

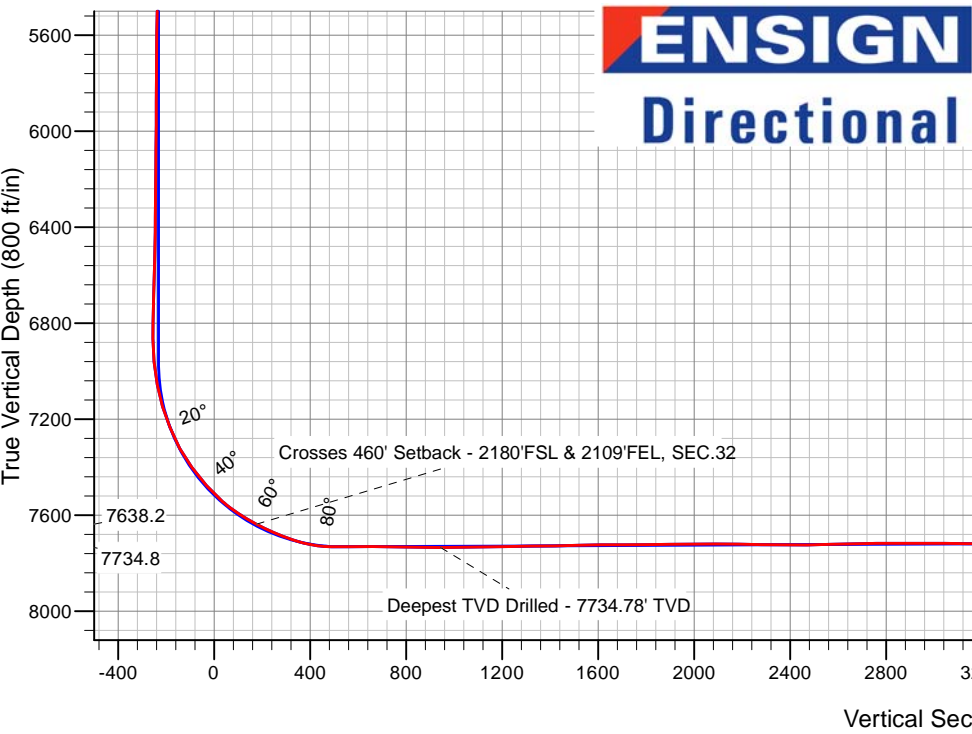
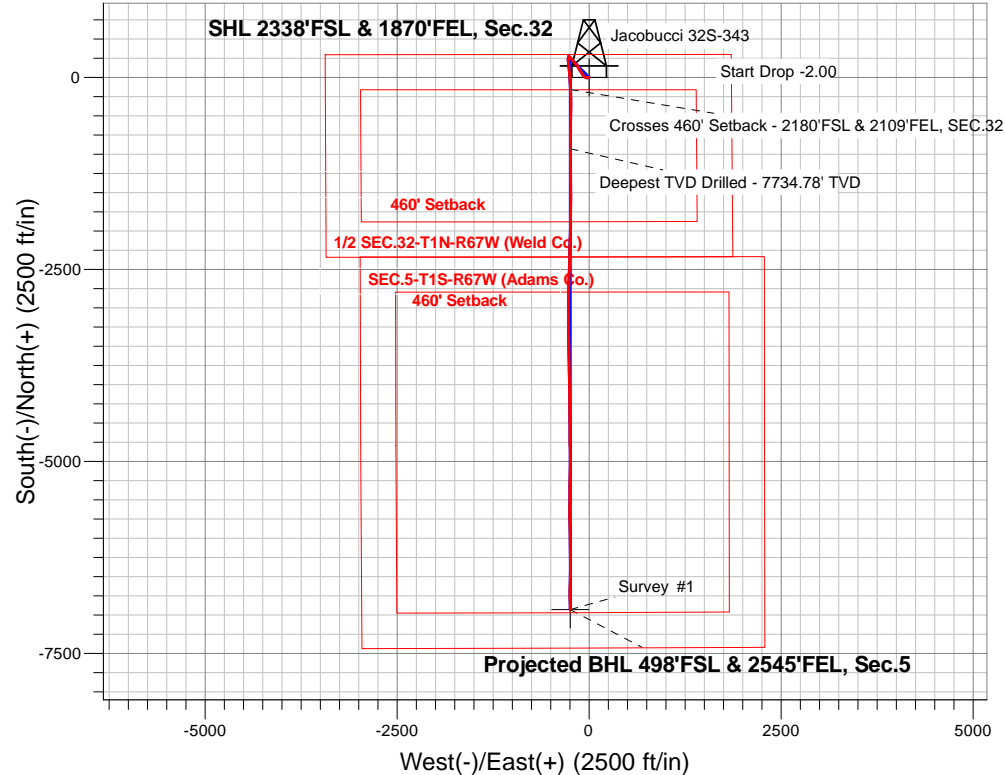
PETROLEUM DEVELOPMENT CORP DJ Basin

