

PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Waste Management 2Q-401**

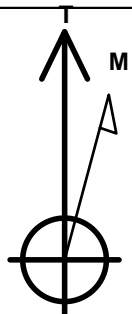
Surface Location: Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 4895.0

| +N/-S | +E/-W | Northing | Easting | Latitude | Longitude | Slot |
|-------|-------|------------|------------|-----------|-------------|------|
| 0.0 | 0.0 | 1302950.47 | 3275521.38 | 40.160790 | -104.514190 | |

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

WELLBORE TARGET DETAILS

| Name | TVD | +N/-S | +E/-W | Shape |
|------------------------|--------|--------|---------|-------|
| BHL 500'FNL & 2495'FEL | 6745.0 | 4546.5 | -1148.6 | Point |



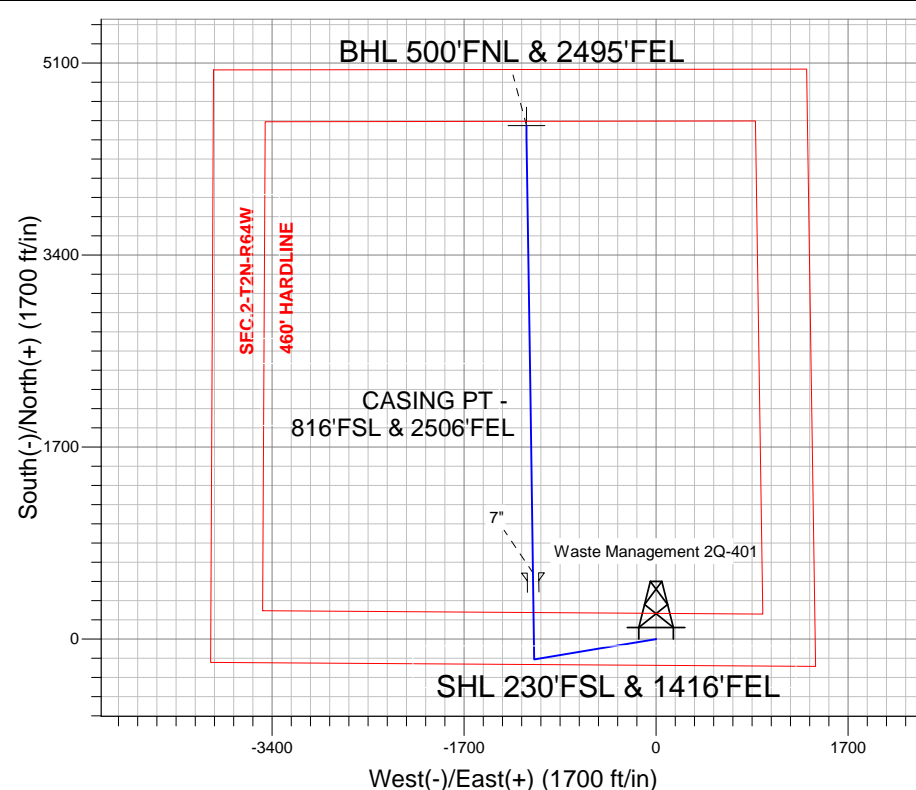
Azimuths to True North
Magnetic North: 8.49°

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

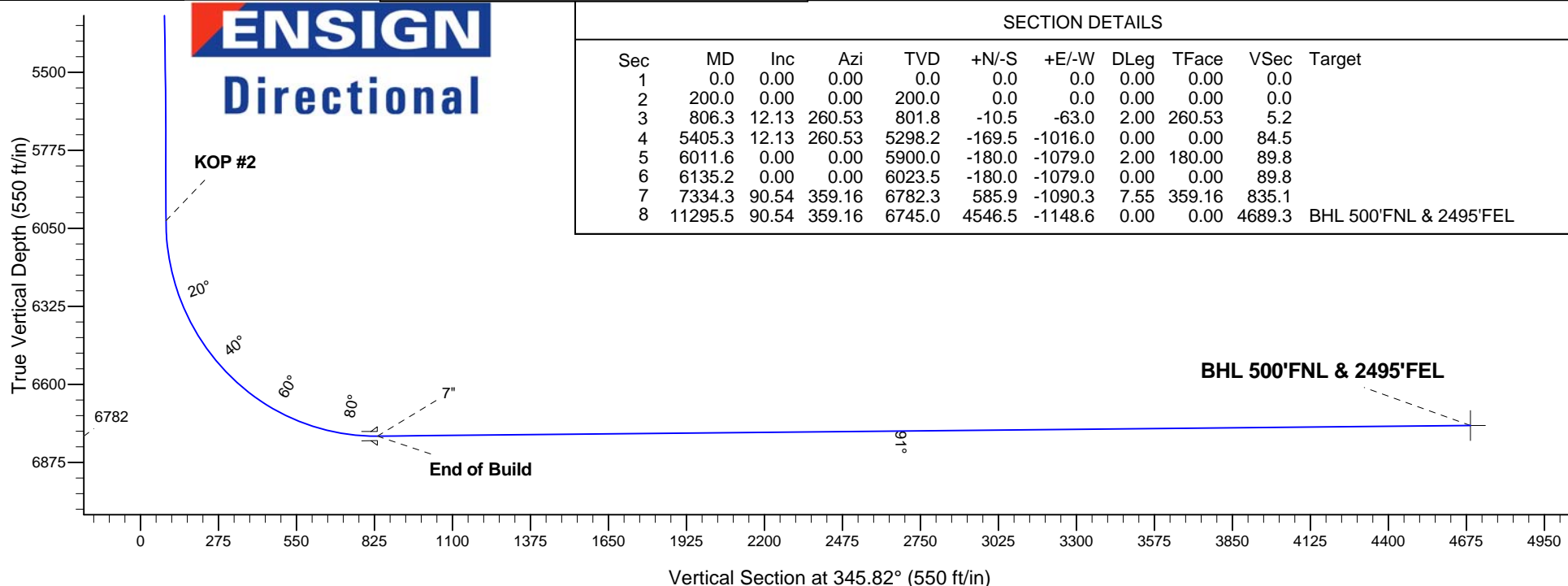
Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W
Waste Management 2Q-401
Plan #1 (2-06-13)
14:42, February 07 2013

ANNOTATIONS

| TVD | MD | Annotation |
|--------|--------|--------------|
| 200.0 | 200.0 | KOP #1 |
| 6023.6 | 6135.2 | KOP #2 |
| 6782.3 | 7334.3 | 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 | 200.0 | 0.00 | 0.00 | 200.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.0 | |
| 3 | 806.3 | 12.13 | 260.53 | 801.8 | -10.5 | -63.0 | 2.00 | 260.53 | 5.2 | |
| 4 | 5405.3 | 12.13 | 260.53 | 5298.2 | -169.5 | -1016.0 | 0.00 | 0.00 | 84.5 | |
| 5 | 6011.6 | 0.00 | 0.00 | 5900.0 | -180.0 | -1079.0 | 2.00 | 180.00 | 89.8 | |
| 6 | 6135.2 | 0.00 | 0.00 | 6023.5 | -180.0 | -1079.0 | 0.00 | 0.00 | 89.8 | |
| 7 | 7334.3 | 90.54 | 359.16 | 6782.3 | 585.9 | -1090.3 | 7.55 | 359.16 | 835.1 | |
| 8 | 11295.5 | 90.54 | 359.16 | 6745.0 | 4546.5 | -1148.6 | 0.00 | 0.00 | 4689.3 | BHL 500'FNL & 2495'FEL |



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.2-T2N-R64W

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

Waste Management 2Q-401

Wellbore #1

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

Standard Planning Report

07 February, 2013

| | | | |
|------------------|--|-------------------------------------|------------------------------|
| Database: | Landmark | Local Co-ordinate Reference: | Well Waste Management 2Q-401 |
| 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-401 | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | Wellbore #1 | | |
| Design: | Plan #1 (2-06-13) | | |

| | | | |
|--------------------|---------------------------------------|----------------------|-----------------------------|
| Project | SEC.2-T2N-R64W, Weld County, Colorado | | |
| Map System: | US State Plane 1983 | System Datum: | Mean Sea Level |
| Geo Datum: | North American Datum 1983 | | Using Well Reference Point |
| Map Zone: | Colorado Northern Zone | | Using geodetic scale factor |

| Site | | | | | | Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W | | | | | | | | | | | |
|------------------------------|--|--|----------|--|--|--|--|--|-----------------|--|--|--------------------------|--|--|-------------|--|--|
| Site Position: | | | | | | Northing: | | | 1,302,950.82 ft | | | Latitude: | | | 40.160790 | | |
| From: | | | Lat/Long | | | Easting: | | | 3,275,552.12 ft | | | Longitude: | | | -104.514080 | | |
| Position Uncertainty: | | | 0.0 ft | | | Slot Radius: | | | " | | | Grid Convergence: | | | 0.64 ° | | |

| Well | Waste Management 2Q-401 | | | | | |
|----------------------|-------------------------|----------|---------------------|-----------------|---------------|-------------|
| Well Position | +N/-S | 0.0 ft | Northing: | 1,302,950.47 ft | Latitude: | 40.160790 |
| | +E/-W | -30.7 ft | Easting: | 3,275,521.38 ft | Longitude: | -104.514190 |
| Position Uncertainty | | 0.0 ft | Wellhead Elevation: | ft | Ground Level: | 4,895.0 ft |

| | | | | | |
|------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| Wellbore | Wellbore #1 | | | | |
| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
| | IGRF2010 | 2/6/2013 | 8.49 | 66.84 | 52,858 |

| | | | | |
|--------------------------|------------------------------|-------------------|----------------------|----------------------|
| Design | Plan #1 (2-06-13) | | | |
| Audit Notes: | | | | |
| Version: | Phase: | PROTOTYPE | Tie On Depth: | 0.0 |
| Vertical Section: | Depth From (TVD) (ft) | +N/-S (ft) | +E/-W (ft) | Direction (°) |
| | 0.0 | 0.0 | 0.0 | 345.82 |

| Plan Sections | | | | | | | | | | |
|----------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|----------------------|---------------------|---------|-------------------|
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) | TFO (°) | Target |
| 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 200.0 | 0.00 | 0.00 | 200.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 806.3 | 12.13 | 260.53 | 801.8 | -10.5 | -63.0 | 2.00 | 2.00 | 0.00 | 260.53 | |
| 5,405.3 | 12.13 | 260.53 | 5,298.2 | -169.5 | -1,016.0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 6,011.6 | 0.00 | 0.00 | 5,900.0 | -180.0 | -1,079.0 | 2.00 | -2.00 | 0.00 | 180.00 | |
| 6,135.2 | 0.00 | 0.00 | 6,023.5 | -180.0 | -1,079.0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 7,334.3 | 90.54 | 359.16 | 6,782.3 | 585.9 | -1,090.3 | 7.55 | 7.55 | 0.00 | 359.16 | |
| 11,295.5 | 90.54 | 359.16 | 6,745.0 | 4,546.5 | -1,148.6 | 0.00 | 0.00 | 0.00 | 0.00 | BHL 500'FNL & 24° |

| | | | |
|------------------|---|-------------------------------------|------------------------------|
| Database: | Landmark | Local Co-ordinate Reference: | Well Waste Management 2Q-401 |
| 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-401 | 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 |
| KOP #1 | | | | | | | | | |
| 240.0 | 0.80 | 260.53 | 240.0 | 0.0 | -0.3 | 0.0 | 2.00 | 2.00 | 0.00 |
| 280.0 | 1.60 | 260.53 | 280.0 | -0.2 | -1.1 | 0.1 | 2.00 | 2.00 | 0.00 |
| 320.0 | 2.40 | 260.53 | 320.0 | -0.4 | -2.5 | 0.2 | 2.00 | 2.00 | 0.00 |
| 360.0 | 3.20 | 260.53 | 359.9 | -0.7 | -4.4 | 0.4 | 2.00 | 2.00 | 0.00 |
| 400.0 | 4.00 | 260.53 | 399.8 | -1.1 | -6.9 | 0.6 | 2.00 | 2.00 | 0.00 |
| 440.0 | 4.80 | 260.53 | 439.7 | -1.7 | -9.9 | 0.8 | 2.00 | 2.00 | 0.00 |
| 480.0 | 5.60 | 260.53 | 479.6 | -2.2 | -13.5 | 1.1 | 2.00 | 2.00 | 0.00 |
| 520.0 | 6.40 | 260.53 | 519.3 | -2.9 | -17.6 | 1.5 | 2.00 | 2.00 | 0.00 |
| 560.0 | 7.20 | 260.53 | 559.1 | -3.7 | -22.3 | 1.9 | 2.00 | 2.00 | 0.00 |
| 600.0 | 8.00 | 260.53 | 598.7 | -4.6 | -27.5 | 2.3 | 2.00 | 2.00 | 0.00 |
| 640.0 | 8.80 | 260.53 | 638.3 | -5.5 | -33.3 | 2.8 | 2.00 | 2.00 | 0.00 |
| 680.0 | 9.60 | 260.53 | 677.8 | -6.6 | -39.6 | 3.3 | 2.00 | 2.00 | 0.00 |
| 720.0 | 10.40 | 260.53 | 717.1 | -7.7 | -46.4 | 3.9 | 2.00 | 2.00 | 0.00 |
| 760.0 | 11.20 | 260.53 | 756.4 | -9.0 | -53.8 | 4.5 | 2.00 | 2.00 | 0.00 |
| 800.0 | 12.00 | 260.53 | 795.6 | -10.3 | -61.7 | 5.1 | 2.00 | 2.00 | 0.00 |
| 806.3 | 12.13 | 260.53 | 801.8 | -10.5 | -63.0 | 5.2 | 2.00 | 2.00 | 0.00 |
| 840.0 | 12.13 | 260.53 | 834.7 | -11.7 | -70.0 | 5.8 | 0.00 | 0.00 | 0.00 |
| 880.0 | 12.13 | 260.53 | 873.8 | -13.1 | -78.3 | 6.5 | 0.00 | 0.00 | 0.00 |
| 920.0 | 12.13 | 260.53 | 912.9 | -14.4 | -86.6 | 7.2 | 0.00 | 0.00 | 0.00 |
| 960.0 | 12.13 | 260.53 | 952.1 | -15.8 | -94.9 | 7.9 | 0.00 | 0.00 | 0.00 |
| 1,000.0 | 12.13 | 260.53 | 991.2 | -17.2 | -103.2 | 8.6 | 0.00 | 0.00 | 0.00 |
| 1,040.0 | 12.13 | 260.53 | 1,030.3 | -18.6 | -111.5 | 9.3 | 0.00 | 0.00 | 0.00 |
| 1,080.0 | 12.13 | 260.53 | 1,069.4 | -20.0 | -119.8 | 10.0 | 0.00 | 0.00 | 0.00 |
| 1,120.0 | 12.13 | 260.53 | 1,108.5 | -21.4 | -128.0 | 10.7 | 0.00 | 0.00 | 0.00 |
| 1,160.0 | 12.13 | 260.53 | 1,147.6 | -22.7 | -136.3 | 11.3 | 0.00 | 0.00 | 0.00 |
| 1,200.0 | 12.13 | 260.53 | 1,186.7 | -24.1 | -144.6 | 12.0 | 0.00 | 0.00 | 0.00 |
| 1,240.0 | 12.13 | 260.53 | 1,225.8 | -25.5 | -152.9 | 12.7 | 0.00 | 0.00 | 0.00 |
| 1,280.0 | 12.13 | 260.53 | 1,264.9 | -26.9 | -161.2 | 13.4 | 0.00 | 0.00 | 0.00 |
| 1,320.0 | 12.13 | 260.53 | 1,304.0 | -28.3 | -169.5 | 14.1 | 0.00 | 0.00 | 0.00 |
| 1,360.0 | 12.13 | 260.53 | 1,343.1 | -29.7 | -177.8 | 14.8 | 0.00 | 0.00 | 0.00 |
| 1,400.0 | 12.13 | 260.53 | 1,382.2 | -31.0 | -186.1 | 15.5 | 0.00 | 0.00 | 0.00 |
| 1,440.0 | 12.13 | 260.53 | 1,421.3 | -32.4 | -194.3 | 16.2 | 0.00 | 0.00 | 0.00 |
| 1,480.0 | 12.13 | 260.53 | 1,460.5 | -33.8 | -202.6 | 16.9 | 0.00 | 0.00 | 0.00 |
| 1,520.0 | 12.13 | 260.53 | 1,499.6 | -35.2 | -210.9 | 17.5 | 0.00 | 0.00 | 0.00 |
| 1,560.0 | 12.13 | 260.53 | 1,538.7 | -36.6 | -219.2 | 18.2 | 0.00 | 0.00 | 0.00 |
| 1,600.0 | 12.13 | 260.53 | 1,577.8 | -38.0 | -227.5 | 18.9 | 0.00 | 0.00 | 0.00 |
| 1,640.0 | 12.13 | 260.53 | 1,616.9 | -39.3 | -235.8 | 19.6 | 0.00 | 0.00 | 0.00 |
| 1,680.0 | 12.13 | 260.53 | 1,656.0 | -40.7 | -244.1 | 20.3 | 0.00 | 0.00 | 0.00 |
| 1,720.0 | 12.13 | 260.53 | 1,695.1 | -42.1 | -252.4 | 21.0 | 0.00 | 0.00 | 0.00 |
| 1,760.0 | 12.13 | 260.53 | 1,734.2 | -43.5 | -260.7 | 21.7 | 0.00 | 0.00 | 0.00 |
| 1,800.0 | 12.13 | 260.53 | 1,773.3 | -44.9 | -268.9 | 22.4 | 0.00 | 0.00 | 0.00 |
| 1,840.0 | 12.13 | 260.53 | 1,812.4 | -46.2 | -277.2 | 23.1 | 0.00 | 0.00 | 0.00 |
| 1,880.0 | 12.13 | 260.53 | 1,851.5 | -47.6 | -285.5 | 23.8 | 0.00 | 0.00 | 0.00 |
| 1,920.0 | 12.13 | 260.53 | 1,890.6 | -49.0 | -293.8 | 24.4 | 0.00 | 0.00 | 0.00 |
| 1,960.0 | 12.13 | 260.53 | 1,929.7 | -50.4 | -302.1 | 25.1 | 0.00 | 0.00 | 0.00 |

