

PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Waste Management 2Q-221**

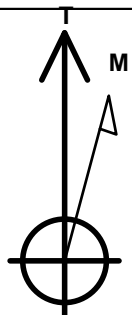
Surface Location: Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 4895.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1302950.82	3275552.12	40.160790	-104.514080	

RKB - 15' WELL @ 4910.0ft (RKB - 15')

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
BHL 500'FNL, 2160'FEL	6850.0	4546.4	-844.0	Point



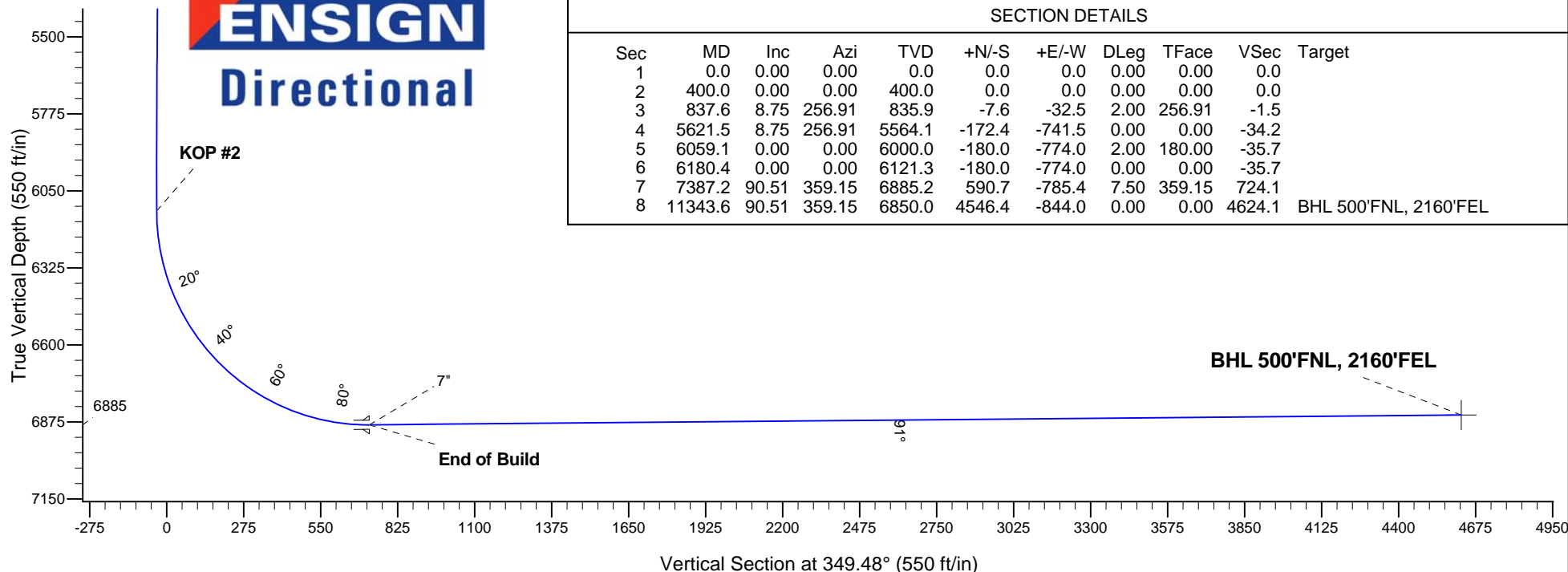
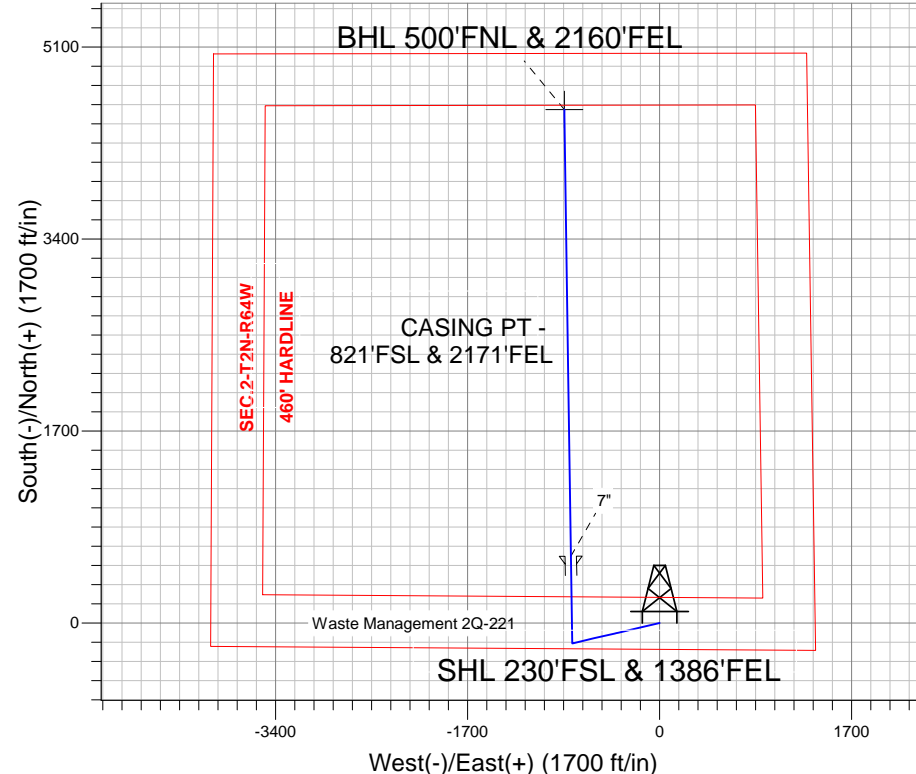
Azimuths to True North
Magnetic North: 8.49°

Magnetic Field
Strength: 52858.2snT
Dip Angle: 66.84°
Date: 2/6/2013
Model: IGRF2010

Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W
Waste Management 2Q-221
Plan #1 (2-06-13)
14:31, February 07 2013

ANNOTATIONS

TVD	MD	Annotation
400.0	400.0	KOP #1
6121.3	6180.4	KOP #2
6885.2	7387.2	End of Build



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.0	
3	837.6	8.75	256.91	835.9	-7.6	-32.5	2.00	256.91	-1.5	
4	5621.5	8.75	256.91	5564.1	-172.4	-741.5	0.00	0.00	-34.2	
5	6059.1	0.00	0.00	6000.0	-180.0	-774.0	2.00	180.00	-35.7	
6	6180.4	0.00	0.00	6121.3	-180.0	-774.0	0.00	0.00	-35.7	
7	7387.2	90.51	359.15	6885.2	590.7	-785.4	7.50	359.15	724.1	
8	11343.6	90.51	359.15	6850.0	4546.4	-844.0	0.00	0.00	4624.1	BHL 500'FNL, 2160'FEL



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.2-T2N-R64W

Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W

Waste Management 2Q-221

Wellbore #1

Plan: Plan #1 (2-06-13)

Standard Planning Report

07 February, 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	
837.6	8.75	256.91	835.9	-7.6	-32.5	2.00	2.00	0.00	256.91	
5,621.5	8.75	256.91	5,564.1	-172.4	-741.5	0.00	0.00	0.00	0.00	
6,059.1	0.00	0.00	6,000.0	-180.0	-774.0	2.00	-2.00	0.00	180.00	
6,180.4	0.00	0.00	6,121.3	-180.0	-774.0	0.00	0.00	0.00	0.00	
7,387.2	90.51	359.15	6,885.2	590.7	-785.4	7.50	7.50	0.00	359.15	
11,343.6	90.51	359.15	6,850.0	4,546.4	-844.0	0.00	0.00	0.00	0.00	BHL 500°FNL, 2160

Database:	Landmark	Local Co-ordinate Reference:	Well Waste Management 2Q-221
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4910.0ft (RKB - 15')
Project:	SEC.2-T2N-R64W	MD Reference:	WELL @ 4910.0ft (RKB - 15')
Site:	Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W	North Reference:	True
Well:	Waste Management 2Q-221	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (2-06-13)		

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
KOP #1									
440.0	0.80	256.91	440.0	-0.1	-0.3	0.0	2.00	2.00	0.00
480.0	1.60	256.91	480.0	-0.3	-1.1	-0.1	2.00	2.00	0.00
520.0	2.40	256.91	520.0	-0.6	-2.4	-0.1	2.00	2.00	0.00
560.0	3.20	256.91	559.9	-1.0	-4.4	-0.2	2.00	2.00	0.00
600.0	4.00	256.91	599.8	-1.6	-6.8	-0.3	2.00	2.00	0.00
640.0	4.80	256.91	639.7	-2.3	-9.8	-0.5	2.00	2.00	0.00
680.0	5.60	256.91	679.6	-3.1	-13.3	-0.6	2.00	2.00	0.00
720.0	6.40	256.91	719.3	-4.0	-17.4	-0.8	2.00	2.00	0.00
760.0	7.20	256.91	759.1	-5.1	-22.0	-1.0	2.00	2.00	0.00
800.0	8.00	256.91	798.7	-6.3	-27.2	-1.3	2.00	2.00	0.00
837.6	8.75	256.91	835.9	-7.6	-32.5	-1.5	2.00	2.00	0.00
840.0	8.75	256.91	838.3	-7.6	-32.8	-1.5	0.00	0.00	0.00
880.0	8.75	256.91	877.8	-9.0	-38.8	-1.8	0.00	0.00	0.00
920.0	8.75	256.91	917.3	-10.4	-44.7	-2.1	0.00	0.00	0.00
960.0	8.75	256.91	956.9	-11.8	-50.6	-2.3	0.00	0.00	0.00
1,000.0	8.75	256.91	996.4	-13.2	-56.6	-2.6	0.00	0.00	0.00
1,040.0	8.75	256.91	1,035.9	-14.5	-62.5	-2.9	0.00	0.00	0.00
1,080.0	8.75	256.91	1,075.5	-15.9	-68.4	-3.2	0.00	0.00	0.00
1,120.0	8.75	256.91	1,115.0	-17.3	-74.3	-3.4	0.00	0.00	0.00
1,160.0	8.75	256.91	1,154.5	-18.7	-80.3	-3.7	0.00	0.00	0.00
1,200.0	8.75	256.91	1,194.1	-20.0	-86.2	-4.0	0.00	0.00	0.00
1,240.0	8.75	256.91	1,233.6	-21.4	-92.1	-4.3	0.00	0.00	0.00
1,280.0	8.75	256.91	1,273.1	-22.8	-98.1	-4.5	0.00	0.00	0.00
1,320.0	8.75	256.91	1,312.7	-24.2	-104.0	-4.8	0.00	0.00	0.00
1,360.0	8.75	256.91	1,352.2	-25.6	-109.9	-5.1	0.00	0.00	0.00
1,400.0	8.75	256.91	1,391.8	-26.9	-115.8	-5.3	0.00	0.00	0.00
1,440.0	8.75	256.91	1,431.3	-28.3	-121.8	-5.6	0.00	0.00	0.00
1,480.0	8.75	256.91	1,470.8	-29.7	-127.7	-5.9	0.00	0.00	0.00
1,520.0	8.75	256.91	1,510.4	-31.1	-133.6	-6.2	0.00	0.00	0.00
1,560.0	8.75	256.91	1,549.9	-32.5	-139.6	-6.4	0.00	0.00	0.00
1,600.0	8.75	256.91	1,589.4	-33.8	-145.5	-6.7	0.00	0.00	0.00
1,640.0	8.75	256.91	1,629.0	-35.2	-151.4	-7.0	0.00	0.00	0.00
1,680.0	8.75	256.91	1,668.5	-36.6	-157.3	-7.3	0.00	0.00	0.00
1,720.0	8.75	256.91	1,708.0	-38.0	-163.3	-7.5	0.00	0.00	0.00
1,760.0	8.75	256.91	1,747.6	-39.3	-169.2	-7.8	0.00	0.00	0.00
1,800.0	8.75	256.91	1,787.1	-40.7	-175.1	-8.1	0.00	0.00	0.00
1,840.0	8.75	256.91	1,826.6	-42.1	-181.1	-8.4	0.00	0.00	0.00
1,880.0	8.75	256.91	1,866.2	-43.5	-187.0	-8.6	0.00	0.00	0.00
1,920.0	8.75	256.91	1,905.7	-44.9	-192.9	-8.9	0.00	0.00	0.00
1,960.0	8.75	256.91	1,945.2	-46.2	-198.8	-9.2	0.00	0.00	0.00

