

PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Waste Management 2Y-441**

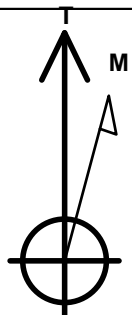
Surface Location: Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 4893.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1302951.27	3275921.07	40.160780	-104.512760	

RKB - 15' WELL @ 4908.0ft (RKB - 15')

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
BHL 500'FNL & 485'FEL	6977.0	4550.1	461.1	Point



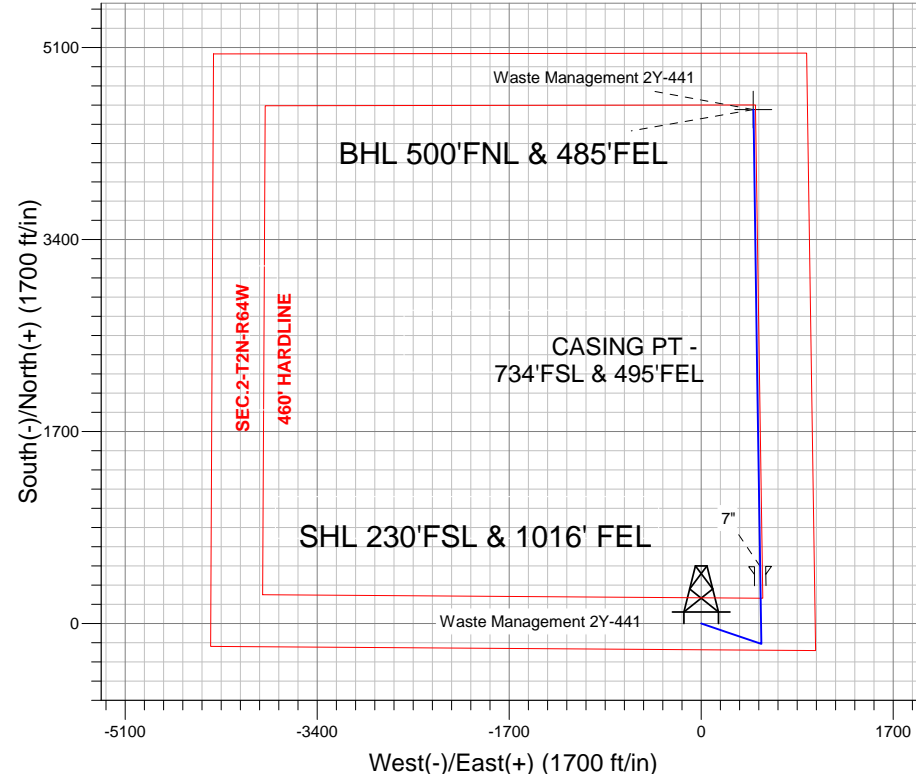
Azimuths to True North
Magnetic North: 8.49°

Magnetic Field
Strength: 52860.6snT
Dip Angle: 66.84°
Date: 1/29/2013
Model: IGRF2010

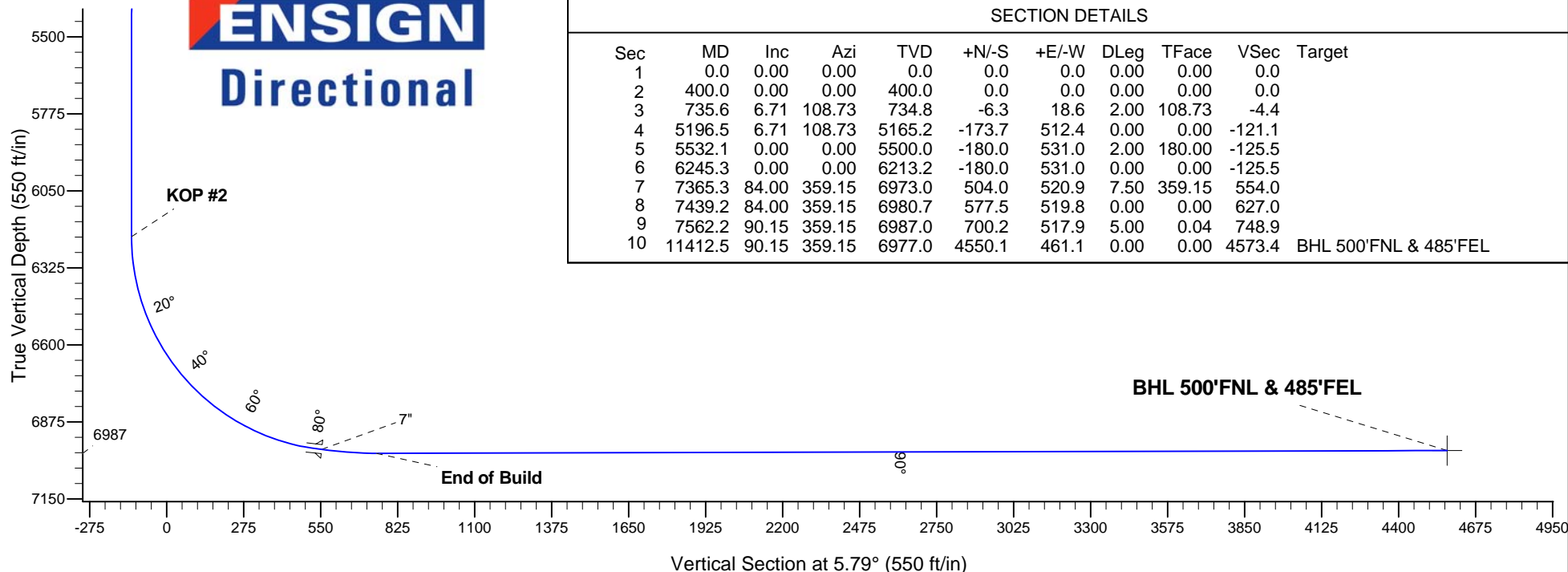
Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W
Waste Management 2Y-441
Plan #1 (01-29-13)
13:52, January 29 2013

ANNOTATIONS

TVD	MD	Annotation
400.0	400.0	KOP #1
6213.2	6245.3	KOP #2
6987.0	7562.2	End of Build



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	400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.0	
3	735.6	6.71	108.73	734.8	-6.3	18.6	2.00	108.73	-4.4	
4	5196.5	6.71	108.73	5165.2	-173.7	512.4	0.00	0.00	-121.1	
5	5532.1	0.00	0.00	5500.0	-180.0	531.0	2.00	180.00	-125.5	
6	6245.3	0.00	0.00	6213.2	-180.0	531.0	0.00	0.00	-125.5	
7	7365.3	84.00	359.15	6973.0	504.0	520.9	7.50	359.15	554.0	
8	7439.2	84.00	359.15	6980.7	577.5	519.8	0.00	0.00	627.0	
9	7562.2	90.15	359.15	6987.0	700.2	517.9	5.00	0.04	748.9	
10	11412.5	90.15	359.15	6977.0	4550.1	461.1	0.00	0.00	4573.4	BHL 500'FNL & 485'FEL



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.2-T2N-R64W

Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W

Waste Management 2Y-441

Wellbore #1

Plan: Plan #1 (01-29-13)

Standard Planning Report

29 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	
400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.00	0.00	
735.6	6.71	108.73	734.8	-6.3	18.6	2.00	2.00	0.00	108.73	
5,196.5	6.71	108.73	5,165.2	-173.7	512.4	0.00	0.00	0.00	0.00	
5,532.1	0.00	0.00	5,500.0	-180.0	531.0	2.00	-2.00	0.00	180.00	
6,245.3	0.00	0.00	6,213.2	-180.0	531.0	0.00	0.00	0.00	0.00	
7,365.3	84.00	359.15	6,973.0	504.0	520.9	7.50	7.50	0.00	359.15	
7,439.2	84.00	359.15	6,980.7	577.5	519.8	0.00	0.00	0.00	0.00	
7,562.2	90.15	359.15	6,987.0	700.2	517.9	5.00	5.00	0.00	0.04	
11,412.5	90.15	359.15	6,977.0	4,550.1	461.1	0.00	0.00	0.00	0.00	BHL 500'FNL & 485'

Database:	Landmark	Local Co-ordinate Reference:	Well Waste Management 2Y-441
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4908.0ft (RKB - 15')
Project:	SEC.2-T2N-R64W	MD Reference:	WELL @ 4908.0ft (RKB - 15')
Site:	Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W	North Reference:	True
Well:	Waste Management 2Y-441	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (01-29-13)		

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	0.00	0.00	240.0	0.0	0.0	0.0	0.00	0.00	0.00
280.0	0.00	0.00	280.0	0.0	0.0	0.0	0.00	0.00	0.00
320.0	0.00	0.00	320.0	0.0	0.0	0.0	0.00	0.00	0.00
360.0	0.00	0.00	360.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
440.0	0.80	108.73	440.0	-0.1	0.3	-0.1	2.00	2.00	0.00
480.0	1.60	108.73	480.0	-0.4	1.1	-0.3	2.00	2.00	0.00
520.0	2.40	108.73	520.0	-0.8	2.4	-0.6	2.00	2.00	0.00
560.0	3.20	108.73	559.9	-1.4	4.2	-1.0	2.00	2.00	0.00
600.0	4.00	108.73	599.8	-2.2	6.6	-1.6	2.00	2.00	0.00
640.0	4.80	108.73	639.7	-3.2	9.5	-2.2	2.00	2.00	0.00
680.0	5.60	108.73	679.6	-4.4	12.9	-3.1	2.00	2.00	0.00
720.0	6.40	108.73	719.3	-5.7	16.9	-4.0	2.00	2.00	0.00
735.6	6.71	108.73	734.8	-6.3	18.6	-4.4	2.00	2.00	0.00
760.0	6.71	108.73	759.1	-7.2	21.3	-5.0	0.00	0.00	0.00
800.0	6.71	108.73	798.8	-8.7	25.7	-6.1	0.00	0.00	0.00
840.0	6.71	108.73	838.5	-10.2	30.2	-7.1	0.00	0.00	0.00
880.0	6.71	108.73	878.2	-11.7	34.6	-8.2	0.00	0.00	0.00
920.0	6.71	108.73	918.0	-13.2	39.0	-9.2	0.00	0.00	0.00
960.0	6.71	108.73	957.7	-14.7	43.4	-10.3	0.00	0.00	0.00
1,000.0	6.71	108.73	997.4	-16.2	47.9	-11.3	0.00	0.00	0.00
1,040.0	6.71	108.73	1,037.1	-17.7	52.3	-12.4	0.00	0.00	0.00
1,080.0	6.71	108.73	1,076.9	-19.2	56.7	-13.4	0.00	0.00	0.00
1,120.0	6.71	108.73	1,116.6	-20.7	61.1	-14.5	0.00	0.00	0.00
1,160.0	6.71	108.73	1,156.3	-22.2	65.6	-15.5	0.00	0.00	0.00
1,200.0	6.71	108.73	1,196.0	-23.7	70.0	-16.6	0.00	0.00	0.00
1,240.0	6.71	108.73	1,235.8	-25.2	74.4	-17.6	0.00	0.00	0.00
1,280.0	6.71	108.73	1,275.5	-26.7	78.9	-18.6	0.00	0.00	0.00
1,320.0	6.71	108.73	1,315.2	-28.2	83.3	-19.7	0.00	0.00	0.00
1,360.0	6.71	108.73	1,355.0	-29.7	87.7	-20.7	0.00	0.00	0.00
1,400.0	6.71	108.73	1,394.7	-31.2	92.1	-21.8	0.00	0.00	0.00
1,440.0	6.71	108.73	1,434.4	-32.7	96.6	-22.8	0.00	0.00	0.00
1,480.0	6.71	108.73	1,474.1	-34.2	101.0	-23.9	0.00	0.00	0.00
1,520.0	6.71	108.73	1,513.9	-35.7	105.4	-24.9	0.00	0.00	0.00
1,560.0	6.71	108.73	1,553.6	-37.2	109.9	-26.0	0.00	0.00	0.00
1,600.0	6.71	108.73	1,593.3	-38.7	114.3	-27.0	0.00	0.00	0.00
1,640.0	6.71	108.73	1,633.0	-40.2	118.7	-28.1	0.00	0.00	0.00
1,680.0	6.71	108.73	1,672.8	-41.7	123.1	-29.1	0.00	0.00	0.00
1,720.0	6.71	108.73	1,712.5	-43.2	127.6	-30.2	0.00	0.00	0.00
1,760.0	6.71	108.73	1,752.2	-44.7	132.0	-31.2	0.00	0.00	0.00
1,800.0	6.71	108.73	1,791.9	-46.2	136.4	-32.3	0.00	0.00	0.00
1,840.0	6.71	108.73	1,831.7	-47.7	140.8	-33.3	0.00	0.00	0.00
1,880.0	6.71	108.73	1,871.4	-49.2	145.3	-34.3	0.00	0.00	0.00
1,920.0	6.71	108.73	1,911.1	-50.7	149.7	-35.4	0.00	0.00	0.00
1,960.0	6.71	108.73	1,950.8	-52.2	154.1	-36.4	0.00	0.00	0.00
2,000.0	6.71	108.73	1,990.6	-53.7	158.6	-37.5	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Waste Management 2Y-441
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4908.0ft (RKB - 15')
Project:	SEC.2-T2N-R64W	MD Reference:	WELL @ 4908.0ft (RKB - 15')
Site:	Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W	North Reference:	True
Well:	Waste Management 2Y-441	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (01-29-13)		