Well Name: **Jacobucci 32S-343**

Surface Location: Jacobucci 1N67W32S Pad Sec.32-T1N-R67W
North American Datum 1983 , US State Plane 1983, Colorado Northern Zone
Ground Elevation: 5059.0
+N/-S+E/-W Northing Easting Latitude Longitude Slot
0.0 0.0 1245852.63 164850.06 40.006750 -104.911510
RKB - 23' WELL @ 5082.0ft (RKB - 23')

FINAL SURVEY

Projected Bottom Hole Location
14609'MD 7709'TVD 6927'S & 246'W of SHL
90.8 degree Incl @ 178.9 degree AZM



| | | | |
|---|-------------|--------|--|
| Jacobucci 1N67W32S Pad Sec.32-T1N-R67W Jacobucci 32S-343 Wellbore #1 14:02, December 01 2016 | ANNOTATIONS | | |
| | TVD | MD | Annotation |
| | 7638.2 | 7821.8 | Crosses 460' Setback - 2180'FSL & 2109'FEL, SEC.32 |
| | 7734.8 | 8607.0 | Deepest TVD Drilled - 7734.78' TVD |

LEGEND

- Jacobucci 32S-343, Wellbore #1, Plan #4 (11-21-16)R V0
- Wellbore #1
- Survey #1

Projected BHL 498'FSL & 2545'FEL, Sec.5



PETROLEUM DEVELOPMENT CORP DJ Basin

SEC.32-T1N-R67W

Jacobucci 1N67W32S Pad Sec.32-T1N-R67W

Jacobucci 32S-343

Wellbore #1

Survey: Survey #1

Standard Survey Report

01 December, 2016

| | | | |
|------------------|--|-------------------------------------|-----------------------------|
| Company: | PETROLEUM DEVELOPMENT CORP DJ Basin | Local Co-ordinate Reference: | Well Jacobucci 32S-343 |
| Project: | SEC.32-T1N-R67W | TVD Reference: | WELL @ 5082.0ft (RKB - 23') |
| Site: | Jacobucci 1N67W32S Pad Sec.32-T1N-R67W | MD Reference: | WELL @ 5082.0ft (RKB - 23') |
| Well: | Jacobucci 32S-343 | North Reference: | True |
| Wellbore: | Wellbore #1 | Survey Calculation Method: | Minimum Curvature |
| Design: | Wellbore #1 | Database: | US_EDM |

| | | | |
|--------------------|----------------------------------|----------------------|-----------------------------|
| Project | SEC.32-T1N-R67W, Weld County, CO | | |
| 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 | Jacobucci 1N67W32S Pad Sec.32-T1N-R67W | | | | |
| Site Position: | | Northing: | 1,245,853.29 usft | Latitude: | 40.006750 |
| From: | Lat/Long | Easting: | 3,164,939.70 usft | Longitude: | -104.911190 |
| Position Uncertainty: | 0.0 ft | Slot Radius: | 13-3/16 " | Grid Convergence: | 0.38 ° |

| Well | Jacobucci 32S-343 | | | | | |
|----------------------|-------------------|--------|---------------------|-------------------|---------------|-------------|
| Well Position | +N/-S | 0.0 ft | Northing: | 1,245,852.64 usft | Latitude: | 40.006750 |
| | +E/-W | 0.0 ft | Easting: | 3,164,850.06 usft | Longitude: | -104.911510 |
| Position Uncertainty | | 0.0 ft | Wellhead Elevation: | ft | Ground Level: | 5,059.0 ft |

| | | | | | |
|------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| Wellbore | Wellbore #1 | | | | |
| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
| | IGRF2010 | 11/21/2016 | 8.18 | 66.52 | 52,336 |

| | | | | | |
|--------------------------|------------------------------|-------------------|-------------------|----------------------|-----|
| Design | Wellbore #1 | | | | |
| Audit Notes: | | | | | |
| Version: | 1.0 | Phase: | ACTUAL | Tie On Depth: | 0.0 |
| Vertical Section: | Depth From (TVD) (ft) | +N/-S (ft) | +E/-W (ft) | Direction (°) | |
| | 0.0 | 0.0 | 0.0 | 184.63 | |

| | | | | | |
|-----------------------|----------------|--------------------------|------------------|--------------------|--|
| Survey Program | Date | 12/1/2016 | | | |
| From (ft) | To (ft) | Survey (Wellbore) | Tool Name | Description | |
| 251.0 | 14,609.0 | Survey #1 (Wellbore #1) | MWD | MWD - Standard | |

