,547.8	6,530.1	16.4	14.3	-104.60	-134.5	109.5	347.6	318.8	28.84	12.052				

<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>Reference Site:</b>	Waste Management 2IL-HZ Pad Sec.2-T2N-R64W	<b>MD Reference:</b>	WELL @ 4954.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Waste Management 2L-201	<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 (1-23-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Waste Management 2IL-HZ Pad Sec.2-T2N-R64W - Waste Management 2L-441 - Wellbore #1 - Plan #													Offset Site Error:	0.0ft
Survey Program: 0-MWD													Offset Well Error:	0.0ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
6,600.0	6,540.1	6,603.4	6,581.6	16.4	14.4	-106.45	-113.7	109.6	350.9	322.0	28.89	12.144		
6,650.0	6,578.7	6,660.1	6,632.5	16.5	14.5	-108.21	-88.7	109.7	354.3	325.4	28.92	12.254		
6,700.0	6,615.2	6,717.8	6,682.3	16.5	14.5	-109.88	-59.4	109.8	358.0	329.1	28.93	12.375		
6,750.0	6,649.4	6,776.7	6,730.6	16.6	14.6	-111.45	-25.8	110.0	361.7	332.8	28.95	12.496		
6,800.0	6,681.1	6,836.7	6,777.0	16.6	14.6	-112.91	12.2	110.2	365.5	336.5	28.99	12.608		
6,850.0	6,710.3	6,897.8	6,821.0	16.7	14.7	-114.26	54.5	110.4	369.2	340.1	29.08	12.698		
6,900.0	6,736.7	6,959.9	6,862.2	16.8	14.9	-115.48	101.0	110.6	372.8	343.5	29.24	12.749		
6,950.0	6,760.2	7,023.1	6,900.1	17.0	15.1	-116.57	151.5	110.8	376.1	346.6	29.49	12.754		
7,000.0	6,780.9	7,087.1	6,934.1	17.2	15.5	-117.53	205.8	111.1	379.2	349.3	29.85	12.701		
7,050.0	6,798.5	7,152.0	6,963.8	17.5	15.9	-118.34	263.5	111.3	381.9	351.5	30.35	12.582		
7,100.0	6,813.0	7,217.7	6,988.7	17.9	16.4	-119.01	324.2	111.6	384.2	353.2	31.01	12.391		
7,150.0	6,824.4	7,283.9	7,008.5	18.4	17.0	-119.53	387.4	111.9	386.0	354.2	31.81	12.134		
7,200.0	6,832.5	7,350.6	7,022.8	18.9	17.6	-119.90	452.5	112.2	387.3	354.5	32.77	11.818		
7,250.0	6,837.4	7,413.8	7,031.2	19.4	18.3	-120.12	515.1	112.5	388.1	354.3	33.86	11.462		
7,300.0	6,839.0	7,463.6	7,036.4	19.9	18.9	-120.45	564.7	112.8	389.9	355.1	34.89	11.178		
7,306.9	6,839.0	7,470.5	7,037.1	20.0	19.0	-120.52	571.5	112.8	390.3	355.3	35.03	11.144		
7,400.0	6,838.2	7,582.0	7,044.0	21.2	20.4	-121.51	682.8	113.3	393.7	356.7	37.01	10.637		
7,500.0	6,837.3	7,684.1	7,044.3	22.5	21.7	-121.66	784.9	113.8	394.3	355.0	39.33	10.026		
7,600.0	6,836.4	7,784.1	7,044.5	23.9	23.1	-121.80	884.9	114.3	394.9	353.2	41.76	9.457		
7,700.0	6,835.5	7,884.1	7,044.8	25.3	24.6	-121.94	984.9	114.7	395.5	351.2	44.30	8.929		
7,800.0	6,834.6	7,984.1	7,045.1	26.8	26.1	-122.09	1,084.9	115.2	396.1	349.2	46.92	8.442		
7,900.0	6,833.7	8,084.1	7,045.3	28.4	27.7	-122.23	1,184.8	115.7	396.7	347.1	49.62	7.995		