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Project:	SEC.2-T2N-R64W	MD Reference:	WELL @ 4910.0ft (RKB - 15')
Site:	Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W	North Reference:	True
Well:	Waste Management 2Q-221	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (2-06-13)		

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)
2,000.0	8.75	256.91	1,984.8	-47.6	-204.8	-9.4	0.00	0.00	0.00
2,040.0	8.75	256.91	2,024.3	-49.0	-210.7	-9.7	0.00	0.00	0.00
2,080.0	8.75	256.91	2,063.8	-50.4	-216.6	-10.0	0.00	0.00	0.00
2,120.0	8.75	256.91	2,103.4	-51.8	-222.6	-10.3	0.00	0.00	0.00
2,160.0	8.75	256.91	2,142.9	-53.1	-228.5	-10.5	0.00	0.00	0.00
2,200.0	8.75	256.91	2,182.4	-54.5	-234.4	-10.8	0.00	0.00	0.00
2,240.0	8.75	256.91	2,222.0	-55.9	-240.3	-11.1	0.00	0.00	0.00
2,280.0	8.75	256.91	2,261.5	-57.3	-246.3	-11.4	0.00	0.00	0.00
2,320.0	8.75	256.91	2,301.0	-58.7	-252.2	-11.6	0.00	0.00	0.00
2,360.0	8.75	256.91	2,340.6	-60.0	-258.1	-11.9	0.00	0.00	0.00
2,400.0	8.75	256.91	2,380.1	-61.4	-264.1	-12.2	0.00	0.00	0.00
2,440.0	8.75	256.91	2,419.6	-62.8	-270.0	-12.5	0.00	0.00	0.00
2,480.0	8.75	256.91	2,459.2	-64.2	-275.9	-12.7	0.00	0.00	0.00
2,520.0	8.75	256.91	2,498.7	-65.5	-281.8	-13.0	0.00	0.00	0.00
2,560.0	8.75	256.91	2,538.2	-66.9	-287.8	-13.3	0.00	0.00	0.00
2,600.0	8.75	256.91	2,577.8	-68.3	-293.7	-13.6	0.00	0.00	0.00
2,640.0	8.75	256.91	2,617.3	-69.7	-299.6	-13.8	0.00	0.00	0.00
2,680.0	8.75	256.91	2,656.8	-71.1	-305.6	-14.1	0.00	0.00	0.00
2,720.0	8.75	256.91	2,696.4	-72.4	-311.5	-14.4	0.00	0.00	0.00
2,760.0	8.75	256.91	2,735.9	-73.8	-317.4	-14.6	0.00	0.00	0.00
2,800.0	8.75	256.91	2,775.4	-75.2	-323.3	-14.9	0.00	0.00	0.00
2,840.0	8.75	256.91	2,815.0	-76.6	-329.3	-15.2	0.00	0.00	0.00
2,880.0	8.75	256.91	2,854.5	-78.0	-335.2	-15.5	0.00	0.00	0.00
2,920.0	8.75	256.91	2,894.1	-79.3	-341.1	-15.7	0.00	0.00	0.00
2,960.0	8.75	256.91	2,933.6	-80.7	-347.0	-16.0	0.00	0.00	0.00
3,000.0	8.75	256.91	2,973.1	-82.1	-353.0	-16.3	0.00	0.00	0.00
3,040.0	8.75	256.91	3,012.7	-83.5	-358.9	-16.6	0.00	0.00	0.00
3,080.0	8.75	256.91	3,052.2	-84.8	-364.8	-16.8	0.00	0.00	0.00
3,120.0	8.75	256.91	3,091.7	-86.2	-370.8	-17.1	0.00	0.00	0.00
3,160.0	8.75	256.91	3,131.3	-87.6	-376.7	-17.4	0.00	0.00	0.00
3,200.0	8.75	256.91	3,170.8	-89.0	-382.6	-17.7	0.00	0.00	0.00
3,240.0	8.75	256.91	3,210.3	-90.4	-388.5	-17.9	0.00	0.00	0.00
3,280.0	8.75	256.91	3,249.9	-91.7	-394.5	-18.2	0.00	0.00	0.00
3,320.0	8.75	256.91	3,289.4	-93.1	-400.4	-18.5	0.00	0.00	0.00
3,360.0	8.75	256.91	3,328.9	-94.5	-406.3	-18.7	0.00	0.00	0.00
3,400.0	8.75	256.91	3,368.5	-95.9	-412.3	-19.0	0.00	0.00	0.00
3,440.0	8.75	256.91	3,408.0	-97.3	-418.2	-19.3	0.00	0.00	0.00
3,480.0	8.75	256.91	3,447.5	-98.6	-424.1	-19.6	0.00	0.00	0.00
3,520.0	8.75	256.91	3,487.1	-100.0	-430.0	-19.8	0.00	0.00	0.00
3,560.0	8.75	256.91	3,526.6	-101.4	-436.0	-20.1	0.00	0.00	0.00
3,600.0	8.75	256.91	3,566.1	-102.8	-441.9	-20.4	0.00	0.00	0.00
3,640.0	8.75	256.91	3,605.7	-104.1	-447.8	-20.7	0.00	0.00	0.00
3,680.0	8.75	256.91	3,645.2	-105.5	-453.8	-20.9	0.00	0.00	0.00
3,720.0	8.75	256.91	3,684.7	-106.9	-459.7	-21.2	0.00	0.00	0.00
3,760.0	8.75	256.91	3,724.3	-108.3	-465.6	-21.5	0.00	0.00	0.00
3,800.0	8.75	256.91	3,763.8	-109.7	-471.5	-21.8	0.00	0.00	0.00
3,840.0	8.75	256.91	3,803.3	-111.0	-477.5	-22.0	0.00	0.00	0.00
3,880.0	8.75	256.91	3,842.9	-112.4	-483.4	-22.3	0.00	0.00	0.00
3,920.0	8.75	256.91	3,882.4	-113.8	-489.3	-22.6	0.00	0.00	0.00
3,960.0	8.75	256.91	3,921.9	-115.2	-495.3	-22.9	0.00	0.00	0.00
4,000.0	8.75	256.91	3,961.5	-116.6	-501.2	-23.1	0.00	0.00	0.00
4,040.0	8.75	256.91	4,001.0	-117.9	-507.1	-23.4	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Waste Management 2Q-221
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4910.0ft (RKB - 15')
Project:	SEC.2-T2N-R64W	MD Reference:	WELL @ 4910.0ft (RKB - 15')
Site:	Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W	North Reference:	True
Well:	Waste Management 2Q-221	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (2-06-13)		

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)
4,080.0	8.75	256.91	4,040.5	-119.3	-513.0	-23.7	0.00	0.00	0.00
4,120.0	8.75	256.91	4,080.1	-120.7	-519.0	-23.9	0.00	0.00	0.00
4,160.0	8.75	256.91	4,119.6	-122.1	-524.9	-24.2	0.00	0.00	0.00
4,200.0	8.75	256.91	4,159.1	-123.4	-530.8	-24.5	0.00	0.00	0.00
4,240.0	8.75	256.91	4,198.7	-124.8	-536.8	-24.8	0.00	0.00	0.00
4,280.0	8.75	256.91	4,238.2	-126.2	-542.7	-25.0	0.00	0.00	0.00
4,320.0	8.75	256.91	4,277.7	-127.6	-548.6	-25.3	0.00	0.00	0.00
4,360.0	8.75	256.91	4,317.3	-129.0	-554.5	-25.6	0.00	0.00	0.00
4,400.0	8.75	256.91	4,356.8	-130.3	-560.5	-25.9	0.00	0.00	0.00
4,440.0	8.75	256.91	4,396.4	-131.7	-566.4	-26.1	0.00	0.00	0.00
4,480.0	8.75	256.91	4,435.9	-133.1	-572.3	-26.4	0.00	0.00	0.00
4,520.0	8.75	256.91	4,475.4	-134.5	-578.3	-26.7	0.00	0.00	0.00
4,560.0	8.75	256.91	4,515.0	-135.9	-584.2	-27.0	0.00	0.00	0.00
4,600.0	8.75	256.91	4,554.5	-137.2	-590.1	-27.2	0.00	0.00	0.00
4,640.0	8.75	256.91	4,594.0	-138.6	-596.0	-27.5	0.00	0.00	0.00
4,680.0	8.75	256.91	4,633.6	-140.0	-602.0	-27.8	0.00	0.00	0.00
4,720.0	8.75	256.91	4,673.1	-141.4	-607.9	-28.0	0.00	0.00	0.00
4,760.0	8.75	256.91	4,712.6	-142.8	-613.8	-28.3	0.00	0.00	0.00
4,800.0	8.75	256.91	4,752.2	-144.1	-619.8	-28.6	0.00	0.00	0.00
4,840.0	8.75	256.91	4,791.7	-145.5	-625.7	-28.9	0.00	0.00	0.00
4,880.0	8.75	256.91	4,831.2	-146.9	-631.6	-29.1	0.00	0.00	0.00
4,920.0	8.75	256.91	4,870.8	-148.3	-637.5	-29.4	0.00	0.00	0.00
4,960.0	8.75	256.91	4,910.3	-149.6	-643.5	-29.7	0.00	0.00	0.00
5,000.0	8.75	256.91	4,949.8	-151.0	-649.4	-30.0	0.00	0.00	0.00
5,040.0	8.75	256.91	4,989.4	-152.4	-655.3	-30.2	0.00	0.00	0.00
5,080.0	8.75	256.91	5,028.9	-153.8	-661.3	-30.5	0.00	0.00	0.00
5,120.0	8.75	256.91	5,068.4	-155.2	-667.2	-30.8	0.00	0.00	0.00
5,160.0	8.75	256.91	5,108.0	-156.5	-673.1	-31.1	0.00	0.00	0.00
5,200.0	8.75	256.91	5,147.5	-157.9	-679.0	-31.3	0.00	0.00	0.00
5,240.0	8.75	256.91	5,187.0	-159.3	-685.0	-31.6	0.00	0.00	0.00
5,280.0	8.75	256.91	5,226.6	-160.7	-690.9	-31.9	0.00	0.00	0.00
5,320.0	8.75	256.91	5,266.1	-162.1	-696.8	-32.2	0.00	0.00	0.00
5,360.0	8.75	256.91	5,305.6	-163.4	-702.8	-32.4	0.00	0.00	0.00
5,400.0	8.75	256.91	5,345.2	-164.8	-708.7	-32.7	0.00	0.00	0.00
5,440.0	8.75	256.91	5,384.7	-166.2	-714.6	-33.0	0.00	0.00	0.00
5,480.0	8.75	256.91	5,424.2	-167.6	-720.5	-33.2	0.00	0.00	0.00
5,520.0	8.75	256.91	5,463.8	-168.9	-726.5	-33.5	0.00	0.00	0.00
5,560.0	8.75	256.91	5,503.3	-170.3	-732.4	-33.8	0.00	0.00	0.00
5,600.0	8.75	256.91	5,542.8	-171.7	-738.3	-34.1	0.00	0.00	0.00
5,621.5	8.75	256.91	5,564.1	-172.4	-741.5	-34.2	0.00	0.00	0.00
5,640.0	8.38	256.91	5,582.4	-173.1	-744.2	-34.3	2.00	-2.00	0.00
5,680.0	7.58	256.91	5,622.0	-174.3	-749.6	-34.6	2.00	-2.00	0.00
5,720.0	6.78	256.91	5,661.7	-175.5	-754.5	-34.8	2.00	-2.00	0.00
5,760.0	5.98	256.91	5,701.4	-176.5	-758.8	-35.0	2.00	-2.00	0.00
5,800.0	5.18	256.91	5,741.2	-177.3	-762.6	-35.2	2.00	-2.00	0.00
5,840.0	4.38	256.91	5,781.1	-178.1	-765.8	-35.3	2.00	-2.00	0.00
5,880.0	3.58	256.91	5,821.0	-178.7	-768.5	-35.5	2.00	-2.00	0.00
5,920.0	2.78	256.91	5,860.9	-179.2	-770.7	-35.6	2.00	-2.00	0.00
5,960.0	1.98	256.91	5,900.9	-179.6	-772.3	-35.6	2.00	-2.00	0.00
6,000.0	1.18	256.91	5,940.9	-179.9	-773.4	-35.7	2.00	-2.00	0.00
6,040.0	0.38	256.91	5,980.9	-180.0	-773.9	-35.7	2.00	-2.00	0.00
6,059.1	0.00	0.00	6,000.0	-180.0	-774.0	-35.7	2.00	-2.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Waste Management 2Q-221
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4910.0ft (RKB - 15')
Project:	SEC.2-T2N-R64W	MD Reference:	WELL @ 4910.0ft (RKB - 15')
Site:	Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W	North Reference:	True
Well:	Waste Management 2Q-221	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (2-06-13)		