| | | | |
|------------------|---|-------------------------------------|------------------------------|
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| 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-401 | 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 | 12.13 | 260.53 | 1,968.9 | -51.8 | -310.4 | 25.8 | 0.00 | 0.00 | 0.00 |
| 2,040.0 | 12.13 | 260.53 | 2,008.0 | -53.2 | -318.7 | 26.5 | 0.00 | 0.00 | 0.00 |
| 2,080.0 | 12.13 | 260.53 | 2,047.1 | -54.5 | -327.0 | 27.2 | 0.00 | 0.00 | 0.00 |
| 2,120.0 | 12.13 | 260.53 | 2,086.2 | -55.9 | -335.2 | 27.9 | 0.00 | 0.00 | 0.00 |
| 2,160.0 | 12.13 | 260.53 | 2,125.3 | -57.3 | -343.5 | 28.6 | 0.00 | 0.00 | 0.00 |
| 2,200.0 | 12.13 | 260.53 | 2,164.4 | -58.7 | -351.8 | 29.3 | 0.00 | 0.00 | 0.00 |
| 2,240.0 | 12.13 | 260.53 | 2,203.5 | -60.1 | -360.1 | 30.0 | 0.00 | 0.00 | 0.00 |
| 2,280.0 | 12.13 | 260.53 | 2,242.6 | -61.5 | -368.4 | 30.6 | 0.00 | 0.00 | 0.00 |
| 2,320.0 | 12.13 | 260.53 | 2,281.7 | -62.8 | -376.7 | 31.3 | 0.00 | 0.00 | 0.00 |
| 2,360.0 | 12.13 | 260.53 | 2,320.8 | -64.2 | -385.0 | 32.0 | 0.00 | 0.00 | 0.00 |
| 2,400.0 | 12.13 | 260.53 | 2,359.9 | -65.6 | -393.3 | 32.7 | 0.00 | 0.00 | 0.00 |
| 2,440.0 | 12.13 | 260.53 | 2,399.0 | -67.0 | -401.5 | 33.4 | 0.00 | 0.00 | 0.00 |
| 2,480.0 | 12.13 | 260.53 | 2,438.1 | -68.4 | -409.8 | 34.1 | 0.00 | 0.00 | 0.00 |
| 2,520.0 | 12.13 | 260.53 | 2,477.2 | -69.8 | -418.1 | 34.8 | 0.00 | 0.00 | 0.00 |
| 2,560.0 | 12.13 | 260.53 | 2,516.4 | -71.1 | -426.4 | 35.5 | 0.00 | 0.00 | 0.00 |
| 2,600.0 | 12.13 | 260.53 | 2,555.5 | -72.5 | -434.7 | 36.2 | 0.00 | 0.00 | 0.00 |
| 2,640.0 | 12.13 | 260.53 | 2,594.6 | -73.9 | -443.0 | 36.9 | 0.00 | 0.00 | 0.00 |
| 2,680.0 | 12.13 | 260.53 | 2,633.7 | -75.3 | -451.3 | 37.5 | 0.00 | 0.00 | 0.00 |
| 2,720.0 | 12.13 | 260.53 | 2,672.8 | -76.7 | -459.6 | 38.2 | 0.00 | 0.00 | 0.00 |
| 2,760.0 | 12.13 | 260.53 | 2,711.9 | -78.0 | -467.8 | 38.9 | 0.00 | 0.00 | 0.00 |
| 2,800.0 | 12.13 | 260.53 | 2,751.0 | -79.4 | -476.1 | 39.6 | 0.00 | 0.00 | 0.00 |
| 2,840.0 | 12.13 | 260.53 | 2,790.1 | -80.8 | -484.4 | 40.3 | 0.00 | 0.00 | 0.00 |
| 2,880.0 | 12.13 | 260.53 | 2,829.2 | -82.2 | -492.7 | 41.0 | 0.00 | 0.00 | 0.00 |
| 2,920.0 | 12.13 | 260.53 | 2,868.3 | -83.6 | -501.0 | 41.7 | 0.00 | 0.00 | 0.00 |
| 2,960.0 | 12.13 | 260.53 | 2,907.4 | -85.0 | -509.3 | 42.4 | 0.00 | 0.00 | 0.00 |
| 3,000.0 | 12.13 | 260.53 | 2,946.5 | -86.3 | -517.6 | 43.1 | 0.00 | 0.00 | 0.00 |
| 3,040.0 | 12.13 | 260.53 | 2,985.6 | -87.7 | -525.9 | 43.7 | 0.00 | 0.00 | 0.00 |
| 3,080.0 | 12.13 | 260.53 | 3,024.8 | -89.1 | -534.1 | 44.4 | 0.00 | 0.00 | 0.00 |
| 3,120.0 | 12.13 | 260.53 | 3,063.9 | -90.5 | -542.4 | 45.1 | 0.00 | 0.00 | 0.00 |
| 3,160.0 | 12.13 | 260.53 | 3,103.0 | -91.9 | -550.7 | 45.8 | 0.00 | 0.00 | 0.00 |
| 3,200.0 | 12.13 | 260.53 | 3,142.1 | -93.3 | -559.0 | 46.5 | 0.00 | 0.00 | 0.00 |
| 3,240.0 | 12.13 | 260.53 | 3,181.2 | -94.6 | -567.3 | 47.2 | 0.00 | 0.00 | 0.00 |
| 3,280.0 | 12.13 | 260.53 | 3,220.3 | -96.0 | -575.6 | 47.9 | 0.00 | 0.00 | 0.00 |
| 3,320.0 | 12.13 | 260.53 | 3,259.4 | -97.4 | -583.9 | 48.6 | 0.00 | 0.00 | 0.00 |
| 3,360.0 | 12.13 | 260.53 | 3,298.5 | -98.8 | -592.2 | 49.3 | 0.00 | 0.00 | 0.00 |
| 3,400.0 | 12.13 | 260.53 | 3,337.6 | -100.2 | -600.5 | 50.0 | 0.00 | 0.00 | 0.00 |
| 3,440.0 | 12.13 | 260.53 | 3,376.7 | -101.6 | -608.7 | 50.6 | 0.00 | 0.00 | 0.00 |
| 3,480.0 | 12.13 | 260.53 | 3,415.8 | -102.9 | -617.0 | 51.3 | 0.00 | 0.00 | 0.00 |
| 3,520.0 | 12.13 | 260.53 | 3,454.9 | -104.3 | -625.3 | 52.0 | 0.00 | 0.00 | 0.00 |
| 3,560.0 | 12.13 | 260.53 | 3,494.0 | -105.7 | -633.6 | 52.7 | 0.00 | 0.00 | 0.00 |
| 3,600.0 | 12.13 | 260.53 | 3,533.2 | -107.1 | -641.9 | 53.4 | 0.00 | 0.00 | 0.00 |
| 3,640.0 | 12.13 | 260.53 | 3,572.3 | -108.5 | -650.2 | 54.1 | 0.00 | 0.00 | 0.00 |
| 3,680.0 | 12.13 | 260.53 | 3,611.4 | -109.8 | -658.5 | 54.8 | 0.00 | 0.00 | 0.00 |
| 3,720.0 | 12.13 | 260.53 | 3,650.5 | -111.2 | -666.8 | 55.5 | 0.00 | 0.00 | 0.00 |
| 3,760.0 | 12.13 | 260.53 | 3,689.6 | -112.6 | -675.0 | 56.2 | 0.00 | 0.00 | 0.00 |
| 3,800.0 | 12.13 | 260.53 | 3,728.7 | -114.0 | -683.3 | 56.8 | 0.00 | 0.00 | 0.00 |
| 3,840.0 | 12.13 | 260.53 | 3,767.8 | -115.4 | -691.6 | 57.5 | 0.00 | 0.00 | 0.00 |
| 3,880.0 | 12.13 | 260.53 | 3,806.9 | -116.8 | -699.9 | 58.2 | 0.00 | 0.00 | 0.00 |
| 3,920.0 | 12.13 | 260.53 | 3,846.0 | -118.1 | -708.2 | 58.9 | 0.00 | 0.00 | 0.00 |
| 3,960.0 | 12.13 | 260.53 | 3,885.1 | -119.5 | -716.5 | 59.6 | 0.00 | 0.00 | 0.00 |
| 4,000.0 | 12.13 | 260.53 | 3,924.2 | -120.9 | -724.8 | 60.3 | 0.00 | 0.00 | 0.00 |
| 4,040.0 | 12.13 | 260.53 | 3,963.3 | -122.3 | -733.1 | 61.0 | 0.00 | 0.00 | 0.00 |

