

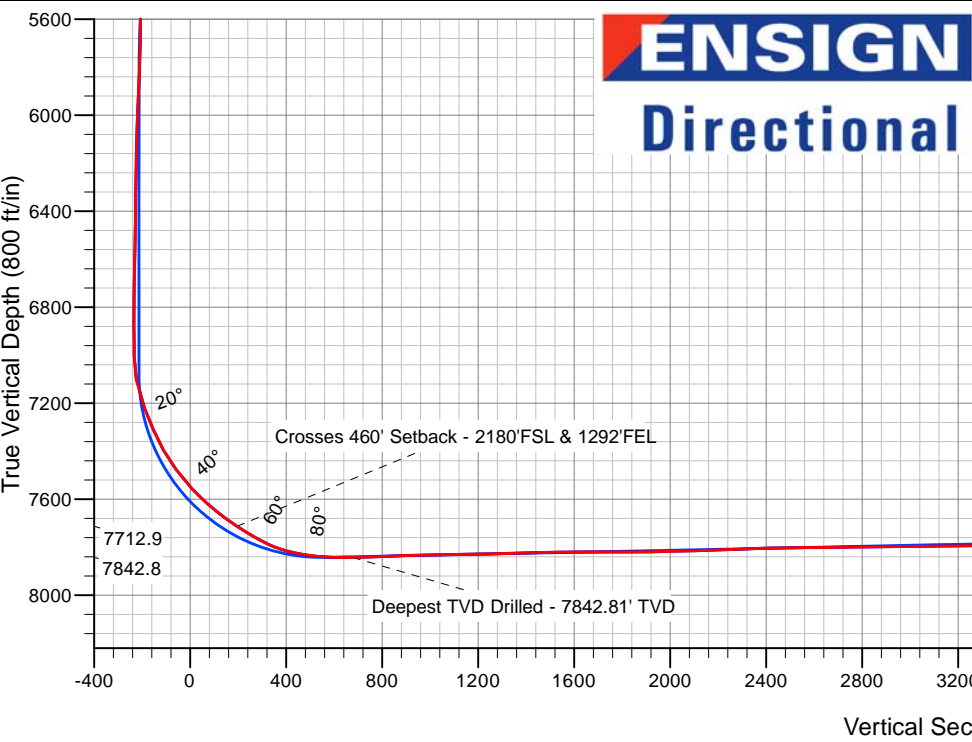
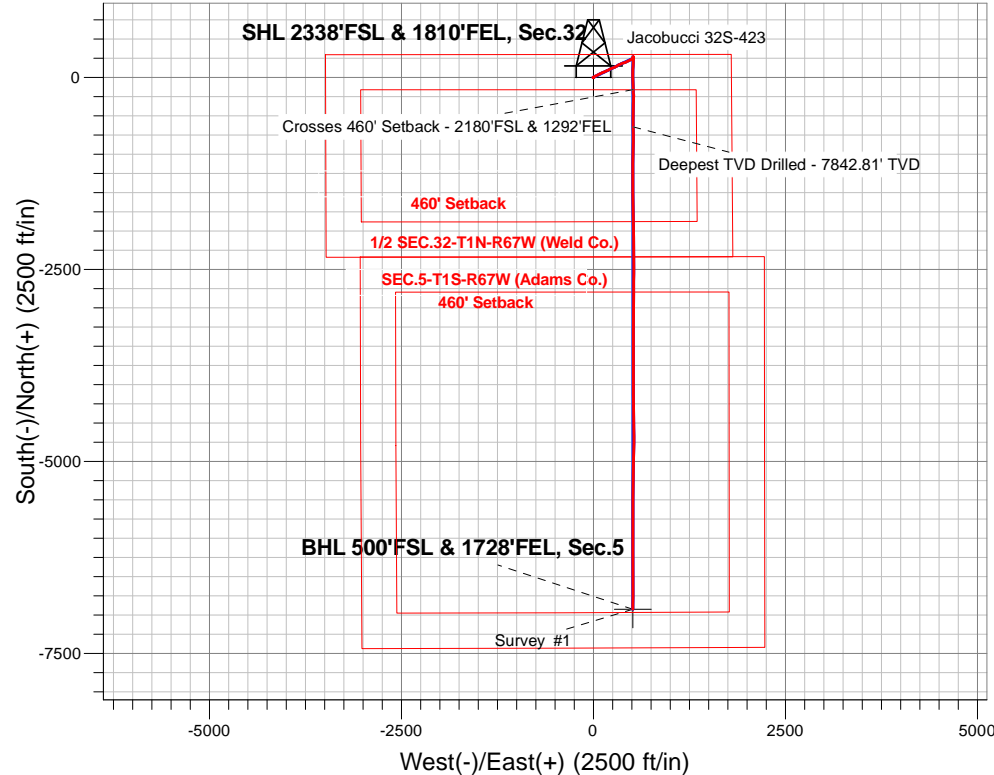
PETROLEUM DEVELOPMENT CORP DJ Basin