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)
6,080.0	0.00	0.00	6,020.9	-180.0	-774.0	-35.7	0.00	0.00	0.00
6,120.0	0.00	0.00	6,060.9	-180.0	-774.0	-35.7	0.00	0.00	0.00
6,160.0	0.00	0.00	6,100.9	-180.0	-774.0	-35.7	0.00	0.00	0.00
6,180.4	0.00	0.00	6,121.3	-180.0	-774.0	-35.7	0.00	0.00	0.00
KOP #2									
6,200.0	1.47	359.15	6,140.9	-179.7	-774.0	-35.5	7.50	7.50	0.00
6,240.0	4.47	359.15	6,180.8	-177.7	-774.0	-33.4	7.50	7.50	0.00
6,280.0	7.47	359.15	6,220.6	-173.5	-774.1	-29.3	7.50	7.50	0.00
6,320.0	10.47	359.15	6,260.1	-167.3	-774.2	-23.2	7.50	7.50	0.00
6,360.0	13.47	359.15	6,299.2	-159.0	-774.3	-15.0	7.50	7.50	0.00
6,400.0	16.47	359.15	6,337.9	-148.7	-774.5	-4.8	7.50	7.50	0.00
6,440.0	19.47	359.15	6,375.9	-136.3	-774.6	7.3	7.50	7.50	0.00
6,480.0	22.47	359.15	6,413.3	-122.0	-774.9	21.5	7.50	7.50	0.00
6,520.0	25.47	359.15	6,449.8	-105.8	-775.1	37.5	7.50	7.50	0.00
6,560.0	28.47	359.15	6,485.5	-87.6	-775.4	55.4	7.50	7.50	0.00
6,600.0	31.47	359.15	6,520.1	-67.7	-775.7	75.1	7.50	7.50	0.00
6,640.0	34.47	359.15	6,553.7	-45.9	-776.0	96.5	7.50	7.50	0.00
6,680.0	37.47	359.15	6,586.0	-22.4	-776.3	119.7	7.50	7.50	0.00
6,720.0	40.47	359.15	6,617.1	2.8	-776.7	144.5	7.50	7.50	0.00
6,760.0	43.47	359.15	6,646.9	29.5	-777.1	170.8	7.50	7.50	0.00
6,800.0	46.47	359.15	6,675.2	57.8	-777.5	198.7	7.50	7.50	0.00
6,840.0	49.47	359.15	6,701.9	87.5	-778.0	228.0	7.50	7.50	0.00
6,880.0	52.47	359.15	6,727.1	118.5	-778.4	258.6	7.50	7.50	0.00
6,920.0	55.47	359.15	6,750.7	150.9	-778.9	290.5	7.50	7.50	0.00
6,960.0	58.47	359.15	6,772.5	184.4	-779.4	323.5	7.50	7.50	0.00
7,000.0	61.47	359.15	6,792.5	219.0	-779.9	357.7	7.50	7.50	0.00
7,040.0	64.47	359.15	6,810.7	254.6	-780.4	392.8	7.50	7.50	0.00
7,080.0	67.47	359.15	6,826.9	291.2	-781.0	428.8	7.50	7.50	0.00
7,120.0	70.47	359.15	6,841.3	328.5	-781.5	465.6	7.50	7.50	0.00
7,160.0	73.47	359.15	6,853.7	366.5	-782.1	503.1	7.50	7.50	0.00
7,200.0	76.47	359.15	6,864.0	405.1	-782.7	541.2	7.50	7.50	0.00
7,240.0	79.47	359.15	6,872.4	444.3	-783.2	579.7	7.50	7.50	0.00
7,280.0	82.47	359.15	6,878.7	483.8	-783.8	618.7	7.50	7.50	0.00
7,320.0	85.47	359.15	6,882.9	523.5	-784.4	657.9	7.50	7.50	0.00
7,360.0	88.47	359.15	6,885.0	563.5	-785.0	697.3	7.50	7.50	0.00
7,387.2	90.51	359.15	6,885.2	590.7	-785.4	724.1	7.50	7.50	0.00
End of Build - 7"									
7,400.0	90.51	359.15	6,885.1	603.4	-785.6	736.7	0.01	0.01	0.00
7,440.0	90.51	359.15	6,884.7	643.4	-786.2	776.1	0.00	0.00	0.00
7,480.0	90.51	359.15	6,884.4	683.4	-786.8	815.6	0.00	0.00	0.00
7,520.0	90.51	359.15	6,884.0	723.4	-787.4	855.0	0.00	0.00	0.00
7,560.0	90.51	359.15	6,883.7	763.4	-788.0	894.4	0.00	0.00	0.00
7,600.0	90.51	359.15	6,883.3	803.4	-788.6	933.8	0.00	0.00	0.00
7,640.0	90.51	359.15	6,883.0	843.4	-789.1	973.3	0.00	0.00	0.00
7,680.0	90.51	359.15	6,882.6	883.4	-789.7	1,012.7	0.00	0.00	0.00
7,720.0	90.51	359.15	6,882.3	923.4	-790.3	1,052.1	0.00	0.00	0.00
7,760.0	90.51	359.15	6,881.9	963.4	-790.9	1,091.6	0.00	0.00	0.00
7,800.0	90.51	359.15	6,881.5	1,003.4	-791.5	1,131.0	0.00	0.00	0.00
7,840.0	90.51	359.15	6,881.2	1,043.4	-792.1	1,170.4	0.00	0.00	0.00
7,880.0	90.51	359.15	6,880.8	1,083.4	-792.7	1,209.9	0.00	0.00	0.00
7,920.0	90.51	359.15	6,880.5	1,123.4	-793.3	1,249.3	0.00	0.00	0.00
7,960.0	90.51	359.15	6,880.1	1,163.4	-793.9	1,288.7	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Waste Management 2Q-221
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4910.0ft (RKB - 15')
Project:	SEC.2-T2N-R64W	MD Reference:	WELL @ 4910.0ft (RKB - 15')
Site:	Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W	North Reference:	True
Well:	Waste Management 2Q-221	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (2-06-13)		

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)
8,000.0	90.51	359.15	6,879.8	1,203.4	-794.5	1,328.1	0.00	0.00	0.00
8,040.0	90.51	359.15	6,879.4	1,243.4	-795.1	1,367.6	0.00	0.00	0.00
8,080.0	90.51	359.15	6,879.0	1,283.3	-795.7	1,407.0	0.00	0.00	0.00
8,120.0	90.51	359.15	6,878.7	1,323.3	-796.2	1,446.4	0.00	0.00	0.00
8,160.0	90.51	359.15	6,878.3	1,363.3	-796.8	1,485.9	0.00	0.00	0.00
8,200.0	90.51	359.15	6,878.0	1,403.3	-797.4	1,525.3	0.00	0.00	0.00
8,240.0	90.51	359.15	6,877.6	1,443.3	-798.0	1,564.7	0.00	0.00	0.00
8,280.0	90.51	359.15	6,877.3	1,483.3	-798.6	1,604.2	0.00	0.00	0.00
8,320.0	90.51	359.15	6,876.9	1,523.3	-799.2	1,643.6	0.00	0.00	0.00
8,360.0	90.51	359.15	6,876.6	1,563.3	-799.8	1,683.0	0.00	0.00	0.00
8,400.0	90.51	359.15	6,876.2	1,603.3	-800.4	1,722.5	0.00	0.00	0.00
8,440.0	90.51	359.15	6,875.8	1,643.3	-801.0	1,761.9	0.00	0.00	0.00
8,480.0	90.51	359.15	6,875.5	1,683.3	-801.6	1,801.3	0.00	0.00	0.00
8,520.0	90.51	359.15	6,875.1	1,723.3	-802.2	1,840.7	0.00	0.00	0.00
8,560.0	90.51	359.15	6,874.8	1,763.3	-802.8	1,880.2	0.00	0.00	0.00
8,600.0	90.51	359.15	6,874.4	1,803.3	-803.4	1,919.6	0.00	0.00	0.00
8,640.0	90.51	359.15	6,874.1	1,843.3	-803.9	1,959.0	0.00	0.00	0.00
8,680.0	90.51	359.15	6,873.7	1,883.3	-804.5	1,998.5	0.00	0.00	0.00
8,720.0	90.51	359.15	6,873.4	1,923.3	-805.1	2,037.9	0.00	0.00	0.00
8,760.0	90.51	359.15	6,873.0	1,963.2	-805.7	2,077.3	0.00	0.00	0.00
8,800.0	90.51	359.15	6,872.6	2,003.2	-806.3	2,116.8	0.00	0.00	0.00
8,840.0	90.51	359.15	6,872.3	2,043.2	-806.9	2,156.2	0.00	0.00	0.00
8,880.0	90.51	359.15	6,871.9	2,083.2	-807.5	2,195.6	0.00	0.00	0.00
8,920.0	90.51	359.15	6,871.6	2,123.2	-808.1	2,235.0	0.00	0.00	0.00
8,960.0	90.51	359.15	6,871.2	2,163.2	-808.7	2,274.5	0.00	0.00	0.00
9,000.0	90.51	359.15	6,870.9	2,203.2	-809.3	2,313.9	0.00	0.00	0.00
9,040.0	90.51	359.15	6,870.5	2,243.2	-809.9	2,353.3	0.00	0.00	0.00
9,080.0	90.51	359.15	6,870.1	2,283.2	-810.5	2,392.8	0.00	0.00	0.00
9,120.0	90.51	359.15	6,869.8	2,323.2	-811.0	2,432.2	0.00	0.00	0.00
9,160.0	90.51	359.15	6,869.4	2,363.2	-811.6	2,471.6	0.00	0.00	0.00
9,200.0	90.51	359.15	6,869.1	2,403.2	-812.2	2,511.1	0.00	0.00	0.00
9,240.0	90.51	359.15	6,868.7	2,443.2	-812.8	2,550.5	0.00	0.00	0.00
9,280.0	90.51	359.15	6,868.4	2,483.2	-813.4	2,589.9	0.00	0.00	0.00
9,320.0	90.51	359.15	6,868.0	2,523.2	-814.0	2,629.3	0.00	0.00	0.00
9,360.0	90.51	359.15	6,867.7	2,563.2	-814.6	2,668.8	0.00	0.00	0.00
9,400.0	90.51	359.15	6,867.3	2,603.2	-815.2	2,708.2	0.00	0.00	0.00
9,440.0	90.51	359.15	6,866.9	2,643.1	-815.8	2,747.6	0.00	0.00	0.00
9,480.0	90.51	359.15	6,866.6	2,683.1	-816.4	2,787.1	0.00	0.00	0.00
9,520.0	90.51	359.15	6,866.2	2,723.1	-817.0	2,826.5	0.00	0.00	0.00
9,560.0	90.51	359.15	6,865.9	2,763.1	-817.6	2,865.9	0.00	0.00	0.00
9,600.0	90.51	359.15	6,865.5	2,803.1	-818.2	2,905.4	0.00	0.00	0.00
9,640.0	90.51	359.15	6,865.2	2,843.1	-818.7	2,944.8	0.00	0.00	0.00
9,680.0	90.51	359.15	6,864.8	2,883.1	-819.3	2,984.2	0.00	0.00	0.00
9,720.0	90.51	359.15	6,864.5	2,923.1	-819.9	3,023.7	0.00	0.00	0.00
9,760.0	90.51	359.15	6,864.1	2,963.1	-820.5	3,063.1	0.00	0.00	0.00
9,800.0	90.51	359.15	6,863.7	3,003.1	-821.1	3,102.5	0.00	0.00	0.00
9,840.0	90.51	359.15	6,863.4	3,043.1	-821.7	3,141.9	0.00	0.00	0.00
9,880.0	90.51	359.15	6,863.0	3,083.1	-822.3	3,181.4	0.00	0.00	0.00
9,920.0	90.51	359.15	6,862.7	3,123.1	-822.9	3,220.8	0.00	0.00	0.00
9,960.0	90.51	359.15	6,862.3	3,163.1	-823.5	3,260.2	0.00	0.00	0.00
10,000.0	90.51	359.15	6,862.0	3,203.1	-824.1	3,299.7	0.00	0.00	0.00
10,040.0	90.51	359.15	6,861.6	3,243.1	-824.7	3,339.1	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
	6,180.4	6,121.3	-180.0	-774.0	KOP #2
	7,387.2	6,885.2	590.7	-785.4	End of Build