| | | | |
|------------------|---|-------------------------------------|------------------------------|
| Database: | Landmark | Local Co-ordinate Reference: | Well Waste Management 2Q-401 |
| 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-401 | 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 | 12.13 | 260.53 | 4,002.4 | -123.7 | -741.3 | 61.7 | 0.00 | 0.00 | 0.00 |
| 4,120.0 | 12.13 | 260.53 | 4,041.6 | -125.1 | -749.6 | 62.4 | 0.00 | 0.00 | 0.00 |
| 4,160.0 | 12.13 | 260.53 | 4,080.7 | -126.4 | -757.9 | 63.1 | 0.00 | 0.00 | 0.00 |
| 4,200.0 | 12.13 | 260.53 | 4,119.8 | -127.8 | -766.2 | 63.7 | 0.00 | 0.00 | 0.00 |
| 4,240.0 | 12.13 | 260.53 | 4,158.9 | -129.2 | -774.5 | 64.4 | 0.00 | 0.00 | 0.00 |
| 4,280.0 | 12.13 | 260.53 | 4,198.0 | -130.6 | -782.8 | 65.1 | 0.00 | 0.00 | 0.00 |
| 4,320.0 | 12.13 | 260.53 | 4,237.1 | -132.0 | -791.1 | 65.8 | 0.00 | 0.00 | 0.00 |
| 4,360.0 | 12.13 | 260.53 | 4,276.2 | -133.4 | -799.4 | 66.5 | 0.00 | 0.00 | 0.00 |
| 4,400.0 | 12.13 | 260.53 | 4,315.3 | -134.7 | -807.6 | 67.2 | 0.00 | 0.00 | 0.00 |
| 4,440.0 | 12.13 | 260.53 | 4,354.4 | -136.1 | -815.9 | 67.9 | 0.00 | 0.00 | 0.00 |
| 4,480.0 | 12.13 | 260.53 | 4,393.5 | -137.5 | -824.2 | 68.6 | 0.00 | 0.00 | 0.00 |
| 4,520.0 | 12.13 | 260.53 | 4,432.6 | -138.9 | -832.5 | 69.3 | 0.00 | 0.00 | 0.00 |
| 4,560.0 | 12.13 | 260.53 | 4,471.7 | -140.3 | -840.8 | 69.9 | 0.00 | 0.00 | 0.00 |
| 4,600.0 | 12.13 | 260.53 | 4,510.8 | -141.6 | -849.1 | 70.6 | 0.00 | 0.00 | 0.00 |
| 4,640.0 | 12.13 | 260.53 | 4,549.9 | -143.0 | -857.4 | 71.3 | 0.00 | 0.00 | 0.00 |
| 4,680.0 | 12.13 | 260.53 | 4,589.1 | -144.4 | -865.7 | 72.0 | 0.00 | 0.00 | 0.00 |
| 4,720.0 | 12.13 | 260.53 | 4,628.2 | -145.8 | -874.0 | 72.7 | 0.00 | 0.00 | 0.00 |
| 4,760.0 | 12.13 | 260.53 | 4,667.3 | -147.2 | -882.2 | 73.4 | 0.00 | 0.00 | 0.00 |
| 4,800.0 | 12.13 | 260.53 | 4,706.4 | -148.6 | -890.5 | 74.1 | 0.00 | 0.00 | 0.00 |
| 4,840.0 | 12.13 | 260.53 | 4,745.5 | -149.9 | -898.8 | 74.8 | 0.00 | 0.00 | 0.00 |
| 4,880.0 | 12.13 | 260.53 | 4,784.6 | -151.3 | -907.1 | 75.5 | 0.00 | 0.00 | 0.00 |
| 4,920.0 | 12.13 | 260.53 | 4,823.7 | -152.7 | -915.4 | 76.2 | 0.00 | 0.00 | 0.00 |
| 4,960.0 | 12.13 | 260.53 | 4,862.8 | -154.1 | -923.7 | 76.8 | 0.00 | 0.00 | 0.00 |
| 5,000.0 | 12.13 | 260.53 | 4,901.9 | -155.5 | -932.0 | 77.5 | 0.00 | 0.00 | 0.00 |
| 5,040.0 | 12.13 | 260.53 | 4,941.0 | -156.9 | -940.3 | 78.2 | 0.00 | 0.00 | 0.00 |
| 5,080.0 | 12.13 | 260.53 | 4,980.1 | -158.2 | -948.5 | 78.9 | 0.00 | 0.00 | 0.00 |
| 5,120.0 | 12.13 | 260.53 | 5,019.2 | -159.6 | -956.8 | 79.6 | 0.00 | 0.00 | 0.00 |
| 5,160.0 | 12.13 | 260.53 | 5,058.3 | -161.0 | -965.1 | 80.3 | 0.00 | 0.00 | 0.00 |
| 5,200.0 | 12.13 | 260.53 | 5,097.5 | -162.4 | -973.4 | 81.0 | 0.00 | 0.00 | 0.00 |
| 5,240.0 | 12.13 | 260.53 | 5,136.6 | -163.8 | -981.7 | 81.7 | 0.00 | 0.00 | 0.00 |
| 5,280.0 | 12.13 | 260.53 | 5,175.7 | -165.1 | -990.0 | 82.4 | 0.00 | 0.00 | 0.00 |
| 5,320.0 | 12.13 | 260.53 | 5,214.8 | -166.5 | -998.3 | 83.0 | 0.00 | 0.00 | 0.00 |
| 5,360.0 | 12.13 | 260.53 | 5,253.9 | -167.9 | -1,006.6 | 83.7 | 0.00 | 0.00 | 0.00 |
| 5,400.0 | 12.13 | 260.53 | 5,293.0 | -169.3 | -1,014.8 | 84.4 | 0.00 | 0.00 | 0.00 |
| 5,405.3 | 12.13 | 260.53 | 5,298.2 | -169.5 | -1,016.0 | 84.5 | 0.00 | 0.00 | 0.00 |
| 5,440.0 | 11.43 | 260.53 | 5,332.1 | -170.6 | -1,022.9 | 85.1 | 2.00 | -2.00 | 0.00 |
| 5,480.0 | 10.63 | 260.53 | 5,371.4 | -171.9 | -1,030.5 | 85.7 | 2.00 | -2.00 | 0.00 |
| 5,520.0 | 9.83 | 260.53 | 5,410.8 | -173.1 | -1,037.5 | 86.3 | 2.00 | -2.00 | 0.00 |
| 5,560.0 | 9.03 | 260.53 | 5,450.2 | -174.2 | -1,044.0 | 86.8 | 2.00 | -2.00 | 0.00 |
| 5,600.0 | 8.23 | 260.53 | 5,489.8 | -175.1 | -1,049.9 | 87.3 | 2.00 | -2.00 | 0.00 |
| 5,640.0 | 7.43 | 260.53 | 5,529.4 | -176.0 | -1,055.3 | 87.8 | 2.00 | -2.00 | 0.00 |
| 5,680.0 | 6.63 | 260.53 | 5,569.1 | -176.8 | -1,060.1 | 88.2 | 2.00 | -2.00 | 0.00 |
| 5,720.0 | 5.83 | 260.53 | 5,608.9 | -177.6 | -1,064.4 | 88.5 | 2.00 | -2.00 | 0.00 |
| 5,760.0 | 5.03 | 260.53 | 5,648.7 | -178.2 | -1,068.1 | 88.9 | 2.00 | -2.00 | 0.00 |
| 5,800.0 | 4.23 | 260.53 | 5,688.5 | -178.7 | -1,071.3 | 89.1 | 2.00 | -2.00 | 0.00 |
| 5,840.0 | 3.43 | 260.53 | 5,728.5 | -179.2 | -1,073.9 | 89.3 | 2.00 | -2.00 | 0.00 |
| 5,880.0 | 2.63 | 260.53 | 5,768.4 | -179.5 | -1,076.0 | 89.5 | 2.00 | -2.00 | 0.00 |
| 5,920.0 | 1.83 | 260.53 | 5,808.4 | -179.8 | -1,077.6 | 89.6 | 2.00 | -2.00 | 0.00 |
| 5,960.0 | 1.03 | 260.53 | 5,848.4 | -179.9 | -1,078.5 | 89.7 | 2.00 | -2.00 | 0.00 |
| 6,000.0 | 0.23 | 260.53 | 5,888.4 | -180.0 | -1,079.0 | 89.8 | 2.00 | -2.00 | 0.00 |
| 6,011.6 | 0.00 | 0.00 | 5,900.0 | -180.0 | -1,079.0 | 89.8 | 2.00 | -2.00 | 0.00 |
| 6,040.0 | 0.00 | 0.00 | 5,928.4 | -180.0 | -1,079.0 | 89.8 | 0.00 | 0.00 | 0.00 |

| | | | |
|------------------|---|-------------------------------------|------------------------------|
| Database: | Landmark | Local Co-ordinate Reference: | Well Waste Management 2Q-401 |
| 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-401 | 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 | 5,968.4 | -180.0 | -1,079.0 | 89.8 | 0.00 | 0.00 | 0.00 |
| 6,120.0 | 0.00 | 0.00 | 6,008.4 | -180.0 | -1,079.0 | 89.8 | 0.00 | 0.00 | 0.00 |
| 6,135.2 | 0.00 | 0.00 | 6,023.6 | -180.0 | -1,079.0 | 89.8 | 0.00 | 0.00 | 0.00 |
| KOP #2 | | | | | | | | | |
| 6,160.0 | 1.88 | 359.16 | 6,048.4 | -179.6 | -1,079.0 | 90.2 | 7.56 | 7.56 | 0.00 |
| 6,200.0 | 4.90 | 359.16 | 6,088.3 | -177.2 | -1,079.0 | 92.5 | 7.55 | 7.55 | 0.00 |
| 6,240.0 | 7.92 | 359.16 | 6,128.0 | -172.8 | -1,079.1 | 96.8 | 7.55 | 7.55 | 0.00 |
| 6,280.0 | 10.94 | 359.16 | 6,167.5 | -166.2 | -1,079.2 | 103.2 | 7.55 | 7.55 | 0.00 |
| 6,320.0 | 13.96 | 359.16 | 6,206.5 | -157.6 | -1,079.3 | 111.6 | 7.55 | 7.55 | 0.00 |
| 6,360.0 | 16.98 | 359.16 | 6,245.1 | -146.9 | -1,079.5 | 121.9 | 7.55 | 7.55 | 0.00 |
| 6,400.0 | 20.00 | 359.16 | 6,283.0 | -134.3 | -1,079.7 | 134.3 | 7.55 | 7.55 | 0.00 |
| 6,440.0 | 23.02 | 359.16 | 6,320.2 | -119.6 | -1,079.9 | 148.5 | 7.55 | 7.55 | 0.00 |
| 6,480.0 | 26.04 | 359.16 | 6,356.6 | -103.0 | -1,080.1 | 164.7 | 7.55 | 7.55 | 0.00 |
| 6,520.0 | 29.06 | 359.16 | 6,392.1 | -84.5 | -1,080.4 | 182.7 | 7.55 | 7.55 | 0.00 |
| 6,560.0 | 32.08 | 359.16 | 6,426.5 | -64.2 | -1,080.7 | 202.5 | 7.55 | 7.55 | 0.00 |
| 6,600.0 | 35.10 | 359.16 | 6,459.8 | -42.0 | -1,081.0 | 224.0 | 7.55 | 7.55 | 0.00 |
| 6,640.0 | 38.12 | 359.16 | 6,491.9 | -18.2 | -1,081.4 | 247.2 | 7.55 | 7.55 | 0.00 |
| 6,680.0 | 41.14 | 359.16 | 6,522.7 | 7.3 | -1,081.8 | 272.0 | 7.55 | 7.55 | 0.00 |
| 6,720.0 | 44.16 | 359.16 | 6,552.2 | 34.4 | -1,082.2 | 298.4 | 7.55 | 7.55 | 0.00 |
| 6,760.0 | 47.18 | 359.16 | 6,580.1 | 63.0 | -1,082.6 | 326.2 | 7.55 | 7.55 | 0.00 |
| 6,800.0 | 50.20 | 359.16 | 6,606.5 | 93.0 | -1,083.0 | 355.5 | 7.55 | 7.55 | 0.00 |
| 6,840.0 | 53.22 | 359.16 | 6,631.3 | 124.4 | -1,083.5 | 386.0 | 7.55 | 7.55 | 0.00 |
| 6,880.0 | 56.24 | 359.16 | 6,654.4 | 157.1 | -1,084.0 | 417.8 | 7.55 | 7.55 | 0.00 |
| 6,920.0 | 59.26 | 359.16 | 6,675.7 | 190.9 | -1,084.5 | 450.7 | 7.55 | 7.55 | 0.00 |
| 6,960.0 | 62.28 | 359.16 | 6,695.3 | 225.8 | -1,085.0 | 484.7 | 7.55 | 7.55 | 0.00 |
| 7,000.0 | 65.30 | 359.16 | 6,712.9 | 261.7 | -1,085.5 | 519.6 | 7.55 | 7.55 | 0.00 |
| 7,040.0 | 68.32 | 359.16 | 6,728.7 | 298.4 | -1,086.0 | 555.4 | 7.55 | 7.55 | 0.00 |
| 7,080.0 | 71.34 | 359.16 | 6,742.5 | 336.0 | -1,086.6 | 591.9 | 7.55 | 7.55 | 0.00 |
| 7,120.0 | 74.36 | 359.16 | 6,754.3 | 374.2 | -1,087.2 | 629.1 | 7.55 | 7.55 | 0.00 |
| 7,160.0 | 77.38 | 359.16 | 6,764.0 | 413.0 | -1,087.7 | 666.8 | 7.55 | 7.55 | 0.00 |
| 7,200.0 | 80.40 | 359.16 | 6,771.7 | 452.2 | -1,088.3 | 705.0 | 7.55 | 7.55 | 0.00 |
| 7,240.0 | 83.42 | 359.16 | 6,777.4 | 491.8 | -1,088.9 | 743.5 | 7.55 | 7.55 | 0.00 |
| 7,280.0 | 86.44 | 359.16 | 6,780.9 | 531.6 | -1,089.5 | 782.3 | 7.55 | 7.55 | 0.00 |
| 7,320.0 | 89.46 | 359.16 | 6,782.3 | 571.6 | -1,090.1 | 821.2 | 7.55 | 7.55 | 0.00 |
| 7,334.3 | 90.54 | 359.16 | 6,782.3 | 585.9 | -1,090.3 | 835.1 | 7.55 | 7.55 | 0.00 |
| End of Build - 7" | | | | | | | | | |
| 7,360.0 | 90.54 | 359.16 | 6,782.1 | 611.6 | -1,090.6 | 860.1 | 0.00 | 0.00 | 0.00 |
| 7,400.0 | 90.54 | 359.16 | 6,781.7 | 651.6 | -1,091.2 | 899.0 | 0.00 | 0.00 | 0.00 |
| 7,440.0 | 90.54 | 359.16 | 6,781.3 | 691.6 | -1,091.8 | 937.9 | 0.00 | 0.00 | 0.00 |
| 7,480.0 | 90.54 | 359.16 | 6,781.0 | 731.6 | -1,092.4 | 976.9 | 0.00 | 0.00 | 0.00 |
| 7,520.0 | 90.54 | 359.16 | 6,780.6 | 771.6 | -1,093.0 | 1,015.8 | 0.00 | 0.00 | 0.00 |
| 7,560.0 | 90.54 | 359.16 | 6,780.2 | 811.6 | -1,093.6 | 1,054.7 | 0.00 | 0.00 | 0.00 |
| 7,600.0 | 90.54 | 359.16 | 6,779.8 | 851.6 | -1,094.2 | 1,093.6 | 0.00 | 0.00 | 0.00 |
| 7,640.0 | 90.54 | 359.16 | 6,779.5 | 891.6 | -1,094.8 | 1,132.5 | 0.00 | 0.00 | 0.00 |
| 7,680.0 | 90.54 | 359.16 | 6,779.1 | 931.6 | -1,095.4 | 1,171.5 | 0.00 | 0.00 | 0.00 |
| 7,720.0 | 90.54 | 359.16 | 6,778.7 | 971.5 | -1,095.9 | 1,210.4 | 0.00 | 0.00 | 0.00 |
| 7,760.0 | 90.54 | 359.16 | 6,778.3 | 1,011.5 | -1,096.5 | 1,249.3 | 0.00 | 0.00 | 0.00 |
| 7,800.0 | 90.54 | 359.16 | 6,777.9 | 1,051.5 | -1,097.1 | 1,288.2 | 0.00 | 0.00 | 0.00 |
| 7,840.0 | 90.54 | 359.16 | 6,777.6 | 1,091.5 | -1,097.7 | 1,327.1 | 0.00 | 0.00 | 0.00 |
| 7,880.0 | 90.54 | 359.16 | 6,777.2 | 1,131.5 | -1,098.3 | 1,366.1 | 0.00 | 0.00 | 0.00 |
| 7,920.0 | 90.54 | 359.16 | 6,776.8 | 1,171.5 | -1,098.9 | 1,405.0 | 0.00 | 0.00 | 0.00 |
| 7,960.0 | 90.54 | 359.16 | 6,776.4 | 1,211.5 | -1,099.5 | 1,443.9 | 0.00 | 0.00 | 0.00 |

