

Unit Petroleum

Reno County, Kansas [NAD 83]

Section 18 T25S-R10W

Loudenback 18 #2H

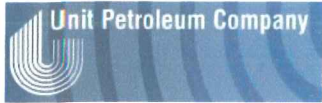
OH

Design: OH

Standard Survey Report

02 June, 2014





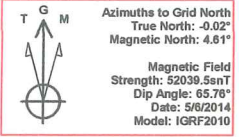
Unit Petroleum
 Project: Reno County, Kansas [NAD 83]
 Site: Section 18 T25S-R10W
 Well: Loudenback 18 #2H
 Wellbore: OH
 Design: Design #3
 Lat: 37° 52' 59.108 N
 Long: 98° 28' 11.868 W
 Pad GL: 1770.00
 KB: 20' KB @ 1790.00usft (UDI 303)



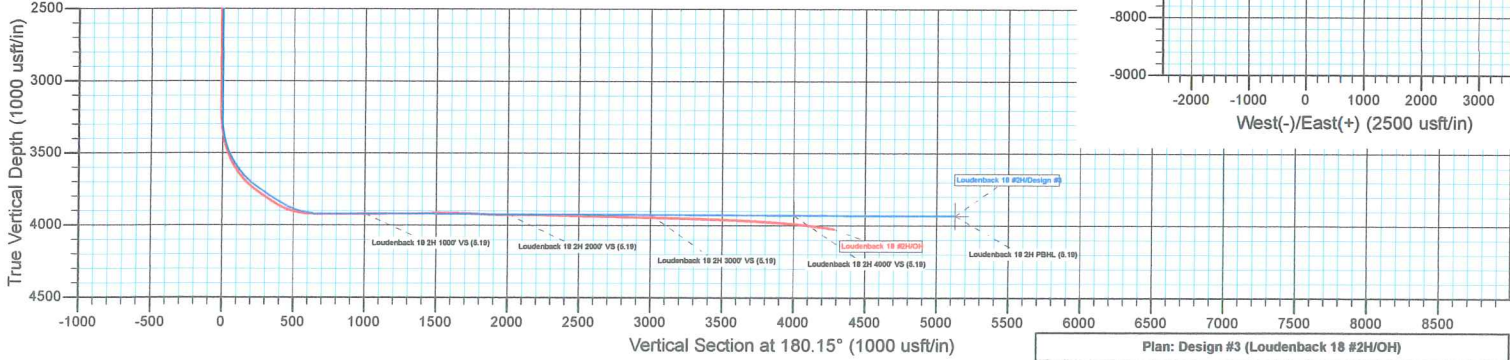
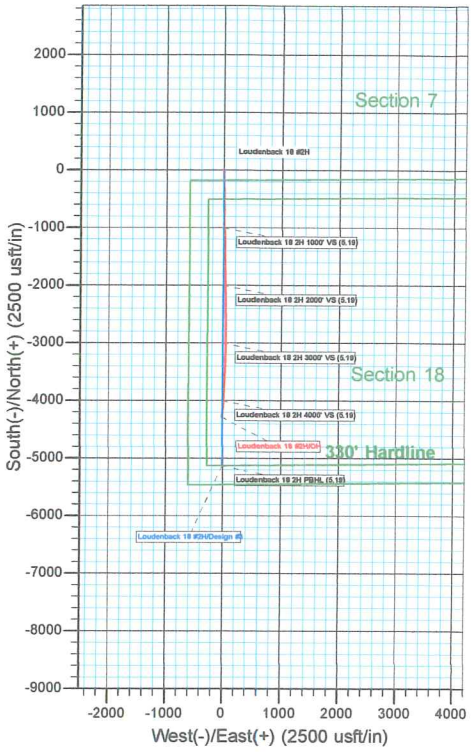
| SECTION DETAILS | | | | | | | | | |
|-----------------|-------|--------|---------|----------|--------|-------|---------|---------|--|
| MD | Inc | Azi | TVD | +N/-S | +E/-W | Dleg | TFace | VSect | |
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 3283.16 | 0.00 | 0.00 | 3283.16 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 3823.16 | 56.00 | 180.15 | 3738.16 | -252.56 | -0.66 | 10.00 | 180.15 | 252.56 | |
| 3973.16 | 56.00 | 180.15 | 3822.04 | -376.92 | -0.99 | 0.00 | 0.00 | 376.92 | |
| 4313.15 | 90.00 | 180.14 | 3920.00 | -897.30 | -1.80 | 10.00 | -0.02 | 697.31 | |
| 4615.85 | 90.00 | 180.14 | 3920.00 | -1000.00 | -2.54 | 0.00 | 0.00 | 1000.00 | |
| 4819.68 | 89.89 | 180.15 | 3920.00 | -1003.81 | -2.54 | 3.00 | 177.39 | 1003.81 | |
| 5613.94 | 89.89 | 180.15 | 3922.00 | -1998.09 | -5.07 | 0.00 | 0.00 | 1998.10 | |
| 5615.85 | 89.83 | 180.15 | 3922.00 | -1998.99 | -5.07 | 3.00 | -179.99 | 2000.00 | |
| 6615.85 | 89.83 | 180.15 | 3925.00 | -3999.99 | -7.61 | 0.00 | 0.00 | 3000.00 | |
| 6817.77 | 89.77 | 180.15 | 3925.01 | -3001.91 | -7.61 | 3.00 | 180.00 | 3001.91 | |
| 7613.29 | 89.77 | 180.15 | 3928.99 | -3997.42 | -10.13 | 0.00 | 0.00 | 3997.43 | |
| 7615.86 | 89.85 | 180.15 | 3929.00 | -3999.99 | -10.14 | 3.00 | 0.00 | 4000.00 | |
| 8744.21 | 89.85 | 180.15 | 3932.00 | -5128.33 | -13.00 | 0.00 | 0.00 | 5128.34 | |