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	6.71	108.73	2,030.3	-55.3	163.0	-38.5	0.00	0.00	0.00
2,080.0	6.71	108.73	2,070.0	-56.8	167.4	-39.6	0.00	0.00	0.00
2,120.0	6.71	108.73	2,109.7	-58.3	171.8	-40.6	0.00	0.00	0.00
2,160.0	6.71	108.73	2,149.5	-59.8	176.3	-41.7	0.00	0.00	0.00
2,200.0	6.71	108.73	2,189.2	-61.3	180.7	-42.7	0.00	0.00	0.00
2,240.0	6.71	108.73	2,228.9	-62.8	185.1	-43.8	0.00	0.00	0.00
2,280.0	6.71	108.73	2,268.6	-64.3	189.6	-44.8	0.00	0.00	0.00
2,320.0	6.71	108.73	2,308.4	-65.8	194.0	-45.9	0.00	0.00	0.00
2,360.0	6.71	108.73	2,348.1	-67.3	198.4	-46.9	0.00	0.00	0.00
2,400.0	6.71	108.73	2,387.8	-68.8	202.8	-48.0	0.00	0.00	0.00
2,440.0	6.71	108.73	2,427.6	-70.3	207.3	-49.0	0.00	0.00	0.00
2,480.0	6.71	108.73	2,467.3	-71.8	211.7	-50.1	0.00	0.00	0.00
2,520.0	6.71	108.73	2,507.0	-73.3	216.1	-51.1	0.00	0.00	0.00
2,560.0	6.71	108.73	2,546.7	-74.8	220.6	-52.1	0.00	0.00	0.00
2,600.0	6.71	108.73	2,586.5	-76.3	225.0	-53.2	0.00	0.00	0.00
2,640.0	6.71	108.73	2,626.2	-77.8	229.4	-54.2	0.00	0.00	0.00
2,680.0	6.71	108.73	2,665.9	-79.3	233.8	-55.3	0.00	0.00	0.00
2,720.0	6.71	108.73	2,705.6	-80.8	238.3	-56.3	0.00	0.00	0.00
2,760.0	6.71	108.73	2,745.4	-82.3	242.7	-57.4	0.00	0.00	0.00
2,800.0	6.71	108.73	2,785.1	-83.8	247.1	-58.4	0.00	0.00	0.00
2,840.0	6.71	108.73	2,824.8	-85.3	251.5	-59.5	0.00	0.00	0.00
2,880.0	6.71	108.73	2,864.5	-86.8	256.0	-60.5	0.00	0.00	0.00
2,920.0	6.71	108.73	2,904.3	-88.3	260.4	-61.6	0.00	0.00	0.00
2,960.0	6.71	108.73	2,944.0	-89.8	264.8	-62.6	0.00	0.00	0.00
3,000.0	6.71	108.73	2,983.7	-91.3	269.3	-63.7	0.00	0.00	0.00
3,040.0	6.71	108.73	3,023.4	-92.8	273.7	-64.7	0.00	0.00	0.00
3,080.0	6.71	108.73	3,063.2	-94.3	278.1	-65.8	0.00	0.00	0.00
3,120.0	6.71	108.73	3,102.9	-95.8	282.5	-66.8	0.00	0.00	0.00
3,160.0	6.71	108.73	3,142.6	-97.3	287.0	-67.8	0.00	0.00	0.00
3,200.0	6.71	108.73	3,182.3	-98.8	291.4	-68.9	0.00	0.00	0.00
3,240.0	6.71	108.73	3,222.1	-100.3	295.8	-69.9	0.00	0.00	0.00
3,280.0	6.71	108.73	3,261.8	-101.8	300.3	-71.0	0.00	0.00	0.00
3,320.0	6.71	108.73	3,301.5	-103.3	304.7	-72.0	0.00	0.00	0.00
3,360.0	6.71	108.73	3,341.2	-104.8	309.1	-73.1	0.00	0.00	0.00
3,400.0	6.71	108.73	3,381.0	-106.3	313.5	-74.1	0.00	0.00	0.00
3,440.0	6.71	108.73	3,420.7	-107.8	318.0	-75.2	0.00	0.00	0.00
3,480.0	6.71	108.73	3,460.4	-109.3	322.4	-76.2	0.00	0.00	0.00
3,520.0	6.71	108.73	3,500.1	-110.8	326.8	-77.3	0.00	0.00	0.00
3,560.0	6.71	108.73	3,539.9	-112.3	331.2	-78.3	0.00	0.00	0.00
3,600.0	6.71	108.73	3,579.6	-113.8	335.7	-79.4	0.00	0.00	0.00
3,640.0	6.71	108.73	3,619.3	-115.3	340.1	-80.4	0.00	0.00	0.00
3,680.0	6.71	108.73	3,659.1	-116.8	344.5	-81.5	0.00	0.00	0.00
3,720.0	6.71	108.73	3,698.8	-118.3	349.0	-82.5	0.00	0.00	0.00
3,760.0	6.71	108.73	3,738.5	-119.8	353.4	-83.6	0.00	0.00	0.00
3,800.0	6.71	108.73	3,778.2	-121.3	357.8	-84.6	0.00	0.00	0.00
3,840.0	6.71	108.73	3,818.0	-122.8	362.2	-85.6	0.00	0.00	0.00
3,880.0	6.71	108.73	3,857.7	-124.3	366.7	-86.7	0.00	0.00	0.00
3,920.0	6.71	108.73	3,897.4	-125.8	371.1	-87.7	0.00	0.00	0.00
3,960.0	6.71	108.73	3,937.1	-127.3	375.5	-88.8	0.00	0.00	0.00
4,000.0	6.71	108.73	3,976.9	-128.8	380.0	-89.8	0.00	0.00	0.00
4,040.0	6.71	108.73	4,016.6	-130.3	384.4	-90.9	0.00	0.00	0.00
4,080.0	6.71	108.73	4,056.3	-131.8	388.8	-91.9	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Waste Management 2Y-441
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4908.0ft (RKB - 15')
Project:	SEC.2-T2N-R64W	MD Reference:	WELL @ 4908.0ft (RKB - 15')
Site:	Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W	North Reference:	True
Well:	Waste Management 2Y-441	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (01-29-13)		

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	6.71	108.73	4,096.0	-133.3	393.2	-93.0	0.00	0.00	0.00
4,160.0	6.71	108.73	4,135.8	-134.8	397.7	-94.0	0.00	0.00	0.00
4,200.0	6.71	108.73	4,175.5	-136.3	402.1	-95.1	0.00	0.00	0.00
4,240.0	6.71	108.73	4,215.2	-137.8	406.5	-96.1	0.00	0.00	0.00
4,280.0	6.71	108.73	4,254.9	-139.3	410.9	-97.2	0.00	0.00	0.00
4,320.0	6.71	108.73	4,294.7	-140.8	415.4	-98.2	0.00	0.00	0.00
4,360.0	6.71	108.73	4,334.4	-142.3	419.8	-99.3	0.00	0.00	0.00
4,400.0	6.71	108.73	4,374.1	-143.8	424.2	-100.3	0.00	0.00	0.00
4,440.0	6.71	108.73	4,413.8	-145.3	428.7	-101.3	0.00	0.00	0.00
4,480.0	6.71	108.73	4,453.6	-146.8	433.1	-102.4	0.00	0.00	0.00
4,520.0	6.71	108.73	4,493.3	-148.3	437.5	-103.4	0.00	0.00	0.00
4,560.0	6.71	108.73	4,533.0	-149.8	441.9	-104.5	0.00	0.00	0.00
4,600.0	6.71	108.73	4,572.7	-151.3	446.4	-105.5	0.00	0.00	0.00
4,640.0	6.71	108.73	4,612.5	-152.8	450.8	-106.6	0.00	0.00	0.00
4,680.0	6.71	108.73	4,652.2	-154.3	455.2	-107.6	0.00	0.00	0.00
4,720.0	6.71	108.73	4,691.9	-155.8	459.7	-108.7	0.00	0.00	0.00
4,760.0	6.71	108.73	4,731.6	-157.3	464.1	-109.7	0.00	0.00	0.00
4,800.0	6.71	108.73	4,771.4	-158.8	468.5	-110.8	0.00	0.00	0.00
4,840.0	6.71	108.73	4,811.1	-160.3	472.9	-111.8	0.00	0.00	0.00
4,880.0	6.71	108.73	4,850.8	-161.8	477.4	-112.9	0.00	0.00	0.00
4,920.0	6.71	108.73	4,890.6	-163.3	481.8	-113.9	0.00	0.00	0.00
4,960.0	6.71	108.73	4,930.3	-164.8	486.2	-115.0	0.00	0.00	0.00
5,000.0	6.71	108.73	4,970.0	-166.3	490.7	-116.0	0.00	0.00	0.00
5,040.0	6.71	108.73	5,009.7	-167.8	495.1	-117.1	0.00	0.00	0.00
5,080.0	6.71	108.73	5,049.5	-169.3	499.5	-118.1	0.00	0.00	0.00
5,120.0	6.71	108.73	5,089.2	-170.8	503.9	-119.1	0.00	0.00	0.00
5,160.0	6.71	108.73	5,128.9	-172.3	508.4	-120.2	0.00	0.00	0.00
5,196.5	6.71	108.73	5,165.2	-173.7	512.4	-121.1	0.00	0.00	0.00
5,200.0	6.64	108.73	5,168.6	-173.8	512.8	-121.2	2.00	-2.00	0.00
5,240.0	5.84	108.73	5,208.4	-175.2	516.9	-122.2	2.00	-2.00	0.00
5,280.0	5.04	108.73	5,248.2	-176.4	520.5	-123.1	2.00	-2.00	0.00
5,320.0	4.24	108.73	5,288.1	-177.5	523.6	-123.8	2.00	-2.00	0.00
5,360.0	3.44	108.73	5,328.0	-178.3	526.1	-124.4	2.00	-2.00	0.00
5,400.0	2.64	108.73	5,367.9	-179.0	528.1	-124.9	2.00	-2.00	0.00
5,440.0	1.84	108.73	5,407.9	-179.5	529.6	-125.2	2.00	-2.00	0.00
5,480.0	1.04	108.73	5,447.9	-179.8	530.6	-125.4	2.00	-2.00	0.00
5,520.0	0.24	108.73	5,487.9	-180.0	531.0	-125.5	2.00	-2.00	0.00
5,532.1	0.00	0.00	5,500.0	-180.0	531.0	-125.5	2.00	-2.00	0.00
5,560.0	0.00	0.00	5,527.9	-180.0	531.0	-125.5	0.00	0.00	0.00
5,600.0	0.00	0.00	5,567.9	-180.0	531.0	-125.5	0.00	0.00	0.00
5,640.0	0.00	0.00	5,607.9	-180.0	531.0	-125.5	0.00	0.00	0.00
5,680.0	0.00	0.00	5,647.9	-180.0	531.0	-125.5	0.00	0.00	0.00
5,720.0	0.00	0.00	5,687.9	-180.0	531.0	-125.5	0.00	0.00	0.00
5,760.0	0.00	0.00	5,727.9	-180.0	531.0	-125.5	0.00	0.00	0.00
5,800.0	0.00	0.00	5,767.9	-180.0	531.0	-125.5	0.00	0.00	0.00
5,840.0	0.00	0.00	5,807.9	-180.0	531.0	-125.5	0.00	0.00	0.00
5,880.0	0.00	0.00	5,847.9	-180.0	531.0	-125.5	0.00	0.00	0.00
5,920.0	0.00	0.00	5,887.9	-180.0	531.0	-125.5	0.00	0.00	0.00
5,960.0	0.00	0.00	5,927.9	-180.0	531.0	-125.5	0.00	0.00	0.00
6,000.0	0.00	0.00	5,967.9	-180.0	531.0	-125.5	0.00	0.00	0.00
6,040.0	0.00	0.00	6,007.9	-180.0	531.0	-125.5	0.00	0.00	0.00
6,080.0	0.00	0.00	6,047.9	-180.0	531.0	-125.5	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Waste Management 2Y-441
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4908.0ft (RKB - 15')
Project:	SEC.2-T2N-R64W	MD Reference:	WELL @ 4908.0ft (RKB - 15')
Site:	Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W	North Reference:	True
Well:	Waste Management 2Y-441	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (01-29-13)		