| | | | |
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| Database: | Landmark | Local Co-ordinate Reference: | Well Waste Management 2Q-401 |
| 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-401 | 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 | 90.54 | 359.16 | 6,776.1 | 1,251.5 | -1,100.1 | 1,482.8 | 0.00 | 0.00 | 0.00 |
| 8,040.0 | 90.54 | 359.16 | 6,775.7 | 1,291.5 | -1,100.7 | 1,521.7 | 0.00 | 0.00 | 0.00 |
| 8,080.0 | 90.54 | 359.16 | 6,775.3 | 1,331.5 | -1,101.2 | 1,560.7 | 0.00 | 0.00 | 0.00 |
| 8,120.0 | 90.54 | 359.16 | 6,774.9 | 1,371.5 | -1,101.8 | 1,599.6 | 0.00 | 0.00 | 0.00 |
| 8,160.0 | 90.54 | 359.16 | 6,774.6 | 1,411.5 | -1,102.4 | 1,638.5 | 0.00 | 0.00 | 0.00 |
| 8,200.0 | 90.54 | 359.16 | 6,774.2 | 1,451.5 | -1,103.0 | 1,677.4 | 0.00 | 0.00 | 0.00 |
| 8,240.0 | 90.54 | 359.16 | 6,773.8 | 1,491.5 | -1,103.6 | 1,716.3 | 0.00 | 0.00 | 0.00 |
| 8,280.0 | 90.54 | 359.16 | 6,773.4 | 1,531.5 | -1,104.2 | 1,755.3 | 0.00 | 0.00 | 0.00 |
| 8,320.0 | 90.54 | 359.16 | 6,773.0 | 1,571.5 | -1,104.8 | 1,794.2 | 0.00 | 0.00 | 0.00 |
| 8,360.0 | 90.54 | 359.16 | 6,772.7 | 1,611.5 | -1,105.4 | 1,833.1 | 0.00 | 0.00 | 0.00 |
| 8,400.0 | 90.54 | 359.16 | 6,772.3 | 1,651.4 | -1,106.0 | 1,872.0 | 0.00 | 0.00 | 0.00 |
| 8,440.0 | 90.54 | 359.16 | 6,771.9 | 1,691.4 | -1,106.5 | 1,910.9 | 0.00 | 0.00 | 0.00 |
| 8,480.0 | 90.54 | 359.16 | 6,771.5 | 1,731.4 | -1,107.1 | 1,949.9 | 0.00 | 0.00 | 0.00 |
| 8,520.0 | 90.54 | 359.16 | 6,771.2 | 1,771.4 | -1,107.7 | 1,988.8 | 0.00 | 0.00 | 0.00 |
| 8,560.0 | 90.54 | 359.16 | 6,770.8 | 1,811.4 | -1,108.3 | 2,027.7 | 0.00 | 0.00 | 0.00 |
| 8,600.0 | 90.54 | 359.16 | 6,770.4 | 1,851.4 | -1,108.9 | 2,066.6 | 0.00 | 0.00 | 0.00 |
| 8,640.0 | 90.54 | 359.16 | 6,770.0 | 1,891.4 | -1,109.5 | 2,105.5 | 0.00 | 0.00 | 0.00 |
| 8,680.0 | 90.54 | 359.16 | 6,769.6 | 1,931.4 | -1,110.1 | 2,144.5 | 0.00 | 0.00 | 0.00 |
| 8,720.0 | 90.54 | 359.16 | 6,769.3 | 1,971.4 | -1,110.7 | 2,183.4 | 0.00 | 0.00 | 0.00 |
| 8,760.0 | 90.54 | 359.16 | 6,768.9 | 2,011.4 | -1,111.2 | 2,222.3 | 0.00 | 0.00 | 0.00 |
| 8,800.0 | 90.54 | 359.16 | 6,768.5 | 2,051.4 | -1,111.8 | 2,261.2 | 0.00 | 0.00 | 0.00 |
| 8,840.0 | 90.54 | 359.16 | 6,768.1 | 2,091.4 | -1,112.4 | 2,300.1 | 0.00 | 0.00 | 0.00 |
| 8,880.0 | 90.54 | 359.16 | 6,767.8 | 2,131.4 | -1,113.0 | 2,339.1 | 0.00 | 0.00 | 0.00 |
| 8,920.0 | 90.54 | 359.16 | 6,767.4 | 2,171.4 | -1,113.6 | 2,378.0 | 0.00 | 0.00 | 0.00 |
| 8,960.0 | 90.54 | 359.16 | 6,767.0 | 2,211.4 | -1,114.2 | 2,416.9 | 0.00 | 0.00 | 0.00 |
| 9,000.0 | 90.54 | 359.16 | 6,766.6 | 2,251.4 | -1,114.8 | 2,455.8 | 0.00 | 0.00 | 0.00 |
| 9,040.0 | 90.54 | 359.16 | 6,766.3 | 2,291.3 | -1,115.4 | 2,494.7 | 0.00 | 0.00 | 0.00 |
| 9,080.0 | 90.54 | 359.16 | 6,765.9 | 2,331.3 | -1,116.0 | 2,533.7 | 0.00 | 0.00 | 0.00 |
| 9,120.0 | 90.54 | 359.16 | 6,765.5 | 2,371.3 | -1,116.5 | 2,572.6 | 0.00 | 0.00 | 0.00 |
| 9,160.0 | 90.54 | 359.16 | 6,765.1 | 2,411.3 | -1,117.1 | 2,611.5 | 0.00 | 0.00 | 0.00 |
| 9,200.0 | 90.54 | 359.16 | 6,764.7 | 2,451.3 | -1,117.7 | 2,650.4 | 0.00 | 0.00 | 0.00 |
| 9,240.0 | 90.54 | 359.16 | 6,764.4 | 2,491.3 | -1,118.3 | 2,689.3 | 0.00 | 0.00 | 0.00 |
| 9,280.0 | 90.54 | 359.16 | 6,764.0 | 2,531.3 | -1,118.9 | 2,728.3 | 0.00 | 0.00 | 0.00 |
| 9,320.0 | 90.54 | 359.16 | 6,763.6 | 2,571.3 | -1,119.5 | 2,767.2 | 0.00 | 0.00 | 0.00 |
| 9,360.0 | 90.54 | 359.16 | 6,763.2 | 2,611.3 | -1,120.1 | 2,806.1 | 0.00 | 0.00 | 0.00 |
| 9,400.0 | 90.54 | 359.16 | 6,762.9 | 2,651.3 | -1,120.7 | 2,845.0 | 0.00 | 0.00 | 0.00 |
| 9,440.0 | 90.54 | 359.16 | 6,762.5 | 2,691.3 | -1,121.3 | 2,883.9 | 0.00 | 0.00 | 0.00 |
| 9,480.0 | 90.54 | 359.16 | 6,762.1 | 2,731.3 | -1,121.8 | 2,922.9 | 0.00 | 0.00 | 0.00 |
| 9,520.0 | 90.54 | 359.16 | 6,761.7 | 2,771.3 | -1,122.4 | 2,961.8 | 0.00 | 0.00 | 0.00 |
| 9,560.0 | 90.54 | 359.16 | 6,761.4 | 2,811.3 | -1,123.0 | 3,000.7 | 0.00 | 0.00 | 0.00 |
| 9,600.0 | 90.54 | 359.16 | 6,761.0 | 2,851.3 | -1,123.6 | 3,039.6 | 0.00 | 0.00 | 0.00 |
| 9,640.0 | 90.54 | 359.16 | 6,760.6 | 2,891.3 | -1,124.2 | 3,078.5 | 0.00 | 0.00 | 0.00 |
| 9,680.0 | 90.54 | 359.16 | 6,760.2 | 2,931.2 | -1,124.8 | 3,117.5 | 0.00 | 0.00 | 0.00 |
| 9,720.0 | 90.54 | 359.16 | 6,759.8 | 2,971.2 | -1,125.4 | 3,156.4 | 0.00 | 0.00 | 0.00 |
| 9,760.0 | 90.54 | 359.16 | 6,759.5 | 3,011.2 | -1,126.0 | 3,195.3 | 0.00 | 0.00 | 0.00 |
| 9,800.0 | 90.54 | 359.16 | 6,759.1 | 3,051.2 | -1,126.6 | 3,234.2 | 0.00 | 0.00 | 0.00 |
| 9,840.0 | 90.54 | 359.16 | 6,758.7 | 3,091.2 | -1,127.1 | 3,273.1 | 0.00 | 0.00 | 0.00 |
| 9,880.0 | 90.54 | 359.16 | 6,758.3 | 3,131.2 | -1,127.7 | 3,312.1 | 0.00 | 0.00 | 0.00 |
| 9,920.0 | 90.54 | 359.16 | 6,758.0 | 3,171.2 | -1,128.3 | 3,351.0 | 0.00 | 0.00 | 0.00 |
| 9,960.0 | 90.54 | 359.16 | 6,757.6 | 3,211.2 | -1,128.9 | 3,389.9 | 0.00 | 0.00 | 0.00 |
| 10,000.0 | 90.54 | 359.16 | 6,757.2 | 3,251.2 | -1,129.5 | 3,428.8 | 0.00 | 0.00 | 0.00 |
| 10,040.0 | 90.54 | 359.16 | 6,756.8 | 3,291.2 | -1,130.1 | 3,467.7 | 0.00 | 0.00 | 0.00 |

| | | | |
|------------------|---|-------------------------------------|------------------------------|
| Database: | Landmark | Local Co-ordinate Reference: | Well Waste Management 2Q-401 |
| 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-401 | 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) |
| 10,080.0 | 90.54 | 359.16 | 6,756.5 | 3,331.2 | -1,130.7 | 3,506.7 | 0.00 | 0.00 | 0.00 |
| 10,120.0 | 90.54 | 359.16 | 6,756.1 | 3,371.2 | -1,131.3 | 3,545.6 | 0.00 | 0.00 | 0.00 |
| 10,160.0 | 90.54 | 359.16 | 6,755.7 | 3,411.2 | -1,131.8 | 3,584.5 | 0.00 | 0.00 | 0.00 |
| 10,200.0 | 90.54 | 359.16 | 6,755.3 | 3,451.2 | -1,132.4 | 3,623.4 | 0.00 | 0.00 | 0.00 |
| 10,240.0 | 90.54 | 359.16 | 6,754.9 | 3,491.2 | -1,133.0 | 3,662.3 | 0.00 | 0.00 | 0.00 |
| 10,280.0 | 90.54 | 359.16 | 6,754.6 | 3,531.2 | -1,133.6 | 3,701.3 | 0.00 | 0.00 | 0.00 |
| 10,320.0 | 90.54 | 359.16 | 6,754.2 | 3,571.2 | -1,134.2 | 3,740.2 | 0.00 | 0.00 | 0.00 |
| 10,360.0 | 90.54 | 359.16 | 6,753.8 | 3,611.1 | -1,134.8 | 3,779.1 | 0.00 | 0.00 | 0.00 |
| 10,400.0 | 90.54 | 359.16 | 6,753.4 | 3,651.1 | -1,135.4 | 3,818.0 | 0.00 | 0.00 | 0.00 |
| 10,440.0 | 90.54 | 359.16 | 6,753.1 | 3,691.1 | -1,136.0 | 3,856.9 | 0.00 | 0.00 | 0.00 |
| 10,480.0 | 90.54 | 359.16 | 6,752.7 | 3,731.1 | -1,136.6 | 3,895.9 | 0.00 | 0.00 | 0.00 |
| 10,520.0 | 90.54 | 359.16 | 6,752.3 | 3,771.1 | -1,137.1 | 3,934.8 | 0.00 | 0.00 | 0.00 |
| 10,560.0 | 90.54 | 359.16 | 6,751.9 | 3,811.1 | -1,137.7 | 3,973.7 | 0.00 | 0.00 | 0.00 |
| 10,600.0 | 90.54 | 359.16 | 6,751.6 | 3,851.1 | -1,138.3 | 4,012.6 | 0.00 | 0.00 | 0.00 |
| 10,640.0 | 90.54 | 359.16 | 6,751.2 | 3,891.1 | -1,138.9 | 4,051.5 | 0.00 | 0.00 | 0.00 |
| 10,680.0 | 90.54 | 359.16 | 6,750.8 | 3,931.1 | -1,139.5 | 4,090.5 | 0.00 | 0.00 | 0.00 |
| 10,720.0 | 90.54 | 359.16 | 6,750.4 | 3,971.1 | -1,140.1 | 4,129.4 | 0.00 | 0.00 | 0.00 |
| 10,760.0 | 90.54 | 359.16 | 6,750.0 | 4,011.1 | -1,140.7 | 4,168.3 | 0.00 | 0.00 | 0.00 |
| 10,800.0 | 90.54 | 359.16 | 6,749.7 | 4,051.1 | -1,141.3 | 4,207.2 | 0.00 | 0.00 | 0.00 |
| 10,840.0 | 90.54 | 359.16 | 6,749.3 | 4,091.1 | -1,141.9 | 4,246.1 | 0.00 | 0.00 | 0.00 |
| 10,880.0 | 90.54 | 359.16 | 6,748.9 | 4,131.1 | -1,142.4 | 4,285.1 | 0.00 | 0.00 | 0.00 |
| 10,920.0 | 90.54 | 359.16 | 6,748.5 | 4,171.1 | -1,143.0 | 4,324.0 | 0.00 | 0.00 | 0.00 |
| 10,960.0 | 90.54 | 359.16 | 6,748.2 | 4,211.1 | -1,143.6 | 4,362.9 | 0.00 | 0.00 | 0.00 |
| 11,000.0 | 90.54 | 359.16 | 6,747.8 | 4,251.0 | -1,144.2 | 4,401.8 | 0.00 | 0.00 | 0.00 |
| 11,040.0 | 90.54 | 359.16 | 6,747.4 | 4,291.0 | -1,144.8 | 4,440.7 | 0.00 | 0.00 | 0.00 |
| 11,080.0 | 90.54 | 359.16 | 6,747.0 | 4,331.0 | -1,145.4 | 4,479.7 | 0.00 | 0.00 | 0.00 |
| 11,120.0 | 90.54 | 359.16 | 6,746.7 | 4,371.0 | -1,146.0 | 4,518.6 | 0.00 | 0.00 | 0.00 |
| 11,160.0 | 90.54 | 359.16 | 6,746.3 | 4,411.0 | -1,146.6 | 4,557.5 | 0.00 | 0.00 | 0.00 |
| 11,200.0 | 90.54 | 359.16 | 6,745.9 | 4,451.0 | -1,147.2 | 4,596.4 | 0.00 | 0.00 | 0.00 |
| 11,240.0 | 90.54 | 359.16 | 6,745.5 | 4,491.0 | -1,147.7 | 4,635.3 | 0.00 | 0.00 | 0.00 |
| 11,280.0 | 90.54 | 359.16 | 6,745.1 | 4,531.0 | -1,148.3 | 4,674.3 | 0.00 | 0.00 | 0.00 |
| 11,295.5 | 90.54 | 359.16 | 6,745.0 | 4,546.5 | -1,148.6 | 4,689.3 | 0.00 | 0.00 | 0.00 |
| BHL 500'FNL & 2495'FEL | | | | | | | | | |

| Casing Points | | | | | |
|---------------------|---------------------|------|--|---------------------|-------------------|
| Measured Depth (ft) | Vertical Depth (ft) | Name | | Casing Diameter (") | Hole Diameter (") |
| 7,334.3 | 6,782.3 | 7" | | 7 | 8-3/4 |

| Plan Annotations | | | | |
|---------------------|---------------------|-------------------|------------|--------------|
| Measured Depth (ft) | Vertical Depth (ft) | Local Coordinates | | Comment |
| | | +N/-S (ft) | +E/-W (ft) | |
| 200.0 | 200.0 | 0.0 | 0.0 | KOP #1 |
| 6,135.2 | 6,023.6 | -180.0 | -1,079.0 | KOP #2 |
| 7,334.3 | 6,782.3 | 585.9 | -1,090.3 | 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-401

Wellbore #1

Plan #1 (2-06-13)