| | | | | | | | | | | |
|----------------------------|------------------------|--------------------|----------------------------|-------------------|-------------------|------------------------------|--------------------------------|-------------------------------|------------------------------|--|
| Survey | | | | | | | | | | |
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) | |
| 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | |
| 251.0 | 0.30 | 88.00 | 251.0 | 0.0 | 0.7 | -0.1 | 0.12 | 0.12 | 0.00 | |
| 347.0 | 0.40 | 95.40 | 347.0 | 0.0 | 1.2 | -0.1 | 0.11 | 0.10 | 7.71 | |
| 443.0 | 0.20 | 27.70 | 443.0 | 0.1 | 1.7 | -0.2 | 0.39 | -0.21 | -70.52 | |
| 539.0 | 0.40 | 273.80 | 539.0 | 0.3 | 1.4 | -0.4 | 0.54 | 0.21 | -118.65 | |
| 635.0 | 0.40 | 270.80 | 635.0 | 0.3 | 0.7 | -0.4 | 0.02 | 0.00 | -3.13 | |
| 730.0 | 0.70 | 269.60 | 730.0 | 0.3 | -0.2 | -0.3 | 0.32 | 0.32 | -1.26 | |
| 826.0 | 1.00 | 268.00 | 826.0 | 0.3 | -1.6 | -0.2 | 0.31 | 0.31 | -1.67 | |
| 921.0 | 1.10 | 267.80 | 921.0 | 0.2 | -3.3 | 0.1 | 0.11 | 0.11 | -0.21 | |
| 1,018.0 | 1.30 | 267.50 | 1,017.9 | 0.1 | -5.4 | 0.3 | 0.21 | 0.21 | -0.31 | |

| | | | |
|------------------|--|-------------------------------------|-----------------------------|
| Company: | PETROLEUM DEVELOPMENT CORP DJ Basin | Local Co-ordinate Reference: | Well Jacobucci 32S-343 |
| Project: | SEC.32-T1N-R67W | TVD Reference: | WELL @ 5082.0ft (RKB - 23') |
| Site: | Jacobucci 1N67W32S Pad Sec.32-T1N-R67W | MD Reference: | WELL @ 5082.0ft (RKB - 23') |
| Well: | Jacobucci 32S-343 | North Reference: | True |
| Wellbore: | Wellbore #1 | Survey Calculation Method: | Minimum Curvature |
| Design: | Wellbore #1 | Database: | US_EDM |