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)
6,120.0	0.00	0.00	6,087.9	-180.0	531.0	-125.5	0.00	0.00	0.00
6,160.0	0.00	0.00	6,127.9	-180.0	531.0	-125.5	0.00	0.00	0.00
6,200.0	0.00	0.00	6,167.9	-180.0	531.0	-125.5	0.00	0.00	0.00
6,240.0	0.00	0.00	6,207.9	-180.0	531.0	-125.5	0.00	0.00	0.00
6,245.3	0.00	0.00	6,213.2	-180.0	531.0	-125.5	0.00	0.00	0.00
6,280.0	2.60	359.15	6,247.9	-179.2	531.0	-124.8	7.50	7.50	0.00
6,320.0	5.60	359.15	6,287.8	-176.4	530.9	-121.9	7.50	7.50	0.00
6,360.0	8.60	359.15	6,327.5	-171.4	530.9	-117.0	7.50	7.50	0.00
6,400.0	11.60	359.15	6,366.8	-164.4	530.8	-110.0	7.50	7.50	0.00
6,440.0	14.60	359.15	6,405.8	-155.3	530.6	-101.0	7.50	7.50	0.00
6,480.0	17.60	359.15	6,444.2	-144.2	530.5	-90.0	7.50	7.50	0.00
6,520.0	20.60	359.15	6,482.0	-131.2	530.3	-77.0	7.50	7.50	0.00
6,560.0	23.60	359.15	6,519.1	-116.1	530.1	-62.1	7.50	7.50	0.00
6,600.0	26.60	359.15	6,555.3	-99.1	529.8	-45.2	7.50	7.50	0.00
6,640.0	29.60	359.15	6,590.6	-80.3	529.5	-26.5	7.50	7.50	0.00
6,680.0	32.60	359.15	6,624.8	-59.6	529.2	-6.0	7.50	7.50	0.00
6,720.0	35.60	359.15	6,657.9	-37.2	528.9	16.3	7.50	7.50	0.00
6,760.0	38.60	359.15	6,689.8	-13.1	528.5	40.3	7.50	7.50	0.00
6,800.0	41.60	359.15	6,720.4	12.7	528.1	65.8	7.50	7.50	0.00
6,840.0	44.60	359.15	6,749.6	40.0	527.7	93.0	7.50	7.50	0.00
6,880.0	47.60	359.15	6,777.4	68.8	527.3	121.6	7.50	7.50	0.00
6,920.0	50.60	359.15	6,803.5	99.0	526.9	151.6	7.50	7.50	0.00
6,960.0	53.60	359.15	6,828.1	130.6	526.4	183.0	7.50	7.50	0.00
7,000.0	56.60	359.15	6,851.0	163.4	525.9	215.6	7.50	7.50	0.00
7,040.0	59.60	359.15	6,872.1	197.3	525.4	249.3	7.50	7.50	0.00
7,080.0	62.60	359.15	6,891.5	232.3	524.9	284.1	7.50	7.50	0.00
7,120.0	65.60	359.15	6,908.9	268.3	524.3	319.8	7.50	7.50	0.00
7,160.0	68.60	359.15	6,924.5	305.2	523.8	356.4	7.50	7.50	0.00
7,200.0	71.60	359.15	6,938.1	342.8	523.2	393.8	7.50	7.50	0.00
7,240.0	74.60	359.15	6,949.7	381.0	522.7	431.8	7.50	7.50	0.00
7,280.0	77.60	359.15	6,959.3	419.9	522.1	470.4	7.50	7.50	0.00
7,320.0	80.60	359.15	6,966.9	459.1	521.5	509.4	7.50	7.50	0.00
7,360.0	83.60	359.15	6,972.4	498.7	520.9	548.7	7.50	7.50	0.00
7,365.3	84.00	359.15	6,973.0	504.0	520.9	554.0	7.50	7.50	0.00
7,400.0	84.00	359.15	6,976.6	538.5	520.3	588.2	0.00	0.00	0.00
7,439.2	84.00	359.15	6,980.7	577.5	519.8	627.0	0.00	0.00	0.00
7,440.0	84.04	359.15	6,980.8	578.3	519.7	627.7	5.00	5.00	0.00
7,480.0	86.04	359.15	6,984.2	618.1	519.2	667.3	5.00	5.00	0.00
7,520.0	88.04	359.15	6,986.3	658.1	518.6	707.0	5.00	5.00	0.00
7,560.0	90.04	359.15	6,987.0	698.1	518.0	746.7	5.00	5.00	0.00
7,562.2	90.15	359.15	6,987.0	700.2	517.9	748.9	5.00	5.00	0.00
7,600.0	90.15	359.15	6,986.9	738.1	517.4	786.5	0.00	0.00	0.00
7,640.0	90.15	359.15	6,986.8	778.0	516.8	826.2	0.00	0.00	0.00
7,680.0	90.15	359.15	6,986.7	818.0	516.2	865.9	0.00	0.00	0.00
7,720.0	90.15	359.15	6,986.6	858.0	515.6	905.7	0.00	0.00	0.00
7,760.0	90.15	359.15	6,986.4	898.0	515.0	945.4	0.00	0.00	0.00
7,800.0	90.15	359.15	6,986.3	938.0	514.4	985.1	0.00	0.00	0.00
7,840.0	90.15	359.15	6,986.2	978.0	513.8	1,024.8	0.00	0.00	0.00
7,880.0	90.15	359.15	6,986.1	1,018.0	513.3	1,064.6	0.00	0.00	0.00
7,920.0	90.15	359.15	6,986.0	1,058.0	512.7	1,104.3	0.00	0.00	0.00
7,960.0	90.15	359.15	6,985.9	1,098.0	512.1	1,144.0	0.00	0.00	0.00
8,000.0	90.15	359.15	6,985.8	1,138.0	511.5	1,183.8	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Waste Management 2Y-441
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4908.0ft (RKB - 15')
Project:	SEC.2-T2N-R64W	MD Reference:	WELL @ 4908.0ft (RKB - 15')
Site:	Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W	North Reference:	True
Well:	Waste Management 2Y-441	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (01-29-13)		

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)
8,040.0	90.15	359.15	6,985.7	1,178.0	510.9	1,223.5	0.00	0.00	0.00
8,080.0	90.15	359.15	6,985.6	1,218.0	510.3	1,263.2	0.00	0.00	0.00
8,120.0	90.15	359.15	6,985.5	1,258.0	509.7	1,303.0	0.00	0.00	0.00
8,160.0	90.15	359.15	6,985.4	1,298.0	509.1	1,342.7	0.00	0.00	0.00
8,200.0	90.15	359.15	6,985.3	1,338.0	508.5	1,382.4	0.00	0.00	0.00
8,240.0	90.15	359.15	6,985.2	1,378.0	507.9	1,422.2	0.00	0.00	0.00
8,280.0	90.15	359.15	6,985.1	1,418.0	507.3	1,461.9	0.00	0.00	0.00
8,320.0	90.15	359.15	6,985.0	1,458.0	506.8	1,501.6	0.00	0.00	0.00
8,360.0	90.15	359.15	6,984.9	1,498.0	506.2	1,541.4	0.00	0.00	0.00
8,400.0	90.15	359.15	6,984.8	1,538.0	505.6	1,581.1	0.00	0.00	0.00
8,440.0	90.15	359.15	6,984.7	1,578.0	505.0	1,620.8	0.00	0.00	0.00
8,480.0	90.15	359.15	6,984.6	1,618.0	504.4	1,660.6	0.00	0.00	0.00
8,520.0	90.15	359.15	6,984.5	1,657.9	503.8	1,700.3	0.00	0.00	0.00
8,560.0	90.15	359.15	6,984.4	1,697.9	503.2	1,740.0	0.00	0.00	0.00
8,600.0	90.15	359.15	6,984.3	1,737.9	502.6	1,779.8	0.00	0.00	0.00
8,640.0	90.15	359.15	6,984.2	1,777.9	502.0	1,819.5	0.00	0.00	0.00
8,680.0	90.15	359.15	6,984.1	1,817.9	501.4	1,859.2	0.00	0.00	0.00
8,720.0	90.15	359.15	6,984.0	1,857.9	500.9	1,899.0	0.00	0.00	0.00
8,760.0	90.15	359.15	6,983.9	1,897.9	500.3	1,938.7	0.00	0.00	0.00
8,800.0	90.15	359.15	6,983.8	1,937.9	499.7	1,978.4	0.00	0.00	0.00
8,840.0	90.15	359.15	6,983.7	1,977.9	499.1	2,018.2	0.00	0.00	0.00
8,880.0	90.15	359.15	6,983.6	2,017.9	498.5	2,057.9	0.00	0.00	0.00
8,920.0	90.15	359.15	6,983.4	2,057.9	497.9	2,097.6	0.00	0.00	0.00
8,960.0	90.15	359.15	6,983.3	2,097.9	497.3	2,137.3	0.00	0.00	0.00
9,000.0	90.15	359.15	6,983.2	2,137.9	496.7	2,177.1	0.00	0.00	0.00
9,040.0	90.15	359.15	6,983.1	2,177.9	496.1	2,216.8	0.00	0.00	0.00
9,080.0	90.15	359.15	6,983.0	2,217.9	495.5	2,256.5	0.00	0.00	0.00
9,120.0	90.15	359.15	6,982.9	2,257.9	494.9	2,296.3	0.00	0.00	0.00
9,160.0	90.15	359.15	6,982.8	2,297.9	494.4	2,336.0	0.00	0.00	0.00
9,200.0	90.15	359.15	6,982.7	2,337.9	493.8	2,375.7	0.00	0.00	0.00
9,240.0	90.15	359.15	6,982.6	2,377.9	493.2	2,415.5	0.00	0.00	0.00
9,280.0	90.15	359.15	6,982.5	2,417.9	492.6	2,455.2	0.00	0.00	0.00
9,320.0	90.15	359.15	6,982.4	2,457.9	492.0	2,494.9	0.00	0.00	0.00
9,360.0	90.15	359.15	6,982.3	2,497.9	491.4	2,534.7	0.00	0.00	0.00
9,400.0	90.15	359.15	6,982.2	2,537.8	490.8	2,574.4	0.00	0.00	0.00
9,440.0	90.15	359.15	6,982.1	2,577.8	490.2	2,614.1	0.00	0.00	0.00
9,480.0	90.15	359.15	6,982.0	2,617.8	489.6	2,653.9	0.00	0.00	0.00
9,520.0	90.15	359.15	6,981.9	2,657.8	489.0	2,693.6	0.00	0.00	0.00
9,560.0	90.15	359.15	6,981.8	2,697.8	488.4	2,733.3	0.00	0.00	0.00
9,600.0	90.15	359.15	6,981.7	2,737.8	487.9	2,773.1	0.00	0.00	0.00
9,640.0	90.15	359.15	6,981.6	2,777.8	487.3	2,812.8	0.00	0.00	0.00
9,680.0	90.15	359.15	6,981.5	2,817.8	486.7	2,852.5	0.00	0.00	0.00
9,720.0	90.15	359.15	6,981.4	2,857.8	486.1	2,892.3	0.00	0.00	0.00
9,760.0	90.15	359.15	6,981.3	2,897.8	485.5	2,932.0	0.00	0.00	0.00
9,800.0	90.15	359.15	6,981.2	2,937.8	484.9	2,971.7	0.00	0.00	0.00
9,840.0	90.15	359.15	6,981.1	2,977.8	484.3	3,011.5	0.00	0.00	0.00
9,880.0	90.15	359.15	6,981.0	3,017.8	483.7	3,051.2	0.00	0.00	0.00
9,920.0	90.15	359.15	6,980.9	3,057.8	483.1	3,090.9	0.00	0.00	0.00
9,960.0	90.15	359.15	6,980.8	3,097.8	482.5	3,130.7	0.00	0.00	0.00
10,000.0	90.15	359.15	6,980.7	3,137.8	482.0	3,170.4	0.00	0.00	0.00
10,040.0	90.15	359.15	6,980.6	3,177.8	481.4	3,210.1	0.00	0.00	0.00
10,080.0	90.15	359.15	6,980.4	3,217.8	480.8	3,249.8	0.00	0.00	0.00