Well Name: **Jacobucci 32S-423**

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 1245853.003164906.08 40.006750 -104.911310
RKB - 23' WELL @ 5082.0ft (RKB - 23')

FINAL SURVEY

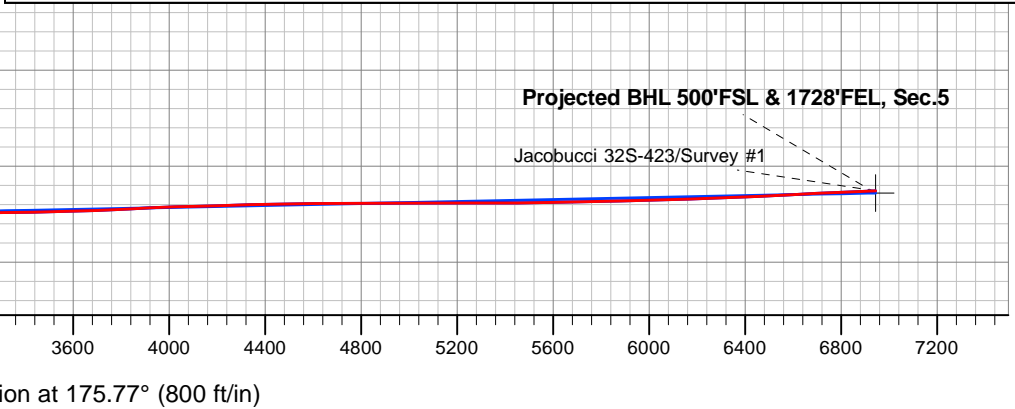
Projected Bottom Hole Location
14703'MD 7703'TVD 6925'S & 512'E of SHL
93.1 degree Incl @ 180.6 degree AZM



| | | | |
|--|-------------|--------|--|
| Jacobucci 1N67W32S Pad Sec.32-T1N-R67W Jacobucci 32S-423 Wellbore #1 9:55, November 11 2016 | ANNOTATIONS | | |
| | TVD | MD | Annotation |
| | 7712.9 | 7905.6 | Crosses 460' Setback - 2180'FSL & 1292'FEL |
| | 7842.8 | 8417.0 | Deepest TVD Drilled - 7842.81' TVD |

LEGEND

- Jacobucci 32S-423, Wellbore #1, Plan #4 (11-01-16)R V0
- Wellbore #1
- Survey #1





PETROLEUM DEVELOPMENT CORP DJ Basin

SEC.32-T1N-R67W

Jacobucci 1N67W32S Pad Sec.32-T1N-R67W

Jacobucci 32S-423

Wellbore #1

Survey: Survey #1

Standard Survey Report

11 November, 2016

| | | | |
|------------------|--|-------------------------------------|-----------------------------|
| Company: | PETROLEUM DEVELOPMENT CORP DJ Basin | Local Co-ordinate Reference: | Well Jacobucci 32S-423 |
| 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-423 | 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-423 | | | | | |
|----------------------|-------------------|--------|---------------------|-------------------|---------------|-------------|
| Well Position | +N/-S | 0.0 ft | Northing: | 1,245,853.00 usft | Latitude: | 40.006750 |
| | +E/-W | 0.0 ft | Easting: | 3,164,906.08 usft | Longitude: | -104.911310 |
| 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 | 11/1/2016 | 8.19 | 66.52 | 52,341 |

| | | | | | |
|--------------------------|------------------------------|-------------------|-------------------|----------------------|-----|
| 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 | 175.77 | |

| | | | | | |
|-----------------------|----------------|--------------------------|------------------|--------------------|--|
| Survey Program | Date | 11/11/2016 | | | |
| From (ft) | To (ft) | Survey (Wellbore) | Tool Name | Description | |
| 251.0 | 14,703.0 | 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 | 0.40 | 129.00 | 251.0 | -0.6 | 0.7 | 0.6 | 0.16 | 0.16 | 0.00 | |
| 347.0 | 0.40 | 108.70 | 347.0 | -0.9 | 1.3 | 1.0 | 0.15 | 0.00 | -21.15 | |
| 443.0 | 0.20 | 258.20 | 443.0 | -1.0 | 1.4 | 1.1 | 0.61 | -0.21 | 155.73 | |
| 539.0 | 0.40 | 275.40 | 539.0 | -1.0 | 0.9 | 1.1 | 0.23 | 0.21 | 17.92 | |
| 634.0 | 0.50 | 271.90 | 634.0 | -1.0 | 0.2 | 1.0 | 0.11 | 0.11 | -3.68 | |
| 825.0 | 0.80 | 279.80 | 825.0 | -0.7 | -2.0 | 0.6 | 0.16 | 0.16 | 4.14 | |
| 921.0 | 0.80 | 289.60 | 921.0 | -0.4 | -3.3 | 0.1 | 0.14 | 0.00 | 10.21 | |
| 1,017.0 | 1.10 | 290.00 | 1,017.0 | 0.2 | -4.8 | -0.5 | 0.31 | 0.31 | 0.42 | |
| 1,113.0 | 0.90 | 278.90 | 1,112.9 | 0.6 | -6.4 | -1.1 | 0.29 | -0.21 | -11.56 | |