8,000.0	6,832.8	8,184.1	7,045.6	30.0	29.4	-122.37	1,284.8	116.1	397.3	345.0	52.39	7.585		
8,100.0	6,832.0	8,284.1	7,045.8	31.6	31.0	-122.51	1,384.8	116.6	398.0	342.8	55.20	7.210		
8,200.0	6,831.1	8,384.1	7,046.1	33.3	32.7	-122.65	1,484.8	117.1	398.6	340.5	58.05	6.866		
8,300.0	6,830.2	8,484.1	7,046.4	35.0	34.4	-122.79	1,584.8	117.5	399.2	338.2	60.94	6.551		
8,400.0	6,829.3	8,584.1	7,046.6	36.7	36.1	-122.93	1,684.8	118.0	399.8	336.0	63.85	6.261		
8,500.0	6,828.4	8,684.1	7,046.9	38.4	37.9	-123.07	1,784.8	118.5	400.4	333.6	66.79	5.995		
8,600.0	6,827.5	8,784.1	7,047.1	40.2	39.7	-123.20	1,884.8	119.0	401.0	331.3	69.75	5.750		
8,700.0	6,826.6	8,884.1	7,047.4	42.0	41.4	-123.34	1,984.8	119.4	401.7	328.9	72.72	5.523		
8,800.0	6,825.7	8,984.0	7,047.7	43.7	43.2	-123.48	2,084.8	119.9	402.3	326.6	75.71	5.314		
8,900.0	6,824.8	9,084.0	7,047.9	45.5	45.0	-123.62	2,184.8	120.4	402.9	324.2	78.71	5.119		
9,000.0	6,823.9	9,184.0	7,048.2	47.3	46.8	-123.75	2,284.8	120.8	403.6	321.8	81.71	4.939		
9,100.0	6,823.1	9,284.0	7,048.4	49.1	48.6	-123.89	2,384.7	121.3	404.2	319.5	84.73	4.771		
9,200.0	6,822.2	9,384.0	7,048.7	50.9	50.5	-124.02	2,484.7	121.8	404.8	317.1	87.74	4.614		
9,300.0	6,821.3	9,484.0	7,049.0	52.8	52.3	-124.16	2,584.7	122.2	405.5	314.7	90.76	4.467		
9,400.0	6,820.4	9,584.0	7,049.2	54.6	54.1	-124.30	2,684.7	122.7	406.1	312.3	93.79	4.330		
9,500.0	6,819.5	9,684.0	7,049.5	56.4	56.0	-124.43	2,784.7	123.2	406.7	309.9	96.81	4.202		
9,600.0	6,818.6	9,784.0	7,049.7	58.3	57.8	-124.56	2,884.7	123.6	407.4	307.6	99.83	4.081		
9,700.0	6,817.7	9,884.0	7,050.0	60.1	59.7	-124.70	2,984.7	124.1	408.0	305.2	102.86	3.967		
9,800.0	6,816.8	9,984.0	7,050.3	61.9	61.5	-124.83	3,084.7	124.6	408.7	302.8	105.88	3.860		
9,900.0	6,815.9	10,084.0	7,050.5	63.8	63.4	-124.96	3,184.7	125.1	409.3	300.4	108.90	3.759		
10,000.0	6,815.0	10,184.0	7,050.8	65.7	65.3	-125.10	3,284.7	125.5	410.0	298.1	111.92	3.663		
10,100.0	6,814.2	10,284.0	7,051.0	67.5	67.1	-125.23	3,384.7	126.0	410.6	295.7	114.93	3.573		
10,200.0	6,813.3	10,384.0	7,051.3	69.4	69.0	-125.36	3,484.7	126.5	411.3	293.4	117.95	3.487		
10,300.0	6,812.4	10,483.9	7,051.6	71.2	70.9	-125.49	3,584.7	126.9	412.0	291.0	120.95	3.406		
10,400.0	6,811.5	10,583.9	7,051.8	73.1	72.7	-125.62	3,684.6	127.4	412.6	288.7	123.96	3.329		
10,500.0	6,810.6	10,683.9	7,052.1	75.0	74.6	-125.75	3,784.6	127.9	413.3	286.3	126.96	3.255		
10,600.0	6,809.7	10,783.9	7,052.3	76.8	76.5	-125.88	3,884.6	128.3	414.0	284.0	129.95	3.185		
10,700.0	6,808.8	10,883.9	7,052.6	78.7	78.4	-126.01	3,984.6	128.8	414.6	281.7	132.94	3.119		