Plan Annotations					
	Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
			+N/-S	+E/-W	
			(ft)	(ft)	
	400.0	400.0	0.0	0.0	KOP #1
	6,245.3	6,213.2	-180.0	531.0	KOP #2
	7,562.2	6,987.0	700.3	517.9	End of Build



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.2-T2N-R64W

Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W

Waste Management 2Y-441

Wellbore #1

Plan #1 (01-29-13)

Anticollision Report

29 January, 2013

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Waste Management 2Y-441
Project:	SEC.2-T2N-R64W	TVD Reference:	WELL @ 4908.0ft (RKB - 15')
Reference Site:	Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W	MD Reference:	WELL @ 4908.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Waste Management 2Y-441	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (01-29-13)	Offset TVD Reference:	Offset Datum

Reference	Plan #1 (01-29-13)		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0ft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,000.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date 1/29/2013			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	11,412.5	Plan #1 (01-29-13) (Wellbore #1)	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W						
Waste Management 2T-221 - Wellbore #1 - Plan #1 (01-	400.0	400.0	30.7	29.2	19.541	CC, ES
Waste Management 2T-221 - Wellbore #1 - Plan #1 (01-	11,412.5	11,173.7	415.3	268.2	2.823	SF
Waste Management 2T-401 - Wellbore #1 - Plan #1 (01-	400.0	399.0	58.7	57.1	37.360	CC, ES
Waste Management 2T-401 - Wellbore #1 - Plan #1 (01-	11,412.5	11,381.4	667.8	489.3	3.741	SF
Waste Management 2Y-201 - Wellbore #1 - Plan #1 (01-	166.3	167.3	30.7	30.2	58.542	CC
Waste Management 2Y-201 - Wellbore #1 - Plan #1 (01-	200.0	201.0	30.7	30.1	45.455	ES
Waste Management 2Y-201 - Wellbore #1 - Plan #1 (01-	11,412.5	11,233.6	420.7	269.5	2.782	SF

Offset Design													
Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W - Waste Management 2T-221 - Wellbore #1 - Plan													
Survey Program: 0-MWD													
Reference		Offset		Semi Major Axis			Distance						
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	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-90.00	0.0	-30.7	30.7				
100.0	100.0	100.0	100.0	0.1	0.1	-90.00	0.0	-30.7	30.7	30.5	0.22	136.789	
200.0	200.0	200.0	200.0	0.3	0.3	-90.00	0.0	-30.7	30.7	30.1	0.67	45.596	
300.0	300.0	300.0	300.0	0.6	0.6	-90.00	0.0	-30.7	30.7	29.6	1.12	27.358	
400.0	400.0	400.0	400.0	0.8	0.8	-90.00	0.0	-30.7	30.7	29.2	1.57	19.541	CC, ES
500.0	500.0	500.0	500.0	1.0	1.0	162.25	0.0	-30.7	32.4	30.4	2.01	16.131	
600.0	599.8	599.8	599.8	1.2	1.2	164.67	0.0	-30.7	37.4	35.0	2.44	15.345	
700.0	699.5	699.5	699.5	1.4	1.5	167.51	0.0	-30.7	45.9	43.0	2.88	15.950	
800.0	798.8	798.8	798.8	1.7	1.7	169.99	0.0	-30.7	57.1	53.8	3.32	17.229	
900.0	898.1	898.1	898.1	2.0	1.9	171.68	0.0	-30.7	68.7	64.9	3.76	18.267	
1,000.0	997.4	997.4	997.4	2.3	2.1	172.89	0.0	-30.7	80.3	76.1	4.21	19.079	
1,100.0	1,096.7	1,099.7	1,099.6	2.6	2.3	173.41	-1.0	-29.3	90.3	85.7	4.64	19.469	
1,200.0	1,196.0	1,202.6	1,202.4	2.9	2.5	173.03	-4.0	-24.8	97.1	92.0	5.06	19.188	
1,300.0	1,295.4	1,305.8	1,305.2	3.2	2.7	171.88	-9.1	-17.2	100.5	95.0	5.49	18.292	
1,400.0	1,394.7	1,405.7	1,404.6	3.5	3.0	170.43	-15.1	-8.4	102.3	96.4	5.94	17.229	
1,500.0	1,494.0	1,505.7	1,504.0	3.8	3.2	169.02	-21.1	0.4	104.2	97.8	6.40	16.294	
1,600.0	1,593.3	1,605.6	1,603.3	4.1	3.5	167.67	-27.1	9.2	106.2	99.3	6.86	15.469	
1,700.0	1,692.6	1,705.6	1,702.7	4.4	3.7	166.37	-33.0	18.1	108.2	100.8	7.34	14.738	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Waste Management 2Y-441
Project:	SEC.2-T2N-R64W	TVD Reference:	WELL @ 4908.0ft (RKB - 15')
Reference Site:	Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W	MD Reference:	WELL @ 4908.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Waste Management 2Y-441	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (01-29-13)	Offset TVD Reference:	Offset Datum

Offset Design		Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W - Waste Management 2T-221 - 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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
1,800.0	1,791.9	1,805.5	1,802.1	4.7	4.0	165.11	-39.0	26.9	110.2	102.4	7.82	14.087		
1,900.0	1,891.3	1,905.5	1,901.5	5.0	4.3	163.90	-45.0	35.7	112.3	104.0	8.32	13.505		
2,000.0	1,990.6	2,005.4	2,000.9	5.3	4.5	162.74	-51.0	44.6	114.5	105.7	8.82	12.983		
2,100.0	2,089.9	2,105.4	2,100.2	5.7	4.8	161.62	-56.9	53.4	116.7	107.4	9.33	12.512		
2,200.0	2,189.2	2,205.3	2,199.6	6.0	5.1	160.54	-62.9	62.2	118.9	109.1	9.84	12.085		
2,300.0	2,288.5	2,305.3	2,299.0	6.3	5.4	159.50	-68.9	71.1	121.2	110.9	10.36	11.698		
2,400.0	2,387.8	2,405.2	2,398.4	6.6	5.7	158.51	-74.9	79.9	123.5	112.7	10.89	11.346		
2,500.0	2,487.1	2,505.2	2,497.8	6.9	6.0	157.54	-80.8	88.7	125.9	114.5	11.42	11.024		
2,600.0	2,586.5	2,605.1	2,597.1	7.2	6.2	156.62	-86.8	97.6	128.3	116.3	11.96	10.729		
2,700.0	2,685.8	2,705.1	2,696.5	7.5	6.5	155.72	-92.8	106.4	130.7	118.2	12.50	10.458		
2,800.0	2,785.1	2,805.0	2,795.9	7.9	6.8	154.87	-98.8	115.2	133.2	120.1	13.05	10.209		
2,900.0	2,884.4	2,905.0	2,895.3	8.2	7.1	154.04	-104.7	124.0	135.7	122.1	13.60	9.979		
3,000.0	2,983.7	3,004.9	2,994.7	8.5	7.4	153.24	-110.7	132.9	138.2	124.0	14.15	9.766		
3,100.0	3,083.0	3,104.9	3,094.0	8.8	7.7	152.47	-116.7	141.7	140.7	126.0	14.71	9.568		
3,200.0	3,182.3	3,204.8	3,193.4	9.1	8.0	151.73	-122.7	150.5	143.3	128.0	15.27	9.385		
3,300.0	3,281.7	3,304.8	3,292.8	9.4	8.3	151.01	-128.7	159.4	145.9	130.1	15.83	9.214		
3,400.0	3,381.0	3,404.7	3,392.2	9.8	8.6	150.32	-134.6	168.2	148.5	132.1	16.40	9.054		
3,500.0	3,480.3	3,504.7	3,491.6	10.1	8.9	149.65	-140.6	177.0	151.1	134.2	16.97	8.905		
3,600.0	3,579.6	3,604.6	3,590.9	10.4	9.2	149.01	-146.6	185.9	153.8	136.2	17.54	8.766		
3,700.0	3,678.9	3,704.6	3,690.3	10.7	9.5	148.39	-152.6	194.7	156.4	138.3	18.12	8.635		
3,800.0	3,778.2	3,804.5	3,789.7	11.0	9.8	147.79	-158.5	203.5	159.1	140.4	18.69	8.513		
3,900.0	3,877.5	3,904.5	3,889.1	11.3	10.1	147.21	-164.5	212.4	161.8	142.6	19.27	8.398		
4,000.0	3,976.9	4,004.4	3,988.5	11.7	10.4	146.64	-170.5	221.2	164.6	144.7	19.85	8.289		
4,100.0	4,076.2	4,100.0	4,083.6	12.0	10.6	146.48	-175.4	228.5	168.3	147.9	20.36	8.265		
4,200.0	4,175.5	4,196.9	4,180.3	12.3	10.8	147.14	-178.6	233.2	174.2	153.4	20.76	8.389		
4,300.0	4,274.8	4,292.5	4,275.9	12.6	11.0	148.49	-179.9	235.2	182.4	161.3	21.10	8.646		
4,400.0	4,374.1	4,390.7	4,374.1	12.9	11.2	150.26	-180.0	235.3	192.4	171.0	21.41	8.988		
4,500.0	4,473.4	4,490.0	4,473.4	13.2	11.3	151.90	-180.0	235.3	202.7	180.9	21.73	9.327		
4,600.0	4,572.7	4,589.3	4,572.7	13.5	11.5	153.38	-180.0	235.3	213.1	191.0	22.06	9.659		
4,700.0	4,672.1	4,688.7	4,672.1	13.9	11.7	154.72	-180.0	235.3	223.6	201.2	22.40	9.981		
4,800.0	4,771.4	4,788.0	4,771.4	14.2	11.8	155.94	-180.0	235.3	234.2	211.5	22.75	10.295		
4,900.0	4,870.7	4,887.3	4,870.7	14.5	12.0	157.05	-180.0	235.3	244.9	221.8	23.11	10.598		
5,000.0	4,970.0	4,986.6	4,970.0	14.8	12.2	158.07	-180.0	235.3	255.8	232.3	23.48	10.892		
5,100.0	5,069.3	5,085.9	5,069.3	15.1	12.4	159.01	-180.0	235.3	266.7	242.8	23.86	11.177		
5,200.0	5,168.6	5,185.2	5,168.6	15.4	12.6	159.88	-180.0	235.3	277.6	253.4	24.24	11.453		
5,300.0	5,268.1	5,284.7	5,268.1	15.7	12.7	160.61	-180.0	235.3	286.9	262.3	24.57	11.675		
5,400.0	5,367.9	5,384.5	5,367.9	15.9	12.9	161.06	-180.0	235.3	292.9	268.0	24.90	11.763		
5,500.0	5,467.9	5,484.5	5,467.9	16.0	13.1	161.26	-180.0	235.3	295.6	270.4	25.21	11.723		
5,600.0	5,567.9	5,584.5	5,567.9	16.2	13.3	-90.00	-180.0	235.3	295.7	270.2	25.52	11.590		
5,700.0	5,667.9	5,684.5	5,667.9	16.3	13.5	-90.00	-180.0	235.3	295.7	269.9	25.89	11.421		
5,800.0	5,767.9	5,784.5	5,767.9	16.5	13.7	-90.00	-180.0	235.3	295.7	269.5	26.27	11.256		
5,900.0	5,867.9	5,884.5	5,867.9	16.6	13.9	-90.00	-180.0	235.3	295.7	269.1	26.65	11.095		
6,000.0	5,967.9	5,984.5	5,967.9	16.8	14.0	-90.00	-180.0	235.3	295.7	268.7	27.04	10.938		
6,020.8	5,988.6	6,005.2	5,988.6	16.8	14.1	-90.00	-180.0	235.3	295.7	268.6	27.12	10.906		
6,100.0	6,067.9	6,083.7	6,067.0	16.9	14.2	-89.42	-177.0	235.2	295.8	268.5	27.37	10.807		
6,200.0	6,167.9	6,180.4	6,162.6	17.1	14.4	-86.59	-162.4	234.9	296.7	269.2	27.55	10.771		
6,300.0	6,267.8	6,272.7	6,251.3	17.2	14.5	-81.12	-137.3	234.3	299.9	272.3	27.66	10.845		
6,400.0	6,366.8	6,362.0	6,333.7	17.4	14.5	-76.50	-103.0	233.5	305.3	277.6	27.71	11.017		
6,500.0	6,463.2	6,450.0	6,410.4	17.4	14.6	-72.23	-60.0	232.5	312.3	284.6	27.80	11.237		
6,600.0	6,555.3	6,534.2	6,478.7	17.5	14.7	-68.48	-10.9	231.4	320.4	292.5	27.89	11.490		
6,700.0	6,641.5	6,617.7	6,540.8	17.5	14.7	-65.17	44.9	230.2	329.0	301.0	27.96	11.766		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Waste Management 2Y-441
Project:	SEC.2-T2N-R64W	TVD Reference:	WELL @ 4908.0ft (RKB - 15')
Reference Site:	Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W	MD Reference:	WELL @ 4908.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Waste Management 2Y-441	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (01-29-13)	Offset TVD Reference:	Offset Datum