| WELL DETAILS: Loudenback 18 #2H | | | | | | |
|---------------------------------|-------|------------|---------------|------------|------------------|------------------|
| +N/-S | +E/-W | Northing | Ground Level: | 1770.00 | Longitude | Slot |
| 0.00 | 0.00 | 1755260.00 | Easting | 1321002.00 | 37° 52' 59.108 N | 98° 28' 11.868 W |

PROJECT DETAILS: Reno County, Kansas [NAD 83]
 Geodetic System: US State Plane 1983
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone: Kansas Southern Zone
 System Datum: Mean Sea Level



NOTE: All Lease lines and Hard lines are estimates only and are subject to the customers' approval.



Plan: Design #3 (Loudenback 18 #2H/OH)
 Created By: Derek Stephens Date: 7:21, June 02 2014



| | | | |
|------------------|------------------------------|-------------------------------------|--------------------------------|
| Company: | Unit Petroleum | Local Co-ordinate Reference: | Well Loudenback 18 #2H |
| Project: | Reno County, Kansas [NAD 83] | TVD Reference: | 20' KB @ 1790.00usft (UDI 303) |
| Site: | Section 18 T25S-R10W | MD Reference: | 20' KB @ 1790.00usft (UDI 303) |
| Well: | Loudenback 18 #2H | North Reference: | Grid |
| Wellbore: | OH | Survey Calculation Method: | Minimum Curvature |
| Design: | OH | Database: | EDM 5000.1 Single User Db |

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|--------------------|------------------------------|----------------------|-----------------------------|
| Project | Reno County, Kansas [NAD 83] | | |
| Map System: | US State Plane 1983 | System Datum: | Mean Sea Level |
| Geo Datum: | North American Datum 1983 | | |
| Map Zone: | Kansas Southern Zone | | Using geodetic scale factor |

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|------------------------------|----------------------|---------------------|-------------------|--------------------------|------------------|
| Site | Section 18 T25S-R10W | | | | |
| Site Position: | | Northing: | 1,755,260.00 usft | Latitude: | 37° 52' 59.108 N |
| From: | Map | Easting: | 1,321,002.00 usft | Longitude: | 98° 28' 11.868 W |
| Position Uncertainty: | 0.00 usft | Slot Radius: | 13-3/16 " | Grid Convergence: | 0.02 ° |

| | | | | | | |
|-----------------------------|-------------------|-----------|----------------------------|-------------------|----------------------|------------------|
| Well | Loudenback 18 #2H | | | | | |
| Well Position | +N/-S | 0.00 usft | Northing: | 1,755,260.00 usft | Latitude: | 37° 52' 59.108 N |
| | +E/-W | 0.00 usft | Easting: | 1,321,002.00 usft | Longitude: | 98° 28' 11.868 W |
| Position Uncertainty | | 0.00 usft | Wellhead Elevation: | usft | Ground Level: | 1,770.00 usft |