Anticollision Report

07 February, 2013

| Offset Design | | | | | | | | | | | | | Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W - Waste Management 2Q-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 | | | | | | | | | |
| Measured Depth | Vertical Depth | Measured Depth | Vertical Depth | Reference | Offset | Highside Toolface | Offset Wellbore Centre | | Between Centres | Between Ellipses | Minimum Separation | Separation Factor | Warning | | | |
| (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (°) | +N/-S (ft) | +E/-W (ft) | (ft) | (ft) | (ft) | | | | | |
| 2,000.0 | 1,968.9 | 2,004.6 | 1,989.3 | 7.5 | 5.9 | -172.29 | -47.8 | -174.7 | 137.3 | 127.8 | 9.51 | 14.433 | | | | |
| 2,100.0 | 2,066.6 | 2,104.4 | 2,088.0 | 8.0 | 6.3 | -172.23 | -51.2 | -189.5 | 143.3 | 133.2 | 10.04 | 14.269 | | | | |
| 2,200.0 | 2,164.4 | 2,204.3 | 2,186.7 | 8.5 | 6.7 | -172.17 | -54.7 | -204.3 | 149.2 | 138.7 | 10.57 | 14.121 | | | | |
| 2,300.0 | 2,262.2 | 2,304.1 | 2,285.3 | 8.9 | 7.0 | -172.12 | -58.1 | -219.1 | 155.2 | 144.1 | 11.10 | 13.986 | | | | |
| 2,400.0 | 2,359.9 | 2,403.9 | 2,384.0 | 9.4 | 7.4 | -172.07 | -61.5 | -233.9 | 161.2 | 149.6 | 11.63 | 13.862 | | | | |
| 2,500.0 | 2,457.7 | 2,503.7 | 2,482.6 | 9.9 | 7.8 | -172.02 | -65.0 | -248.7 | 167.2 | 155.1 | 12.16 | 13.749 | | | | |
| 2,600.0 | 2,555.5 | 2,603.5 | 2,581.3 | 10.3 | 8.1 | -171.98 | -68.4 | -263.5 | 173.2 | 160.5 | 12.69 | 13.645 | | | | |
| 2,700.0 | 2,653.2 | 2,703.4 | 2,679.9 | 10.8 | 8.5 | -171.94 | -71.9 | -278.3 | 179.2 | 166.0 | 13.23 | 13.549 | | | | |
| 2,800.0 | 2,751.0 | 2,803.2 | 2,778.6 | 11.3 | 8.9 | -171.90 | -75.3 | -293.1 | 185.2 | 171.4 | 13.76 | 13.460 | | | | |
| 2,900.0 | 2,848.8 | 2,903.0 | 2,877.3 | 11.7 | 9.2 | -171.86 | -78.7 | -307.9 | 191.2 | 176.9 | 14.29 | 13.377 | | | | |
| 3,000.0 | 2,946.5 | 3,002.8 | 2,975.9 | 12.2 | 9.6 | -171.83 | -82.2 | -322.7 | 197.2 | 182.3 | 14.82 | 13.300 | | | | |
| 3,100.0 | 3,044.3 | 3,102.6 | 3,074.6 | 12.7 | 10.0 | -171.80 | -85.6 | -337.4 | 203.2 | 187.8 | 15.36 | 13.229 | | | | |
| 3,200.0 | 3,142.1 | 3,202.5 | 3,173.2 | 13.1 | 10.3 | -171.77 | -89.1 | -352.2 | 209.1 | 193.3 | 15.89 | 13.161 | | | | |
| 3,300.0 | 3,239.8 | 3,302.3 | 3,271.9 | 13.6 | 10.7 | -171.74 | -92.5 | -367.0 | 215.1 | 198.7 | 16.42 | 13.098 | | | | |
| 3,400.0 | 3,337.6 | 3,402.1 | 3,370.5 | 14.1 | 11.1 | -171.72 | -95.9 | -381.8 | 221.1 | 204.2 | 16.96 | 13.039 | | | | |
| 3,500.0 | 3,435.4 | 3,501.9 | 3,469.2 | 14.5 | 11.4 | -171.69 | -99.4 | -396.6 | 227.1 | 209.6 | 17.49 | 12.984 | | | | |
| 3,600.0 | 3,533.2 | 3,601.7 | 3,567.9 | 15.0 | 11.8 | -171.67 | -102.8 | -411.4 | 233.1 | 215.1 | 18.03 | 12.931 | | | | |
| 3,700.0 | 3,630.9 | 3,701.6 | 3,666.5 | 15.5 | 12.2 | -171.65 | -106.3 | -426.2 | 239.1 | 220.5 | 18.56 | 12.882 | | | | |
| 3,800.0 | 3,728.7 | 3,801.4 | 3,765.2 | 15.9 | 12.5 | -171.62 | -109.7 | -441.0 | 245.1 | 226.0 | 19.10 | 12.835 | | | | |
| 3,900.0 | 3,826.5 | 3,901.2 | 3,863.8 | 16.4 | 12.9 | -171.60 | -113.1 | -455.8 | 251.1 | 231.5 | 19.63 | 12.790 | | | | |
| 4,000.0 | 3,924.2 | 4,001.0 | 3,962.5 | 16.9 | 13.3 | -171.58 | -116.6 | -470.6 | 257.1 | 236.9 | 20.17 | 12.748 | | | | |
| 4,100.0 | 4,022.0 | 4,100.9 | 4,061.2 | 17.3 | 13.7 | -171.57 | -120.0 | -485.4 | 263.1 | 242.4 | 20.70 | 12.708 | | | | |
| 4,200.0 | 4,119.8 | 4,200.7 | 4,159.8 | 17.8 | 14.0 | -171.55 | -123.5 | -500.2 | 269.1 | 247.8 | 21.24 | 12.670 | | | | |
| 4,300.0 | 4,217.5 | 4,300.5 | 4,258.5 | 18.3 | 14.4 | -171.53 | -126.9 | -515.0 | 275.0 | 253.3 | 21.77 | 12.634 | | | | |
| 4,400.0 | 4,315.3 | 4,400.3 | 4,357.1 | 18.7 | 14.8 | -171.51 | -130.3 | -529.8 | 281.0 | 258.7 | 22.31 | 12.600 | | | | |
| 4,500.0 | 4,413.1 | 4,500.1 | 4,455.8 | 19.2 | 15.1 | -171.50 | -133.8 | -544.6 | 287.0 | 264.2 | 22.84 | 12.567 | | | | |
| 4,600.0 | 4,510.8 | 4,600.0 | 4,554.4 | 19.7 | 15.5 | -171.48 | -137.2 | -559.4 | 293.0 | 269.6 | 23.38 | 12.535 | | | | |
| 4,700.0 | 4,608.6 | 4,699.8 | 4,653.1 | 20.1 | 15.9 | -171.47 | -140.7 | -574.2 | 299.0 | 275.1 | 23.91 | 12.505 | | | | |
| 4,800.0 | 4,706.4 | 4,799.6 | 4,751.8 | 20.6 | 16.2 | -171.46 | -144.1 | -588.9 | 305.0 | 280.6 | 24.45 | 12.476 | | | | |
| 4,900.0 | 4,804.1 | 4,899.4 | 4,850.4 | 21.1 | 16.6 | -171.44 | -147.5 | -603.7 | 311.0 | 286.0 | 24.98 | 12.449 | | | | |
| 5,000.0 | 4,901.9 | 4,999.2 | 4,949.1 | 21.6 | 17.0 | -171.43 | -151.0 | -618.5 | 317.0 | 291.5 | 25.52 | 12.422 | | | | |
| 5,100.0 | 4,999.7 | 5,099.1 | 5,047.7 | 22.0 | 17.4 | -171.42 | -154.4 | -633.3 | 323.0 | 296.9 | 26.05 | 12.397 | | | | |
| 5,200.0 | 5,097.5 | 5,198.9 | 5,146.4 | 22.5 | 17.7 | -171.41 | -157.9 | -648.1 | 329.0 | 302.4 | 26.59 | 12.373 | | | | |
| 5,300.0 | 5,195.2 | 5,298.7 | 5,245.0 | 23.0 | 18.1 | -171.39 | -161.3 | -662.9 | 335.0 | 307.8 | 27.12 | 12.349 | | | | |
| 5,400.0 | 5,293.0 | 5,398.5 | 5,343.7 | 23.4 | 18.5 | -171.38 | -164.7 | -677.7 | 341.0 | 313.3 | 27.66 | 12.327 | | | | |
| 5,500.0 | 5,391.1 | 5,498.4 | 5,442.4 | 23.8 | 18.8 | -171.35 | -168.2 | -692.5 | 345.4 | 317.2 | 28.19 | 12.254 | | | | |
| 5,600.0 | 5,489.8 | 5,598.4 | 5,541.3 | 24.1 | 19.2 | -171.21 | -171.6 | -707.3 | 346.4 | 317.7 | 28.66 | 12.086 | | | | |
| 5,700.0 | 5,589.0 | 5,690.3 | 5,632.2 | 24.3 | 19.5 | -171.03 | -174.6 | -720.2 | 344.9 | 315.8 | 29.06 | 11.869 | | | | |
| 5,800.0 | 5,688.5 | 5,779.8 | 5,721.1 | 24.5 | 19.7 | -170.87 | -176.9 | -730.0 | 342.8 | 313.5 | 29.36 | 11.676 | | | | |
| 5,900.0 | 5,788.4 | 5,869.3 | 5,810.4 | 24.7 | 19.9 | -170.73 | -178.6 | -737.1 | 340.4 | 310.8 | 29.62 | 11.494 | | | | |
| 6,000.0 | 5,888.4 | 5,958.9 | 5,899.9 | 24.8 | 20.0 | -170.60 | -179.6 | -741.5 | 337.6 | 307.8 | 29.82 | 11.322 | | | | |
| 6,100.0 | 5,988.4 | 6,048.7 | 5,989.5 | 24.9 | 20.1 | 90.00 | -180.0 | -743.2 | 335.8 | 305.5 | 30.25 | 11.100 | | | | |
| 6,130.9 | 6,019.2 | 6,078.4 | 6,019.2 | 24.9 | 20.2 | 90.91 | -180.0 | -743.3 | 335.8 | 305.5 | 30.24 | 11.104 | | | | |
| 6,200.0 | 6,088.3 | 6,147.4 | 6,088.3 | 25.0 | 20.3 | 91.31 | -180.0 | -743.3 | 335.8 | 305.3 | 30.53 | 11.001 | | | | |
| 6,300.0 | 6,187.1 | 6,248.0 | 6,188.8 | 25.1 | 20.4 | 93.36 | -177.0 | -743.3 | 336.3 | 305.2 | 31.13 | 10.804 | | | | |
| 6,400.0 | 6,283.0 | 6,350.7 | 6,290.2 | 25.2 | 20.5 | 95.50 | -161.1 | -743.5 | 337.3 | 305.6 | 31.66 | 10.653 | | | | |
| 6,500.0 | 6,374.5 | 6,455.3 | 6,390.3 | 25.2 | 20.6 | 97.57 | -131.1 | -744.0 | 338.7 | 306.6 | 32.06 | 10.565 | | | | |
| 6,600.0 | 6,459.8 | 6,561.7 | 6,486.9 | 25.2 | 20.6 | 99.52 | -86.8 | -744.6 | 340.4 | 308.1 | 32.33 | 10.531 | | | | |
| 6,700.0 | 6,537.6 | 6,669.9 | 6,578.0 | 25.3 | 20.7 | 101.31 | -28.5 | -745.5 | 342.4 | 309.9 | 32.52 | 10.529 | | | | |
| 6,800.0 | 6,606.5 | 6,779.9 | 6,661.1 | 25.4 | 20.8 | 102.91 | 43.4 | -746.6 | 344.5 | 311.7 | 32.75 | 10.517 | | | | |
| 6,900.0 | 6,665.3 | 6,891.4 | 6,734.0 | 25.5 | 20.9 | 104.28 | 127.6 | -747.8 | 346.4 | 313.3 | 33.20 | 10.437 | | | | |