| Survey | | | | | | | | | |
|---------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-------------------------|------------------------|-----------------------|
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
| 1,113.0 | 1.10 | 253.80 | 1,112.9 | -0.2 | -7.3 | 0.8 | 0.37 | -0.21 | -14.42 |
| 1,209.0 | 1.30 | 248.50 | 1,208.9 | -0.8 | -9.2 | 1.6 | 0.24 | 0.21 | -5.52 |
| 1,305.0 | 1.50 | 255.20 | 1,304.9 | -1.5 | -11.5 | 2.5 | 0.27 | 0.21 | 6.98 |
| 1,401.0 | 1.60 | 252.20 | 1,400.8 | -2.3 | -13.9 | 3.4 | 0.13 | 0.10 | -3.13 |
| 1,497.0 | 1.70 | 251.00 | 1,496.8 | -3.1 | -16.6 | 4.5 | 0.11 | 0.10 | -1.25 |
| 1,592.0 | 1.80 | 249.20 | 1,591.8 | -4.1 | -19.3 | 5.7 | 0.12 | 0.11 | -1.89 |
| 1,688.0 | 2.40 | 262.80 | 1,687.7 | -4.9 | -22.7 | 6.7 | 0.81 | 0.63 | 14.17 |
| 1,784.0 | 3.00 | 283.10 | 1,783.6 | -4.6 | -27.1 | 6.8 | 1.17 | 0.63 | 21.15 |
| 1,880.0 | 3.80 | 289.30 | 1,879.4 | -3.0 | -32.6 | 5.6 | 0.92 | 0.83 | 6.46 |
| 2,010.0 | 4.90 | 298.90 | 2,009.0 | 1.1 | -41.5 | 2.2 | 1.01 | 0.85 | 7.38 |
| 2,075.0 | 5.00 | 301.40 | 2,073.8 | 3.9 | -46.4 | -0.2 | 0.37 | 0.15 | 3.85 |
| 2,171.0 | 4.60 | 290.30 | 2,169.5 | 7.5 | -53.5 | -3.1 | 1.05 | -0.42 | -11.56 |
| 2,267.0 | 5.70 | 295.80 | 2,265.1 | 10.9 | -61.4 | -5.9 | 1.25 | 1.15 | 5.73 |
| 2,363.0 | 6.70 | 319.00 | 2,360.5 | 17.2 | -69.4 | -11.5 | 2.79 | 1.04 | 24.17 |
| 2,458.0 | 6.00 | 326.70 | 2,454.9 | 25.5 | -75.8 | -19.3 | 1.16 | -0.74 | 8.11 |
| 2,554.0 | 6.60 | 324.80 | 2,550.4 | 34.2 | -81.7 | -27.5 | 0.66 | 0.63 | -1.98 |
| 2,650.0 | 7.90 | 326.70 | 2,645.6 | 44.2 | -88.5 | -36.9 | 1.38 | 1.35 | 1.98 |
| 2,745.0 | 8.10 | 330.00 | 2,739.7 | 55.5 | -95.4 | -47.6 | 0.53 | 0.21 | 3.47 |
| 2,841.0 | 7.50 | 326.70 | 2,834.8 | 66.6 | -102.3 | -58.1 | 0.78 | -0.63 | -3.44 |
| 2,936.0 | 8.10 | 327.60 | 2,928.9 | 77.4 | -109.3 | -68.3 | 0.64 | 0.63 | 0.95 |
| 3,032.0 | 7.70 | 326.20 | 3,024.0 | 88.5 | -116.5 | -78.8 | 0.46 | -0.42 | -1.46 |
| 3,128.0 | 7.20 | 324.80 | 3,119.2 | 98.7 | -123.5 | -88.4 | 0.55 | -0.52 | -1.46 |
| 3,223.0 | 7.10 | 333.00 | 3,213.4 | 108.8 | -129.6 | -98.0 | 1.08 | -0.11 | 8.63 |
| 3,319.0 | 7.60 | 329.00 | 3,308.7 | 119.5 | -135.6 | -108.2 | 0.74 | 0.52 | -4.17 |
| 3,415.0 | 6.90 | 328.80 | 3,403.9 | 129.9 | -141.8 | -118.1 | 0.73 | -0.73 | -0.21 |
| 3,510.0 | 7.70 | 330.40 | 3,498.1 | 140.3 | -147.9 | -127.9 | 0.87 | 0.84 | 1.68 |
| 3,606.0 | 8.10 | 322.30 | 3,593.2 | 151.3 | -155.2 | -138.3 | 1.23 | 0.42 | -8.44 |
| 3,702.0 | 7.30 | 319.50 | 3,688.3 | 161.3 | -163.3 | -147.6 | 0.92 | -0.83 | -2.92 |
| 3,797.0 | 7.10 | 321.40 | 3,782.6 | 170.4 | -170.9 | -156.1 | 0.33 | -0.21 | 2.00 |
| 3,893.0 | 7.70 | 320.40 | 3,877.8 | 180.0 | -178.7 | -165.0 | 0.64 | 0.63 | -1.04 |
| 3,989.0 | 7.10 | 317.60 | 3,973.0 | 189.4 | -186.8 | -173.7 | 0.73 | -0.63 | -2.92 |
| 4,085.0 | 7.40 | 316.50 | 4,068.2 | 198.2 | -195.1 | -181.9 | 0.34 | 0.31 | -1.15 |
| 4,180.0 | 6.70 | 317.90 | 4,162.5 | 206.8 | -203.0 | -189.7 | 0.76 | -0.74 | 1.47 |
| 4,277.0 | 6.60 | 322.70 | 4,258.9 | 215.4 | -210.2 | -197.8 | 0.58 | -0.10 | 4.95 |
| 4,373.0 | 6.20 | 323.20 | 4,354.3 | 224.0 | -216.6 | -205.8 | 0.42 | -0.42 | 0.52 |
| 4,469.0 | 5.60 | 321.90 | 4,449.7 | 231.8 | -222.6 | -213.1 | 0.64 | -0.63 | -1.35 |
| 4,565.0 | 5.40 | 321.40 | 4,545.3 | 239.0 | -228.3 | -219.8 | 0.21 | -0.21 | -0.52 |
| 4,661.0 | 3.80 | 324.20 | 4,641.0 | 245.1 | -233.0 | -225.5 | 1.68 | -1.67 | 2.92 |
| 4,756.0 | 2.50 | 307.00 | 4,735.8 | 248.9 | -236.5 | -229.0 | 1.68 | -1.37 | -18.11 |
| 4,852.0 | 2.20 | 302.60 | 4,831.8 | 251.2 | -239.7 | -231.0 | 0.36 | -0.31 | -4.58 |
| 4,947.0 | 2.40 | 304.90 | 4,926.7 | 253.3 | -242.9 | -232.9 | 0.23 | 0.21 | 2.42 |
| 5,042.0 | 2.20 | 304.50 | 5,021.6 | 255.5 | -246.0 | -234.8 | 0.21 | -0.21 | -0.42 |
| 5,138.0 | 1.00 | 268.50 | 5,117.6 | 256.5 | -248.4 | -235.6 | 1.57 | -1.25 | -37.50 |
| 5,232.0 | 0.70 | 263.90 | 5,211.6 | 256.4 | -249.8 | -235.4 | 0.33 | -0.32 | -4.89 |

| | | | |
|------------------|--|-------------------------------------|-----------------------------|
| Company: | PETROLEUM DEVELOPMENT CORP DJ Basin | Local Co-ordinate Reference: | Well Jacobucci 32S-343 |
| Project: | SEC.32-T1N-R67W | TVD Reference: | WELL @ 5082.0ft (RKB - 23') |
| Site: | Jacobucci 1N67W32S Pad Sec.32-T1N-R67W | MD Reference: | WELL @ 5082.0ft (RKB - 23') |
| Well: | Jacobucci 32S-343 | North Reference: | True |
| Wellbore: | Wellbore #1 | Survey Calculation Method: | Minimum Curvature |
| Design: | Wellbore #1 | Database: | US_EDM |