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|------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| Wellbore | OH | | | | |
| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
| | IGRF2010 | 5/6/2014 | 4.63 | 65.76 | 52,039 |

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|--------------------------|--------------------------------|---------------------|---------------------|----------------------|------|
| Design | OH | | | | |
| Audit Notes: | | | | | |
| Version: | 1.0 | Phase: | ACTUAL | Tie On Depth: | 0.00 |
| Vertical Section: | Depth From (TVD) (usft) | +N/-S (usft) | +E/-W (usft) | Direction (°) | |
| | 0.00 | 0.00 | 0.00 | 180.15 | |

| | | | | | |
|-----------------------|------------------|--------------------------|------------------|-----------------------------|--|
| Survey Program | Date | 6/2/2014 | | | |
| From (usft) | To (usft) | Survey (Wellbore) | Tool Name | Description | |
| 77.97 | 3,210.00 | Gyro (OH) | CB-GYRO-MS | Camera based gyro multishot | |
| 3,262.00 | 7,925.00 | MWD (OH) | MWD | MWD - Standard | |

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|------------------------------|------------------------|--------------------|------------------------------|---------------------|---------------------|--------------------------------|--------------------------------|-------------------------------|------------------------------|------|
| Survey | | | | | | | | | | |
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) | |
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 77.97 | 0.73 | 324.58 | 77.97 | 0.40 | -0.29 | -0.40 | 0.94 | 0.94 | 0.00 | 0.00 |
| 172.88 | 1.04 | 344.39 | 172.87 | 1.73 | -0.87 | -1.72 | 0.45 | 0.33 | 20.87 | |
| 267.79 | 0.61 | 354.45 | 267.77 | 3.06 | -1.15 | -3.06 | 0.48 | -0.45 | 10.60 | |
| 362.70 | 0.84 | 334.25 | 362.67 | 4.19 | -1.50 | -4.19 | 0.36 | 0.24 | -21.28 | |
| 457.61 | 0.83 | 328.45 | 457.57 | 5.40 | -2.16 | -5.40 | 0.09 | -0.01 | -6.11 | |
| 552.52 | 0.59 | 352.67 | 552.47 | 6.47 | -2.59 | -6.47 | 0.40 | -0.25 | 25.52 | |
| 647.43 | 0.83 | 332.84 | 647.37 | 7.57 | -2.96 | -7.56 | 0.36 | 0.25 | -20.89 | |
| 742.34 | 0.27 | 337.72 | 742.28 | 8.39 | -3.36 | -8.38 | 0.59 | -0.59 | 5.14 | |
| 837.25 | 0.15 | 320.42 | 837.19 | 8.69 | -3.52 | -8.68 | 0.14 | -0.13 | -18.23 | |

| | | | |
|------------------|------------------------------|-------------------------------------|--------------------------------|
| Company: | Unit Petroleum | Local Co-ordinate Reference: | Well Loudenback 18 #2H |
| Project: | Reno County, Kansas [NAD 83] | TVD Reference: | 20' KB @ 1790.00usft (UDI 303) |
| Site: | Section 18 T25S-R10W | MD Reference: | 20' KB @ 1790.00usft (UDI 303) |
| Well: | Loudenback 18 #2H | North Reference: | Grid |
| Wellbore: | OH | Survey Calculation Method: | Minimum Curvature |
| Design: | OH | Database: | EDM 5000.1 Single User Db |