| | | | |
|------------------|--|-------------------------------------|-----------------------------|
| Company: | PETROLEUM DEVELOPMENT CORP DJ Basin | Local Co-ordinate Reference: | Well Jacobucci 32S-423 |
| 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-423 | 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) |
| 1,209.0 | 0.40 | 233.90 | 1,208.9 | 0.5 | -7.4 | -1.1 | 0.71 | -0.52 | -46.88 |
| 1,304.0 | 0.40 | 274.30 | 1,303.9 | 0.3 | -8.0 | -0.9 | 0.29 | 0.00 | 42.53 |
| 1,400.0 | 1.40 | 56.90 | 1,399.9 | 1.0 | -7.3 | -1.5 | 1.81 | 1.04 | 148.54 |
| 1,496.0 | 3.10 | 66.40 | 1,495.8 | 2.7 | -4.0 | -3.0 | 1.81 | 1.77 | 9.90 |
| 1,592.0 | 4.30 | 61.30 | 1,591.6 | 5.5 | 1.6 | -5.3 | 1.29 | 1.25 | -5.31 |
| 1,688.0 | 5.60 | 62.50 | 1,687.3 | 9.3 | 8.9 | -8.7 | 1.36 | 1.35 | 1.25 |
| 1,784.0 | 7.10 | 63.60 | 1,782.7 | 14.2 | 18.3 | -12.8 | 1.57 | 1.56 | 1.15 |
| 1,880.0 | 8.20 | 63.40 | 1,877.8 | 19.9 | 29.8 | -17.6 | 1.15 | 1.15 | -0.21 |
| 2,002.0 | 8.70 | 63.00 | 1,998.5 | 27.9 | 45.8 | -24.5 | 0.41 | 0.41 | -0.33 |
| 2,069.0 | 7.00 | 62.30 | 2,064.9 | 32.1 | 53.9 | -28.1 | 2.54 | -2.54 | -1.04 |
| 2,165.0 | 8.40 | 65.00 | 2,160.0 | 37.8 | 65.4 | -32.9 | 1.51 | 1.46 | 2.81 |
| 2,261.0 | 8.40 | 65.10 | 2,255.0 | 43.7 | 78.2 | -37.8 | 0.02 | 0.00 | 0.10 |
| 2,357.0 | 7.80 | 62.90 | 2,350.0 | 49.7 | 90.3 | -42.9 | 0.70 | -0.63 | -2.29 |
| 2,452.0 | 8.00 | 63.40 | 2,444.1 | 55.6 | 102.0 | -47.9 | 0.22 | 0.21 | 0.53 |
| 2,548.0 | 7.70 | 63.70 | 2,539.2 | 61.4 | 113.7 | -52.8 | 0.32 | -0.31 | 0.31 |
| 2,644.0 | 8.90 | 67.40 | 2,634.2 | 67.1 | 126.3 | -57.6 | 1.37 | 1.25 | 3.85 |
| 2,739.0 | 8.90 | 68.00 | 2,728.1 | 72.7 | 139.9 | -62.1 | 0.10 | 0.00 | 0.63 |
| 2,930.0 | 8.60 | 65.50 | 2,916.9 | 84.1 | 166.6 | -71.6 | 0.25 | -0.16 | -1.31 |
| 3,026.0 | 8.30 | 65.70 | 3,011.8 | 90.0 | 179.5 | -76.5 | 0.31 | -0.31 | 0.21 |
| 3,122.0 | 8.40 | 63.00 | 3,106.8 | 96.0 | 192.0 | -81.6 | 0.42 | 0.10 | -2.81 |
| 3,217.0 | 8.20 | 60.40 | 3,200.8 | 102.5 | 204.1 | -87.1 | 0.45 | -0.21 | -2.74 |
| 3,313.0 | 7.90 | 60.40 | 3,295.9 | 109.1 | 215.8 | -92.9 | 0.31 | -0.31 | 0.00 |
| 3,409.0 | 7.70 | 67.40 | 3,391.0 | 114.9 | 227.5 | -97.7 | 1.01 | -0.21 | 7.29 |
| 3,505.0 | 8.90 | 68.30 | 3,486.0 | 120.1 | 240.3 | -102.0 | 1.26 | 1.25 | 0.94 |
| 3,600.0 | 8.50 | 67.60 | 3,579.9 | 125.5 | 253.6 | -106.4 | 0.44 | -0.42 | -0.74 |
| 3,696.0 | 8.20 | 67.60 | 3,674.8 | 130.8 | 266.5 | -110.7 | 0.31 | -0.31 | 0.00 |
| 3,791.0 | 7.60 | 65.10 | 3,768.9 | 136.0 | 278.5 | -115.1 | 0.73 | -0.63 | -2.63 |
| 3,887.0 | 8.20 | 61.30 | 3,864.0 | 142.0 | 290.2 | -120.2 | 0.83 | 0.63 | -3.96 |
| 3,983.0 | 7.70 | 57.60 | 3,959.1 | 148.7 | 301.7 | -126.0 | 0.75 | -0.52 | -3.85 |
| 4,079.0 | 8.30 | 61.60 | 4,054.2 | 155.4 | 313.2 | -131.9 | 0.85 | 0.63 | 4.17 |
| 4,174.0 | 7.30 | 57.80 | 4,148.3 | 161.9 | 324.3 | -137.5 | 1.18 | -1.05 | -4.00 |
| 4,270.0 | 7.50 | 67.30 | 4,243.5 | 167.6 | 335.3 | -142.4 | 1.29 | 0.21 | 9.90 |
| 4,366.0 | 7.80 | 68.30 | 4,338.7 | 172.4 | 347.1 | -146.3 | 0.34 | 0.31 | 1.04 |
| 4,462.0 | 7.30 | 65.00 | 4,433.8 | 177.4 | 358.7 | -150.4 | 0.69 | -0.52 | -3.44 |
| 4,558.0 | 7.90 | 69.70 | 4,529.0 | 182.3 | 370.4 | -154.4 | 0.90 | 0.63 | 4.90 |
| 4,654.0 | 8.60 | 72.20 | 4,624.0 | 186.8 | 383.4 | -157.9 | 0.82 | 0.73 | 2.60 |
| 4,749.0 | 8.20 | 69.90 | 4,718.0 | 191.3 | 396.6 | -161.4 | 0.55 | -0.42 | -2.42 |
| 4,845.0 | 7.70 | 69.90 | 4,813.0 | 195.8 | 409.0 | -165.1 | 0.52 | -0.52 | 0.00 |
| 4,940.0 | 9.40 | 64.40 | 4,907.0 | 201.4 | 422.0 | -169.6 | 1.98 | 1.79 | -5.79 |
| 5,033.0 | 9.10 | 64.40 | 4,998.8 | 207.8 | 435.5 | -175.1 | 0.32 | -0.32 | 0.00 |
| 5,131.0 | 8.60 | 63.60 | 5,095.6 | 214.4 | 449.0 | -180.7 | 0.53 | -0.51 | -0.82 |
| 5,225.0 | 7.80 | 64.30 | 5,188.6 | 220.3 | 461.1 | -185.7 | 0.86 | -0.85 | 0.74 |
| 5,320.0 | 9.00 | 67.80 | 5,282.6 | 225.9 | 473.8 | -190.3 | 1.37 | 1.26 | 3.68 |
| 5,416.0 | 8.60 | 67.10 | 5,377.5 | 231.5 | 487.3 | -194.9 | 0.43 | -0.42 | -0.73 |