Offset Design		Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W - Waste Management 2T-221 - 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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
6,800.0	6,720.4	6,700.0	6,595.6	17.6	14.8	-62.33	106.3	228.8	337.6	309.6	28.01	12.051				
6,900.0	6,790.6	6,780.7	6,642.6	17.7	15.0	-59.98	171.8	227.3	345.7	317.6	28.08	12.312				
7,000.0	6,851.0	6,860.8	6,682.2	17.8	15.4	-58.08	241.3	225.7	353.1	324.9	28.20	12.520				
7,100.0	6,900.4	6,940.0	6,714.0	18.0	16.0	-56.61	313.9	224.1	359.3	330.9	28.45	12.630				
7,200.0	6,938.1	7,018.8	6,738.0	18.5	16.8	-55.56	388.8	222.4	364.2	335.3	28.90	12.604				
7,300.0	6,963.4	7,100.0	6,754.5	19.2	17.6	-54.89	468.3	220.6	367.6	338.0	29.63	12.408				
7,400.0	6,976.6	7,175.3	6,762.2	20.1	18.4	-54.60	543.1	218.9	369.9	339.1	30.79	12.013				
7,500.0	6,985.4	7,261.5	6,762.9	21.2	19.5	-53.68	629.3	217.0	375.1	343.0	32.13	11.675				
7,600.0	6,986.9	7,361.5	6,762.0	22.5	20.8	-53.40	729.2	214.7	377.1	343.2	33.94	11.110				
7,700.0	6,986.6	7,461.4	6,761.1	23.8	22.2	-53.39	829.2	212.5	378.1	341.9	36.21	10.442				
7,800.0	6,986.3	7,561.4	6,760.2	25.2	23.7	-53.39	929.2	210.2	379.1	340.5	38.61	9.818				
7,900.0	6,986.1	7,661.4	6,759.3	26.6	25.2	-53.38	1,029.1	208.0	380.1	339.0	41.13	9.243				
8,000.0	6,985.8	7,761.4	6,758.5	28.1	26.8	-53.37	1,129.1	205.7	381.1	337.4	43.73	8.716				
8,100.0	6,985.6	7,861.4	6,757.6	29.7	28.4	-53.37	1,229.0	203.5	382.1	335.7	46.41	8.235				
8,200.0	6,985.3	7,961.4	6,756.7	31.3	30.1	-53.36	1,329.0	201.2	383.1	334.0	49.15	7.796				
8,300.0	6,985.1	8,061.4	6,755.8	33.0	31.8	-53.35	1,429.0	199.0	384.1	332.2	51.94	7.396				
8,400.0	6,984.8	8,161.4	6,754.9	34.6	33.5	-53.35	1,528.9	196.7	385.1	330.4	54.78	7.031				
8,500.0	6,984.5	8,261.4	6,754.0	36.3	35.2	-53.34	1,628.9	194.4	386.1	328.5	57.66	6.697				
8,600.0	6,984.3	8,361.4	6,753.1	38.0	37.0	-53.34	1,728.9	192.2	387.1	326.6	60.57	6.392				
8,700.0	6,984.0	8,461.4	6,752.2	39.7	38.7	-53.33	1,828.8	189.9	388.2	324.6	63.50	6.112				
8,800.0	6,983.8	8,561.4	6,751.3	41.5	40.5	-53.32	1,928.8	187.7	389.2	322.7	66.47	5.855				
8,900.0	6,983.5	8,661.4	6,750.4	43.3	42.3	-53.32	2,028.8	185.4	390.2	320.7	69.45	5.618				
9,000.0	6,983.2	8,761.4	6,749.6	45.0	44.1	-53.31	2,128.7	183.2	391.2	318.7	72.45	5.399				
9,100.0	6,983.0	8,861.4	6,748.7	46.8	46.0	-53.31	2,228.7	180.9	392.2	316.7	75.47	5.196				
9,200.0	6,982.7	8,961.4	6,747.8	48.6	47.8	-53.30	2,328.7	178.7	393.2	314.7	78.50	5.008				
9,300.0	6,982.5	9,061.4	6,746.9	50.4	49.6	-53.29	2,428.6	176.4	394.2	312.6	81.55	4.834				
9,400.0	6,982.2	9,161.4	6,746.0	52.2	51.5	-53.29	2,528.6	174.1	395.2	310.6	84.60	4.671				
9,500.0	6,981.9	9,261.4	6,745.1	54.1	53.3	-53.28	2,628.6	171.9	396.2	308.5	87.67	4.519				
9,600.0	6,981.7	9,361.4	6,744.2	55.9	55.2	-53.28	2,728.5	169.6	397.2	306.4	90.75	4.377				
9,700.0	6,981.4	9,461.3	6,743.3	57.7	57.0	-53.27	2,828.5	167.4	398.2	304.3	93.83	4.244				
9,800.0	6,981.2	9,561.3	6,742.4	59.6	58.9	-53.26	2,928.5	165.1	399.2	302.3	96.92	4.119				
9,900.0	6,980.9	9,661.3	6,741.5	61.4	60.7	-53.26	3,028.4	162.9	400.2	300.2	100.02	4.001				
10,000.0	6,980.7	9,761.3	6,740.7	63.3	62.6	-53.25	3,128.4	160.6	401.2	298.1	103.12	3.890				
10,100.0	6,980.4	9,861.3	6,739.8	65.1	64.5	-53.25	3,228.4	158.4	402.2	295.9	106.23	3.786				
10,200.0	6,980.1	9,961.3	6,738.9	67.0	66.4	-53.24	3,328.3	156.1	403.2	293.8	109.34	3.687				
10,300.0	6,979.9	10,061.3	6,738.0	68.8	68.2	-53.24	3,428.3	153.9	404.2	291.7	112.46	3.594				
10,400.0	6,979.6	10,161.3	6,737.1	70.7	70.1	-53.23	3,528.3	151.6	405.2	289.6	115.58	3.506				
10,500.0	6,979.4	10,261.3	6,736.2	72.6	72.0	-53.22	3,628.2	149.3	406.2	287.5	118.71	3.422				
10,600.0	6,979.1	10,361.3	6,735.3	74.4	73.9	-53.22	3,728.2	147.1	407.2	285.4	121.84	3.342				
10,700.0	6,978.8	10,461.3	6,734.4	76.3	75.8	-53.21	3,828.2	144.8	408.2	283.2	124.97	3.266				
10,800.0	6,978.6	10,561.3	6,733.5	78.2	77.7	-53.21	3,928.1	142.6	409.2	281.1	128.11	3.194				
10,900.0	6,978.3	10,661.3	6,732.6	80.1	79.5	-53.20	4,028.1	140.3	410.2	279.0	131.24	3.125				
11,000.0	6,978.1	10,761.3	6,731.8	81.9	81.4	-53.20	4,128.1	138.1	411.2	276.8	134.38	3.060				
11,100.0	6,977.8	10,861.3	6,730.9	83.8	83.3	-53.19	4,228.0	135.8	412.2	274.7	137.53	2.997				
11,200.0	6,977.5	10,961.3	6,730.0	85.7	85.2	-53.19	4,328.0	133.6	413.2	272.5	140.67	2.937				
11,300.0	6,977.3	11,061.3	6,729.1	87.6	87.1	-53.18	4,427.9	131.3	414.2	270.4	143.82	2.880				
11,400.0	6,977.0	11,161.3	6,728.2	89.5	88.8	-53.18	4,527.9	129.0	415.2	268.4	146.77	2.829				
11,412.5	6,977.0	11,173.7	6,728.1	89.7	89.0	-53.18	4,540.4	128.8	415.3	268.2	147.12	2.823 SF				

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Waste Management 2Y-441
Project:	SEC.2-T2N-R64W	TVD Reference:	WELL @ 4908.0ft (RKB - 15')
Reference Site:	Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W	MD Reference:	WELL @ 4908.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Waste Management 2Y-441	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (01-29-13)	Offset TVD Reference:	Offset Datum

Offset Design Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W - Waste Management 2T-401 - 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 (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	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	-90.00	0.0	-58.7	58.7					
100.0	100.0	99.0	99.0	0.1	0.1	-90.00	0.0	-58.7	58.7	58.5	0.22	262.453		
200.0	200.0	199.0	199.0	0.3	0.3	-90.00	0.0	-58.7	58.7	58.0	0.67	87.339		
300.0	300.0	299.0	299.0	0.6	0.6	-90.00	0.0	-58.7	58.7	57.6	1.12	52.333		
400.0	400.0	399.0	399.0	0.8	0.8	-90.00	0.0	-58.7	58.7	57.1	1.57	37.360 CC, ES		
500.0	500.0	499.0	499.0	1.0	1.0	161.80	0.0	-58.7	60.4	58.3	2.01	30.079		
600.0	599.8	598.8	598.8	1.2	1.2	163.20	0.0	-58.7	65.3	62.9	2.44	26.819		
700.0	699.5	698.5	698.5	1.4	1.5	165.11	0.0	-58.7	73.7	70.9	2.88	25.644		
800.0	798.8	797.8	797.8	1.7	1.7	167.09	0.0	-58.7	84.9	81.6	3.32	25.595		
900.0	898.1	897.1	897.1	2.0	1.9	168.64	0.0	-58.7	96.3	92.5	3.76	25.609		
1,000.0	997.4	996.4	996.4	2.3	2.1	169.86	0.0	-58.7	107.8	103.6	4.21	25.610		
1,100.0	1,096.7	1,095.7	1,095.7	2.6	2.4	170.85	0.0	-58.7	119.3	114.7	4.66	25.606		
1,200.0	1,196.0	1,195.0	1,195.0	2.9	2.6	171.66	0.0	-58.7	130.9	125.8	5.11	25.599		
1,300.0	1,295.4	1,294.4	1,294.4	3.2	2.8	172.35	0.0	-58.7	142.4	136.9	5.57	25.590		
1,400.0	1,394.7	1,393.7	1,393.7	3.5	3.0	172.93	0.0	-58.7	154.0	148.0	6.02	25.581		
1,500.0	1,494.0	1,493.0	1,493.0	3.8	3.2	173.42	0.0	-58.7	165.6	159.2	6.48	25.571		
1,600.0	1,593.3	1,592.3	1,592.3	4.1	3.5	173.86	0.0	-58.7	177.3	170.3	6.93	25.562		
1,700.0	1,692.6	1,691.6	1,691.6	4.4	3.7	174.24	0.0	-58.7	188.9	181.5	7.39	25.554		
1,800.0	1,791.9	1,790.9	1,790.9	4.7	3.9	174.57	0.0	-58.7	200.5	192.7	7.85	25.545		
1,900.0	1,891.3	1,890.3	1,890.3	5.0	4.1	174.87	0.0	-58.7	212.2	203.9	8.31	25.537		
2,000.0	1,990.6	1,989.6	1,989.6	5.3	4.4	175.14	0.0	-58.7	223.8	215.0	8.77	25.530		
2,100.0	2,089.9	2,088.9	2,088.9	5.7	4.6	175.38	0.0	-58.7	235.5	226.2	9.23	25.523		
2,200.0	2,189.2	2,188.2	2,188.2	6.0	4.8	175.60	0.0	-58.7	247.1	237.4	9.68	25.516		
2,300.0	2,288.5	2,287.5	2,287.5	6.3	5.0	175.80	0.0	-58.7	258.8	248.6	10.14	25.510		
2,400.0	2,387.8	2,386.8	2,386.8	6.6	5.3	175.98	0.0	-58.7	270.4	259.8	10.60	25.504		
2,500.0	2,487.1	2,486.1	2,486.1	6.9	5.5	176.14	0.0	-58.7	282.1	271.0	11.06	25.498		
2,600.0	2,586.5	2,585.5	2,585.5	7.2	5.7	176.30	0.0	-58.7	293.7	282.2	11.52	25.493		
2,700.0	2,685.8	2,684.8	2,684.8	7.5	5.9	176.44	0.0	-58.7	305.4	293.4	11.98	25.488		
2,800.0	2,785.1	2,784.1	2,784.1	7.9	6.1	176.57	0.0	-58.7	317.1	304.6	12.44	25.483		
2,900.0	2,884.4	2,883.4	2,883.4	8.2	6.4	176.69	0.0	-58.7	328.7	315.8	12.90	25.479		
3,000.0	2,983.7	2,982.7	2,982.7	8.5	6.6	176.80	0.0	-58.7	340.4	327.1	13.36	25.474		
3,100.0	3,083.0	3,080.6	3,080.6	8.8	6.8	176.73	-1.0	-59.2	352.3	338.5	13.80	25.528		
3,200.0	3,182.3	3,178.0	3,177.9	9.1	7.0	176.14	-5.1	-60.9	364.6	350.4	14.21	25.653		
3,300.0	3,281.7	3,274.9	3,274.5	9.4	7.1	175.10	-12.1	-64.0	377.5	362.9	14.63	25.808		
3,400.0	3,381.0	3,372.0	3,371.0	9.8	7.3	173.68	-21.9	-68.3	391.2	376.1	15.06	25.979		
3,500.0	3,480.3	3,470.5	3,468.8	10.1	7.5	172.24	-32.5	-73.0	405.2	389.7	15.50	26.139		
3,600.0	3,579.6	3,569.0	3,566.6	10.4	7.7	170.89	-43.1	-77.6	419.5	403.5	15.96	26.288		
3,700.0	3,678.9	3,667.5	3,664.4	10.7	7.9	169.64	-53.7	-82.3	433.9	417.5	16.42	26.428		
3,800.0	3,778.2	3,766.0	3,762.3	11.0	8.1	168.46	-64.3	-86.9	448.6	431.7	16.89	26.558		
3,900.0	3,877.5	3,864.5	3,860.1	11.3	8.3	167.36	-74.9	-91.5	463.5	446.1	17.37	26.679		
4,000.0	3,976.9	3,963.0	3,957.9	11.7	8.5	166.33	-85.4	-96.2	478.5	460.6	17.86	26.792		
4,100.0	4,076.2	4,061.5	4,055.8	12.0	8.8	165.36	-96.0	-100.8	493.6	475.3	18.35	26.899		
4,200.0	4,175.5	4,160.0	4,153.6	12.3	9.0	164.44	-106.6	-105.5	508.9	490.0	18.85	26.998		
4,300.0	4,274.8	4,258.6	4,251.4	12.6	9.2	163.59	-117.2	-110.1	524.3	504.9	19.35	27.093		
4,400.0	4,374.1	4,357.1	4,349.2	12.9	9.5	162.77	-127.8	-114.8	539.8	519.9	19.86	27.182		
4,500.0	4,473.4	4,455.6	4,447.1	13.2	9.7	162.01	-138.4	-119.4	555.4	535.0	20.37	27.266		
4,600.0	4,572.7	4,554.1	4,544.9	13.5	10.0	161.29	-149.0	-124.1	571.1	550.2	20.88	27.346		
4,700.0	4,672.1	4,652.6	4,642.7	13.9	10.2	160.60	-159.6	-128.7	586.9	565.5	21.40	27.422		
4,800.0	4,771.4	4,758.6	4,748.1	14.2	10.5	160.01	-169.8	-133.2	602.3	580.3	21.93	27.462		
4,900.0	4,870.7	4,867.4	4,856.6	14.5	10.8	159.78	-176.7	-136.3	616.1	593.7	22.44	27.455		
5,000.0	4,970.0	4,976.6	4,965.8	14.8	11.0	159.91	-179.8	-137.6	628.4	605.5	22.93	27.412		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Waste Management 2Y-441
Project:	SEC.2-T2N-R64W	TVD Reference:	WELL @ 4908.0ft (RKB - 15')
Reference Site:	Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W	MD Reference:	WELL @ 4908.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Waste Management 2Y-441	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (01-29-13)	Offset TVD Reference:	Offset Datum