| Survey | | | | | | | | | | |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|--|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) | |
| 932.16 | 0.45 | 317.03 | 932.10 | 9.06 | -3.86 | -9.05 | 0.32 | 0.32 | -3.57 | |
| 1,027.07 | 0.20 | 302.94 | 1,027.01 | 9.42 | -4.25 | -9.41 | 0.27 | -0.26 | -14.85 | |
| 1,121.98 | 0.26 | 16.69 | 1,121.92 | 9.72 | -4.33 | -9.71 | 0.30 | 0.06 | 77.71 | |
| 1,216.89 | 0.25 | 13.90 | 1,216.82 | 10.12 | -4.22 | -10.11 | 0.02 | -0.01 | -2.94 | |
| 1,311.80 | 0.27 | 32.51 | 1,311.73 | 10.51 | -4.05 | -10.50 | 0.09 | 0.02 | 19.61 | |
| 1,406.71 | 0.17 | 2.60 | 1,406.64 | 10.84 | -3.92 | -10.83 | 0.16 | -0.11 | -31.51 | |
| 1,501.62 | 0.27 | 216.30 | 1,501.55 | 10.80 | -4.05 | -10.79 | 0.44 | 0.11 | -154.15 | |
| 1,596.53 | 0.27 | 224.30 | 1,596.46 | 10.46 | -4.33 | -10.45 | 0.04 | 0.00 | 8.43 | |
| 1,691.44 | 0.28 | 211.87 | 1,691.37 | 10.11 | -4.61 | -10.09 | 0.06 | 0.01 | -13.10 | |
| 1,786.35 | 0.36 | 151.12 | 1,786.28 | 9.65 | -4.59 | -9.64 | 0.35 | 0.08 | -64.01 | |
| 1,881.26 | 0.30 | 158.53 | 1,881.19 | 9.16 | -4.36 | -9.14 | 0.08 | -0.06 | 7.81 | |
| 1,976.17 | 0.09 | 341.85 | 1,976.10 | 9.00 | -4.29 | -8.98 | 0.41 | -0.22 | -186.16 | |
| 2,071.08 | 0.26 | 266.55 | 2,071.01 | 9.05 | -4.53 | -9.04 | 0.27 | 0.18 | -79.34 | |
| 2,165.99 | 0.06 | 131.68 | 2,165.92 | 9.01 | -4.70 | -9.00 | 0.32 | -0.21 | -142.10 | |
| 2,260.90 | 0.39 | 236.23 | 2,260.83 | 8.79 | -4.94 | -8.78 | 0.43 | 0.35 | 110.16 | |
| 2,355.81 | 0.20 | 256.23 | 2,355.73 | 8.58 | -5.37 | -8.56 | 0.22 | -0.20 | 21.07 | |
| 2,450.72 | 0.53 | 285.63 | 2,450.64 | 8.65 | -5.95 | -8.64 | 0.39 | 0.35 | 30.98 | |
| 2,545.63 | 0.48 | 305.78 | 2,545.55 | 9.01 | -6.69 | -8.99 | 0.19 | -0.05 | 21.23 | |
| 2,640.54 | 0.24 | 17.92 | 2,640.46 | 9.43 | -6.96 | -9.41 | 0.49 | -0.25 | 76.01 | |
| 2,735.45 | 0.18 | 334.58 | 2,735.37 | 9.75 | -6.96 | -9.73 | 0.17 | -0.06 | -45.66 | |
| 2,830.36 | 0.34 | 60.83 | 2,830.28 | 10.02 | -6.78 | -10.01 | 0.39 | 0.17 | 90.88 | |
| 2,925.27 | 0.37 | 52.34 | 2,925.18 | 10.35 | -6.29 | -10.33 | 0.06 | 0.03 | -8.95 | |
| 3,020.18 | 0.33 | 245.07 | 3,020.09 | 10.42 | -6.29 | -10.40 | 0.73 | -0.04 | -176.24 | |
| 3,115.09 | 0.65 | 243.94 | 3,115.00 | 10.07 | -7.02 | -10.05 | 0.34 | 0.34 | -1.19 | |
| 3,210.00 | 0.66 | 208.19 | 3,209.90 | 9.35 | -7.77 | -9.33 | 0.42 | 0.01 | -37.67 | |
| 3,262.00 | 2.10 | 194.20 | 3,261.89 | 8.16 | -8.14 | -8.14 | 2.82 | 2.77 | -26.90 | |
| 3,293.00 | 4.80 | 184.20 | 3,292.83 | 6.32 | -8.38 | -6.30 | 8.89 | 8.71 | -32.26 | |
| 3,324.00 | 7.20 | 181.30 | 3,323.66 | 3.08 | -8.52 | -3.06 | 7.80 | 7.74 | -9.35 | |
| 3,356.00 | 9.60 | 178.00 | 3,355.31 | -1.59 | -8.47 | 1.61 | 7.65 | 7.50 | -10.31 | |
| 3,388.00 | 12.00 | 176.30 | 3,386.74 | -7.58 | -8.16 | 7.60 | 7.56 | 7.50 | -5.31 | |
| 3,420.00 | 14.10 | 176.20 | 3,417.91 | -14.79 | -7.69 | 14.81 | 6.56 | 6.56 | -0.31 | |
| 3,451.00 | 16.20 | 177.50 | 3,447.84 | -22.88 | -7.25 | 22.90 | 6.86 | 6.77 | 4.19 | |
| 3,483.00 | 18.50 | 177.80 | 3,478.38 | -32.41 | -6.86 | 32.43 | 7.19 | 7.19 | 0.94 | |
| 3,514.00 | 21.50 | 177.70 | 3,507.50 | -43.00 | -6.44 | 43.02 | 9.68 | 9.68 | -0.32 | |
| 3,546.00 | 24.70 | 177.60 | 3,536.94 | -55.55 | -5.93 | 55.56 | 10.00 | 10.00 | -0.31 | |
| 3,578.00 | 28.00 | 177.90 | 3,565.61 | -69.74 | -5.37 | 69.75 | 10.32 | 10.31 | 0.94 | |
| 3,610.00 | 31.00 | 178.80 | 3,593.46 | -85.49 | -4.92 | 85.50 | 9.48 | 9.38 | 2.81 | |
| 3,641.00 | 34.50 | 179.90 | 3,619.52 | -102.25 | -4.74 | 102.26 | 11.45 | 11.29 | 3.55 | |
| 3,672.00 | 37.40 | 181.00 | 3,644.62 | -120.45 | -4.89 | 120.46 | 9.58 | 9.35 | 3.55 | |
| 3,703.00 | 40.50 | 180.70 | 3,668.72 | -139.93 | -5.18 | 139.94 | 10.02 | 10.00 | -0.97 | |
| 3,734.00 | 44.00 | 179.90 | 3,691.67 | -160.77 | -5.28 | 160.78 | 11.42 | 11.29 | -2.58 | |
| 3,766.00 | 47.60 | 179.30 | 3,713.97 | -183.71 | -5.12 | 183.72 | 11.33 | 11.25 | -1.88 | |
| 3,797.00 | 51.00 | 178.80 | 3,734.18 | -207.20 | -4.72 | 207.21 | 11.04 | 10.97 | -1.61 | |