| Survey | | | | | | | | | |
|--|-----------------|-------------|---------------------|------------|------------|-----------------------|-------------------------|------------------------|-----------------------|
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
| 5,327.0 | 0.80 | 305.40 | 5,306.6 | 256.7 | -250.9 | -235.7 | 0.57 | 0.11 | 43.68 |
| 5,423.0 | 1.10 | 303.30 | 5,402.5 | 257.6 | -252.2 | -236.4 | 0.31 | 0.31 | -2.19 |
| 5,518.0 | 0.90 | 325.80 | 5,497.5 | 258.7 | -253.4 | -237.5 | 0.46 | -0.21 | 23.68 |
| 5,613.0 | 0.60 | 340.90 | 5,592.5 | 259.8 | -254.0 | -238.5 | 0.38 | -0.32 | 15.89 |
| 5,710.0 | 0.90 | 318.60 | 5,689.5 | 260.9 | -254.6 | -239.5 | 0.43 | 0.31 | -22.99 |
| 5,805.0 | 0.70 | 320.50 | 5,784.5 | 261.9 | -255.5 | -240.4 | 0.21 | -0.21 | 2.00 |
| 5,901.0 | 0.50 | 306.00 | 5,880.5 | 262.6 | -256.2 | -241.1 | 0.26 | -0.21 | -15.10 |
| 5,997.0 | 0.50 | 297.90 | 5,976.5 | 263.0 | -256.9 | -241.4 | 0.07 | 0.00 | -8.44 |
| 6,092.0 | 0.80 | 322.80 | 6,071.5 | 263.8 | -257.7 | -242.1 | 0.43 | 0.32 | 26.21 |
| 6,186.0 | 0.60 | 332.70 | 6,165.5 | 264.7 | -258.3 | -243.0 | 0.25 | -0.21 | 10.53 |
| 6,377.0 | 0.70 | 333.20 | 6,356.5 | 266.6 | -259.3 | -244.9 | 0.05 | 0.05 | 0.26 |
| 6,473.0 | 1.00 | 341.10 | 6,452.5 | 268.0 | -259.8 | -246.1 | 0.33 | 0.31 | 8.23 |
| 6,568.0 | 1.40 | 323.00 | 6,547.4 | 269.7 | -260.8 | -247.8 | 0.58 | 0.42 | -19.05 |
| 6,665.0 | 2.20 | 330.20 | 6,644.4 | 272.2 | -262.4 | -250.2 | 0.86 | 0.82 | 7.42 |
| 6,790.0 | 2.30 | 322.30 | 6,769.3 | 276.3 | -265.2 | -254.0 | 0.26 | 0.08 | -6.32 |
| 6,885.0 | 1.30 | 225.60 | 6,864.3 | 277.1 | -267.1 | -254.6 | 2.92 | -1.05 | -101.79 |
| 6,981.0 | 4.70 | 205.90 | 6,960.1 | 272.8 | -269.6 | -250.1 | 3.65 | 3.54 | -20.52 |
| 7,077.0 | 10.70 | 189.90 | 7,055.2 | 260.4 | -272.9 | -237.6 | 6.58 | 6.25 | -16.67 |
| 7,172.0 | 17.40 | 182.60 | 7,147.3 | 237.5 | -275.0 | -214.6 | 7.28 | 7.05 | -7.68 |
| 7,265.0 | 21.20 | 177.50 | 7,235.1 | 206.8 | -274.9 | -184.0 | 4.47 | 4.09 | -5.48 |
| 7,361.0 | 29.50 | 170.80 | 7,321.8 | 166.1 | -270.4 | -143.7 | 9.13 | 8.65 | -6.98 |
| 7,457.0 | 37.50 | 173.10 | 7,401.8 | 113.6 | -263.1 | -92.0 | 8.44 | 8.33 | 2.40 |
| 7,553.0 | 41.20 | 172.90 | 7,476.0 | 53.2 | -255.6 | -32.4 | 3.86 | 3.85 | -0.21 |
| 7,649.0 | 49.50 | 175.70 | 7,543.4 | -14.7 | -249.0 | 34.7 | 8.89 | 8.65 | 2.92 |
| 7,745.0 | 58.20 | 176.10 | 7,600.0 | -91.9 | -243.5 | 111.3 | 9.07 | 9.06 | 0.42 |
| 7,821.8 | 62.12 | 176.91 | 7,638.2 | -158.4 | -239.4 | 177.2 | 5.18 | 5.10 | 1.05 |
| Crosses 460' Setback - 2180'FSL & 2109'FEL, SEC.32 | | | | | | | | | |
| 7,841.0 | 63.10 | 177.10 | 7,647.0 | -175.4 | -238.5 | 194.1 | 5.18 | 5.11 | 1.00 |
| 7,888.0 | 66.00 | 178.30 | 7,667.2 | -217.8 | -236.8 | 236.2 | 6.59 | 6.17 | 2.55 |
| 7,937.0 | 69.00 | 181.30 | 7,686.0 | -263.1 | -236.7 | 281.3 | 8.33 | 6.12 | 6.12 |
| 7,984.0 | 71.10 | 182.00 | 7,702.0 | -307.2 | -238.0 | 325.4 | 4.68 | 4.47 | 1.49 |
| 8,033.0 | 75.40 | 180.60 | 7,716.1 | -354.1 | -239.0 | 372.3 | 9.19 | 8.78 | -2.86 |
| 8,080.0 | 80.90 | 180.40 | 7,725.8 | -400.1 | -239.4 | 418.1 | 11.71 | 11.70 | -0.43 |
| 8,129.0 | 87.40 | 181.90 | 7,730.8 | -448.8 | -240.4 | 466.7 | 13.61 | 13.27 | 3.06 |
| 8,225.0 | 91.60 | 182.40 | 7,731.6 | -544.7 | -244.0 | 562.6 | 4.41 | 4.38 | 0.52 |
| 8,321.0 | 89.40 | 180.80 | 7,730.8 | -640.7 | -246.7 | 658.5 | 2.83 | -2.29 | -1.67 |
| 8,416.0 | 88.50 | 179.40 | 7,732.5 | -735.7 | -246.8 | 753.2 | 1.75 | -0.95 | -1.47 |
| 8,512.0 | 89.30 | 178.50 | 7,734.4 | -831.6 | -245.1 | 848.7 | 1.25 | 0.83 | -0.94 |
| 8,607.0 | 90.20 | 179.40 | 7,734.8 | -926.6 | -243.3 | 943.2 | 1.34 | 0.95 | 0.95 |
| Deepest TVD Drilled - 7734.78' TVD | | | | | | | | | |
| 8,703.0 | 90.70 | 178.50 | 7,734.0 | -1,022.6 | -241.6 | 1,038.7 | 1.07 | 0.52 | -0.94 |
| 8,799.0 | 91.20 | 178.70 | 7,732.4 | -1,118.5 | -239.2 | 1,134.2 | 0.56 | 0.52 | 0.21 |
| 8,894.0 | 90.80 | 180.40 | 7,730.8 | -1,213.5 | -238.5 | 1,228.8 | 1.84 | -0.42 | 1.79 |