| | | | |
|------------------|--|-------------------------------------|-----------------------------|
| Company: | PETROLEUM DEVELOPMENT CORP DJ Basin | Local Co-ordinate Reference: | Well Jacobucci 32S-423 |
| 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-423 | 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) |
| 5,511.0 | 7.70 | 63.00 | 5,471.5 | 237.2 | 499.5 | -199.7 | 1.13 | -0.95 | -4.32 |
| 5,606.0 | 5.10 | 50.40 | 5,565.9 | 242.8 | 508.5 | -204.6 | 3.09 | -2.74 | -13.26 |
| 5,703.0 | 2.90 | 87.40 | 5,662.7 | 245.6 | 514.2 | -207.0 | 3.39 | -2.27 | 38.14 |
| 5,798.0 | 2.60 | 15.20 | 5,757.6 | 247.8 | 517.2 | -209.0 | 3.42 | -0.32 | -76.00 |
| 5,894.0 | 2.50 | 10.70 | 5,853.5 | 252.0 | 518.2 | -213.0 | 0.23 | -0.10 | -4.69 |
| 5,990.0 | 2.20 | 10.80 | 5,949.5 | 255.9 | 518.9 | -216.8 | 0.31 | -0.31 | 0.10 |
| 6,085.0 | 2.10 | 19.30 | 6,044.4 | 259.3 | 519.8 | -220.2 | 0.35 | -0.11 | 8.95 |
| 6,179.0 | 1.90 | 10.10 | 6,138.3 | 262.5 | 520.7 | -223.3 | 0.40 | -0.21 | -9.79 |
| 6,275.0 | 1.60 | 294.90 | 6,234.3 | 264.6 | 519.7 | -225.5 | 2.24 | -0.31 | -78.33 |
| 6,370.0 | 1.50 | 294.50 | 6,329.3 | 265.7 | 517.4 | -226.7 | 0.11 | -0.11 | -0.42 |
| 6,466.0 | 0.90 | 311.80 | 6,425.2 | 266.7 | 515.7 | -227.9 | 0.72 | -0.63 | 18.02 |
| 6,561.0 | 1.00 | 348.90 | 6,520.2 | 268.0 | 515.0 | -229.2 | 0.64 | 0.11 | 39.05 |
| 6,658.0 | 1.20 | 7.10 | 6,617.2 | 269.8 | 514.9 | -231.1 | 0.41 | 0.21 | 18.76 |
| 6,754.0 | 1.10 | 5.90 | 6,713.2 | 271.7 | 515.1 | -233.0 | 0.11 | -0.10 | -1.25 |
| 6,849.0 | 0.30 | 149.50 | 6,808.2 | 272.4 | 515.4 | -233.6 | 1.42 | -0.84 | 151.16 |
| 6,945.0 | 0.30 | 104.20 | 6,904.2 | 272.2 | 515.7 | -233.3 | 0.24 | 0.00 | -47.19 |
| 6,992.0 | 0.30 | 86.20 | 6,951.2 | 272.1 | 516.0 | -233.3 | 0.20 | 0.00 | -38.30 |
| 7,046.0 | 0.60 | 146.00 | 7,005.2 | 271.9 | 516.3 | -233.0 | 0.96 | 0.56 | 110.74 |
| 7,141.0 | 10.40 | 179.00 | 7,099.6 | 262.9 | 516.7 | -224.0 | 10.42 | 10.32 | 34.74 |
| 7,266.0 | 21.00 | 176.80 | 7,219.8 | 229.2 | 518.2 | -190.3 | 8.49 | 8.48 | -1.76 |
| 7,362.0 | 23.20 | 180.50 | 7,308.7 | 193.1 | 519.0 | -154.2 | 2.71 | 2.29 | 3.85 |
| 7,458.0 | 29.50 | 183.30 | 7,394.7 | 150.5 | 517.4 | -111.9 | 6.69 | 6.56 | 2.92 |
| 7,554.0 | 37.00 | 186.10 | 7,475.0 | 98.1 | 513.0 | -60.0 | 7.97 | 7.81 | 2.92 |
| 7,650.0 | 42.50 | 179.80 | 7,548.8 | 36.9 | 510.0 | 0.9 | 7.10 | 5.73 | -6.56 |
| 7,746.0 | 48.20 | 177.10 | 7,616.2 | -31.3 | 512.0 | 69.0 | 6.26 | 5.94 | -2.81 |
| 7,841.0 | 53.90 | 177.10 | 7,675.9 | -105.1 | 515.7 | 142.9 | 6.00 | 6.00 | 0.00 |
| 7,905.6 | 56.19 | 177.58 | 7,712.9 | -158.0 | 518.1 | 195.8 | 3.59 | 3.54 | 0.74 |
| Crosses 460' Setback - 2180'FSL & 1292'FEL | | | | | | | | | |
| 7,937.0 | 57.30 | 177.80 | 7,730.1 | -184.2 | 519.2 | 222.0 | 3.59 | 3.54 | 0.71 |
| 8,033.0 | 62.60 | 179.40 | 7,778.2 | -267.2 | 521.2 | 305.0 | 5.71 | 5.52 | 1.67 |
| 8,129.0 | 74.50 | 182.00 | 7,813.2 | -356.4 | 520.0 | 393.8 | 12.65 | 12.40 | 2.71 |
| 8,225.0 | 81.30 | 181.50 | 7,833.4 | -450.2 | 517.2 | 487.1 | 7.10 | 7.08 | -0.52 |
| 8,321.0 | 88.40 | 179.90 | 7,842.0 | -545.7 | 516.0 | 582.3 | 7.58 | 7.40 | -1.67 |
| 8,417.0 | 90.60 | 178.90 | 7,842.8 | -641.7 | 517.0 | 678.1 | 2.52 | 2.29 | -1.04 |
| Deepest TVD Drilled - 7842.81' TVD | | | | | | | | | |
| 8,512.0 | 92.50 | 179.60 | 7,840.2 | -736.7 | 518.3 | 772.9 | 2.13 | 2.00 | 0.74 |
| 8,608.0 | 91.80 | 180.10 | 7,836.6 | -832.6 | 518.5 | 868.6 | 0.90 | -0.73 | 0.52 |
| 8,703.0 | 91.70 | 180.60 | 7,833.7 | -927.5 | 517.9 | 963.3 | 0.54 | -0.11 | 0.53 |
| 8,799.0 | 90.70 | 181.20 | 7,831.7 | -1,023.5 | 516.4 | 1,058.9 | 1.21 | -1.04 | 0.63 |
| 8,895.0 | 90.90 | 181.30 | 7,830.4 | -1,119.5 | 514.3 | 1,154.4 | 0.23 | 0.21 | 0.10 |
| 8,991.0 | 91.20 | 180.80 | 7,828.6 | -1,215.4 | 512.6 | 1,250.0 | 0.61 | 0.31 | -0.52 |
| 9,087.0 | 92.20 | 180.60 | 7,825.8 | -1,311.4 | 511.4 | 1,345.6 | 1.06 | 1.04 | -0.21 |
| 9,183.0 | 90.90 | 179.60 | 7,823.2 | -1,407.4 | 511.2 | 1,441.3 | 1.71 | -1.35 | -1.04 |