| | | | |
|------------------|------------------------------|-------------------------------------|--------------------------------|
| Company: | Unit Petroleum | Local Co-ordinate Reference: | Well Loudenback 18 #2H |
| Project: | Reno County, Kansas [NAD 83] | TVD Reference: | 20' KB @ 1790.00usft (UDI 303) |
| Site: | Section 18 T25S-R10W | MD Reference: | 20' KB @ 1790.00usft (UDI 303) |
| Well: | Loudenback 18 #2H | North Reference: | Grid |
| Wellbore: | OH | Survey Calculation Method: | Minimum Curvature |
| Design: | OH | Database: | EDM 5000.1 Single User Db |

| Survey | | | | | | | | | | |
|---|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|--|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) | |
| 3,828.00 | 54.30 | 178.50 | 3,752.99 | -231.84 | -4.14 | 231.85 | 10.67 | 10.65 | -0.97 | |
| 3,859.00 | 55.30 | 178.60 | 3,770.86 | -257.16 | -3.50 | 257.17 | 3.24 | 3.23 | 0.32 | |
| 3,890.00 | 55.60 | 178.60 | 3,788.44 | -282.68 | -2.88 | 282.69 | 0.97 | 0.97 | 0.00 | |
| 3,922.00 | 55.80 | 178.30 | 3,806.47 | -309.11 | -2.16 | 309.11 | 1.00 | 0.63 | -0.94 | |
| 3,953.00 | 55.70 | 178.50 | 3,823.92 | -334.72 | -1.45 | 334.73 | 0.62 | -0.32 | 0.65 | |
| 3,984.00 | 57.30 | 178.60 | 3,841.03 | -360.57 | -0.79 | 360.57 | 5.17 | 5.16 | 0.32 | |
| 4,016.00 | 60.70 | 178.60 | 3,857.51 | -387.98 | -0.12 | 387.98 | 10.63 | 10.63 | 0.00 | |
| 4,046.00 | 64.40 | 178.60 | 3,871.33 | -414.59 | 0.53 | 414.59 | 12.33 | 12.33 | 0.00 | |
| 4,078.00 | 68.10 | 178.60 | 3,884.22 | -443.87 | 1.24 | 443.86 | 11.56 | 11.56 | 0.00 | |
| 4,109.00 | 72.00 | 178.40 | 3,894.79 | -472.99 | 2.01 | 472.99 | 12.60 | 12.58 | -0.65 | |
| 4,141.00 | 75.90 | 178.10 | 3,903.64 | -503.72 | 2.95 | 503.72 | 12.22 | 12.19 | -0.94 | |
| 4,172.00 | 79.40 | 178.50 | 3,910.27 | -533.99 | 3.84 | 533.98 | 11.36 | 11.29 | 1.29 | |
| 4,203.00 | 83.10 | 179.00 | 3,914.98 | -564.62 | 4.51 | 564.60 | 12.04 | 11.94 | 1.61 | |
| 4,247.00 | 87.20 | 179.80 | 3,918.70 | -608.45 | 4.97 | 608.43 | 9.49 | 9.32 | 1.82 | |
| 4,342.00 | 89.20 | 180.10 | 3,921.69 | -703.39 | 5.05 | 703.38 | 2.13 | 2.11 | 0.32 | |
| 4,438.00 | 90.20 | 179.80 | 3,922.19 | -799.39 | 5.14 | 799.38 | 1.09 | 1.04 | -0.31 | |
| 4,534.00 | 91.80 | 179.80 | 3,920.51 | -895.37 | 5.47 | 895.36 | 1.67 | 1.67 | 0.00 | |
| 4,629.00 | 91.00 | 178.80 | 3,918.19 | -990.34 | 6.63 | 990.32 | 1.35 | -0.84 | -1.05 | |