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.2-T2N-R64W

Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W

Waste Management 2Q-221

Wellbore #1

Plan #1 (2-06-13)

Anticollision Report

07 February, 2013

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Waste Management 2Q-221
Project:	SEC.2-T2N-R64W	TVD Reference:	WELL @ 4910.0ft (RKB - 15')
Reference Site:	Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W	MD Reference:	WELL @ 4910.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Waste Management 2Q-221	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 (2-06-13)	Offset TVD Reference:	Offset Datum

Offset Design		Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W - Waste Management 2Q-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 +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
2,000.0	1,984.8	1,987.2	1,956.3	5.9	7.5	11.26	-51.3	-338.5	136.7	127.3	9.48	14.421		
2,100.0	2,083.6	2,087.0	2,053.9	6.3	7.9	11.33	-54.8	-359.1	142.7	132.7	10.01	14.257		
2,200.0	2,182.4	2,186.8	2,151.5	6.6	8.4	11.39	-58.2	-379.8	148.7	138.2	10.54	14.109		
2,300.0	2,281.3	2,286.6	2,249.1	7.0	8.9	11.44	-61.7	-400.5	154.7	143.6	11.07	13.975		
2,400.0	2,380.1	2,386.4	2,346.7	7.4	9.3	11.49	-65.1	-421.2	160.7	149.1	11.60	13.852		
2,500.0	2,478.9	2,486.3	2,444.3	7.7	9.8	11.54	-68.6	-441.9	166.7	154.6	12.13	13.739		
2,600.0	2,577.8	2,586.1	2,541.9	8.1	10.3	11.58	-72.0	-462.6	172.7	160.0	12.66	13.635		
2,700.0	2,676.6	2,685.9	2,639.5	8.5	10.7	11.62	-75.5	-483.2	178.7	165.5	13.20	13.539		
2,800.0	2,775.4	2,785.7	2,737.0	8.9	11.2	11.66	-78.9	-503.9	184.7	170.9	13.73	13.451		
2,900.0	2,874.3	2,885.5	2,834.6	9.2	11.7	11.70	-82.4	-524.6	190.7	176.4	14.26	13.368		
3,000.0	2,973.1	2,985.4	2,932.2	9.6	12.1	11.73	-85.8	-545.3	196.6	181.8	14.79	13.292		
3,100.0	3,072.0	3,085.2	3,029.8	10.0	12.6	11.76	-89.3	-566.0	202.6	187.3	15.33	13.220		
3,200.0	3,170.8	3,185.0	3,127.4	10.3	13.1	11.79	-92.7	-586.7	208.6	192.8	15.86	13.153		
3,300.0	3,269.6	3,284.8	3,225.0	10.7	13.5	11.82	-96.2	-607.3	214.6	198.2	16.39	13.091		
3,400.0	3,368.5	3,384.6	3,322.6	11.1	14.0	11.84	-99.6	-628.0	220.6	203.7	16.93	13.032		
3,500.0	3,467.3	3,484.5	3,420.2	11.4	14.5	11.87	-103.1	-648.7	226.6	209.1	17.46	12.976		
3,600.0	3,566.1	3,584.3	3,517.8	11.8	14.9	11.89	-106.5	-669.4	232.6	214.6	18.00	12.924		
3,700.0	3,665.0	3,684.1	3,615.4	12.2	15.4	11.92	-110.0	-690.1	238.6	220.0	18.53	12.875		
3,800.0	3,763.8	3,783.9	3,713.0	12.5	15.9	11.94	-113.4	-710.7	244.6	225.5	19.07	12.828		
3,900.0	3,862.6	3,883.7	3,810.6	12.9	16.3	11.96	-116.9	-731.4	250.6	231.0	19.60	12.784		
4,000.0	3,961.5	3,983.6	3,908.2	13.3	16.8	11.98	-120.3	-752.1	256.6	236.4	20.13	12.742		
4,100.0	4,060.3	4,083.4	4,005.8	13.7	17.3	12.00	-123.8	-772.8	262.5	241.9	20.67	12.702		
4,200.0	4,159.1	4,183.2	4,103.4	14.0	17.7	12.01	-127.2	-793.5	268.5	247.3	21.20	12.664		
4,300.0	4,258.0	4,283.0	4,200.9	14.4	18.2	12.03	-130.7	-814.2	274.5	252.8	21.74	12.628		
4,400.0	4,356.8	4,382.9	4,298.5	14.8	18.7	12.05	-134.1	-834.8	280.5	258.2	22.27	12.594		
4,500.0	4,455.7	4,482.7	4,396.1	15.1	19.1	12.06	-137.6	-855.5	286.5	263.7	22.81	12.561		
4,600.0	4,554.5	4,582.5	4,493.7	15.5	19.6	12.08	-141.0	-876.2	292.5	269.2	23.34	12.530		
4,700.0	4,653.3	4,682.3	4,591.3	15.9	20.1	12.09	-144.5	-896.9	298.5	274.6	23.88	12.500		
4,800.0	4,752.2	4,782.1	4,688.9	16.2	20.5	12.11	-147.9	-917.6	304.5	280.1	24.41	12.471		
4,900.0	4,851.0	4,882.0	4,786.5	16.6	21.0	12.12	-151.4	-938.3	310.5	285.5	24.95	12.444		
5,000.0	4,949.8	4,981.8	4,884.1	17.0	21.5	12.13	-154.9	-958.9	316.5	291.0	25.49	12.417		
5,100.0	5,048.7	5,081.6	4,981.7	17.4	21.9	12.14	-158.3	-979.6	322.5	296.4	26.02	12.392		
5,200.0	5,147.5	5,181.4	5,079.3	17.7	22.4	12.16	-161.8	-1,000.3	328.4	301.9	26.56	12.368		
5,300.0	5,246.3	5,281.2	5,176.9	18.1	22.9	12.17	-165.2	-1,021.0	334.4	307.3	27.09	12.345		
5,400.0	5,345.2	5,381.1	5,274.5	18.5	23.3	12.18	-168.7	-1,041.7	340.4	312.8	27.63	12.322		
5,500.0	5,444.0	5,491.1	5,382.3	18.8	23.8	12.22	-172.2	-1,063.2	345.3	317.1	28.17	12.259		
5,600.0	5,542.8	5,604.7	5,494.4	19.2	24.1	12.37	-175.3	-1,081.3	346.4	317.7	28.68	12.078		
5,700.0	5,641.8	5,718.2	5,607.0	19.5	24.4	12.59	-177.5	-1,094.9	344.6	315.5	29.13	11.829		
5,800.0	5,741.2	5,831.5	5,720.0	19.7	24.6	12.78	-179.1	-1,104.2	342.2	312.7	29.49	11.604		
5,900.0	5,841.0	5,944.8	5,833.2	19.9	24.7	12.95	-179.9	-1,109.0	339.4	309.6	29.79	11.391		
6,000.0	5,940.9	6,052.5	5,940.9	20.1	24.9	13.07	-180.0	-1,109.7	336.3	306.3	30.04	11.197		
6,084.0	6,024.9	6,136.5	6,024.9	20.2	24.9	13.11	-180.0	-1,109.7	335.4	305.1	30.26	11.081		
6,100.0	6,040.9	6,152.4	6,040.8	20.2	25.0	-89.97	-179.8	-1,109.7	335.7	305.3	30.43	11.034		
6,200.0	6,140.9	6,250.9	6,138.8	20.3	25.1	-87.69	-171.2	-1,109.9	336.0	305.2	30.82	10.902		
6,300.0	6,240.4	6,347.6	6,233.2	20.5	25.1	-85.58	-150.5	-1,110.2	336.7	305.3	31.39	10.726		
6,400.0	6,337.9	6,442.8	6,322.8	20.5	25.2	-83.55	-118.5	-1,110.7	337.9	306.0	31.86	10.603		
6,500.0	6,431.7	6,536.7	6,406.6	20.6	25.2	-81.64	-76.2	-1,111.3	339.4	307.1	32.21	10.534		
6,600.0	6,520.1	6,629.4	6,483.6	20.7	25.3	-79.87	-24.7	-1,112.0	341.1	308.6	32.45	10.510		
6,700.0	6,601.7	6,721.1	6,552.9	20.7	25.3	-78.27	35.2	-1,112.9	342.9	310.3	32.63	10.508		
6,800.0	6,675.2	6,811.8	6,614.0	20.8	25.4	-76.86	102.2	-1,113.9	344.8	311.9	32.87	10.490		
6,900.0	6,739.1	6,900.0	6,665.3	20.9	25.5	-75.67	173.8	-1,115.0	346.5	313.3	33.24	10.425		

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 2Q-221
Project:	SEC.2-T2N-R64W	TVD Reference:	WELL @ 4910.0ft (RKB - 15')
Reference Site:	Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W	MD Reference:	WELL @ 4910.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Waste Management 2Q-221	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 (2-06-13)	Offset TVD Reference:	Offset Datum