Offset Design		Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W - Waste Management 2T-401 - 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		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
							+N/-S (ft)	+E/-W (ft)							
5,100.0	5,069.3	5,079.1	5,068.3	15.1	11.2	160.26	-180.0	-137.7	639.5	616.1	23.37	27.365			
5,200.0	5,168.6	5,178.4	5,167.6	15.4	11.4	160.61	-180.0	-137.7	650.5	626.7	23.81	27.320			
5,300.0	5,268.1	5,277.9	5,267.1	15.7	11.6	160.95	-180.0	-137.7	659.8	635.6	24.22	27.244			
5,400.0	5,367.9	5,377.7	5,366.9	15.9	11.8	161.17	-180.0	-137.7	665.8	641.2	24.60	27.063			
5,500.0	5,467.9	5,477.7	5,466.9	16.0	12.0	161.27	-180.0	-137.7	668.5	643.6	24.96	26.782			
5,600.0	5,567.9	5,577.7	5,566.9	16.2	12.2	-90.00	-180.0	-137.7	668.7	643.4	25.31	26.419			
5,700.0	5,667.9	5,677.7	5,666.9	16.3	12.4	-90.00	-180.0	-137.7	668.7	643.0	25.70	26.020			
5,800.0	5,767.9	5,777.7	5,766.9	16.5	12.7	-90.00	-180.0	-137.7	668.7	642.6	26.09	25.631			
5,900.0	5,867.9	5,877.7	5,866.9	16.6	12.9	-90.00	-180.0	-137.7	668.7	642.2	26.48	25.252			
6,000.0	5,967.9	5,977.7	5,966.9	16.8	13.1	-90.00	-180.0	-137.7	668.7	641.8	26.87	24.882			
6,100.0	6,067.9	6,077.7	6,066.9	16.9	13.3	-90.00	-180.0	-137.7	668.7	641.4	27.27	24.522			
6,200.0	6,167.9	6,177.7	6,166.9	17.1	13.5	-90.00	-180.0	-137.7	668.7	641.0	27.67	24.170			
6,300.0	6,267.8	6,277.0	6,266.2	17.2	13.7	-89.16	-178.2	-137.7	668.7	640.6	28.08	23.818			
6,400.0	6,366.8	6,375.8	6,364.0	17.4	13.9	-89.18	-165.0	-137.9	668.7	640.3	28.37	23.567			
6,500.0	6,463.2	6,474.6	6,459.3	17.4	14.0	-89.22	-139.3	-138.3	668.7	640.1	28.60	23.376			
6,600.0	6,555.3	6,573.5	6,550.6	17.5	14.1	-89.28	-101.5	-138.8	668.7	639.9	28.81	23.208			
6,700.0	6,641.5	6,672.4	6,636.3	17.5	14.2	-89.34	-52.1	-139.6	668.6	639.6	29.06	23.011			
6,800.0	6,720.4	6,771.5	6,715.0	17.6	14.3	-89.42	7.9	-140.5	668.6	639.2	29.42	22.728			
6,900.0	6,790.6	6,870.7	6,785.4	17.7	14.6	-89.50	77.7	-141.5	668.6	638.6	29.97	22.307			
7,000.0	6,851.0	6,970.0	6,846.2	17.8	15.0	-89.60	156.2	-142.6	668.6	637.8	30.79	21.713			
7,100.0	6,900.4	7,069.5	6,896.3	18.0	15.6	-89.70	242.0	-143.9	668.6	636.6	31.93	20.938			
7,200.0	6,938.1	7,169.1	6,935.0	18.5	16.4	-89.81	333.7	-145.2	668.5	635.1	33.41	20.010			
7,300.0	6,963.4	7,268.9	6,961.4	19.2	17.3	-89.92	429.8	-146.6	668.5	633.3	35.22	18.979			
7,400.0	6,976.6	7,368.8	6,975.6	20.1	18.3	-90.00	528.7	-148.1	668.5	631.2	37.34	17.905			
7,500.0	6,985.4	7,468.9	6,984.9	21.2	19.5	-90.04	628.3	-149.5	668.5	628.8	39.70	16.837			
7,600.0	6,986.9	7,568.9	6,986.9	22.5	20.8	-90.09	728.3	-151.0	668.5	626.2	42.27	15.814			
7,700.0	6,986.6	7,668.9	6,986.6	23.8	22.2	-90.09	828.3	-152.5	668.4	623.4	45.02	14.848			
7,800.0	6,986.3	7,768.9	6,986.4	25.2	23.7	-90.09	928.3	-153.9	668.4	620.5	47.92	13.950			
7,900.0	6,986.1	7,868.9	6,986.1	26.6	25.2	-90.09	1,028.3	-155.4	668.4	617.5	50.94	13.122			
8,000.0	6,985.8	7,968.9	6,985.9	28.1	26.8	-90.09	1,128.3	-156.8	668.4	614.3	54.07	12.363			
8,100.0	6,985.6	8,068.9	6,985.6	29.7	28.4	-90.09	1,228.2	-158.3	668.4	611.1	57.28	11.669			
8,200.0	6,985.3	8,168.9	6,985.3	31.3	30.0	-90.09	1,328.2	-159.8	668.4	607.8	60.57	11.035			
8,300.0	6,985.1	8,268.9	6,985.1	33.0	31.7	-90.09	1,428.2	-161.2	668.4	604.4	63.92	10.456			
8,400.0	6,984.8	8,368.9	6,984.8	34.6	33.4	-90.09	1,528.2	-162.7	668.3	601.0	67.33	9.927			
8,500.0	6,984.5	8,468.9	6,984.6	36.3	35.2	-90.09	1,628.2	-164.1	668.3	597.5	70.78	9.443			
8,600.0	6,984.3	8,568.9	6,984.3	38.0	36.9	-90.09	1,728.2	-165.6	668.3	594.0	74.26	8.999			
8,700.0	6,984.0	8,668.9	6,984.0	39.7	38.7	-90.09	1,828.2	-167.1	668.3	590.5	77.79	8.591			
8,800.0	6,983.8	8,768.9	6,983.8	41.5	40.5	-90.09	1,928.2	-168.5	668.3	586.9	81.34	8.216			
8,900.0	6,983.5	8,868.9	6,983.5	43.3	42.3	-90.09	2,028.2	-170.0	668.3	583.3	84.92	7.870			
9,000.0	6,983.2	8,968.9	6,983.3	45.0	44.1	-90.09	2,128.1	-171.4	668.2	579.7	88.52	7.549			
9,100.0	6,983.0	9,068.9	6,983.0	46.8	45.9	-90.09	2,228.1	-172.9	668.2	576.1	92.14	7.252			
9,200.0	6,982.7	9,168.9	6,982.8	48.6	47.7	-90.09	2,328.1	-174.4	668.2	572.4	95.77	6.977			
9,300.0	6,982.5	9,268.9	6,982.5	50.4	49.5	-90.09	2,428.1	-175.8	668.2	568.8	99.43	6.720			
9,400.0	6,982.2	9,368.9	6,982.2	52.2	51.4	-90.09	2,528.1	-177.3	668.2	565.1	103.10	6.481			
9,500.0	6,981.9	9,468.9	6,982.0	54.1	53.2	-90.09	2,628.1	-178.7	668.2	561.4	106.78	6.257			
9,600.0	6,981.7	9,568.9	6,981.7	55.9	55.1	-90.09	2,728.1	-180.2	668.1	557.7	110.47	6.048			
9,700.0	6,981.4	9,668.9	6,981.5	57.7	56.9	-90.09	2,828.1	-181.7	668.1	553.9	114.17	5.852			
9,800.0	6,981.2	9,768.9	6,981.2	59.6	58.8	-90.09	2,928.1	-183.1	668.1	550.2	117.88	5.668			
9,900.0	6,980.9	9,868.9	6,980.9	61.4	60.6	-90.09	3,028.0	-184.6	668.1	546.5	121.60	5.494			
10,000.0	6,980.7	9,968.9	6,980.7	63.3	62.5	-90.09	3,128.0	-186.0	668.1	542.7	125.33	5.331			

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Waste Management 2Y-441
Project:	SEC.2-T2N-R64W	TVD Reference:	WELL @ 4908.0ft (RKB - 15')
Reference Site:	Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W	MD Reference:	WELL @ 4908.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Waste Management 2Y-441	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (01-29-13)	Offset TVD Reference:	Offset Datum