| 4,638.49 | 90.79 | 178.83 | 3,918.04 | -999.83 | 6.83 | 999.81 | 2.21 | -2.19 | 0.31 | |
| Loudenback 18 2H 1000' VS (5.19) | | | | | | | | | | |
| 4,725.00 | 88.90 | 179.10 | 3,918.28 | -1,086.31 | 8.39 | 1,086.29 | 2.21 | -2.19 | 0.31 | |
| 4,821.00 | 89.40 | 180.00 | 3,919.70 | -1,182.30 | 9.14 | 1,182.27 | 1.07 | 0.52 | 0.94 | |
| 4,915.00 | 90.20 | 179.90 | 3,920.03 | -1,276.30 | 9.23 | 1,276.27 | 0.86 | 0.85 | -0.11 | |
| 5,010.00 | 92.00 | 179.20 | 3,918.21 | -1,371.27 | 9.97 | 1,371.24 | 2.03 | 1.89 | -0.74 | |
| 5,106.00 | 91.00 | 178.30 | 3,915.69 | -1,467.22 | 12.06 | 1,467.18 | 1.40 | -1.04 | -0.94 | |
| 5,201.00 | 89.70 | 178.60 | 3,915.11 | -1,562.18 | 14.63 | 1,562.13 | 1.40 | -1.37 | 0.32 | |
| 5,293.00 | 88.40 | 177.60 | 3,916.64 | -1,654.11 | 17.68 | 1,654.06 | 1.78 | -1.41 | -1.09 | |
| 5,384.00 | 88.40 | 177.40 | 3,919.18 | -1,744.99 | 21.65 | 1,744.93 | 0.22 | 0.00 | -0.22 | |
| 5,476.00 | 87.50 | 177.90 | 3,922.47 | -1,836.85 | 25.42 | 1,836.78 | 1.12 | -0.98 | 0.54 | |
| 5,568.00 | 87.90 | 178.20 | 3,926.16 | -1,928.72 | 28.55 | 1,928.64 | 0.54 | 0.43 | 0.33 | |
| 5,638.41 | 89.14 | 179.05 | 3,927.98 | -1,999.09 | 30.24 | 1,999.01 | 2.13 | 1.76 | 1.21 | |
| Loudenback 18 2H 2000' VS (5.19) | | | | | | | | | | |
| 5,659.00 | 89.50 | 179.30 | 3,928.23 | -2,019.67 | 30.53 | 2,019.59 | 2.13 | 1.76 | 1.21 | |
| 5,752.00 | 90.40 | 179.50 | 3,928.31 | -2,112.67 | 31.51 | 2,112.58 | 0.99 | 0.97 | 0.22 | |
| 5,844.00 | 90.50 | 178.40 | 3,927.58 | -2,204.65 | 33.19 | 2,204.56 | 1.20 | 0.11 | -1.20 | |
| 5,937.00 | 88.40 | 178.60 | 3,928.48 | -2,297.61 | 35.63 | 2,297.51 | 2.27 | -2.26 | 0.22 | |
| 6,028.00 | 88.30 | 178.80 | 3,931.10 | -2,388.55 | 37.69 | 2,388.44 | 0.25 | -0.11 | 0.22 | |
| 6,120.00 | 88.30 | 179.30 | 3,933.83 | -2,480.49 | 39.22 | 2,480.38 | 0.54 | 0.00 | 0.54 | |
| 6,212.00 | 88.50 | 178.70 | 3,936.40 | -2,572.44 | 40.82 | 2,572.33 | 0.69 | 0.22 | -0.65 | |
| 6,305.00 | 88.90 | 178.80 | 3,938.51 | -2,665.40 | 42.85 | 2,665.28 | 0.44 | 0.43 | 0.11 | |
| 6,397.00 | 88.50 | 179.40 | 3,940.59 | -2,757.36 | 44.29 | 2,757.24 | 0.78 | -0.43 | 0.65 | |
| 6,490.00 | 88.80 | 180.60 | 3,942.78 | -2,850.33 | 44.29 | 2,850.21 | 1.33 | 0.32 | 1.29 | |
| 6,583.00 | 89.40 | 180.60 | 3,944.24 | -2,943.32 | 43.32 | 2,943.20 | 0.65 | 0.65 | 0.00 | |
| 6,640.66 | 89.40 | 181.54 | 3,944.85 | -3,000.96 | 42.24 | 3,000.84 | 1.63 | 0.00 | 1.63 | |