| | | | |
|------------------|--|-------------------------------------|-----------------------------|
| Company: | PETROLEUM DEVELOPMENT CORP DJ Basin | Local Co-ordinate Reference: | Well Jacobucci 32S-343 |
| Project: | SEC.32-T1N-R67W | TVD Reference: | WELL @ 5082.0ft (RKB - 23') |
| Site: | Jacobucci 1N67W32S Pad Sec.32-T1N-R67W | MD Reference: | WELL @ 5082.0ft (RKB - 23') |
| Well: | Jacobucci 32S-343 | North Reference: | True |
| Wellbore: | Wellbore #1 | Survey Calculation Method: | Minimum Curvature |
| Design: | Wellbore #1 | Database: | US_EDM |

| Survey | | | | | | | | | |
|---------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-------------------------|------------------------|-----------------------|
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
| 8,990.0 | 90.70 | 180.10 | 7,729.5 | -1,309.5 | -238.9 | 1,324.5 | 0.33 | -0.10 | -0.31 |
| 9,086.0 | 91.00 | 179.90 | 7,728.1 | -1,405.5 | -238.9 | 1,420.2 | 0.38 | 0.31 | -0.21 |
| 9,182.0 | 91.80 | 179.90 | 7,725.8 | -1,501.5 | -238.7 | 1,515.8 | 0.83 | 0.83 | 0.00 |
| 9,278.0 | 90.30 | 180.80 | 7,724.0 | -1,597.4 | -239.3 | 1,611.5 | 1.82 | -1.56 | 0.94 |
| 9,374.0 | 90.20 | 180.60 | 7,723.6 | -1,693.4 | -240.5 | 1,707.3 | 0.23 | -0.10 | -0.21 |
| 9,470.0 | 91.10 | 180.80 | 7,722.5 | -1,789.4 | -241.7 | 1,803.1 | 0.96 | 0.94 | 0.21 |
| 9,566.0 | 89.90 | 181.70 | 7,721.6 | -1,885.4 | -243.8 | 1,898.9 | 1.56 | -1.25 | 0.94 |
| 9,662.0 | 90.60 | 181.50 | 7,721.2 | -1,981.4 | -246.4 | 1,994.8 | 0.76 | 0.73 | -0.21 |
| 9,757.0 | 90.00 | 181.90 | 7,720.7 | -2,076.3 | -249.3 | 2,089.7 | 0.76 | -0.63 | 0.42 |
| 9,853.0 | 89.10 | 181.00 | 7,721.5 | -2,172.3 | -251.7 | 2,185.5 | 1.33 | -0.94 | -0.94 |
| 9,948.0 | 89.30 | 181.00 | 7,722.8 | -2,267.3 | -253.4 | 2,280.3 | 0.21 | 0.21 | 0.00 |
| 10,044.0 | 89.40 | 180.80 | 7,723.9 | -2,363.2 | -254.9 | 2,376.1 | 0.23 | 0.10 | -0.21 |
| 10,140.0 | 90.10 | 181.10 | 7,724.3 | -2,459.2 | -256.5 | 2,471.9 | 0.79 | 0.73 | 0.31 |
| 10,236.0 | 92.20 | 182.40 | 7,722.4 | -2,555.2 | -259.4 | 2,567.7 | 2.57 | 2.19 | 1.35 |
| 10,332.0 | 91.10 | 181.90 | 7,719.6 | -2,651.0 | -263.0 | 2,663.6 | 1.26 | -1.15 | -0.52 |
| 10,427.0 | 90.40 | 182.00 | 7,718.4 | -2,746.0 | -266.2 | 2,758.5 | 0.74 | -0.74 | 0.11 |
| 10,523.0 | 89.80 | 181.10 | 7,718.2 | -2,841.9 | -268.8 | 2,854.4 | 1.13 | -0.63 | -0.94 |
| 10,619.0 | 90.70 | 180.60 | 7,717.8 | -2,937.9 | -270.2 | 2,950.2 | 1.07 | 0.94 | -0.52 |
| 10,715.0 | 89.30 | 180.10 | 7,717.8 | -3,033.9 | -270.8 | 3,045.9 | 1.55 | -1.46 | -0.52 |
| 10,810.0 | 89.60 | 179.90 | 7,718.7 | -3,128.9 | -270.8 | 3,140.6 | 0.38 | 0.32 | -0.21 |
| 10,906.0 | 90.20 | 179.20 | 7,718.9 | -3,224.9 | -270.1 | 3,236.2 | 0.96 | 0.63 | -0.73 |