| Offset Design | | | | | | | | | | | | | Waste Management 2T-HZ2 Pad Sec.2-T2N-R64W - Waste Management 2Q-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 | Vertical Depth | Measured Depth | Vertical Depth | Reference | Offset | Highside Toolface | Offset Wellbore Centre | | Between Centres | Between Ellipses | Minimum Separation | Separation Factor | | | | |
| Depth (ft) | Depth (ft) | Depth (ft) | Depth (ft) | (ft) | (ft) | (°) | +N/-S (ft) | +E/-W (ft) | (ft) | (ft) | (ft) | | | | | |
| 7,000.0 | 6,712.9 | 7,004.4 | 6,794.6 | 25.7 | 21.1 | 105.40 | 222.9 | -749.2 | 348.2 | 314.2 | 34.01 | 10.240 | | | | |
| 7,100.0 | 6,748.6 | 7,118.5 | 6,840.8 | 26.0 | 21.4 | 106.24 | 327.1 | -750.8 | 349.6 | 314.3 | 35.35 | 9.891 | | | | |
| 7,200.0 | 6,771.7 | 7,233.4 | 6,871.2 | 26.4 | 22.0 | 106.79 | 437.8 | -752.4 | 350.6 | 313.3 | 37.29 | 9.403 | | | | |
| 7,300.0 | 6,781.9 | 7,348.9 | 6,884.6 | 26.9 | 22.8 | 107.03 | 552.3 | -754.1 | 351.0 | 311.2 | 39.79 | 8.821 | | | | |
| 7,400.0 | 6,781.7 | 7,454.0 | 6,884.6 | 27.6 | 23.8 | 107.05 | 657.5 | -755.6 | 351.1 | 308.8 | 42.30 | 8.299 | | | | |
| 7,500.0 | 6,780.8 | 7,554.0 | 6,883.7 | 28.5 | 24.9 | 107.05 | 757.5 | -757.1 | 351.1 | 306.3 | 44.77 | 7.842 | | | | |
| 7,600.0 | 6,779.8 | 7,654.0 | 6,882.8 | 29.4 | 26.0 | 107.06 | 857.5 | -758.6 | 351.1 | 303.7 | 47.40 | 7.407 | | | | |
| 7,700.0 | 6,778.9 | 7,754.0 | 6,882.0 | 30.5 | 27.3 | 107.07 | 957.4 | -760.1 | 351.1 | 300.9 | 50.16 | 6.999 | | | | |
| 7,800.0 | 6,777.9 | 7,854.0 | 6,881.1 | 31.6 | 28.7 | 107.08 | 1,057.4 | -761.6 | 351.1 | 298.1 | 53.04 | 6.619 | | | | |
| 7,900.0 | 6,777.0 | 7,954.0 | 6,880.2 | 32.9 | 30.1 | 107.09 | 1,157.4 | -763.0 | 351.1 | 295.1 | 56.02 | 6.268 | | | | |
| 8,000.0 | 6,776.1 | 8,054.0 | 6,879.3 | 34.2 | 31.6 | 107.10 | 1,257.4 | -764.5 | 351.1 | 292.0 | 59.07 | 5.944 | | | | |
| 8,100.0 | 6,775.1 | 8,154.0 | 6,878.4 | 35.6 | 33.1 | 107.11 | 1,357.4 | -766.0 | 351.1 | 288.9 | 62.20 | 5.645 | | | | |
| 8,200.0 | 6,774.2 | 8,254.0 | 6,877.5 | 37.0 | 34.7 | 107.11 | 1,457.4 | -767.5 | 351.1 | 285.7 | 65.39 | 5.370 | | | | |
| 8,300.0 | 6,773.2 | 8,354.0 | 6,876.6 | 38.5 | 36.3 | 107.12 | 1,557.3 | -769.0 | 351.1 | 282.5 | 68.62 | 5.117 | | | | |
| 8,400.0 | 6,772.3 | 8,454.0 | 6,875.7 | 40.1 | 38.0 | 107.13 | 1,657.3 | -770.4 | 351.1 | 279.2 | 71.91 | 4.883 | | | | |
| 8,500.0 | 6,771.3 | 8,554.0 | 6,874.8 | 41.6 | 39.6 | 107.14 | 1,757.3 | -771.9 | 351.1 | 275.9 | 75.23 | 4.668 | | | | |
| 8,600.0 | 6,770.4 | 8,654.0 | 6,873.9 | 43.2 | 41.3 | 107.15 | 1,857.3 | -773.4 | 351.2 | 272.6 | 78.58 | 4.469 | | | | |
| 8,700.0 | 6,769.5 | 8,754.0 | 6,873.0 | 44.8 | 43.0 | 107.16 | 1,957.3 | -774.9 | 351.2 | 269.2 | 81.96 | 4.284 | | | | |
| 8,800.0 | 6,768.5 | 8,854.0 | 6,872.2 | 46.5 | 44.8 | 107.17 | 2,057.3 | -776.4 | 351.2 | 265.8 | 85.37 | 4.113 | | | | |
| 8,900.0 | 6,767.6 | 8,954.0 | 6,871.3 | 48.2 | 46.5 | 107.17 | 2,157.3 | -777.8 | 351.2 | 262.4 | 88.81 | 3.954 | | | | |
| 9,000.0 | 6,766.6 | 9,054.0 | 6,870.4 | 49.9 | 48.3 | 107.18 | 2,257.2 | -779.3 | 351.2 | 258.9 | 92.26 | 3.807 | | | | |
| 9,100.0 | 6,765.7 | 9,154.0 | 6,869.5 | 51.6 | 50.0 | 107.19 | 2,357.2 | -780.8 | 351.2 | 255.5 | 95.73 | 3.669 | | | | |
| 9,200.0 | 6,764.7 | 9,254.0 | 6,868.6 | 53.3 | 51.8 | 107.20 | 2,457.2 | -782.3 | 351.2 | 252.0 | 99.21 | 3.540 | | | | |
| 9,300.0 | 6,763.8 | 9,354.0 | 6,867.7 | 55.0 | 53.6 | 107.21 | 2,557.2 | -783.8 | 351.2 | 248.5 | 102.72 | 3.419 | | | | |
| 9,400.0 | 6,762.9 | 9,454.0 | 6,866.8 | 56.8 | 55.4 | 107.22 | 2,657.2 | -785.2 | 351.2 | 245.0 | 106.23 | 3.306 | | | | |
| 9,500.0 | 6,761.9 | 9,554.0 | 6,865.9 | 58.5 | 57.2 | 107.23 | 2,757.2 | -786.7 | 351.2 | 241.5 | 109.76 | 3.200 | | | | |
| 9,600.0 | 6,761.0 | 9,654.0 | 6,865.0 | 60.3 | 59.0 | 107.23 | 2,857.2 | -788.2 | 351.2 | 237.9 | 113.29 | 3.100 | | | | |
| 9,700.0 | 6,760.0 | 9,754.0 | 6,864.1 | 62.1 | 60.8 | 107.24 | 2,957.1 | -789.7 | 351.2 | 234.4 | 116.84 | 3.006 | | | | |
| 9,800.0 | 6,759.1 | 9,854.0 | 6,863.3 | 63.9 | 62.6 | 107.25 | 3,057.1 | -791.2 | 351.2 | 230.8 | 120.39 | 2.917 | | | | |
| 9,900.0 | 6,758.2 | 9,954.0 | 6,862.4 | 65.6 | 64.5 | 107.26 | 3,157.1 | -792.6 | 351.2 | 227.3 | 123.96 | 2.834 | | | | |
| 10,000.0 | 6,757.2 | 10,054.0 | 6,861.5 | 67.4 | 66.3 | 107.27 | 3,257.1 | -794.1 | 351.3 | 223.7 | 127.53 | 2.754 | | | | |
| 10,100.0 | 6,756.3 | 10,154.0 | 6,860.6 | 69.3 | 68.2 | 107.28 | 3,357.1 | -795.6 | 351.3 | 220.2 | 131.10 | 2.679 | | | | |
| 10,200.0 | 6,755.3 | 10,254.0 | 6,859.7 | 71.1 | 70.0 | 107.29 | 3,457.1 | -797.1 | 351.3 | 216.6 | 134.68 | 2.608 | | | | |
| 10,300.0 | 6,754.4 | 10,354.0 | 6,858.8 | 72.9 | 71.8 | 107.29 | 3,557.0 | -798.6 | 351.3 | 213.0 | 138.27 | 2.540 | | | | |
| 10,400.0 | 6,753.4 | 10,454.0 | 6,857.9 | 74.7 | 73.7 | 107.30 | 3,657.0 | -800.0 | 351.3 | 209.4 | 141.87 | 2.476 | | | | |
| 10,500.0 | 6,752.5 | 10,554.0 | 6,857.0 | 76.5 | 75.6 | 107.31 | 3,757.0 | -801.5 | 351.3 | 205.8 | 145.46 | 2.415 | | | | |
| 10,600.0 | 6,751.6 | 10,654.0 | 6,856.1 | 78.4 | 77.4 | 107.32 | 3,857.0 | -803.0 | 351.3 | 202.2 | 149.07 | 2.357 | | | | |
| 10,700.0 | 6,750.6 | 10,754.0 | 6,855.2 | 80.2 | 79.3 | 107.33 | 3,957.0 | -804.5 | 351.3 | 198.6 | 152.67 | 2.301 | | | | |
| 10,800.0 | 6,749.7 | 10,854.0 | 6,854.4 | 82.1 | 81.1 | 107.34 | 4,057.0 | -806.0 | 351.3 | 195.0 | 156.28 | 2.248 | | | | |
| 10,900.0 | 6,748.7 | 10,954.0 | 6,853.5 | 83.9 | 83.0 | 107.35 | 4,157.0 | -807.4 | 351.3 | 191.4 | 159.90 | 2.197 | | | | |
| 11,000.0 | 6,747.8 | 11,054.0 | 6,852.6 | 85.7 | 84.9 | 107.35 | 4,256.9 | -808.9 | 351.3 | 187.8 | 163.51 | 2.149 | | | | |
| 11,100.0 | 6,746.8 | 11,154.0 | 6,851.7 | 87.6 | 86.8 | 107.36 | 4,356.9 | -810.4 | 351.3 | 184.2 | 167.13 | 2.102 | | | | |
| 11,200.0 | 6,745.9 | 11,254.0 | 6,850.8 | 89.5 | 88.6 | 107.37 | 4,456.9 | -811.9 | 351.3 | 180.6 | 170.76 | 2.058 | | | | |
| 11,255.8 | 6,745.4 | 11,309.8 | 6,850.3 | 90.5 | 89.7 | 107.38 | 4,512.7 | -812.7 | 351.4 | 178.6 | 172.78 | 2.034 | | | | |
| 11,295.5 | 6,745.0 | 11,343.6 | 6,850.0 | 91.2 | 90.3 | 107.38 | 4,546.5 | -813.2 | 351.4 | 177.3 | 174.11 | 2.018 SF | | | | |

| | | | |
|---------------------------|--|-------------------------------------|------------------------------|
| Company: | PETROLEUM DEVELOPMENT CORP Weld County CO | Local Co-ordinate Reference: | Well Waste Management 2Q-401 |
| 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-401 | 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 | | Between Centres (ft) | Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor | | |
| | | | | | | | +N/-S (ft) | +E/-W (ft) | | | | | | |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 92.33 | -3.6 | 89.4 | 89.5 | | | | | |
| 100.0 | 100.0 | 99.0 | 99.0 | 0.1 | 0.1 | 92.33 | -3.6 | 89.4 | 89.5 | 89.3 | 0.22 | 400.259 | | |
| 200.0 | 200.0 | 199.0 | 199.0 | 0.3 | 0.3 | 92.33 | -3.6 | 89.4 | 89.5 | 88.8 | 0.67 | 133.198 CC, ES | | |
| 300.0 | 300.0 | 299.0 | 299.0 | 0.6 | 0.6 | -168.42 | -3.6 | 89.4 | 91.2 | 90.1 | 1.12 | 81.784 | | |
| 400.0 | 399.8 | 398.8 | 398.8 | 0.8 | 0.8 | -169.02 | -3.6 | 89.4 | 96.4 | 94.8 | 1.56 | 61.705 | | |
| 500.0 | 499.5 | 498.5 | 498.5 | 1.0 | 1.0 | -169.90 | -3.6 | 89.4 | 104.9 | 102.9 | 2.02 | 52.053 | | |
| 600.0 | 598.7 | 597.7 | 597.7 | 1.3 | 1.2 | -170.91 | -3.6 | 89.4 | 116.9 | 114.5 | 2.47 | 47.259 | | |
| 700.0 | 697.5 | 696.5 | 696.5 | 1.6 | 1.5 | -171.93 | -3.6 | 89.4 | 132.4 | 129.5 | 2.94 | 45.092 | | |
| 800.0 | 795.6 | 794.6 | 794.6 | 2.0 | 1.7 | -172.90 | -3.6 | 89.4 | 151.3 | 147.9 | 3.40 | 44.487 | | |
| 900.0 | 893.4 | 892.4 | 892.4 | 2.5 | 1.9 | -173.76 | -3.6 | 89.4 | 172.2 | 168.3 | 3.86 | 44.558 | | |
| 1,000.0 | 991.2 | 990.2 | 990.2 | 2.9 | 2.1 | -174.44 | -3.6 | 89.4 | 193.1 | 188.8 | 4.33 | 44.572 | | |
| 1,100.0 | 1,088.9 | 1,087.9 | 1,087.9 | 3.4 | 2.3 | -174.98 | -3.6 | 89.4 | 214.0 | 209.2 | 4.80 | 44.556 | | |
| 1,200.0 | 1,186.7 | 1,185.7 | 1,185.7 | 3.8 | 2.6 | -175.43 | -3.6 | 89.4 | 235.0 | 229.7 | 5.28 | 44.525 | | |
| 1,300.0 | 1,284.5 | 1,283.5 | 1,283.5 | 4.3 | 2.8 | -175.80 | -3.6 | 89.4 | 255.9 | 250.2 | 5.75 | 44.486 | | |
| 1,400.0 | 1,382.2 | 1,381.2 | 1,381.2 | 4.7 | 3.0 | -176.12 | -3.6 | 89.4 | 276.9 | 270.6 | 6.23 | 44.445 | | |
| 1,500.0 | 1,480.0 | 1,479.0 | 1,479.0 | 5.2 | 3.2 | -176.40 | -3.6 | 89.4 | 297.8 | 291.1 | 6.71 | 44.403 | | |
| 1,600.0 | 1,577.8 | 1,576.8 | 1,576.8 | 5.7 | 3.4 | -176.63 | -3.6 | 89.4 | 318.8 | 311.6 | 7.19 | 44.361 | | |
| 1,700.0 | 1,675.5 | 1,674.5 | 1,674.5 | 6.1 | 3.7 | -176.84 | -3.6 | 89.4 | 339.8 | 332.1 | 7.67 | 44.321 | | |
| 1,800.0 | 1,773.3 | 1,772.3 | 1,772.3 | 6.6 | 3.9 | -177.02 | -3.6 | 89.4 | 360.7 | 352.6 | 8.15 | 44.283 | | |
| 1,900.0 | 1,871.1 | 1,870.1 | 1,870.1 | 7.1 | 4.1 | -177.19 | -3.6 | 89.4 | 381.7 | 373.1 | 8.63 | 44.246 | | |
| 2,000.0 | 1,968.9 | 1,967.9 | 1,967.9 | 7.5 | 4.3 | -177.34 | -3.6 | 89.4 | 402.7 | 393.6 | 9.11 | 44.212 | | |
| 2,100.0 | 2,066.6 | 2,065.6 | 2,065.6 | 8.0 | 4.5 | -177.47 | -3.6 | 89.4 | 423.7 | 414.1 | 9.59 | 44.179 | | |
| 2,200.0 | 2,164.4 | 2,163.4 | 2,163.4 | 8.5 | 4.8 | -177.59 | -3.6 | 89.4 | 444.7 | 434.6 | 10.07 | 44.148 | | |
| 2,300.0 | 2,262.2 | 2,261.2 | 2,261.2 | 8.9 | 5.0 | -177.70 | -3.6 | 89.4 | 465.7 | 455.1 | 10.55 | 44.119 | | |
| 2,400.0 | 2,359.9 | 2,358.9 | 2,358.9 | 9.4 | 5.2 | -177.80 | -3.6 | 89.4 | 486.7 | 475.6 | 11.04 | 44.091 | | |
| 2,500.0 | 2,457.7 | 2,456.7 | 2,456.7 | 9.9 | 5.4 | -177.89 | -3.6 | 89.4 | 507.7 | 496.1 | 11.52 | 44.065 | | |
| 2,600.0 | 2,555.5 | 2,554.5 | 2,554.5 | 10.3 | 5.6 | -177.97 | -3.6 | 89.4 | 528.6 | 516.6 | 12.00 | 44.041 | | |
| 2,700.0 | 2,653.2 | 2,652.2 | 2,652.2 | 10.8 | 5.8 | -178.05 | -3.6 | 89.4 | 549.6 | 537.2 | 12.49 | 44.017 | | |
| 2,800.0 | 2,751.0 | 2,750.0 | 2,750.0 | 11.3 | 6.1 | -178.12 | -3.6 | 89.4 | 570.6 | 557.7 | 12.97 | 43.995 | | |
| 2,900.0 | 2,848.8 | 2,847.8 | 2,847.8 | 11.7 | 6.3 | -178.19 | -3.6 | 89.4 | 591.6 | 578.2 | 13.45 | 43.974 | | |
| 3,000.0 | 2,946.5 | 2,945.5 | 2,945.5 | 12.2 | 6.5 | -178.25 | -3.6 | 89.4 | 612.6 | 598.7 | 13.94 | 43.954 | | |
| 3,100.0 | 3,044.3 | 3,052.2 | 3,052.2 | 12.7 | 6.7 | -178.28 | -4.0 | 89.1 | 633.3 | 618.9 | 14.43 | 43.896 | | |
| 3,200.0 | 3,142.1 | 3,170.9 | 3,170.8 | 13.1 | 7.0 | -178.09 | -7.4 | 86.0 | 651.4 | 636.5 | 14.91 | 43.682 | | |
| 3,300.0 | 3,239.8 | 3,290.7 | 3,290.2 | 13.6 | 7.2 | -177.62 | -14.5 | 79.5 | 666.3 | 650.9 | 15.40 | 43.281 | | |
| 3,400.0 | 3,337.6 | 3,407.1 | 3,405.8 | 14.1 | 7.4 | -176.93 | -24.9 | 70.0 | 678.2 | 662.3 | 15.89 | 42.689 | | |
| 3,500.0 | 3,435.4 | 3,506.2 | 3,504.0 | 14.5 | 7.6 | -176.28 | -34.8 | 61.0 | 689.2 | 672.8 | 16.36 | 42.122 | | |
| 3,600.0 | 3,533.2 | 3,605.3 | 3,602.1 | 15.0 | 7.8 | -175.66 | -44.7 | 52.0 | 700.2 | 683.4 | 16.84 | 41.571 | | |
| 3,700.0 | 3,630.9 | 3,704.4 | 3,700.3 | 15.5 | 8.0 | -175.05 | -54.6 | 43.0 | 711.3 | 694.0 | 17.34 | 41.032 | | |
| 3,800.0 | 3,728.7 | 3,803.5 | 3,798.5 | 15.9 | 8.3 | -174.47 | -64.5 | 34.0 | 722.5 | 704.7 | 17.84 | 40.508 | | |
| 3,900.0 | 3,826.5 | 3,902.6 | 3,896.7 | 16.4 | 8.5 | -173.90 | -74.4 | 25.0 | 733.7 | 715.4 | 18.34 | 39.998 | | |
| 4,000.0 | 3,924.2 | 4,001.7 | 3,994.9 | 16.9 | 8.7 | -173.35 | -84.3 | 15.9 | 745.1 | 726.2 | 18.86 | 39.503 | | |
| 4,100.0 | 4,022.0 | 4,100.8 | 4,093.1 | 17.3 | 9.0 | -172.81 | -94.2 | 6.9 | 756.5 | 737.1 | 19.39 | 39.022 | | |
| 4,200.0 | 4,119.8 | 4,199.9 | 4,191.3 | 17.8 | 9.3 | -172.29 | -104.1 | -2.1 | 767.9 | 748.0 | 19.92 | 38.556 | | |
| 4,300.0 | 4,217.5 | 4,299.0 | 4,289.5 | 18.3 | 9.5 | -171.79 | -114.0 | -11.1 | 779.4 | 759.0 | 20.46 | 38.104 | | |
| 4,400.0 | 4,315.3 | 4,398.1 | 4,387.7 | 18.7 | 9.8 | -171.30 | -123.9 | -20.1 | 791.0 | 770.0 | 21.00 | 37.665 | | |
| 4,500.0 | 4,413.1 | 4,497.2 | 4,485.9 | 19.2 | 10.1 | -170.82 | -133.8 | -29.1 | 802.6 | 781.1 | 21.55 | 37.241 | | |
| 4,600.0 | 4,510.8 | 4,596.4 | 4,584.1 | 19.7 | 10.3 | -170.36 | -143.7 | -38.2 | 814.3 | 792.2 | 22.11 | 36.830 | | |
| 4,700.0 | 4,608.6 | 4,695.5 | 4,682.3 | 20.1 | 10.6 | -169.91 | -153.6 | -47.2 | 826.1 | 803.4 | 22.67 | 36.432 | | |
| 4,800.0 | 4,706.4 | 4,794.6 | 4,780.5 | 20.6 | 10.9 | -169.47 | -163.5 | -56.2 | 837.8 | 814.6 | 23.24 | 36.047 | | |
| 4,900.0 | 4,804.1 | 4,893.7 | 4,878.7 | 21.1 | 11.2 | -169.05 | -173.4 | -65.2 | 849.7 | 825.9 | 23.82 | 35.675 | | |
| 5,000.0 | 4,901.9 | 4,977.1 | 4,961.3 | 21.6 | 11.4 | -168.70 | -181.7 | -72.8 | 861.7 | 837.3 | 24.35 | 35.389 SF | | |