| | | | |
|------------------|--|-------------------------------------|-----------------------------|
| Company: | PETROLEUM DEVELOPMENT CORP DJ Basin | Local Co-ordinate Reference: | Well Jacobucci 32S-423 |
| 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-423 | 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) |
| 9,278.0 | 91.70 | 179.90 | 7,821.0 | -1,502.3 | 511.6 | 1,536.0 | 0.90 | 0.84 | 0.32 |
| 9,374.0 | 89.40 | 178.20 | 7,820.1 | -1,598.3 | 513.2 | 1,631.8 | 2.98 | -2.40 | -1.77 |
| 9,470.0 | 90.10 | 178.70 | 7,820.5 | -1,694.3 | 515.8 | 1,727.7 | 0.90 | 0.73 | 0.52 |
| 9,566.0 | 89.70 | 179.90 | 7,820.7 | -1,790.3 | 517.0 | 1,823.5 | 1.32 | -0.42 | 1.25 |
| 9,662.0 | 91.50 | 179.20 | 7,819.7 | -1,886.2 | 517.8 | 1,919.3 | 2.01 | 1.88 | -0.73 |
| 9,758.0 | 91.60 | 178.90 | 7,817.1 | -1,982.2 | 519.4 | 2,015.1 | 0.33 | 0.10 | -0.31 |
| 9,853.0 | 91.60 | 178.20 | 7,814.4 | -2,077.1 | 521.8 | 2,110.0 | 0.74 | 0.00 | -0.74 |
| 9,949.0 | 91.80 | 179.60 | 7,811.6 | -2,173.1 | 523.6 | 2,205.8 | 1.47 | 0.21 | 1.46 |
| 10,044.0 | 92.20 | 179.60 | 7,808.3 | -2,268.0 | 524.3 | 2,300.5 | 0.42 | 0.42 | 0.00 |
| 10,140.0 | 92.00 | 180.50 | 7,804.8 | -2,363.9 | 524.2 | 2,396.2 | 0.96 | -0.21 | 0.94 |
| 10,236.0 | 90.30 | 180.30 | 7,802.8 | -2,459.9 | 523.5 | 2,491.9 | 1.78 | -1.77 | -0.21 |
| 10,332.0 | 90.40 | 179.80 | 7,802.2 | -2,555.9 | 523.4 | 2,587.6 | 0.53 | 0.10 | -0.52 |
| 10,428.0 | 90.80 | 180.80 | 7,801.2 | -2,651.9 | 522.9 | 2,683.3 | 1.12 | 0.42 | 1.04 |
| 10,523.0 | 90.70 | 180.10 | 7,800.0 | -2,746.9 | 522.2 | 2,778.0 | 0.74 | -0.11 | -0.74 |
| 10,619.0 | 90.70 | 179.60 | 7,798.8 | -2,842.9 | 522.4 | 2,873.7 | 0.52 | 0.00 | -0.52 |
| 10,715.0 | 90.80 | 181.00 | 7,797.6 | -2,938.9 | 521.9 | 2,969.4 | 1.46 | 0.10 | 1.46 |
| 10,811.0 | 90.60 | 180.50 | 7,796.4 | -3,034.9 | 520.7 | 3,065.0 | 0.56 | -0.21 | -0.52 |
| 10,907.0 | 90.50 | 179.90 | 7,795.5 | -3,130.9 | 520.3 | 3,160.7 | 0.63 | -0.10 | -0.63 |
| 11,002.0 | 90.40 | 179.00 | 7,794.7 | -3,225.8 | 521.2 | 3,255.5 | 0.95 | -0.11 | -0.95 |
| 11,098.0 | 91.40 | 181.20 | 7,793.2 | -3,321.8 | 521.1 | 3,351.2 | 2.52 | 1.04 | 2.29 |