| 11,002.0 | 91.50 | 179.70 | 7,717.5 | -3,320.9 | -269.1 | 3,331.8 | 1.45 | 1.35 | 0.52 |
| 11,098.0 | 90.20 | 178.90 | 7,716.0 | -3,416.9 | -268.0 | 3,427.4 | 1.59 | -1.35 | -0.83 |
| 11,193.0 | 90.30 | 178.90 | 7,715.6 | -3,511.9 | -266.2 | 3,521.9 | 0.11 | 0.11 | 0.00 |
| 11,289.0 | 90.20 | 179.00 | 7,715.2 | -3,607.8 | -264.4 | 3,617.4 | 0.15 | -0.10 | 0.10 |
| 11,384.0 | 90.20 | 178.90 | 7,714.9 | -3,702.8 | -262.7 | 3,711.9 | 0.11 | 0.00 | -0.11 |
| 11,480.0 | 89.90 | 178.90 | 7,714.8 | -3,798.8 | -260.8 | 3,807.5 | 0.31 | -0.31 | 0.00 |
| 11,576.0 | 90.10 | 178.90 | 7,714.8 | -3,894.8 | -259.0 | 3,903.0 | 0.21 | 0.21 | 0.00 |
| 11,672.0 | 90.60 | 179.00 | 7,714.2 | -3,990.8 | -257.2 | 3,998.5 | 0.53 | 0.52 | 0.10 |
| 11,767.0 | 90.90 | 179.00 | 7,712.9 | -4,085.7 | -255.5 | 4,093.0 | 0.32 | 0.32 | 0.00 |
| 11,863.0 | 91.00 | 179.20 | 7,711.4 | -4,181.7 | -254.0 | 4,188.6 | 0.23 | 0.10 | 0.21 |
| 11,959.0 | 90.70 | 179.20 | 7,709.9 | -4,277.7 | -252.7 | 4,284.1 | 0.31 | -0.31 | 0.00 |
| 12,054.0 | 89.60 | 179.60 | 7,709.7 | -4,372.7 | -251.7 | 4,378.8 | 1.23 | -1.16 | 0.42 |
| 12,151.0 | 90.30 | 179.60 | 7,709.8 | -4,469.7 | -251.0 | 4,475.4 | 0.72 | 0.72 | 0.00 |
| 12,246.0 | 90.40 | 179.00 | 7,709.2 | -4,564.7 | -249.9 | 4,570.0 | 0.64 | 0.11 | -0.63 |
| 12,338.0 | 91.20 | 180.40 | 7,707.9 | -4,656.7 | -249.4 | 4,661.6 | 1.75 | 0.87 | 1.52 |
| 12,434.0 | 89.30 | 179.40 | 7,707.5 | -4,752.7 | -249.2 | 4,757.3 | 2.24 | -1.98 | -1.04 |
| 12,530.0 | 89.30 | 179.20 | 7,708.7 | -4,848.6 | -248.0 | 4,852.9 | 0.21 | 0.00 | -0.21 |
| 12,626.0 | 90.70 | 179.70 | 7,708.7 | -4,944.6 | -247.1 | 4,948.5 | 1.55 | 1.46 | 0.52 |
| 12,721.0 | 88.60 | 180.10 | 7,709.2 | -5,039.6 | -247.0 | 5,043.1 | 2.25 | -2.21 | 0.42 |
| 12,817.0 | 88.70 | 180.30 | 7,711.5 | -5,135.6 | -247.3 | 5,138.8 | 0.23 | 0.10 | 0.21 |
| 12,913.0 | 90.00 | 181.30 | 7,712.6 | -5,231.6 | -248.6 | 5,234.6 | 1.71 | 1.35 | 1.04 |
| 13,009.0 | 90.20 | 181.10 | 7,712.4 | -5,327.6 | -250.6 | 5,330.4 | 0.29 | 0.21 | -0.21 |
| 13,105.0 | 91.00 | 180.40 | 7,711.4 | -5,423.6 | -251.9 | 5,426.2 | 1.11 | 0.83 | -0.73 |

| | | | |
|------------------|--|-------------------------------------|-----------------------------|
| Company: | PETROLEUM DEVELOPMENT CORP DJ Basin | Local Co-ordinate Reference: | Well Jacobucci 32S-343 |
| Project: | SEC.32-T1N-R67W | TVD Reference: | WELL @ 5082.0ft (RKB - 23') |
| Site: | Jacobucci 1N67W32S Pad Sec.32-T1N-R67W | MD Reference: | WELL @ 5082.0ft (RKB - 23') |
| Well: | Jacobucci 32S-343 | North Reference: | True |
| Wellbore: | Wellbore #1 | Survey Calculation Method: | Minimum Curvature |
| Design: | Wellbore #1 | Database: | US_EDM |