Offset Design Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W - Waste Management 2T-401 - 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	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation		Separation Factor
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)		
10,100.0	6,980.4	10,068.9	6,980.4	65.1	64.4	-90.09	3,228.0	-187.5	668.1	539.0	129.06	5.176	
10,200.0	6,980.1	10,168.9	6,980.2	67.0	66.2	-90.09	3,328.0	-189.0	668.0	535.2	132.80	5.030	
10,300.0	6,979.9	10,268.9	6,979.9	68.8	68.1	-90.09	3,428.0	-190.4	668.0	531.5	136.55	4.892	
10,400.0	6,979.6	10,368.9	6,979.6	70.7	70.0	-90.09	3,528.0	-191.9	668.0	527.7	140.30	4.761	
10,500.0	6,979.4	10,468.9	6,979.4	72.6	71.9	-90.09	3,628.0	-193.3	668.0	523.9	144.06	4.637	
10,600.0	6,979.1	10,568.9	6,979.1	74.4	73.8	-90.09	3,728.0	-194.8	668.0	520.1	147.82	4.519	
10,700.0	6,978.8	10,668.9	6,978.9	76.3	75.6	-90.09	3,828.0	-196.3	668.0	516.4	151.59	4.406	
10,800.0	6,978.6	10,768.9	6,978.6	78.2	77.5	-90.09	3,927.9	-197.7	667.9	512.6	155.36	4.299	
10,900.0	6,978.3	10,868.9	6,978.4	80.1	79.4	-90.09	4,027.9	-199.2	667.9	508.8	159.13	4.197	
11,000.0	6,978.1	10,968.9	6,978.1	81.9	81.3	-90.09	4,127.9	-200.6	667.9	505.0	162.91	4.100	
11,100.0	6,977.8	11,068.9	6,977.8	83.8	83.2	-90.09	4,227.9	-202.1	667.9	501.2	166.69	4.007	
11,200.0	6,977.5	11,168.9	6,977.6	85.7	85.1	-90.09	4,327.9	-203.6	667.9	497.4	170.47	3.918	
11,300.0	6,977.3	11,268.9	6,977.3	87.6	87.0	-90.09	4,427.9	-205.0	667.9	493.6	174.26	3.833	
11,400.0	6,977.0	11,368.9	6,977.1	89.5	88.9	-90.09	4,527.9	-206.5	667.8	489.8	178.05	3.751	
11,412.5	6,977.0	11,381.4	6,977.0	89.7	89.1	-90.09	4,540.3	-206.7	667.8	489.3	178.52	3.741 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Waste Management 2Y-441
Project:	SEC.2-T2N-R64W	TVD Reference:	WELL @ 4908.0ft (RKB - 15')
Reference Site:	Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W	MD Reference:	WELL @ 4908.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Waste Management 2Y-441	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (01-29-13)	Offset TVD Reference:	Offset Datum

Offset Design Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W - Waste Management 2Y-201 - 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		
0.0	0.0	1.0	1.0	0.0	0.0	90.01	0.0	30.7	30.7	30.7	0.00	N/A		
100.0	100.0	101.0	101.0	0.1	0.1	90.01	0.0	30.7	30.7	30.5	0.23	135.435		
166.3	166.3	167.3	167.3	0.3	0.3	90.01	0.0	30.7	30.7	30.2	0.53	58.542 CC		
200.0	200.0	201.0	201.0	0.3	0.3	90.01	0.0	30.7	30.7	30.1	0.68	45.455 ES		
300.0	300.0	300.0	300.0	0.6	0.6	90.66	-0.4	32.5	32.5	31.4	1.11	29.213		
400.0	400.0	398.6	398.4	0.8	0.8	92.22	-1.5	37.5	37.6	36.0	1.55	24.207		
500.0	500.0	497.0	496.4	1.0	1.0	-15.20	-3.2	45.8	44.4	42.5	1.98	22.442		
600.0	599.8	595.1	593.9	1.2	1.3	-14.69	-5.7	57.3	51.3	48.9	2.41	21.334		
700.0	699.5	693.4	691.0	1.4	1.6	-14.68	-8.9	72.1	58.2	55.3	2.85	20.398		
800.0	798.8	793.3	789.5	1.7	2.0	-15.19	-12.4	88.2	63.4	60.1	3.31	19.132		
900.0	898.1	893.1	888.0	2.0	2.3	-15.68	-15.8	104.2	68.4	64.7	3.79	18.051		
1,000.0	997.4	993.0	986.5	2.3	2.7	-16.10	-19.3	120.3	73.5	69.2	4.28	17.179		
1,100.0	1,096.7	1,092.9	1,085.0	2.6	3.1	-16.47	-22.7	136.4	78.5	73.8	4.77	16.465		
1,200.0	1,196.0	1,192.7	1,183.5	2.9	3.5	-16.79	-26.2	152.5	83.6	78.3	5.27	15.871		
1,300.0	1,295.4	1,292.6	1,282.0	3.2	3.9	-17.08	-29.7	168.5	88.6	82.9	5.77	15.373		
1,400.0	1,394.7	1,392.5	1,380.5	3.5	4.2	-17.34	-33.1	184.6	93.7	87.4	6.27	14.945		
1,500.0	1,494.0	1,492.4	1,479.0	3.8	4.6	-17.57	-36.6	200.7	98.8	92.0	6.77	14.577		
1,600.0	1,593.3	1,592.2	1,577.6	4.1	5.0	-17.77	-40.0	216.7	103.8	96.5	7.28	14.256		
1,700.0	1,692.6	1,692.1	1,676.1	4.4	5.4	-17.96	-43.5	232.8	108.9	101.1	7.79	13.975		
1,800.0	1,791.9	1,792.0	1,774.6	4.7	5.8	-18.13	-47.0	248.9	113.9	105.6	8.30	13.726		
1,900.0	1,891.3	1,891.8	1,873.1	5.0	6.2	-18.29	-50.4	264.9	119.0	110.2	8.81	13.505		
2,000.0	1,990.6	1,991.7	1,971.6	5.3	6.5	-18.43	-53.9	281.0	124.1	114.7	9.32	13.306		
2,100.0	2,089.9	2,091.6	2,070.1	5.7	6.9	-18.57	-57.3	297.1	129.1	119.3	9.84	13.127		
2,200.0	2,189.2	2,191.5	2,168.6	6.0	7.3	-18.69	-60.8	313.1	134.2	123.8	10.35	12.965		
2,300.0	2,288.5	2,291.3	2,267.1	6.3	7.7	-18.80	-64.3	329.2	139.2	128.4	10.86	12.817		
2,400.0	2,387.8	2,391.2	2,365.6	6.6	8.1	-18.91	-67.7	345.3	144.3	132.9	11.38	12.683		
2,500.0	2,487.1	2,491.1	2,464.1	6.9	8.5	-19.01	-71.2	361.3	149.4	137.5	11.89	12.559		
2,600.0	2,586.5	2,590.9	2,562.6	7.2	8.9	-19.10	-74.6	377.4	154.4	142.0	12.41	12.445		
2,700.0	2,685.8	2,690.8	2,661.2	7.5	9.2	-19.19	-78.1	393.5	159.5	146.6	12.93	12.341		
2,800.0	2,785.1	2,790.7	2,759.7	7.9	9.6	-19.27	-81.6	409.5	164.6	151.1	13.44	12.243		
2,900.0	2,884.4	2,890.6	2,858.2	8.2	10.0	-19.34	-85.0	425.6	169.6	155.7	13.96	12.153		
3,000.0	2,983.7	2,990.4	2,956.7	8.5	10.4	-19.41	-88.5	441.7	174.7	160.2	14.48	12.069		
3,100.0	3,083.0	3,090.3	3,055.2	8.8	10.8	-19.48	-91.9	457.7	179.8	164.8	14.99	11.991		
3,200.0	3,182.3	3,190.2	3,153.7	9.1	11.2	-19.55	-95.4	473.8	184.8	169.3	15.51	11.917		
3,300.0	3,281.7	3,290.0	3,252.2	9.4	11.6	-19.61	-98.9	489.9	189.9	173.9	16.03	11.848		
3,400.0	3,381.0	3,389.9	3,350.7	9.8	11.9	-19.66	-102.3	506.0	195.0	178.4	16.55	11.784		
3,500.0	3,480.3	3,489.8	3,449.2	10.1	12.3	-19.72	-105.8	522.0	200.0	183.0	17.06	11.723		
3,600.0	3,579.6	3,589.7	3,547.7	10.4	12.7	-19.77	-109.2	538.1	205.1	187.5	17.58	11.666		
3,700.0	3,678.9	3,689.5	3,646.3	10.7	13.1	-19.82	-112.7	554.2	210.2	192.1	18.10	11.612		
3,800.0	3,778.2	3,789.4	3,744.8	11.0	13.5	-19.87	-116.2	570.2	215.3	196.6	18.62	11.560		
3,900.0	3,877.5	3,889.3	3,843.3	11.3	13.9	-19.91	-119.6	586.3	220.3	201.2	19.14	11.512		
4,000.0	3,976.9	3,989.1	3,941.8	11.7	14.3	-19.95	-123.1	602.4	225.4	205.7	19.66	11.466		
4,100.0	4,076.2	4,089.0	4,040.3	12.0	14.7	-19.99	-126.5	618.4	230.5	210.3	20.18	11.422		
4,200.0	4,175.5	4,188.9	4,138.8	12.3	15.0	-20.03	-130.0	634.5	235.5	214.8	20.70	11.380		
4,300.0	4,274.8	4,288.8	4,237.3	12.6	15.4	-20.07	-133.5	650.6	240.6	219.4	21.21	11.341		
4,400.0	4,374.1	4,388.6	4,335.8	12.9	15.8	-20.11	-136.9	666.6	245.7	223.9	21.73	11.303		
4,500.0	4,473.4	4,488.5	4,434.3	13.2	16.2	-20.14	-140.4	682.7	250.7	228.5	22.25	11.267		
4,600.0	4,572.7	4,588.4	4,532.8	13.5	16.6	-20.18	-143.8	698.8	255.8	233.0	22.77	11.233		
4,700.0	4,672.1	4,688.2	4,631.3	13.9	17.0	-20.21	-147.3	714.8	260.9	237.6	23.29	11.200		
4,800.0	4,771.4	4,788.1	4,729.9	14.2	17.4	-20.24	-150.8	730.9	265.9	242.1	23.81	11.168		
4,900.0	4,870.7	4,888.0	4,828.4	14.5	17.8	-20.27	-154.2	747.0	271.0	246.7	24.33	11.138		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Waste Management 2Y-441
Project:	SEC.2-T2N-R64W	TVD Reference:	WELL @ 4908.0ft (RKB - 15')
Reference Site:	Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W	MD Reference:	WELL @ 4908.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Waste Management 2Y-441	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (01-29-13)	Offset TVD Reference:	Offset Datum