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

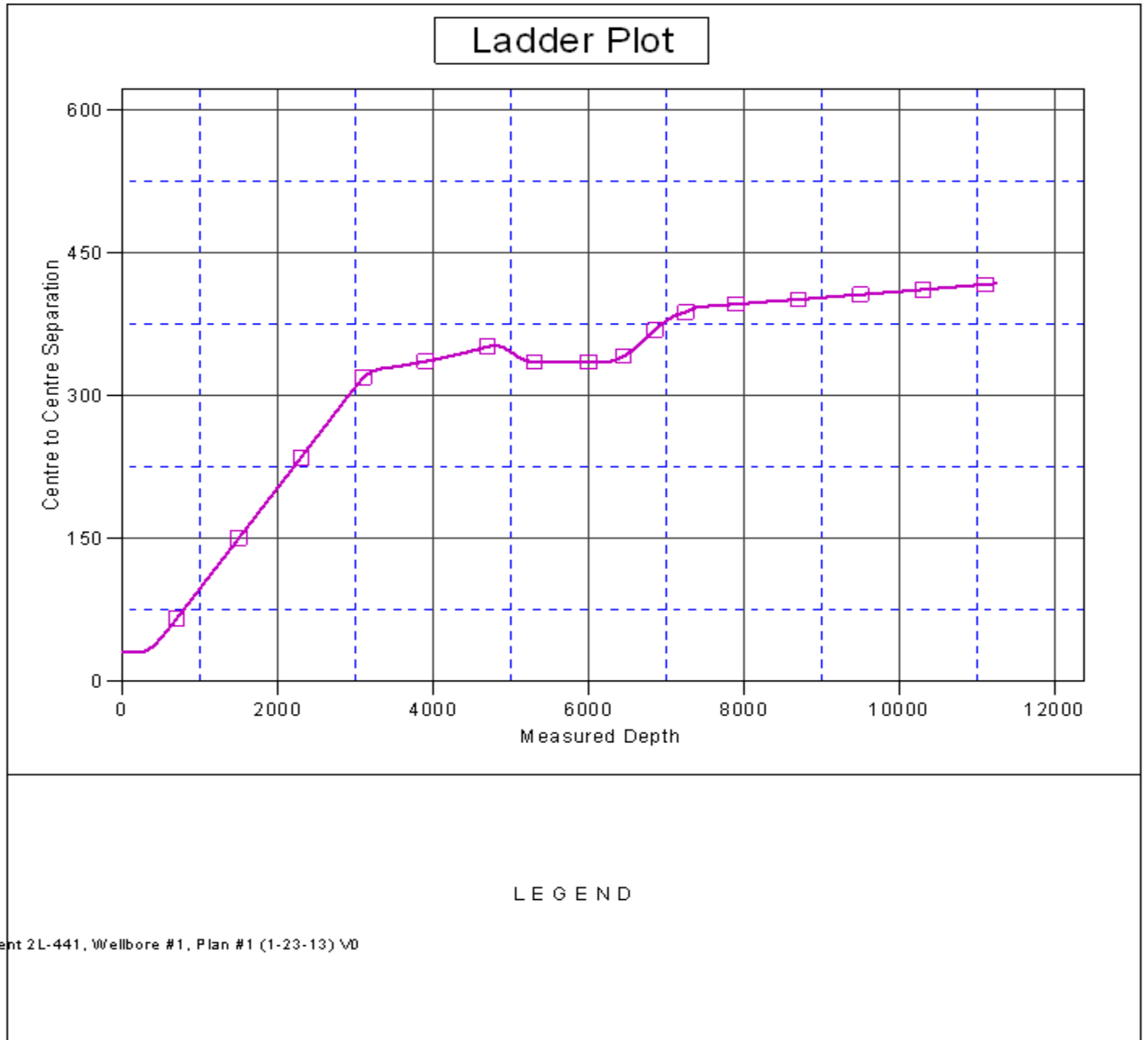
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Waste Management 2L-201
<b>Project:</b>	SEC.2-T2N-R64W	<b>TVD Reference:</b>	WELL @ 4954.0ft (RKB - 15')
<b>Reference Site:</b>	Waste Management 2IL-HZ Pad Sec.2-T2N-R64W	<b>MD Reference:</b>	WELL @ 4954.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Waste Management 2L-201	<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 (1-23-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Waste Management 2IL-HZ Pad Sec.2-T2N-R64W - Waste Management 2L-441 - Wellbore #1 - Plan #										Offset Site Error:		0.0 ft			
Survey Program: 0-MWD														Offset Well Error:		0.0 ft	
Reference				Offset		Semi Major Axis			Distance					Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	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					
10,800.0	6,807.9	10,983.9	7,052.9	80.6	80.2	-126.14	4,084.6	129.3	415.3	279.4	135.93	3.055					
10,900.0	6,807.0	11,083.9	7,053.1	82.5	82.1	-126.27	4,184.6	129.7	416.0	277.1	138.91	2.995					
11,000.0	6,806.1	11,183.9	7,053.4	84.4	84.0	-126.40	4,284.6	130.2	416.6	274.8	141.89	2.936					
11,100.0	6,805.3	11,283.9	7,053.6	86.2	85.9	-126.52	4,384.6	130.7	417.3	272.5	144.85	2.881					
11,200.0	6,804.4	11,383.9	7,053.9	88.1	87.8	-126.65	4,484.6	131.2	418.0	270.2	147.82	2.828					
11,240.9	6,804.0	11,423.9	7,054.0	88.9	88.5	-126.70	4,524.6	131.3	418.3	269.4	148.93	2.809					
11,241.6	6,804.0	11,423.9	7,054.0	88.9	88.5	-126.70	4,524.6	131.3	418.3	269.3	148.94	2.808 SF					

<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>Reference Site:</b>	Waste Management 2IL-HZ Pad Sec.2-T2N-R64W	<b>MD Reference:</b>	WELL @ 4954.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Waste Management 2L-201	<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 (1-23-13)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4954.0ft (RKB - 15')  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000 °

Coordinates are relative to: Waste Management 2L-201  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 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>Reference Site:</b>	Waste Management 2IL-HZ Pad Sec.2-T2N-R64W	<b>MD Reference:</b>	WELL @ 4954.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Waste Management 2L-201	<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 (1-23-13)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4954.0ft (RKB - 15')  
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Coordinates are relative to: Waste Management 2L-201  
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