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-401 |
| 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-401 | 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 | | | |
| 5,100.0 | 4,999.7 | 5,015.9 | 5,000.0 | 22.0 | 11.5 | -168.67 | -183.6 | -74.6 | 878.5 | 853.8 | 24.73 | 35.528 | | | |
| 5,200.0 | 5,097.5 | 5,112.3 | 5,096.5 | 22.5 | 11.7 | -168.93 | -183.6 | -74.6 | 899.1 | 873.9 | 25.17 | 35.721 | | | |
| 5,300.0 | 5,195.2 | 5,210.1 | 5,194.2 | 23.0 | 11.9 | -169.18 | -183.6 | -74.6 | 919.7 | 894.1 | 25.62 | 35.896 | | | |
| 5,400.0 | 5,293.0 | 5,307.9 | 5,292.0 | 23.4 | 12.1 | -169.42 | -183.6 | -74.6 | 940.4 | 914.3 | 26.08 | 36.064 | | | |
| 5,500.0 | 5,391.1 | 5,405.9 | 5,390.1 | 23.8 | 12.3 | -169.70 | -183.6 | -74.6 | 959.6 | 933.0 | 26.54 | 36.154 | | | |
| 5,600.0 | 5,489.8 | 5,504.6 | 5,488.8 | 24.1 | 12.5 | -169.93 | -183.6 | -74.6 | 975.4 | 948.4 | 26.95 | 36.190 | | | |
| 5,700.0 | 5,589.0 | 5,603.8 | 5,588.0 | 24.3 | 12.7 | -170.10 | -183.6 | -74.6 | 987.8 | 960.4 | 27.33 | 36.141 | | | |
| 5,800.0 | 5,688.5 | 5,703.4 | 5,687.5 | 24.5 | 12.9 | -170.22 | -183.6 | -74.6 | 996.7 | 969.1 | 27.68 | 36.012 | | | |

| | | | |
|---------------------------|--|-------------------------------------|------------------------------|
| Company: | PETROLEUM DEVELOPMENT CORP Weld County CO | Local Co-ordinate Reference: | Well Waste Management 2Q-401 |
| 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-401 | 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: | 0.0ft |
|---|---------------------|---------------------|---------------------|----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|-------------------------|-------------------|--|--------------------|---------|
| 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 | 0.0 | 0.0 | 0.0 | 0.0 | 90.00 | 0.0 | 58.7 | 58.7 | | | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | 90.00 | 0.0 | 58.7 | 58.7 | 58.5 | 0.22 | 261.143 | | | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | 90.00 | 0.0 | 58.7 | 58.7 | 58.0 | 0.67 | 87.048 CC, ES | | | |
| 300.0 | 300.0 | 300.0 | 300.0 | 0.6 | 0.6 | -170.80 | 0.0 | 58.7 | 60.4 | 59.3 | 1.12 | 54.053 | | | |
| 400.0 | 399.8 | 399.8 | 399.8 | 0.8 | 0.8 | -171.52 | 0.0 | 58.7 | 65.6 | 64.0 | 1.56 | 41.941 | | | |
| 500.0 | 499.5 | 499.5 | 499.5 | 1.0 | 1.0 | -172.49 | 0.0 | 58.7 | 74.2 | 72.2 | 2.02 | 36.787 | | | |
| 600.0 | 598.7 | 598.7 | 598.7 | 1.3 | 1.2 | -173.52 | 0.0 | 58.7 | 86.3 | 83.8 | 2.48 | 34.871 | | | |
| 700.0 | 697.5 | 700.9 | 700.8 | 1.6 | 1.4 | -174.21 | -0.6 | 57.0 | 100.2 | 97.3 | 2.92 | 34.367 | | | |
| 800.0 | 795.6 | 803.5 | 803.4 | 2.0 | 1.7 | -174.37 | -2.6 | 51.9 | 114.2 | 110.9 | 3.35 | 34.120 | | | |
| 900.0 | 893.4 | 906.9 | 906.3 | 2.5 | 1.9 | -174.11 | -5.9 | 43.4 | 126.7 | 122.9 | 3.80 | 33.366 | | | |
| 1,000.0 | 991.2 | 1,008.5 | 1,007.1 | 2.9 | 2.1 | -173.50 | -10.2 | 32.0 | 136.3 | 132.1 | 4.27 | 31.930 | | | |
| 1,100.0 | 1,088.9 | 1,108.0 | 1,105.9 | 3.4 | 2.4 | -172.94 | -14.6 | 20.6 | 145.6 | 140.8 | 4.76 | 30.598 | | | |
| 1,200.0 | 1,186.7 | 1,207.6 | 1,204.8 | 3.8 | 2.7 | -172.45 | -19.0 | 9.1 | 154.9 | 149.6 | 5.26 | 29.463 | | | |
| 1,300.0 | 1,284.5 | 1,307.1 | 1,303.6 | 4.3 | 3.0 | -172.01 | -23.4 | -2.3 | 164.2 | 158.4 | 5.76 | 28.489 | | | |
| 1,400.0 | 1,382.2 | 1,406.7 | 1,402.4 | 4.7 | 3.3 | -171.62 | -27.8 | -13.8 | 173.5 | 167.2 | 6.28 | 27.646 | | | |
| 1,500.0 | 1,480.0 | 1,506.3 | 1,501.2 | 5.2 | 3.6 | -171.27 | -32.2 | -25.2 | 182.8 | 176.0 | 6.79 | 26.915 | | | |
| 1,600.0 | 1,577.8 | 1,605.8 | 1,600.0 | 5.7 | 3.9 | -170.96 | -36.6 | -36.7 | 192.1 | 184.8 | 7.31 | 26.272 | | | |
| 1,700.0 | 1,675.5 | 1,705.4 | 1,698.8 | 6.1 | 4.2 | -170.67 | -41.0 | -48.1 | 201.4 | 193.6 | 7.84 | 25.703 | | | |
| 1,800.0 | 1,773.3 | 1,804.9 | 1,797.6 | 6.6 | 4.5 | -170.41 | -45.4 | -59.6 | 210.7 | 202.4 | 8.36 | 25.198 | | | |
| 1,900.0 | 1,871.1 | 1,904.5 | 1,896.4 | 7.1 | 4.8 | -170.17 | -49.8 | -71.0 | 220.1 | 211.2 | 8.89 | 24.747 | | | |
| 2,000.0 | 1,968.9 | 2,004.1 | 1,995.2 | 7.5 | 5.2 | -169.95 | -54.2 | -82.5 | 229.4 | 220.0 | 9.42 | 24.341 | | | |
| 2,100.0 | 2,066.6 | 2,103.6 | 2,094.0 | 8.0 | 5.5 | -169.74 | -58.6 | -94.0 | 238.7 | 228.8 | 9.96 | 23.975 | | | |
| 2,200.0 | 2,164.4 | 2,203.2 | 2,192.8 | 8.5 | 5.8 | -169.56 | -63.0 | -105.4 | 248.1 | 237.6 | 10.49 | 23.642 | | | |
| 2,300.0 | 2,262.2 | 2,302.7 | 2,291.6 | 8.9 | 6.1 | -169.38 | -67.4 | -116.9 | 257.4 | 246.4 | 11.03 | 23.339 | | | |
| 2,400.0 | 2,359.9 | 2,402.3 | 2,390.4 | 9.4 | 6.4 | -169.22 | -71.8 | -128.3 | 266.8 | 255.2 | 11.57 | 23.062 | | | |
| 2,500.0 | 2,457.7 | 2,501.9 | 2,489.2 | 9.9 | 6.8 | -169.07 | -76.2 | -139.8 | 276.1 | 264.0 | 12.11 | 22.807 | | | |
| 2,600.0 | 2,555.5 | 2,601.4 | 2,588.0 | 10.3 | 7.1 | -168.93 | -80.6 | -151.2 | 285.4 | 272.8 | 12.65 | 22.573 | | | |
| 2,700.0 | 2,653.2 | 2,701.0 | 2,686.8 | 10.8 | 7.4 | -168.80 | -85.0 | -162.7 | 294.8 | 281.6 | 13.19 | 22.356 | | | |
| 2,800.0 | 2,751.0 | 2,800.5 | 2,785.6 | 11.3 | 7.7 | -168.67 | -89.4 | -174.1 | 304.1 | 290.4 | 13.73 | 22.155 | | | |
| 2,900.0 | 2,848.8 | 2,900.1 | 2,884.4 | 11.7 | 8.0 | -168.55 | -93.7 | -185.6 | 313.5 | 299.2 | 14.27 | 21.969 | | | |
| 3,000.0 | 2,946.5 | 2,999.7 | 2,983.2 | 12.2 | 8.4 | -168.44 | -98.1 | -197.0 | 322.8 | 308.0 | 14.81 | 21.795 | | | |
| 3,100.0 | 3,044.3 | 3,099.2 | 3,082.0 | 12.7 | 8.7 | -168.34 | -102.5 | -208.5 | 332.2 | 316.8 | 15.36 | 21.633 | | | |
| 3,200.0 | 3,142.1 | 3,198.8 | 3,180.8 | 13.1 | 9.0 | -168.24 | -106.9 | -219.9 | 341.5 | 325.6 | 15.90 | 21.481 | | | |
| 3,300.0 | 3,239.8 | 3,298.3 | 3,279.6 | 13.6 | 9.3 | -168.15 | -111.3 | -231.4 | 350.9 | 334.5 | 16.44 | 21.339 | | | |
| 3,400.0 | 3,337.6 | 3,397.9 | 3,378.4 | 14.1 | 9.7 | -168.06 | -115.7 | -242.9 | 360.3 | 343.3 | 16.99 | 21.205 | | | |
| 3,500.0 | 3,435.4 | 3,497.5 | 3,477.2 | 14.5 | 10.0 | -167.98 | -120.1 | -254.3 | 369.6 | 352.1 | 17.53 | 21.079 | | | |
| 3,600.0 | 3,533.2 | 3,597.0 | 3,576.0 | 15.0 | 10.3 | -167.90 | -124.5 | -265.8 | 379.0 | 360.9 | 18.08 | 20.960 | | | |
| 3,700.0 | 3,630.9 | 3,696.6 | 3,674.8 | 15.5 | 10.6 | -167.82 | -128.9 | -277.2 | 388.3 | 369.7 | 18.63 | 20.848 | | | |
| 3,800.0 | 3,728.7 | 3,796.1 | 3,773.6 | 15.9 | 11.0 | -167.75 | -133.3 | -288.7 | 397.7 | 378.5 | 19.17 | 20.742 | | | |
| 3,900.0 | 3,826.5 | 3,895.7 | 3,872.4 | 16.4 | 11.3 | -167.68 | -137.7 | -300.1 | 407.0 | 387.3 | 19.72 | 20.641 | | | |
| 4,000.0 | 3,924.2 | 3,995.3 | 3,971.2 | 16.9 | 11.6 | -167.62 | -142.1 | -311.6 | 416.4 | 396.1 | 20.27 | 20.546 | | | |
| 4,100.0 | 4,022.0 | 4,094.8 | 4,070.0 | 17.3 | 11.9 | -167.55 | -146.5 | -323.0 | 425.8 | 404.9 | 20.81 | 20.455 | | | |
| 4,200.0 | 4,119.8 | 4,194.4 | 4,168.8 | 17.8 | 12.3 | -167.49 | -150.9 | -334.5 | 435.1 | 413.8 | 21.36 | 20.369 | | | |
| 4,300.0 | 4,217.5 | 4,293.9 | 4,267.6 | 18.3 | 12.6 | -167.44 | -155.3 | -345.9 | 444.5 | 422.6 | 21.91 | 20.287 | | | |
| 4,400.0 | 4,315.3 | 4,393.5 | 4,366.4 | 18.7 | 12.9 | -167.38 | -159.7 | -357.4 | 453.8 | 431.4 | 22.46 | 20.209 | | | |
| 4,500.0 | 4,413.1 | 4,493.1 | 4,465.2 | 19.2 | 13.2 | -167.33 | -164.1 | -368.8 | 463.2 | 440.2 | 23.01 | 20.134 | | | |
| 4,600.0 | 4,510.8 | 4,592.6 | 4,564.0 | 19.7 | 13.6 | -167.28 | -168.5 | -380.3 | 472.6 | 449.0 | 23.55 | 20.063 | | | |
| 4,700.0 | 4,608.6 | 4,690.1 | 4,660.7 | 20.1 | 13.9 | -167.23 | -172.8 | -391.5 | 482.0 | 457.9 | 24.09 | 20.005 | | | |
| 4,800.0 | 4,706.4 | 4,776.1 | 4,746.2 | 20.6 | 14.1 | -167.27 | -176.0 | -399.8 | 493.1 | 468.6 | 24.54 | 20.096 | | | |
| 4,900.0 | 4,804.1 | 4,861.5 | 4,831.4 | 21.1 | 14.2 | -167.43 | -178.2 | -405.7 | 507.0 | 482.0 | 24.96 | 20.315 | | | |
| 5,000.0 | 4,901.9 | 4,946.1 | 4,916.0 | 21.6 | 14.4 | -167.69 | -179.6 | -409.2 | 523.6 | 498.2 | 25.35 | 20.651 | | | |