Offset Design Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W - Waste Management 2Y-201 - 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		
5,000.0	4,970.0	4,987.9	4,926.9	14.8	18.1	-20.30	-157.7	763.0	276.1	251.2	24.85	11.109		
5,100.0	5,069.3	5,087.7	5,025.4	15.1	18.5	-20.32	-161.1	779.1	281.1	255.8	25.37	11.081		
5,200.0	5,168.6	5,187.6	5,123.9	15.4	18.9	-20.35	-164.6	795.2	286.2	260.3	25.89	11.055		
5,300.0	5,268.1	5,287.4	5,222.3	15.7	19.3	-20.30	-168.1	811.2	293.0	266.7	26.31	11.139		
5,400.0	5,367.9	5,386.8	5,320.4	15.9	19.7	-20.04	-171.5	827.2	303.1	276.5	26.67	11.366		
5,500.0	5,467.9	5,496.8	5,429.2	16.0	20.0	-19.62	-174.9	843.2	314.9	288.0	26.94	11.690		
5,600.0	5,567.9	5,608.4	5,540.1	16.2	20.3	89.56	-177.5	855.2	325.5	298.3	27.15	11.987		
5,700.0	5,667.9	5,720.7	5,652.1	16.3	20.5	89.86	-179.2	863.0	332.4	304.9	27.49	12.092		
5,800.0	5,767.9	5,833.6	5,764.9	16.5	20.6	89.99	-180.0	866.5	335.6	307.7	27.84	12.051		
5,900.0	5,867.9	5,937.6	5,868.9	16.6	20.7	90.00	-180.0	866.7	335.7	307.5	28.20	11.905		
6,000.0	5,967.9	6,037.6	5,968.9	16.8	20.9	90.00	-180.0	866.7	335.7	307.2	28.55	11.758		
6,100.0	6,067.9	6,137.8	6,069.0	16.9	21.0	89.39	-176.4	866.7	335.7	306.8	28.96	11.593		
6,113.6	6,081.5	6,151.4	6,082.5	16.9	21.0	89.15	-175.0	866.7	335.7	306.7	29.03	11.565		
6,200.0	6,167.9	6,235.8	6,165.6	17.1	21.1	86.72	-160.8	866.5	336.0	306.5	29.54	11.376		
6,300.0	6,267.8	6,328.9	6,254.9	17.2	21.1	83.31	-134.6	866.1	338.2	307.8	30.40	11.126		
6,400.0	6,366.8	6,418.9	6,337.6	17.4	21.2	79.01	-99.1	865.5	342.4	311.3	31.12	11.005		
6,500.0	6,463.2	6,506.5	6,413.5	17.4	21.2	75.01	-55.4	864.9	348.3	316.6	31.65	11.003		
6,600.0	6,555.3	6,592.0	6,482.3	17.5	21.2	71.38	-4.7	864.1	355.2	323.3	31.95	11.118		
6,700.0	6,641.5	6,675.8	6,543.8	17.5	21.3	68.14	52.1	863.3	362.8	330.8	32.01	11.334		
6,800.0	6,720.4	6,758.0	6,597.8	17.6	21.3	65.32	114.1	862.4	370.5	338.6	31.92	11.608		
6,900.0	6,790.6	6,839.0	6,644.1	17.7	21.4	62.93	180.5	861.4	378.0	346.2	31.76	11.900		
7,000.0	6,851.0	6,919.0	6,682.7	17.8	21.5	60.94	250.5	860.4	384.8	353.1	31.72	12.131		
7,100.0	6,900.4	7,000.0	6,714.1	18.0	21.8	59.34	325.1	859.2	390.7	358.7	31.97	12.223		
7,200.0	6,938.1	7,076.8	6,736.5	18.5	22.0	58.18	398.4	858.2	395.4	362.7	32.65	12.109		
7,300.0	6,963.4	7,150.0	6,750.8	19.2	22.4	57.41	470.2	857.1	398.7	364.9	33.84	11.781		
7,400.0	6,976.6	7,232.7	6,758.7	20.1	23.0	56.92	552.5	855.9	400.9	365.3	35.54	11.280		
7,500.0	6,985.4	7,321.3	6,758.8	21.2	23.7	55.91	641.0	854.6	405.6	368.2	37.36	10.857		
7,600.0	6,986.9	7,421.2	6,757.9	22.5	24.7	55.59	741.0	853.1	406.9	367.2	39.70	10.250		
7,700.0	6,986.6	7,521.2	6,757.1	23.8	25.8	55.52	841.0	851.6	407.2	365.2	42.00	9.695		
7,800.0	6,986.3	7,621.2	6,756.2	25.2	27.1	55.44	941.0	850.1	407.6	363.2	44.43	9.175		
7,900.0	6,986.1	7,721.2	6,755.3	26.6	28.4	55.37	1,040.9	848.6	407.9	361.0	46.95	8.689		
8,000.0	6,985.8	7,821.2	6,754.4	28.1	29.8	55.30	1,140.9	847.1	408.3	358.7	49.55	8.240		
8,100.0	6,985.6	7,921.2	6,753.5	29.7	31.3	55.22	1,240.9	845.6	408.6	356.4	52.22	7.825		
8,200.0	6,985.3	8,021.2	6,752.6	31.3	32.8	55.15	1,340.9	844.2	409.0	354.0	54.95	7.443		
8,300.0	6,985.1	8,121.2	6,751.7	33.0	34.4	55.08	1,440.9	842.7	409.3	351.6	57.73	7.091		
8,400.0	6,984.8	8,221.2	6,750.8	34.6	36.0	55.00	1,540.9	841.2	409.7	349.2	60.55	6.766		
8,500.0	6,984.5	8,321.2	6,749.9	36.3	37.6	54.93	1,640.8	839.7	410.1	346.7	63.41	6.467		
8,600.0	6,984.3	8,421.2	6,749.0	38.0	39.2	54.86	1,740.8	838.2	410.4	344.1	66.29	6.191		
8,700.0	6,984.0	8,521.2	6,748.2	39.7	40.9	54.78	1,840.8	836.7	410.8	341.6	69.21	5.936		
8,800.0	6,983.8	8,621.2	6,747.3	41.5	42.6	54.71	1,940.8	835.3	411.1	339.0	72.14	5.699		
8,900.0	6,983.5	8,721.2	6,746.4	43.3	44.3	54.64	2,040.8	833.8	411.5	336.4	75.09	5.480		
9,000.0	6,983.2	8,821.2	6,745.5	45.0	46.1	54.57	2,140.8	832.3	411.8	333.8	78.06	5.276		
9,100.0	6,983.0	8,921.2	6,744.6	46.8	47.8	54.50	2,240.7	830.8	412.2	331.2	81.04	5.086		
9,200.0	6,982.7	9,021.2	6,743.7	48.6	49.6	54.42	2,340.7	829.3	412.6	328.5	84.04	4.909		
9,300.0	6,982.5	9,121.2	6,742.8	50.4	51.4	54.35	2,440.7	827.8	412.9	325.9	87.04	4.744		
9,400.0	6,982.2	9,221.2	6,741.9	52.2	53.1	54.28	2,540.7	826.3	413.3	323.2	90.05	4.589		
9,500.0	6,981.9	9,321.2	6,741.0	54.1	54.9	54.21	2,640.7	824.9	413.7	320.6	93.07	4.444		
9,600.0	6,981.7	9,421.2	6,740.1	55.9	56.7	54.14	2,740.6	823.4	414.0	317.9	96.10	4.308		
9,700.0	6,981.4	9,521.2	6,739.3	57.7	58.5	54.06	2,840.6	821.9	414.4	315.2	99.13	4.180		
9,800.0	6,981.2	9,621.2	6,738.4	59.6	60.4	53.99	2,940.6	820.4	414.7	312.6	102.17	4.060		

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

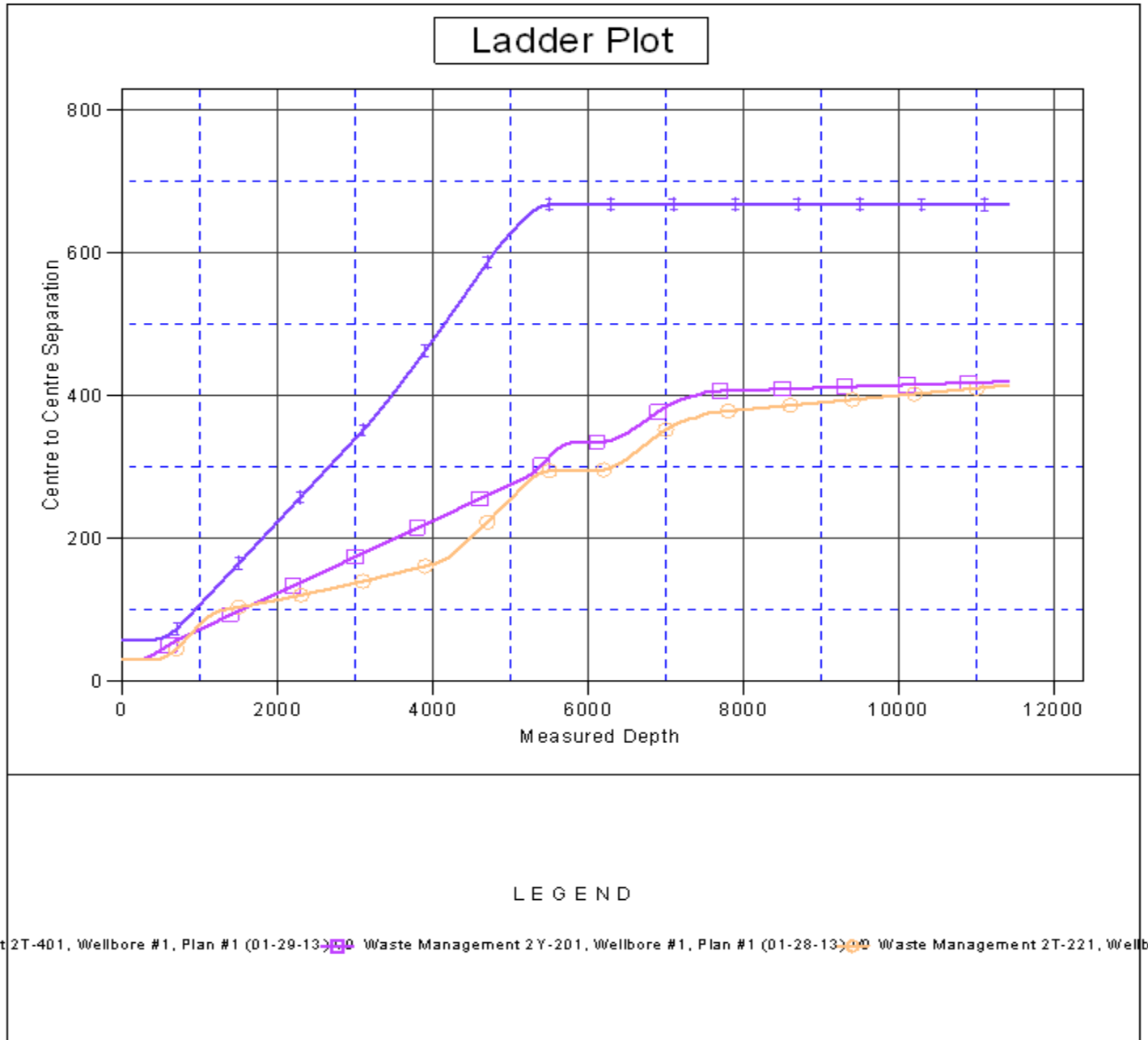
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Waste Management 2Y-441
Project:	SEC.2-T2N-R64W	TVD Reference:	WELL @ 4908.0ft (RKB - 15')
Reference Site:	Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W	MD Reference:	WELL @ 4908.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Waste Management 2Y-441	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (01-29-13)	Offset TVD Reference:	Offset Datum

Offset Design		Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W - Waste Management 2Y-201 - 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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,900.0	6,980.9	9,721.2	6,737.5	61.4	62.2	53.92	3,040.6	818.9	415.1	309.9	105.20	3.946		
10,000.0	6,980.7	9,821.2	6,736.6	63.3	64.0	53.85	3,140.6	817.4	415.5	307.2	108.25	3.838		
10,100.0	6,980.4	9,921.2	6,735.7	65.1	65.8	53.78	3,240.6	816.0	415.8	304.5	111.29	3.737		
10,200.0	6,980.1	10,021.2	6,734.8	67.0	67.7	53.71	3,340.5	814.5	416.2	301.9	114.33	3.640		
10,300.0	6,979.9	10,121.2	6,733.9	68.8	69.5	53.64	3,440.5	813.0	416.6	299.2	117.38	3.549		
10,400.0	6,979.6	10,221.2	6,733.0	70.7	71.4	53.57	3,540.5	811.5	416.9	296.5	120.43	3.462		
10,500.0	6,979.4	10,321.2	6,732.1	72.6	73.2	53.50	3,640.5	810.0	417.3	293.8	123.47	3.380		
10,600.0	6,979.1	10,421.2	6,731.2	74.4	75.1	53.43	3,740.5	808.5	417.7	291.2	126.52	3.301		
10,700.0	6,978.8	10,521.2	6,730.3	76.3	76.9	53.36	3,840.5	807.0	418.0	288.5	129.57	3.226		
10,800.0	6,978.6	10,621.1	6,729.5	78.2	78.8	53.29	3,940.4	805.6	418.4	285.8	132.61	3.155		
10,900.0	6,978.3	10,721.1	6,728.6	80.1	80.7	53.22	4,040.4	804.1	418.8	283.1	135.66	3.087		
11,000.0	6,978.1	10,821.1	6,727.7	81.9	82.5	53.15	4,140.4	802.6	419.2	280.5	138.70	3.022		
11,100.0	6,977.8	10,921.1	6,726.8	83.8	84.4	53.08	4,240.4	801.1	419.5	277.8	141.74	2.960		
11,200.0	6,977.5	11,021.1	6,725.9	85.7	86.3	53.01	4,340.4	799.6	419.9	275.1	144.78	2.900		
11,300.0	6,977.3	11,121.1	6,725.0	87.6	88.1	52.94	4,440.4	798.1	420.3	272.5	147.82	2.843		
11,400.0	6,977.0	11,221.1	6,724.1	89.5	90.0	52.87	4,540.3	796.6	420.7	269.8	150.86	2.788		
11,412.5	6,977.0	11,233.6	6,724.0	89.7	90.3	52.86	4,552.8	796.5	420.7	269.5	151.24	2.782 SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Waste Management 2Y-441
Project:	SEC.2-T2N-R64W	TVD Reference:	WELL @ 4908.0ft (RKB - 15')
Reference Site:	Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W	MD Reference:	WELL @ 4908.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Waste Management 2Y-441	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (01-29-13)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4908.0ft (RKB - 15')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Waste Management 2Y-441
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.64°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Waste Management 2Y-441
Project:	SEC.2-T2N-R64W	TVD Reference:	WELL @ 4908.0ft (RKB - 15')
Reference Site:	Waste Management 2T-HZ1 Pad Sec.2-T2N-R64W	MD Reference:	WELL @ 4908.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Waste Management 2Y-441	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (01-29-13)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4908.0ft (RKB - 15')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Waste Management 2Y-441
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.64°