| 11,194.0 | 90.90 | 180.50 | 7,791.3 | -3,417.8 | 519.7 | 3,446.8 | 0.90 | -0.52 | -0.73 |
| 11,289.0 | 90.80 | 179.90 | 7,789.9 | -3,512.8 | 519.3 | 3,541.5 | 0.64 | -0.11 | -0.63 |
| 11,385.0 | 92.40 | 180.60 | 7,787.2 | -3,608.7 | 518.9 | 3,637.2 | 1.82 | 1.67 | 0.73 |
| 11,480.0 | 92.60 | 180.50 | 7,783.1 | -3,703.6 | 518.0 | 3,731.8 | 0.24 | 0.21 | -0.11 |
| 11,576.0 | 92.60 | 180.10 | 7,778.7 | -3,799.5 | 517.5 | 3,827.4 | 0.42 | 0.00 | -0.42 |
| 11,672.0 | 93.00 | 179.60 | 7,774.0 | -3,895.4 | 517.7 | 3,923.0 | 0.67 | 0.42 | -0.52 |
| 11,768.0 | 91.40 | 179.90 | 7,770.3 | -3,991.4 | 518.2 | 4,018.7 | 1.70 | -1.67 | 0.31 |
| 11,863.0 | 91.50 | 179.00 | 7,767.9 | -4,086.3 | 519.1 | 4,113.5 | 0.95 | 0.11 | -0.95 |
| 11,959.0 | 91.90 | 178.70 | 7,765.1 | -4,182.3 | 521.0 | 4,209.3 | 0.52 | 0.42 | -0.31 |
| 12,055.0 | 91.30 | 179.20 | 7,762.4 | -4,278.2 | 522.8 | 4,305.1 | 0.81 | -0.63 | 0.52 |
| 12,151.0 | 91.40 | 178.70 | 7,760.1 | -4,374.2 | 524.5 | 4,400.9 | 0.53 | 0.10 | -0.52 |
| 12,246.0 | 90.80 | 180.30 | 7,758.3 | -4,469.1 | 525.3 | 4,495.7 | 1.80 | -0.63 | 1.68 |
| 12,343.0 | 91.20 | 179.60 | 7,756.6 | -4,566.1 | 525.4 | 4,592.5 | 0.83 | 0.41 | -0.72 |
| 12,439.0 | 90.80 | 179.40 | 7,754.9 | -4,662.1 | 526.3 | 4,688.2 | 0.47 | -0.42 | -0.21 |
| 12,535.0 | 90.00 | 181.30 | 7,754.3 | -4,758.1 | 525.7 | 4,783.9 | 2.15 | -0.83 | 1.98 |
| 12,630.0 | 90.00 | 181.00 | 7,754.3 | -4,853.1 | 523.8 | 4,878.5 | 0.32 | 0.00 | -0.32 |
| 12,726.0 | 89.70 | 180.60 | 7,754.5 | -4,949.1 | 522.4 | 4,974.1 | 0.52 | -0.31 | -0.42 |
| 12,822.0 | 89.80 | 180.30 | 7,754.9 | -5,045.1 | 521.7 | 5,069.8 | 0.33 | 0.10 | -0.31 |
| 12,918.0 | 90.60 | 181.50 | 7,754.6 | -5,141.0 | 520.2 | 5,165.4 | 1.50 | 0.83 | 1.25 |
| 13,013.0 | 90.30 | 181.20 | 7,753.9 | -5,236.0 | 517.9 | 5,260.0 | 0.45 | -0.32 | -0.32 |
| 13,109.0 | 89.60 | 180.60 | 7,753.9 | -5,332.0 | 516.4 | 5,355.6 | 0.96 | -0.73 | -0.63 |
| 13,205.0 | 90.60 | 181.50 | 7,753.8 | -5,428.0 | 514.7 | 5,451.2 | 1.40 | 1.04 | 0.94 |
| 13,301.0 | 91.00 | 180.80 | 7,752.4 | -5,524.0 | 512.7 | 5,546.7 | 0.84 | 0.42 | -0.73 |
| 13,397.0 | 91.20 | 180.50 | 7,750.6 | -5,619.9 | 511.6 | 5,642.4 | 0.38 | 0.21 | -0.31 |