| Survey | | | | | | | | | | |
|---------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-------------------------|------------------------|-----------------------|--|
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) | |
| 13,201.0 | 89.90 | 181.00 | 7,710.7 | -5,519.5 | -253.1 | 5,522.0 | 1.31 | -1.15 | 0.63 | |
| 13,296.0 | 90.10 | 180.40 | 7,710.7 | -5,614.5 | -254.2 | 5,616.7 | 0.67 | 0.21 | -0.63 | |
| 13,393.0 | 90.30 | 179.60 | 7,710.3 | -5,711.5 | -254.2 | 5,713.4 | 0.85 | 0.21 | -0.82 | |
| 13,488.0 | 90.20 | 178.70 | 7,709.9 | -5,806.5 | -252.8 | 5,808.0 | 0.95 | -0.11 | -0.95 | |
| 13,584.0 | 90.50 | 178.30 | 7,709.3 | -5,902.5 | -250.3 | 5,903.4 | 0.52 | 0.31 | -0.42 | |
| 13,680.0 | 90.70 | 177.60 | 7,708.3 | -5,998.4 | -246.9 | 5,998.8 | 0.76 | 0.21 | -0.73 | |
| 13,776.0 | 92.10 | 179.60 | 7,706.0 | -6,094.4 | -244.5 | 6,094.2 | 2.54 | 1.46 | 2.08 | |
| 13,872.0 | 90.10 | 179.00 | 7,704.1 | -6,190.3 | -243.4 | 6,189.8 | 2.18 | -2.08 | -0.63 | |
| 13,968.0 | 90.50 | 180.80 | 7,703.6 | -6,286.3 | -243.2 | 6,285.5 | 1.92 | 0.42 | 1.88 | |
| 14,064.0 | 90.70 | 181.30 | 7,702.6 | -6,382.3 | -245.0 | 6,381.3 | 0.56 | 0.21 | 0.52 | |
| 14,159.0 | 90.30 | 181.10 | 7,701.8 | -6,477.3 | -246.9 | 6,476.1 | 0.47 | -0.42 | -0.21 | |
| 14,255.0 | 88.60 | 180.30 | 7,702.7 | -6,573.3 | -248.1 | 6,571.9 | 1.96 | -1.77 | -0.83 | |
| 14,351.0 | 88.50 | 180.10 | 7,705.1 | -6,669.2 | -248.4 | 6,667.5 | 0.23 | -0.10 | -0.21 | |
| 14,447.0 | 88.50 | 179.60 | 7,707.7 | -6,765.2 | -248.2 | 6,763.2 | 0.52 | 0.00 | -0.52 | |
| 14,554.0 | 90.00 | 178.90 | 7,709.1 | -6,872.2 | -246.8 | 6,869.7 | 1.55 | 1.40 | -0.65 | |
| 14,609.0 | 90.80 | 178.90 | 7,708.7 | -6,927.2 | -245.7 | 6,924.4 | 1.45 | 1.45 | 0.00 | |

| Design Targets | | | | | | | | | | |
|--|---------------|--------------|----------|------------|------------|-----------------|----------------|-----------|-------------|--|
| Target Name | Dip Angle (°) | Dip Dir. (°) | TVD (ft) | +N/-S (ft) | +E/-W (ft) | Northing (usft) | Easting (usft) | Latitude | Longitude | |
| - hit/miss target | | | | | | | | | | |
| - Shape | | | | | | | | | | |
| SHL 2338'FSL & 1870'FI | 0.00 | 0.00 | 1.0 | 0.0 | 0.0 | 1,245,852.68 | 3,164,850.06 | 40.006750 | -104.911510 | |
| - survey hits target center | | | | | | | | | | |
| - Point | | | | | | | | | | |
| BHL 500'FSL & 2544'FE | 0.00 | 0.00 | 7,702.0 | -6,928.7 | -246.6 | 1,238,922.72 | 3,164,649.47 | 39.987730 | -104.912390 | |
| - survey misses target center by 6.9ft at 14609.0ft MD (7708.7 TVD, -6927.2 N, -245.7 E) | | | | | | | | | | |
| - Point | | | | | | | | | | |

| Survey Annotations | | | | | |
|---------------------|---------------------|-------------------|------------|--|--|
| Measured Depth (ft) | Vertical Depth (ft) | Local Coordinates | | | |
| | | +N/-S (ft) | +E/-W (ft) | Comment | |
| 7,821.8 | 7,638.2 | -158.4 | -239.4 | Crosses 460' Setback - 2180'FSL & 2109'FEL, SEC.32 | |
| 8,607.0 | 7,734.8 | -926.6 | -243.3 | Deepest TVD Drilled - 7734.78' TVD | |

| | | |
|-------------------|--------------------|-------------|
| Checked By: _____ | Approved By: _____ | Date: _____ |
|-------------------|--------------------|-------------|