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 (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 | |
| 5,100.0 | 4,999.7 | 5,030.2 | 5,000.0 | 22.0 | 14.5 | -168.05 | -180.0 | -410.3 | 542.8 | 517.1 | 25.73 | 21.093 | | |
| 5,200.0 | 5,097.5 | 5,127.6 | 5,097.5 | 22.5 | 14.6 | -168.49 | -180.0 | -410.3 | 563.4 | 537.2 | 26.13 | 21.559 | | |
| 5,300.0 | 5,195.2 | 5,225.4 | 5,195.2 | 23.0 | 14.8 | -168.90 | -180.0 | -410.3 | 584.0 | 557.5 | 26.53 | 22.012 | | |
| 5,400.0 | 5,293.0 | 5,323.2 | 5,293.0 | 23.4 | 14.9 | -169.28 | -180.0 | -410.3 | 604.6 | 577.7 | 26.94 | 22.447 | | |
| 5,500.0 | 5,391.1 | 5,421.2 | 5,391.1 | 23.8 | 15.1 | -169.68 | -180.0 | -410.3 | 623.8 | 596.5 | 27.34 | 22.817 | | |
| 5,600.0 | 5,489.8 | 5,519.9 | 5,489.8 | 24.1 | 15.3 | -169.99 | -180.0 | -410.3 | 639.6 | 611.9 | 27.69 | 23.097 | | |
| 5,700.0 | 5,589.0 | 5,619.1 | 5,589.0 | 24.3 | 15.4 | -170.23 | -180.0 | -410.3 | 652.0 | 624.0 | 28.02 | 23.271 | | |
| 5,800.0 | 5,688.5 | 5,718.7 | 5,688.5 | 24.5 | 15.6 | -170.39 | -180.0 | -410.3 | 661.0 | 632.7 | 28.32 | 23.344 | | |
| 5,900.0 | 5,788.4 | 5,818.6 | 5,788.4 | 24.7 | 15.7 | -170.49 | -180.0 | -410.3 | 666.6 | 638.0 | 28.58 | 23.320 | | |
| 6,000.0 | 5,888.4 | 5,918.5 | 5,888.4 | 24.8 | 15.9 | -170.53 | -180.0 | -410.3 | 668.7 | 639.9 | 28.82 | 23.201 | | |
| 6,100.0 | 5,988.4 | 6,018.5 | 5,988.4 | 24.9 | 16.1 | 90.00 | -180.0 | -410.3 | 668.7 | 639.4 | 29.26 | 22.853 | | |
| 6,200.0 | 6,088.3 | 6,119.4 | 6,089.1 | 25.0 | 16.2 | 90.74 | -176.0 | -410.4 | 668.7 | 639.2 | 29.48 | 22.682 | | |
| 6,300.0 | 6,187.1 | 6,220.4 | 6,188.6 | 25.1 | 16.3 | 90.60 | -159.2 | -410.6 | 668.7 | 639.0 | 29.71 | 22.503 | | |
| 6,382.3 | 6,266.4 | 6,303.4 | 6,268.1 | 25.1 | 16.4 | 90.48 | -135.6 | -410.9 | 668.7 | 638.8 | 29.86 | 22.395 | | |
| 6,400.0 | 6,283.0 | 6,321.2 | 6,284.8 | 25.2 | 16.4 | 90.45 | -129.4 | -411.0 | 668.7 | 638.8 | 29.89 | 22.373 | | |
| 6,500.0 | 6,374.5 | 6,421.7 | 6,376.0 | 25.2 | 16.5 | 90.31 | -87.3 | -411.6 | 668.7 | 638.6 | 30.05 | 22.253 | | |
| 6,600.0 | 6,459.8 | 6,522.0 | 6,460.8 | 25.2 | 16.6 | 90.16 | -33.8 | -412.4 | 668.7 | 638.4 | 30.27 | 22.091 | | |
| 6,700.0 | 6,537.6 | 6,622.1 | 6,537.7 | 25.3 | 16.6 | 90.02 | 30.2 | -413.3 | 668.7 | 638.1 | 30.63 | 21.834 | | |
| 6,800.0 | 6,606.5 | 6,722.0 | 6,605.4 | 25.4 | 16.7 | 89.89 | 103.5 | -414.4 | 668.7 | 637.5 | 31.20 | 21.436 | | |
| 6,900.0 | 6,665.3 | 6,821.7 | 6,662.8 | 25.5 | 16.9 | 89.77 | 184.9 | -415.5 | 668.8 | 636.7 | 32.05 | 20.867 | | |
| 7,000.0 | 6,712.9 | 6,921.3 | 6,709.2 | 25.7 | 17.3 | 89.66 | 272.9 | -416.8 | 668.8 | 635.6 | 33.23 | 20.130 | | |
| 7,100.0 | 6,748.6 | 7,020.6 | 6,743.6 | 26.0 | 17.9 | 89.56 | 366.1 | -418.1 | 668.9 | 634.1 | 34.74 | 19.254 | | |
| 7,200.0 | 6,771.7 | 7,119.9 | 6,765.7 | 26.4 | 18.7 | 89.48 | 462.8 | -419.5 | 668.9 | 632.4 | 36.57 | 18.290 | | |
| 7,300.0 | 6,781.9 | 7,219.0 | 6,775.0 | 26.9 | 19.7 | 89.41 | 561.4 | -420.9 | 669.0 | 630.3 | 38.68 | 17.293 | | |
| 7,400.0 | 6,781.7 | 7,318.8 | 6,774.6 | 27.6 | 20.9 | 89.39 | 661.1 | -422.3 | 669.0 | 628.0 | 41.05 | 16.296 | | |
| 7,500.0 | 6,780.8 | 7,418.8 | 6,773.7 | 28.5 | 22.2 | 89.39 | 761.1 | -423.8 | 669.1 | 625.4 | 43.64 | 15.332 | | |
| 7,600.0 | 6,779.8 | 7,518.8 | 6,772.7 | 29.4 | 23.6 | 89.39 | 861.1 | -425.2 | 669.1 | 622.7 | 46.40 | 14.421 | | |
| 7,700.0 | 6,778.9 | 7,618.8 | 6,771.8 | 30.5 | 25.0 | 89.39 | 961.0 | -426.6 | 669.1 | 619.8 | 49.30 | 13.572 | | |
| 7,800.0 | 6,777.9 | 7,718.8 | 6,770.9 | 31.6 | 26.5 | 89.39 | 1,061.0 | -428.0 | 669.2 | 616.9 | 52.33 | 12.788 | | |
| 7,900.0 | 6,777.0 | 7,818.8 | 6,769.9 | 32.9 | 28.1 | 89.39 | 1,161.0 | -429.5 | 669.2 | 613.8 | 55.46 | 12.068 | | |
| 8,000.0 | 6,776.1 | 7,918.8 | 6,769.0 | 34.2 | 29.7 | 89.39 | 1,261.0 | -430.9 | 669.3 | 610.6 | 58.67 | 11.407 | | |
| 8,100.0 | 6,775.1 | 8,018.8 | 6,768.0 | 35.6 | 31.3 | 89.39 | 1,361.0 | -432.3 | 669.3 | 607.4 | 61.96 | 10.803 | | |
| 8,200.0 | 6,774.2 | 8,118.8 | 6,767.1 | 37.0 | 33.0 | 89.39 | 1,461.0 | -433.8 | 669.4 | 604.1 | 65.30 | 10.250 | | |
| 8,300.0 | 6,773.2 | 8,218.8 | 6,766.1 | 38.5 | 34.7 | 89.39 | 1,561.0 | -435.2 | 669.4 | 600.7 | 68.70 | 9.744 | | |
| 8,400.0 | 6,772.3 | 8,318.8 | 6,765.2 | 40.1 | 36.4 | 89.39 | 1,660.9 | -436.6 | 669.4 | 597.3 | 72.15 | 9.279 | | |
| 8,500.0 | 6,771.3 | 8,418.8 | 6,764.3 | 41.6 | 38.1 | 89.39 | 1,760.9 | -438.0 | 669.5 | 593.9 | 75.63 | 8.852 | | |
| 8,600.0 | 6,770.4 | 8,518.8 | 6,763.3 | 43.2 | 39.9 | 89.39 | 1,860.9 | -439.5 | 669.5 | 590.4 | 79.15 | 8.459 | | |
| 8,700.0 | 6,769.5 | 8,618.8 | 6,762.4 | 44.8 | 41.6 | 89.39 | 1,960.9 | -440.9 | 669.6 | 586.9 | 82.69 | 8.097 | | |
| 8,800.0 | 6,768.5 | 8,718.8 | 6,761.4 | 46.5 | 43.4 | 89.39 | 2,060.9 | -442.3 | 669.6 | 583.3 | 86.26 | 7.762 | | |
| 8,900.0 | 6,767.6 | 8,818.8 | 6,760.5 | 48.2 | 45.2 | 89.39 | 2,160.9 | -443.8 | 669.7 | 579.8 | 89.86 | 7.452 | | |
| 9,000.0 | 6,766.6 | 8,918.8 | 6,759.5 | 49.9 | 47.0 | 89.39 | 2,260.9 | -445.2 | 669.7 | 576.2 | 93.47 | 7.165 | | |
| 9,100.0 | 6,765.7 | 9,018.8 | 6,758.6 | 51.6 | 48.8 | 89.39 | 2,360.8 | -446.6 | 669.7 | 572.6 | 97.10 | 6.897 | | |
| 9,200.0 | 6,764.7 | 9,118.8 | 6,757.7 | 53.3 | 50.6 | 89.39 | 2,460.8 | -448.0 | 669.8 | 569.0 | 100.75 | 6.648 | | |
| 9,300.0 | 6,763.8 | 9,218.8 | 6,756.7 | 55.0 | 52.5 | 89.39 | 2,560.8 | -449.5 | 669.8 | 565.4 | 104.41 | 6.415 | | |
| 9,400.0 | 6,762.9 | 9,318.8 | 6,755.8 | 56.8 | 54.3 | 89.39 | 2,660.8 | -450.9 | 669.9 | 561.8 | 108.09 | 6.197 | | |
| 9,500.0 | 6,761.9 | 9,418.8 | 6,754.8 | 58.5 | 56.1 | 89.39 | 2,760.8 | -452.3 | 669.9 | 558.1 | 111.78 | 5.993 | | |
| 9,600.0 | 6,761.0 | 9,518.8 | 6,753.9 | 60.3 | 58.0 | 89.39 | 2,860.8 | -453.8 | 670.0 | 554.5 | 115.47 | 5.802 | | |
| 9,700.0 | 6,760.0 | 9,618.8 | 6,752.9 | 62.1 | 59.8 | 89.39 | 2,960.8 | -455.2 | 670.0 | 550.8 | 119.18 | 5.622 | | |
| 9,800.0 | 6,759.1 | 9,718.8 | 6,752.0 | 63.9 | 61.7 | 89.39 | 3,060.7 | -456.6 | 670.0 | 547.1 | 122.90 | 5.452 | | |
| 9,900.0 | 6,758.2 | 9,818.8 | 6,751.1 | 65.6 | 63.5 | 89.39 | 3,160.7 | -458.1 | 670.1 | 543.5 | 126.62 | 5.292 | | |

| | | | |
|---------------------------|--|-------------------------------------|------------------------------|
| Company: | PETROLEUM DEVELOPMENT CORP Weld County CO | Local Co-ordinate Reference: | Well Waste Management 2Q-401 |
| 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-401 | 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 | | | | | | | | | | |
| 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 | 6,757.2 | 9,918.8 | 6,750.1 | 67.4 | 65.4 | 89.39 | 3,260.7 | -459.5 | 670.1 | 539.8 | 130.35 | 5.141 | | |
| 10,100.0 | 6,756.3 | 10,018.8 | 6,749.2 | 69.3 | 67.3 | 89.39 | 3,360.7 | -460.9 | 670.2 | 536.1 | 134.09 | 4.998 | | |
| 10,200.0 | 6,755.3 | 10,118.8 | 6,748.2 | 71.1 | 69.1 | 89.39 | 3,460.7 | -462.3 | 670.2 | 532.4 | 137.83 | 4.863 | | |
| 10,300.0 | 6,754.4 | 10,218.8 | 6,747.3 | 72.9 | 71.0 | 89.39 | 3,560.7 | -463.8 | 670.2 | 528.7 | 141.58 | 4.734 | | |
| 10,400.0 | 6,753.4 | 10,318.8 | 6,746.3 | 74.7 | 72.9 | 89.39 | 3,660.7 | -465.2 | 670.3 | 525.0 | 145.33 | 4.612 | | |
| 10,500.0 | 6,752.5 | 10,418.8 | 6,745.4 | 76.5 | 74.8 | 89.39 | 3,760.6 | -466.6 | 670.3 | 521.2 | 149.09 | 4.496 | | |
| 10,600.0 | 6,751.6 | 10,518.8 | 6,744.5 | 78.4 | 76.6 | 89.39 | 3,860.6 | -468.1 | 670.4 | 517.5 | 152.85 | 4.386 | | |
| 10,700.0 | 6,750.6 | 10,618.8 | 6,743.5 | 80.2 | 78.5 | 89.39 | 3,960.6 | -469.5 | 670.4 | 513.8 | 156.62 | 4.281 | | |
| 10,800.0 | 6,749.7 | 10,718.8 | 6,742.6 | 82.1 | 80.4 | 89.39 | 4,060.6 | -470.9 | 670.5 | 510.1 | 160.39 | 4.180 | | |
| 10,900.0 | 6,748.7 | 10,818.8 | 6,741.6 | 83.9 | 82.3 | 89.39 | 4,160.6 | -472.3 | 670.5 | 506.3 | 164.16 | 4.084 | | |
| 11,000.0 | 6,747.8 | 10,918.8 | 6,740.7 | 85.7 | 84.2 | 89.39 | 4,260.6 | -473.8 | 670.5 | 502.6 | 167.94 | 3.993 | | |
| 11,100.0 | 6,746.8 | 11,018.8 | 6,739.8 | 87.6 | 86.1 | 89.39 | 4,360.5 | -475.2 | 670.6 | 498.9 | 171.72 | 3.905 | | |
| 11,200.0 | 6,745.9 | 11,118.8 | 6,738.8 | 89.5 | 88.0 | 89.39 | 4,460.5 | -476.6 | 670.6 | 495.1 | 175.50 | 3.821 | | |
| 11,252.8 | 6,745.4 | 11,171.6 | 6,738.3 | 90.4 | 89.0 | 89.39 | 4,513.4 | -477.4 | 670.7 | 493.1 | 177.51 | 3.778 | | |
| 11,295.5 | 6,745.0 | 11,204.7 | 6,738.0 | 91.2 | 89.6 | 89.39 | 4,546.4 | -477.9 | 670.7 | 491.8 | 178.94 | 3.748 SF | | |

| | | | |
|---------------------------|---|-------------------------------------|------------------------------|
| Company: | PETROLEUM DEVELOPMENT CORP Weld County CO | Local Co-ordinate Reference: | Well Waste Management 2Q-401 |
| 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-401 | 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-401
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-401 |
| 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-401 | 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-401
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.64°