| | | | |
|------------------|--|-------------------------------------|-----------------------------|
| Company: | PETROLEUM DEVELOPMENT CORP DJ Basin | Local Co-ordinate Reference: | Well Jacobucci 32S-423 |
| 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-423 | 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) | |
| 13,493.0 | 91.00 | 180.10 | 7,748.7 | -5,715.9 | 511.1 | 5,738.0 | 0.47 | -0.21 | -0.42 | |
| 13,589.0 | 91.60 | 180.10 | 7,746.6 | -5,811.9 | 511.0 | 5,833.7 | 0.63 | 0.63 | 0.00 | |
| 13,685.0 | 91.80 | 179.90 | 7,743.7 | -5,907.8 | 511.0 | 5,929.4 | 0.29 | 0.21 | -0.21 | |
| 13,781.0 | 91.60 | 179.60 | 7,740.9 | -6,003.8 | 511.4 | 6,025.2 | 0.38 | -0.21 | -0.31 | |
| 13,877.0 | 91.50 | 179.40 | 7,738.3 | -6,099.8 | 512.2 | 6,120.9 | 0.23 | -0.10 | -0.21 | |
| 13,973.0 | 92.00 | 179.80 | 7,735.3 | -6,195.7 | 512.9 | 6,216.7 | 0.67 | 0.52 | 0.42 | |
| 14,068.0 | 91.70 | 179.20 | 7,732.3 | -6,290.7 | 513.7 | 6,311.4 | 0.71 | -0.32 | -0.63 | |
| 14,164.0 | 92.10 | 178.70 | 7,729.1 | -6,386.6 | 515.5 | 6,407.2 | 0.67 | 0.42 | -0.52 | |
| 14,260.0 | 93.50 | 179.60 | 7,724.4 | -6,482.5 | 516.9 | 6,502.9 | 1.73 | 1.46 | 0.94 | |
| 14,356.0 | 93.10 | 180.80 | 7,718.9 | -6,578.3 | 516.6 | 6,598.5 | 1.32 | -0.42 | 1.25 | |
| 14,451.0 | 92.50 | 180.60 | 7,714.2 | -6,673.2 | 515.4 | 6,693.0 | 0.67 | -0.63 | -0.21 | |
| 14,547.0 | 92.10 | 181.20 | 7,710.4 | -6,769.1 | 513.9 | 6,788.6 | 0.75 | -0.42 | 0.63 | |
| 14,643.0 | 93.00 | 180.60 | 7,706.1 | -6,865.0 | 512.4 | 6,884.1 | 1.13 | 0.94 | -0.63 | |
| 14,703.0 | 93.10 | 180.60 | 7,702.9 | -6,924.9 | 511.8 | 6,943.8 | 0.17 | 0.17 | 0.00 | |