Offset Design Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W - Waste Management 2Q-401 - Wellbore #1 - Plan														Offset Site Error:	0.0ft
Survey Program: 0-MWD														Offset Well Error:	0.0ft
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		
7,000.0	6,792.5	6,991.1	6,709.2	21.1	25.7	-74.66	253.6	-1,116.1	348.1	314.2	33.93	10.260			
7,100.0	6,834.4	7,079.9	6,742.4	21.4	25.9	-73.89	335.9	-1,117.3	349.4	314.4	35.02	9.978			
7,200.0	6,864.0	7,168.3	6,765.8	21.8	26.2	-73.35	421.1	-1,118.6	350.4	313.8	36.58	9.578			
7,300.0	6,881.0	7,256.5	6,779.1	22.5	26.7	-73.04	508.2	-1,119.9	350.9	312.3	38.62	9.087			
7,400.0	6,885.1	7,345.9	6,782.2	23.3	27.2	-72.96	597.5	-1,121.2	351.1	310.0	41.03	8.556			
7,500.0	6,884.2	7,445.9	6,781.3	24.3	28.0	-72.95	697.5	-1,122.7	351.1	307.7	43.41	8.087			
7,600.0	6,883.3	7,545.9	6,780.3	25.4	28.9	-72.94	797.5	-1,124.1	351.1	305.1	45.96	7.639			
7,700.0	6,882.4	7,645.9	6,779.4	26.6	29.9	-72.93	897.5	-1,125.6	351.1	302.4	48.65	7.216			
7,800.0	6,881.5	7,745.9	6,778.5	27.9	31.0	-72.92	997.5	-1,127.1	351.1	299.6	51.47	6.821			
7,900.0	6,880.7	7,845.9	6,777.5	29.3	32.2	-72.92	1,097.5	-1,128.5	351.1	296.7	54.39	6.455			
8,000.0	6,879.8	7,945.9	6,776.6	30.8	33.5	-72.91	1,197.4	-1,130.0	351.1	293.7	57.41	6.116			
8,100.0	6,878.9	8,045.9	6,775.6	32.3	34.8	-72.90	1,297.4	-1,131.5	351.1	290.6	60.50	5.804			
8,200.0	6,878.0	8,145.9	6,774.7	33.9	36.3	-72.89	1,397.4	-1,133.0	351.1	287.5	63.65	5.516			
8,300.0	6,877.1	8,245.9	6,773.7	35.5	37.7	-72.88	1,497.4	-1,134.4	351.1	284.3	66.87	5.251			
8,400.0	6,876.2	8,345.9	6,772.8	37.1	39.2	-72.87	1,597.4	-1,135.9	351.1	281.0	70.12	5.007			
8,500.0	6,875.3	8,445.9	6,771.9	38.7	40.8	-72.86	1,697.4	-1,137.4	351.1	277.7	73.42	4.782			
8,600.0	6,874.4	8,545.9	6,770.9	40.4	42.4	-72.86	1,797.4	-1,138.8	351.1	274.4	76.76	4.575			
8,700.0	6,873.5	8,645.9	6,770.0	42.1	44.0	-72.85	1,897.3	-1,140.3	351.2	271.0	80.13	4.382			
8,800.0	6,872.6	8,745.9	6,769.0	43.8	45.6	-72.84	1,997.3	-1,141.8	351.2	267.6	83.53	4.204			
8,900.0	6,871.8	8,845.9	6,768.1	45.6	47.3	-72.83	2,097.3	-1,143.3	351.2	264.2	86.95	4.039			
9,000.0	6,870.9	8,945.9	6,767.1	47.3	48.9	-72.82	2,197.3	-1,144.7	351.2	260.8	90.39	3.885			
9,100.0	6,870.0	9,045.9	6,766.2	49.1	50.6	-72.81	2,297.3	-1,146.2	351.2	257.3	93.85	3.742			
9,200.0	6,869.1	9,145.9	6,765.3	50.8	52.3	-72.80	2,397.3	-1,147.7	351.2	253.9	97.33	3.608			
9,300.0	6,868.2	9,245.9	6,764.3	52.6	54.1	-72.80	2,497.2	-1,149.1	351.2	250.4	100.82	3.483			
9,400.0	6,867.3	9,345.9	6,763.4	54.4	55.8	-72.79	2,597.2	-1,150.6	351.2	246.9	104.33	3.366			
9,500.0	6,866.4	9,445.9	6,762.4	56.2	57.6	-72.78	2,697.2	-1,152.1	351.2	243.4	107.85	3.257			
9,600.0	6,865.5	9,545.9	6,761.5	58.0	59.3	-72.77	2,797.2	-1,153.6	351.2	239.8	111.38	3.153			
9,700.0	6,864.6	9,645.9	6,760.5	59.8	61.1	-72.76	2,897.2	-1,155.0	351.2	236.3	114.92	3.056			
9,800.0	6,863.7	9,745.9	6,759.6	61.7	62.9	-72.75	2,997.2	-1,156.5	351.2	232.8	118.47	2.965			
9,900.0	6,862.8	9,845.9	6,758.7	63.5	64.7	-72.74	3,097.2	-1,158.0	351.2	229.2	122.03	2.878			
10,000.0	6,862.0	9,945.9	6,757.7	65.3	66.5	-72.74	3,197.1	-1,159.4	351.3	225.7	125.59	2.797			
10,100.0	6,861.1	10,045.9	6,756.8	67.2	68.3	-72.73	3,297.1	-1,160.9	351.3	222.1	129.17	2.719			
10,200.0	6,860.2	10,145.9	6,755.8	69.0	70.1	-72.72	3,397.1	-1,162.4	351.3	218.5	132.75	2.646			
10,300.0	6,859.3	10,245.9	6,754.9	70.8	71.9	-72.71	3,497.1	-1,163.9	351.3	214.9	136.33	2.577			
10,400.0	6,858.4	10,345.9	6,753.9	72.7	73.7	-72.70	3,597.1	-1,165.3	351.3	211.4	139.92	2.511			
10,500.0	6,857.5	10,445.9	6,753.0	74.6	75.6	-72.69	3,697.1	-1,166.8	351.3	207.8	143.52	2.448			
10,600.0	6,856.6	10,545.9	6,752.1	76.4	77.4	-72.68	3,797.1	-1,168.3	351.3	204.2	147.12	2.388			
10,700.0	6,855.7	10,645.9	6,751.1	78.3	79.2	-72.68	3,897.0	-1,169.7	351.3	200.6	150.72	2.331			
10,800.0	6,854.8	10,745.9	6,750.2	80.1	81.1	-72.67	3,997.0	-1,171.2	351.3	197.0	154.33	2.276			
10,900.0	6,853.9	10,845.9	6,749.2	82.0	82.9	-72.66	4,097.0	-1,172.7	351.3	193.4	157.94	2.224			
11,000.0	6,853.1	10,945.9	6,748.3	83.9	84.7	-72.65	4,197.0	-1,174.2	351.3	189.8	161.56	2.175			
11,100.0	6,852.2	11,045.9	6,747.4	85.7	86.6	-72.64	4,297.0	-1,175.6	351.3	186.2	165.18	2.127			
11,200.0	6,851.3	11,145.9	6,746.4	87.6	88.5	-72.63	4,397.0	-1,177.1	351.3	182.5	168.80	2.081			
11,300.0	6,850.4	11,245.9	6,745.5	89.5	90.3	-72.62	4,496.9	-1,178.6	351.4	178.9	172.42	2.038			
11,343.6	6,850.0	11,289.5	6,745.1	90.3	91.1	-72.62	4,540.5	-1,179.2	351.4	177.4	174.00	2.019 SF			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Waste Management 2Q-221
Project:	SEC.2-T2N-R64W	TVD Reference:	WELL @ 4910.0ft (RKB - 15')
Reference Site:	Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W	MD Reference:	WELL @ 4910.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Waste Management 2Q-221	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 (2-06-13)	Offset TVD Reference:	Offset Datum

Offset Design		Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W - Waste Management 2T-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				
0.0	0.0	0.0	0.0	0.0	0.0	93.56	-3.6	58.7	58.8							
100.0	100.0	99.0	99.0	0.1	0.1	93.56	-3.6	58.7	58.8	58.6	0.22	262.959				
200.0	200.0	199.0	199.0	0.3	0.3	93.56	-3.6	58.7	58.8	58.1	0.67	87.507				
300.0	300.0	299.0	299.0	0.6	0.6	93.56	-3.6	58.7	58.8	57.7	1.12	52.434				
400.0	400.0	399.0	399.0	0.8	0.8	93.56	-3.6	58.7	58.8	57.2	1.57	37.432 CC, ES				
500.0	500.0	499.0	499.0	1.0	1.0	-163.82	-3.6	58.7	60.5	58.5	2.01	30.125				
600.0	599.8	598.8	598.8	1.2	1.2	-165.07	-3.6	58.7	65.5	63.1	2.44	26.860				
700.0	699.5	698.5	698.5	1.4	1.5	-166.77	-3.6	58.7	74.0	71.1	2.88	25.696				
800.0	798.7	797.7	797.7	1.7	1.7	-168.58	-3.6	58.7	85.9	82.6	3.32	25.846				
900.0	897.6	896.6	896.6	2.0	1.9	-170.25	-3.6	58.7	100.6	96.8	3.77	26.694				
1,000.0	996.4	995.4	995.4	2.3	2.1	-171.53	-3.6	58.7	115.6	111.4	4.22	27.407				
1,100.0	1,095.2	1,094.2	1,094.2	2.7	2.3	-172.51	-3.6	58.7	130.7	126.0	4.67	27.970				
1,200.0	1,194.1	1,193.1	1,193.1	3.0	2.6	-173.29	-3.6	58.7	145.8	140.7	5.13	28.424				
1,300.0	1,292.9	1,291.9	1,291.9	3.4	2.8	-173.92	-3.6	58.7	160.9	155.4	5.59	28.797				
1,400.0	1,391.8	1,390.8	1,390.8	3.7	3.0	-174.45	-3.6	58.7	176.1	170.0	6.05	29.108				
1,500.0	1,490.6	1,489.6	1,489.6	4.1	3.2	-174.89	-3.6	58.7	191.2	184.7	6.51	29.372				
1,600.0	1,589.4	1,588.4	1,588.4	4.5	3.5	-175.26	-3.6	58.7	206.4	199.4	6.97	29.597				
1,700.0	1,688.3	1,687.3	1,687.3	4.8	3.7	-175.59	-3.6	58.7	221.6	214.1	7.44	29.793				
1,800.0	1,787.1	1,786.1	1,786.1	5.2	3.9	-175.87	-3.6	58.7	236.7	228.8	7.90	29.963				
1,900.0	1,885.9	1,884.9	1,884.9	5.5	4.1	-176.12	-3.6	58.7	251.9	243.6	8.37	30.113				
2,000.0	1,984.8	1,983.8	1,983.8	5.9	4.3	-176.34	-3.6	58.7	267.1	258.3	8.83	30.247				
2,100.0	2,083.6	2,082.6	2,082.6	6.3	4.6	-176.54	-3.6	58.7	282.3	273.0	9.30	30.365				
2,200.0	2,182.4	2,181.4	2,181.4	6.6	4.8	-176.72	-3.6	58.7	297.5	287.7	9.76	30.472				
2,300.0	2,281.3	2,280.3	2,280.3	7.0	5.0	-176.87	-3.6	58.7	312.7	302.5	10.23	30.568				
2,400.0	2,380.1	2,379.1	2,379.1	7.4	5.2	-177.02	-3.6	58.7	327.9	317.2	10.70	30.656				
2,500.0	2,478.9	2,477.9	2,477.9	7.7	5.5	-177.15	-3.6	58.7	343.1	331.9	11.16	30.735				
2,600.0	2,577.8	2,576.8	2,576.8	8.1	5.7	-177.27	-3.6	58.7	358.3	346.6	11.63	30.808				
2,700.0	2,676.6	2,675.6	2,675.6	8.5	5.9	-177.38	-3.6	58.7	373.5	361.4	12.10	30.874				
2,800.0	2,775.4	2,774.4	2,774.4	8.9	6.1	-177.49	-3.6	58.7	388.7	376.1	12.56	30.936				
2,900.0	2,874.3	2,873.3	2,873.3	9.2	6.3	-177.58	-3.6	58.7	403.9	390.8	13.03	30.993				
3,000.0	2,973.1	2,972.1	2,972.1	9.6	6.6	-177.67	-3.6	58.7	419.1	405.6	13.50	31.045				
3,100.0	3,072.0	3,080.7	3,080.7	10.0	6.8	-177.67	-4.5	57.9	433.5	419.5	13.97	31.034				
3,200.0	3,170.8	3,193.9	3,193.8	10.3	7.0	-177.34	-8.5	54.3	444.9	430.5	14.42	30.857				
3,300.0	3,269.6	3,307.6	3,307.0	10.7	7.2	-176.68	-15.8	47.6	453.2	438.3	14.87	30.469				
3,400.0	3,368.5	3,417.3	3,415.9	11.1	7.4	-175.75	-26.0	38.4	458.6	443.2	15.34	29.903				
3,500.0	3,467.3	3,517.0	3,514.6	11.4	7.6	-174.84	-35.9	29.3	463.3	447.5	15.79	29.341				
3,600.0	3,566.1	3,616.6	3,613.3	11.8	7.8	-173.95	-45.9	20.2	468.1	451.9	16.25	28.802				
3,700.0	3,665.0	3,716.2	3,712.0	12.2	8.1	-173.08	-55.8	11.2	473.0	456.3	16.73	28.283				
3,800.0	3,763.8	3,815.8	3,810.7	12.5	8.3	-172.23	-65.8	2.1	478.1	460.9	17.21	27.783				
3,900.0	3,862.6	3,915.4	3,909.4	12.9	8.5	-171.40	-75.7	-7.0	483.2	465.5	17.70	27.303				
4,000.0	3,961.5	4,015.1	4,008.1	13.3	8.8	-170.58	-85.7	-16.0	488.5	470.3	18.20	26.840				
4,100.0	4,060.3	4,114.7	4,106.8	13.7	9.0	-169.79	-95.6	-25.1	493.8	475.1	18.71	26.396				
4,200.0	4,159.1	4,214.3	4,205.6	14.0	9.3	-169.01	-105.5	-34.1	499.3	480.0	19.23	25.969				
4,300.0	4,258.0	4,313.9	4,304.3	14.4	9.6	-168.24	-115.5	-43.2	504.8	485.0	19.75	25.558				
4,400.0	4,356.8	4,413.6	4,403.0	14.8	9.8	-167.49	-125.4	-52.3	510.4	490.1	20.28	25.163				
4,500.0	4,455.7	4,513.2	4,501.7	15.1	10.1	-166.76	-135.4	-61.3	516.1	495.3	20.82	24.784				
4,600.0	4,554.5	4,612.8	4,600.4	15.5	10.4	-166.05	-145.3	-70.4	521.9	500.5	21.37	24.419				
4,700.0	4,653.3	4,712.4	4,699.1	15.9	10.7	-165.35	-155.3	-79.5	527.8	505.8	21.93	24.068				
4,800.0	4,752.2	4,812.0	4,797.8	16.2	10.9	-164.67	-165.2	-88.5	533.7	511.2	22.49	23.731				
4,900.0	4,851.0	4,911.7	4,896.5	16.6	11.2	-164.00	-175.2	-97.6	539.7	516.6	23.06	23.408				
5,000.0	4,949.8	4,992.6	4,976.8	17.0	11.5	-163.50	-182.9	-104.7	546.4	522.8	23.57	23.184				