| Design Targets | | | | | | | | | | |
|---|---------------|--------------|----------|------------|------------|-----------------|----------------|-----------|--|--|
| Target Name | Dip Angle (°) | Dip Dir. (°) | TVD (ft) | +N/-S (ft) | +E/-W (ft) | Northing (usft) | Easting (usft) | Latitude | | |
| - hit/miss target | | | | | | | | | | |
| - Shape | | | | | | | | | | |
| SHL 2338'FSL & 1810'FI | 0.00 | 0.00 | 1.0 | 0.1 | 0.0 | 1,245,853.07 | 3,164,906.08 | 40.006750 | | |
| - survey misses target center by 0.1ft at 1.0ft MD (1.0 TVD, 0.0 N, 0.0 E) | | | | | | | | | | |
| - Point | | | | | | | | | | |
| BHL 500'FSL & 1727'FE | 0.00 | 0.00 | 7,712.0 | -6,925.0 | 512.8 | 1,238,931.78 | 3,165,464.82 | 39.987740 | | |
| - survey misses target center by 9.1ft at 14702.6ft MD (7702.9 TVD, -6924.5 N, 511.8 E) | | | | | | | | | | |
| - Point | | | | | | | | | | |

| Survey Annotations | | | | | |
|---------------------|---------------------|-------------------|------------|--|--|
| Measured Depth (ft) | Vertical Depth (ft) | Local Coordinates | | | |
| | | +N/-S (ft) | +E/-W (ft) | Comment | |
| 7,905.6 | 7,712.9 | -158.0 | 518.1 | Crosses 460' Setback - 2180'FSL & 1292'FEL | |
| 8,417.0 | 7,842.8 | -641.7 | 517.0 | Deepest TVD Drilled - 7842.81' TVD | |

Checked By: _____ Approved By: _____ Date: _____