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

Offset Design		Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W - Waste Management 2T-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								
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)				
5,100.0	5,048.7	5,063.5	5,047.7	17.4	11.6	-163.74	-183.6	-105.3	559.7	535.7	23.96	23.362			
5,200.0	5,147.5	5,162.4	5,146.5	17.7	11.8	-164.16	-183.6	-105.3	574.3	549.9	24.38	23.553			
5,300.0	5,246.3	5,261.2	5,245.3	18.1	12.0	-164.57	-183.6	-105.3	589.0	564.2	24.81	23.736			
5,400.0	5,345.2	5,360.0	5,344.2	18.5	12.2	-164.95	-183.6	-105.3	603.7	578.4	25.25	23.911			
5,500.0	5,444.0	5,458.9	5,443.0	18.8	12.4	-165.32	-183.6	-105.3	618.4	592.7	25.68	24.080			
5,600.0	5,542.8	5,557.7	5,541.8	19.2	12.6	-165.67	-183.6	-105.3	633.1	607.0	26.12	24.243			
5,700.0	5,641.8	5,656.7	5,640.8	19.5	12.8	-166.03	-183.6	-105.3	646.9	620.3	26.55	24.362			
5,800.0	5,741.2	5,756.1	5,740.2	19.7	13.0	-166.31	-183.6	-105.3	657.3	630.4	26.94	24.403			
5,900.0	5,841.0	5,855.8	5,840.0	19.9	13.2	-166.49	-183.6	-105.3	664.4	637.1	27.29	24.343			
6,000.0	5,940.9	5,955.8	5,939.9	20.1	13.4	-166.58	-183.6	-105.3	668.1	640.5	27.63	24.185			
6,100.0	6,040.9	6,055.8	6,039.9	20.2	13.6	90.31	-183.6	-105.3	668.7	640.7	28.04	23.851			
6,200.0	6,140.9	6,156.2	6,140.3	20.3	13.8	91.15	-183.3	-105.3	668.7	640.3	28.35	23.584			
6,300.0	6,240.4	6,257.9	6,241.5	20.5	14.0	91.10	-173.5	-105.4	668.7	640.0	28.67	23.322			
6,400.0	6,337.9	6,359.5	6,340.3	20.5	14.1	91.04	-150.4	-105.8	668.7	639.8	28.90	23.134			
6,497.5	6,429.3	6,458.4	6,432.8	20.6	14.2	90.95	-115.4	-106.3	668.7	639.6	29.09	22.988			
6,500.0	6,431.7	6,461.0	6,435.2	20.6	14.2	90.95	-114.4	-106.3	668.7	639.6	29.09	22.985			
6,600.0	6,520.1	6,562.4	6,524.3	20.7	14.3	90.85	-66.2	-107.0	668.7	639.4	29.30	22.823			
6,700.0	6,601.7	6,663.5	6,606.1	20.7	14.4	90.73	-6.8	-107.8	668.7	639.1	29.60	22.591			
6,800.0	6,675.2	6,764.5	6,679.2	20.8	14.5	90.60	62.7	-108.8	668.7	638.6	30.08	22.230			
6,900.0	6,739.1	6,865.3	6,742.4	20.9	14.8	90.46	141.1	-110.0	668.7	637.9	30.82	21.699			
7,000.0	6,792.5	6,965.9	6,794.6	21.1	15.4	90.31	227.0	-111.2	668.8	636.9	31.87	20.984			
7,100.0	6,834.4	7,066.2	6,835.0	21.4	16.2	90.16	318.7	-112.5	668.8	635.5	33.27	20.104			
7,200.0	6,864.0	7,166.3	6,863.0	21.8	17.1	90.01	414.7	-113.9	668.8	633.8	35.00	19.109			
7,300.0	6,881.0	7,266.2	6,878.3	22.5	18.1	89.85	513.4	-115.3	668.9	631.8	37.04	18.058			
7,400.0	6,885.1	7,365.9	6,880.9	23.3	19.3	89.72	613.0	-116.7	668.9	629.6	39.33	17.006			
7,500.0	6,884.2	7,465.9	6,879.8	24.3	20.6	89.71	713.0	-118.2	669.0	627.1	41.86	15.980			
7,600.0	6,883.3	7,565.9	6,878.8	25.4	22.0	89.69	813.0	-119.6	669.0	624.4	44.58	15.009			
7,700.0	6,882.4	7,665.9	6,877.7	26.6	23.5	89.68	913.0	-121.1	669.1	621.6	47.44	14.102			
7,800.0	6,881.5	7,765.9	6,876.6	27.9	25.0	89.66	1,013.0	-122.5	669.1	618.7	50.44	13.265			
7,900.0	6,880.7	7,865.9	6,875.6	29.3	26.6	89.65	1,112.9	-123.9	669.1	615.6	53.55	12.496			
8,000.0	6,879.8	7,965.9	6,874.5	30.8	28.2	89.63	1,212.9	-125.4	669.2	612.4	56.75	11.792			
8,100.0	6,878.9	8,065.9	6,873.4	32.3	29.8	89.62	1,312.9	-126.8	669.2	609.2	60.02	11.150			
8,200.0	6,878.0	8,165.9	6,872.4	33.9	31.5	89.60	1,412.9	-128.2	669.3	605.9	63.36	10.563			
8,300.0	6,877.1	8,265.9	6,871.3	35.5	33.2	89.59	1,512.9	-129.7	669.3	602.6	66.75	10.027			
8,400.0	6,876.2	8,365.9	6,870.2	37.1	35.0	89.57	1,612.9	-131.1	669.4	599.2	70.19	9.536			
8,500.0	6,875.3	8,465.9	6,869.2	38.7	36.7	89.56	1,712.8	-132.5	669.4	595.7	73.67	9.086			
8,600.0	6,874.4	8,565.9	6,868.1	40.4	38.5	89.55	1,812.8	-134.0	669.5	592.3	77.19	8.673			
8,700.0	6,873.5	8,665.9	6,867.0	42.1	40.3	89.53	1,912.8	-135.4	669.5	588.8	80.73	8.293			
8,800.0	6,872.6	8,765.9	6,866.0	43.8	42.1	89.52	2,012.8	-136.9	669.5	585.2	84.30	7.942			
8,900.0	6,871.8	8,865.9	6,864.9	45.6	43.9	89.50	2,112.8	-138.3	669.6	581.7	87.90	7.618			
9,000.0	6,870.9	8,965.9	6,863.8	47.3	45.7	89.49	2,212.8	-139.7	669.6	578.1	91.51	7.318			
9,100.0	6,870.0	9,065.9	6,862.8	49.1	47.5	89.47	2,312.7	-141.2	669.7	574.5	95.14	7.039			
9,200.0	6,869.1	9,165.9	6,861.7	50.8	49.3	89.46	2,412.7	-142.6	669.7	570.9	98.79	6.779			
9,300.0	6,868.2	9,265.9	6,860.7	52.6	51.2	89.44	2,512.7	-144.0	669.8	567.3	102.46	6.537			
9,400.0	6,867.3	9,365.9	6,859.6	54.4	53.0	89.43	2,612.7	-145.5	669.8	563.7	106.13	6.311			
9,500.0	6,866.4	9,465.9	6,858.5	56.2	54.9	89.41	2,712.7	-146.9	669.9	560.0	109.82	6.100			
9,600.0	6,865.5	9,565.9	6,857.5	58.0	56.7	89.40	2,812.7	-148.3	669.9	556.4	113.52	5.901			
9,700.0	6,864.6	9,665.9	6,856.4	59.8	58.6	89.38	2,912.7	-149.8	670.0	552.7	117.23	5.715			
9,800.0	6,863.7	9,765.9	6,855.3	61.7	60.4	89.37	3,012.6	-151.2	670.0	549.1	120.94	5.540			
9,900.0	6,862.8	9,865.9	6,854.3	63.5	62.3	89.35	3,112.6	-152.7	670.0	545.4	124.67	5.375			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Waste Management 2Q-221
Project:	SEC.2-T2N-R64W	TVD Reference:	WELL @ 4910.0ft (RKB - 15')
Reference Site:	Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W	MD Reference:	WELL @ 4910.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Waste Management 2Q-221	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 (2-06-13)	Offset TVD Reference:	Offset Datum

Offset Design Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W - Waste Management 2T-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							
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	
10,000.0	6,862.0	9,965.9	6,853.2	65.3	64.2	89.34	3,212.6	-154.1	670.1	541.7	128.40	5.219		
10,100.0	6,861.1	10,065.9	6,852.1	67.2	66.0	89.32	3,312.6	-155.5	670.1	538.0	132.14	5.072		
10,200.0	6,860.2	10,165.9	6,851.1	69.0	67.9	89.31	3,412.6	-157.0	670.2	534.3	135.88	4.932		
10,300.0	6,859.3	10,265.9	6,850.0	70.8	69.8	89.29	3,512.6	-158.4	670.2	530.6	139.63	4.800		
10,400.0	6,858.4	10,365.9	6,848.9	72.7	71.7	89.28	3,612.5	-159.8	670.3	526.9	143.38	4.675		
10,500.0	6,857.5	10,465.9	6,847.9	74.6	73.6	89.26	3,712.5	-161.3	670.3	523.2	147.14	4.556		
10,600.0	6,856.6	10,565.9	6,846.8	76.4	75.4	89.25	3,812.5	-162.7	670.4	519.5	150.91	4.442		
10,700.0	6,855.7	10,665.9	6,845.8	78.3	77.3	89.23	3,912.5	-164.1	670.4	515.7	154.67	4.334		
10,800.0	6,854.8	10,765.9	6,844.7	80.1	79.2	89.22	4,012.5	-165.6	670.5	512.0	158.45	4.231		
10,900.0	6,853.9	10,865.9	6,843.6	82.0	81.1	89.20	4,112.5	-167.0	670.5	508.3	162.22	4.133		
11,000.0	6,853.1	10,965.9	6,842.6	83.9	83.0	89.19	4,212.4	-168.5	670.5	504.6	166.00	4.039		
11,100.0	6,852.2	11,065.9	6,841.5	85.7	84.9	89.17	4,312.4	-169.9	670.6	500.8	169.78	3.950		
11,200.0	6,851.3	11,165.9	6,840.4	87.6	86.8	89.16	4,412.4	-171.3	670.6	497.1	173.56	3.864		
11,300.0	6,850.4	11,265.9	6,839.4	89.5	88.7	89.14	4,512.4	-172.8	670.7	493.3	177.35	3.782		
11,318.3	6,850.2	11,284.3	6,839.2	89.8	89.0	89.14	4,530.7	-173.0	670.7	492.7	178.04	3.767		
11,343.6	6,850.0	11,300.0	6,839.0	90.3	89.3	89.14	4,546.4	-173.3	670.8	492.0	178.82	3.751 SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Waste Management 2Q-221
Project:	SEC.2-T2N-R64W	TVD Reference:	WELL @ 4910.0ft (RKB - 15')
Reference Site:	Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W	MD Reference:	WELL @ 4910.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Waste Management 2Q-221	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 (2-06-13)	Offset TVD Reference:	Offset Datum

Offset Design		Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W - Waste Management 2T-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		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
				(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)						
0.0	0.0	0.0	0.0	0.0	0.0	90.01	0.0	28.0	28.0					
100.0	100.0	100.0	100.0	0.1	0.1	90.01	0.0	28.0	28.0	27.7	0.22	124.354		
200.0	200.0	200.0	200.0	0.3	0.3	90.01	0.0	28.0	28.0	27.3	0.67	41.451		
300.0	300.0	300.0	300.0	0.6	0.6	90.01	0.0	28.0	28.0	26.8	1.12	24.871		
400.0	400.0	400.0	400.0	0.8	0.8	90.01	0.0	28.0	28.0	26.4	1.57	17.765 CC, ES		
500.0	500.0	500.0	500.0	1.0	1.0	-167.66	0.0	28.0	29.7	27.6	2.01	14.752		
600.0	599.8	599.8	599.8	1.2	1.2	-169.48	0.0	28.0	34.8	32.3	2.44	14.245		
700.0	699.5	700.9	700.9	1.4	1.4	-170.90	-0.6	26.3	41.7	38.8	2.86	14.581		
800.0	798.7	802.2	802.0	1.7	1.7	-171.34	-2.6	21.3	48.7	45.4	3.27	14.896		
900.0	897.6	903.7	903.2	2.0	1.9	-171.06	-5.8	12.9	55.1	51.4	3.70	14.898		
1,000.0	996.4	1,004.6	1,003.3	2.3	2.1	-170.01	-10.1	1.7	58.8	54.6	4.15	14.167		
1,100.0	1,095.2	1,104.5	1,102.5	2.7	2.4	-168.95	-14.5	-9.8	62.1	57.5	4.62	13.447		
1,200.0	1,194.1	1,204.5	1,201.7	3.0	2.7	-168.00	-18.9	-21.3	65.4	60.3	5.10	12.833		
1,300.0	1,292.9	1,304.4	1,300.8	3.4	3.0	-167.15	-23.3	-32.8	68.7	63.1	5.58	12.306		
1,400.0	1,391.8	1,404.3	1,400.0	3.7	3.3	-166.37	-27.7	-44.3	72.1	66.0	6.08	11.850		
1,500.0	1,490.6	1,504.3	1,499.2	4.1	3.6	-165.66	-32.1	-55.8	75.4	68.8	6.59	11.454		
1,600.0	1,589.4	1,604.2	1,598.4	4.5	3.9	-165.02	-36.5	-67.2	78.8	71.7	7.09	11.106		
1,700.0	1,688.3	1,704.2	1,697.5	4.8	4.2	-164.42	-41.0	-78.7	82.2	74.6	7.61	10.799		
1,800.0	1,787.1	1,804.1	1,796.7	5.2	4.5	-163.88	-45.4	-90.2	85.6	77.4	8.13	10.526		
1,900.0	1,885.9	1,904.0	1,895.9	5.5	4.8	-163.37	-49.8	-101.7	88.9	80.3	8.65	10.282		
2,000.0	1,984.8	2,004.0	1,995.1	5.9	5.2	-162.90	-54.2	-113.2	92.3	83.2	9.18	10.063		
2,100.0	2,083.6	2,103.9	2,094.3	6.3	5.5	-162.47	-58.6	-124.7	95.7	86.0	9.71	9.865		
2,200.0	2,182.4	2,203.9	2,193.4	6.6	5.8	-162.06	-63.0	-136.2	99.2	88.9	10.24	9.686		
2,300.0	2,281.3	2,303.8	2,292.6	7.0	6.1	-161.68	-67.4	-147.7	102.6	91.8	10.77	9.523		
2,400.0	2,380.1	2,403.7	2,391.8	7.4	6.4	-161.33	-71.8	-159.2	106.0	94.7	11.31	9.373		
2,500.0	2,478.9	2,503.7	2,491.0	7.7	6.8	-161.00	-76.3	-170.7	109.4	97.6	11.85	9.236		
2,600.0	2,577.8	2,603.6	2,590.1	8.1	7.1	-160.69	-80.7	-182.2	112.8	100.5	12.39	9.110		
2,700.0	2,676.6	2,703.6	2,689.3	8.5	7.4	-160.39	-85.1	-193.7	116.3	103.3	12.93	8.994		
2,800.0	2,775.4	2,803.5	2,788.5	8.9	7.7	-160.12	-89.5	-205.2	119.7	106.2	13.47	8.886		
2,900.0	2,874.3	2,903.4	2,887.7	9.2	8.1	-159.86	-93.9	-216.7	123.1	109.1	14.01	8.786		
3,000.0	2,973.1	3,003.4	2,986.9	9.6	8.4	-159.61	-98.3	-228.2	126.6	112.0	14.56	8.693		
3,100.0	3,072.0	3,103.3	3,086.0	10.0	8.7	-159.38	-102.7	-239.7	130.0	114.9	15.11	8.606		
3,200.0	3,170.8	3,203.3	3,185.2	10.3	9.0	-159.16	-107.1	-251.2	133.4	117.8	15.65	8.525		
3,300.0	3,269.6	3,303.2	3,284.4	10.7	9.4	-158.94	-111.6	-262.7	136.9	120.7	16.20	8.449		
3,400.0	3,368.5	3,403.1	3,383.6	11.1	9.7	-158.74	-116.0	-274.2	140.3	123.6	16.75	8.377		
3,500.0	3,467.3	3,503.1	3,482.8	11.4	10.0	-158.55	-120.4	-285.7	143.8	126.5	17.30	8.310		
3,600.0	3,566.1	3,603.0	3,581.9	11.8	10.3	-158.37	-124.8	-297.2	147.2	129.4	17.85	8.247		
3,700.0	3,665.0	3,703.0	3,681.1	12.2	10.7	-158.20	-129.2	-308.7	150.7	132.3	18.40	8.187		
3,800.0	3,763.8	3,802.9	3,780.3	12.5	11.0	-158.03	-133.6	-320.2	154.1	135.2	18.96	8.131		
3,900.0	3,862.6	3,902.8	3,879.5	12.9	11.3	-157.87	-138.0	-331.7	157.6	138.1	19.51	8.077		
4,000.0	3,961.5	4,002.8	3,978.6	13.3	11.6	-157.72	-142.4	-343.2	161.0	141.0	20.06	8.026		
4,100.0	4,060.3	4,102.7	4,077.8	13.7	12.0	-157.58	-146.9	-354.7	164.5	143.9	20.62	7.978		
4,200.0	4,159.1	4,202.7	4,177.0	14.0	12.3	-157.44	-151.3	-366.2	167.9	146.8	21.17	7.933		
4,300.0	4,258.0	4,302.6	4,276.2	14.4	12.6	-157.30	-155.7	-377.7	171.4	149.7	21.73	7.889		
4,400.0	4,356.8	4,402.5	4,375.4	14.8	12.9	-157.18	-160.1	-389.2	174.8	152.6	22.28	7.848		
4,500.0	4,455.7	4,502.5	4,474.5	15.1	13.3	-157.05	-164.5	-400.7	178.3	155.5	22.84	7.808		
4,600.0	4,554.5	4,602.4	4,573.7	15.5	13.6	-156.93	-168.9	-412.2	181.8	158.4	23.39	7.770		
4,700.0	4,653.3	4,700.0	4,670.6	15.9	13.9	-156.84	-173.2	-423.3	185.3	161.4	23.93	7.744		
4,800.0	4,752.2	4,795.5	4,765.6	16.2	14.1	-157.10	-176.6	-432.1	190.9	166.6	24.36	7.839		
4,900.0	4,851.0	4,889.6	4,859.5	16.6	14.3	-157.81	-178.8	-437.8	199.4	174.7	24.71	8.069		
5,000.0	4,949.8	4,983.0	4,952.9	17.0	14.4	-158.86	-179.9	-440.7	210.7	185.7	25.01	8.425		

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

Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W - Waste Management 2T-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)			
5,100.0	5,048.7	5,078.8	5,048.7	17.4	14.6	-160.17	-180.0	-441.0	224.6	199.3	25.29	8.882		
5,200.0	5,147.5	5,177.7	5,147.5	17.7	14.7	-161.40	-180.0	-441.0	239.0	213.4	25.58	9.342		
5,300.0	5,246.3	5,276.5	5,246.3	18.1	14.9	-162.50	-180.0	-441.0	253.5	227.6	25.90	9.789		
5,400.0	5,345.2	5,375.3	5,345.2	18.5	15.0	-163.48	-180.0	-441.0	268.1	241.8	26.23	10.221		
5,500.0	5,444.0	5,474.2	5,444.0	18.8	15.2	-164.35	-180.0	-441.0	282.7	256.1	26.57	10.639		
5,600.0	5,542.8	5,573.0	5,542.8	19.2	15.3	-165.14	-180.0	-441.0	297.4	270.5	26.93	11.044		
5,700.0	5,641.8	5,672.0	5,641.8	19.5	15.5	-165.86	-180.0	-441.0	311.1	283.8	27.28	11.404		
5,800.0	5,741.2	5,771.4	5,741.2	19.7	15.7	-166.38	-180.0	-441.0	321.6	294.0	27.59	11.654		
5,900.0	5,841.0	5,871.1	5,841.0	19.9	15.8	-166.71	-180.0	-441.0	328.6	300.8	27.89	11.784		
6,000.0	5,940.9	5,971.1	5,940.9	20.1	16.0	-166.88	-180.0	-441.0	332.4	304.2	28.17	11.798		
6,100.0	6,040.9	6,071.2	6,041.1	20.2	16.1	89.90	-179.4	-441.1	332.9	304.4	28.55	11.660		
6,158.5	6,099.4	6,129.8	6,099.4	20.3	16.2	90.05	-174.9	-441.1	332.9	304.3	28.60	11.639		
6,200.0	6,140.9	6,170.7	6,139.9	20.3	16.3	89.01	-169.1	-441.2	333.0	304.3	28.64	11.626		
6,300.0	6,240.4	6,268.0	6,234.5	20.5	16.4	86.61	-146.7	-441.5	333.5	304.8	28.71	11.617		
6,400.0	6,337.9	6,363.7	6,324.1	20.5	16.5	84.29	-113.1	-442.0	334.6	305.9	28.78	11.629		
6,500.0	6,431.7	6,457.9	6,407.4	20.6	16.5	82.09	-69.4	-442.6	336.2	307.3	28.89	11.637		
6,600.0	6,520.1	6,550.0	6,483.1	20.7	16.6	80.06	-17.0	-443.4	338.2	309.1	29.09	11.624		
6,700.0	6,601.7	6,642.3	6,552.1	20.7	16.6	78.19	44.3	-444.3	340.3	310.9	29.41	11.570		
6,800.0	6,675.2	6,732.9	6,612.1	20.8	16.8	76.55	112.0	-445.2	342.5	312.7	29.86	11.470		
6,900.0	6,739.1	6,822.6	6,663.3	20.9	16.9	75.13	185.6	-446.3	344.7	314.2	30.48	11.311		
7,000.0	6,792.5	6,911.5	6,705.1	21.1	17.2	73.94	264.0	-447.4	346.7	315.5	31.26	11.092		
7,100.0	6,834.4	7,000.0	6,737.4	21.4	17.7	73.01	346.3	-448.6	348.4	316.2	32.23	10.810		
7,200.0	6,864.0	7,087.8	6,759.9	21.8	18.4	72.32	431.2	-449.8	349.8	316.3	33.41	10.468		
7,300.0	6,881.0	7,175.4	6,772.5	22.5	19.3	71.90	517.8	-451.0	350.6	315.8	34.80	10.075		
7,400.0	6,885.1	7,264.9	6,775.1	23.3	20.3	71.74	607.2	-452.3	351.0	314.5	36.48	9.621		
7,500.0	6,884.2	7,364.9	6,774.2	24.3	21.5	71.73	707.2	-453.7	351.1	312.2	38.86	9.033		
7,600.0	6,883.3	7,464.9	6,773.2	25.4	22.8	71.73	807.1	-455.2	351.1	309.7	41.43	8.475		
7,700.0	6,882.4	7,564.9	6,772.3	26.6	24.2	71.72	907.1	-456.6	351.2	307.0	44.15	7.954		
7,800.0	6,881.5	7,664.9	6,771.4	27.9	25.7	71.72	1,007.1	-458.0	351.2	304.2	47.01	7.473		
7,900.0	6,880.7	7,764.9	6,770.4	29.3	27.2	71.71	1,107.1	-459.4	351.3	301.3	49.97	7.031		
8,000.0	6,879.8	7,864.9	6,769.5	30.8	28.8	71.71	1,207.1	-460.9	351.4	298.4	53.02	6.627		
8,100.0	6,878.9	7,964.9	6,768.5	32.3	30.4	71.70	1,307.1	-462.3	351.4	295.3	56.15	6.259		
8,200.0	6,878.0	8,064.9	6,767.6	33.9	32.1	71.70	1,407.1	-463.7	351.5	292.2	59.34	5.924		
8,300.0	6,877.1	8,164.9	6,766.6	35.5	33.8	71.69	1,507.0	-465.2	351.6	289.0	62.58	5.618		
8,400.0	6,876.2	8,264.9	6,765.7	37.1	35.5	71.68	1,607.0	-466.6	351.6	285.8	65.87	5.338		
8,500.0	6,875.3	8,364.9	6,764.8	38.7	37.2	71.68	1,707.0	-468.0	351.7	282.5	69.20	5.082		
8,600.0	6,874.4	8,464.9	6,763.8	40.4	38.9	71.67	1,807.0	-469.4	351.8	279.2	72.56	4.848		
8,700.0	6,873.5	8,564.9	6,762.9	42.1	40.7	71.67	1,907.0	-470.9	351.8	275.9	75.96	4.632		
8,800.0	6,872.6	8,664.9	6,761.9	43.8	42.5	71.66	2,007.0	-472.3	351.9	272.5	79.37	4.433		
8,900.0	6,871.8	8,764.9	6,761.0	45.6	44.2	71.66	2,107.0	-473.7	352.0	269.1	82.81	4.250		
9,000.0	6,870.9	8,864.9	6,760.1	47.3	46.0	71.65	2,206.9	-475.2	352.0	265.8	86.27	4.080		
9,100.0	6,870.0	8,964.9	6,759.1	49.1	47.8	71.65	2,306.9	-476.6	352.1	262.3	89.75	3.923		
9,200.0	6,869.1	9,064.9	6,758.2	50.8	49.7	71.64	2,406.9	-478.0	352.2	258.9	93.24	3.777		
9,300.0	6,868.2	9,164.9	6,757.2	52.6	51.5	71.64	2,506.9	-479.5	352.2	255.5	96.75	3.641		
9,400.0	6,867.3	9,264.9	6,756.3	54.4	53.3	71.63	2,606.9	-480.9	352.3	252.0	100.26	3.514		
9,500.0	6,866.4	9,364.9	6,755.3	56.2	55.2	71.62	2,706.9	-482.3	352.3	248.6	103.79	3.395		
9,600.0	6,865.5	9,464.9	6,754.4	58.0	57.0	71.62	2,806.9	-483.7	352.4	245.1	107.33	3.283		
9,700.0	6,864.6	9,564.9	6,753.5	59.8	58.8	71.61	2,906.8	-485.2	352.5	241.6	110.88	3.179		
9,800.0	6,863.7	9,664.9	6,752.5	61.7	60.7	71.61	3,006.8	-486.6	352.5	238.1	114.43	3.081		
9,900.0	6,862.8	9,764.9	6,751.6	63.5	62.5	71.60	3,106.8	-488.0	352.6	234.6	118.00	2.988		

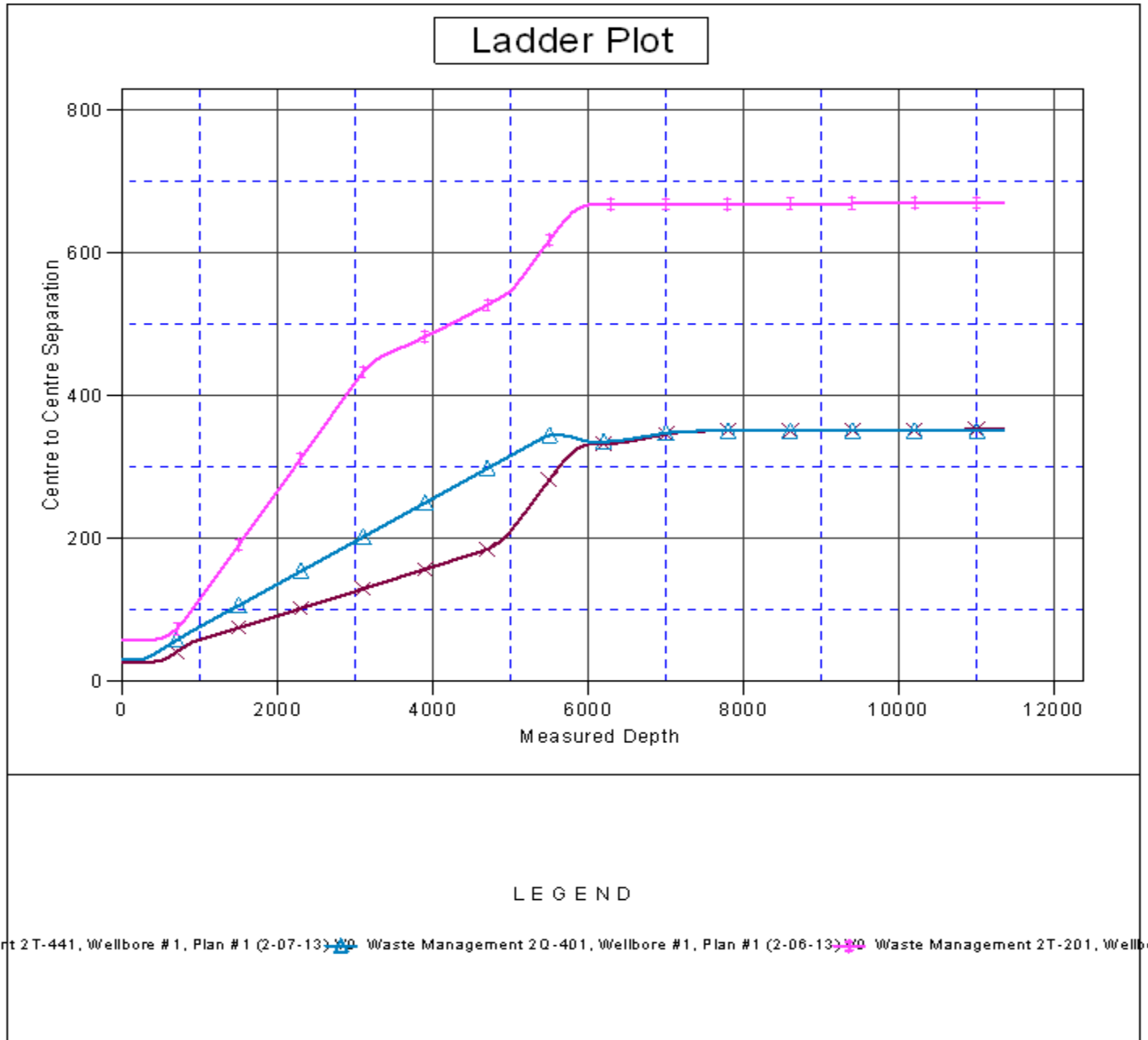
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Waste Management 2Q-221
Project:	SEC.2-T2N-R64W	TVD Reference:	WELL @ 4910.0ft (RKB - 15')
Reference Site:	Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W	MD Reference:	WELL @ 4910.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Waste Management 2Q-221	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 (2-06-13)	Offset TVD Reference:	Offset Datum

Offset Design Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W - Waste Management 2T-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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
10,000.0	6,862.0	9,864.9	6,750.6	65.3	64.4	71.60	3,206.8	-489.5	352.7	231.1	121.57	2.901	
10,100.0	6,861.1	9,964.9	6,749.7	67.2	66.3	71.59	3,306.8	-490.9	352.7	227.6	125.14	2.819	
10,200.0	6,860.2	10,064.9	6,748.7	69.0	68.1	71.59	3,406.8	-492.3	352.8	224.1	128.72	2.741	
10,300.0	6,859.3	10,164.9	6,747.8	70.8	70.0	71.58	3,506.7	-493.7	352.9	220.6	132.31	2.667	
10,400.0	6,858.4	10,264.9	6,746.9	72.7	71.9	71.57	3,606.7	-495.2	352.9	217.0	135.90	2.597	
10,500.0	6,857.5	10,364.9	6,745.9	74.6	73.8	71.57	3,706.7	-496.6	353.0	213.5	139.49	2.531	
10,600.0	6,856.6	10,464.9	6,745.0	76.4	75.6	71.56	3,806.7	-498.0	353.1	210.0	143.09	2.467	
10,700.0	6,855.7	10,564.9	6,744.0	78.3	77.5	71.56	3,906.7	-499.5	353.1	206.4	146.69	2.407	
10,800.0	6,854.8	10,664.9	6,743.1	80.1	79.4	71.55	4,006.7	-500.9	353.2	202.9	150.30	2.350	
10,900.0	6,853.9	10,764.9	6,742.1	82.0	81.3	71.55	4,106.7	-502.3	353.3	199.3	153.91	2.295	
11,000.0	6,853.1	10,864.9	6,741.2	83.9	83.2	71.54	4,206.6	-503.7	353.3	195.8	157.52	2.243	
11,100.0	6,852.2	10,964.9	6,740.3	85.7	85.0	71.54	4,306.6	-505.2	353.4	192.2	161.13	2.193	
11,200.0	6,851.3	11,064.9	6,739.3	87.6	86.9	71.53	4,406.6	-506.6	353.4	188.7	164.75	2.145	
11,300.0	6,850.4	11,164.9	6,738.4	89.5	88.8	71.53	4,506.6	-508.0	353.5	185.1	168.37	2.100	
11,320.5	6,850.2	11,185.4	6,738.2	89.9	89.2	71.52	4,527.1	-508.3	353.5	184.4	169.11	2.090	
11,343.6	6,850.0	11,204.7	6,738.0	90.3	89.6	71.52	4,546.4	-508.6	353.6	183.7	169.88	2.081 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Waste Management 2Q-221
Project:	SEC.2-T2N-R64W	TVD Reference:	WELL @ 4910.0ft (RKB - 15')
Reference Site:	Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W	MD Reference:	WELL @ 4910.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Waste Management 2Q-221	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 (2-06-13)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4910.0ft (RKB - 15')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Waste Management 2Q-221
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 2Q-221
Project:	SEC.2-T2N-R64W	TVD Reference:	WELL @ 4910.0ft (RKB - 15')
Reference Site:	Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W	MD Reference:	WELL @ 4910.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Waste Management 2Q-221	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 (2-06-13)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4910.0ft (RKB - 15')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Waste Management 2Q-221
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.64°