| | | | |
|------------------|------------------------------|-------------------------------------|--------------------------------|
| Company: | Unit Petroleum | Local Co-ordinate Reference: | Well Loudenback 18 #2H |
| Project: | Reno County, Kansas [NAD 83] | TVD Reference: | 20' KB @ 1790.00usft (UDI 303) |
| Site: | Section 18 T25S-R10W | MD Reference: | 20' KB @ 1790.00usft (UDI 303) |
| Well: | Loudenback 18 #2H | North Reference: | Grid |
| Wellbore: | OH | Survey Calculation Method: | Minimum Curvature |
| Design: | OH | Database: | EDM 5000.1 Single User Db |

| Survey | | | | | | | | | | |
|--|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|--|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) | |
| Loudenback 18 2H 3000' VS (5.19) | | | | | | | | | | |
| 6,675.00 | 89.40 | 182.10 | 3,945.21 | -3,035.28 | 41.15 | 3,035.17 | 1.63 | 0.00 | 1.63 | |
| 6,767.00 | 88.40 | 181.40 | 3,946.97 | -3,127.22 | 38.34 | 3,127.11 | 1.33 | -1.09 | -0.76 | |
| 6,860.00 | 88.00 | 181.40 | 3,949.90 | -3,220.15 | 36.07 | 3,220.04 | 0.43 | -0.43 | 0.00 | |
| 6,952.00 | 87.20 | 181.50 | 3,953.75 | -3,312.04 | 33.75 | 3,311.94 | 0.88 | -0.87 | 0.11 | |
| 7,044.00 | 89.00 | 181.70 | 3,956.80 | -3,403.95 | 31.18 | 3,403.86 | 1.97 | 1.96 | 0.22 | |
| 7,137.00 | 88.00 | 181.70 | 3,959.23 | -3,496.87 | 28.42 | 3,496.79 | 1.08 | -1.08 | 0.00 | |
| 7,229.00 | 87.90 | 182.30 | 3,962.52 | -3,588.76 | 25.21 | 3,588.68 | 0.66 | -0.11 | 0.65 | |
| 7,325.00 | 86.90 | 182.50 | 3,966.88 | -3,684.57 | 21.20 | 3,684.51 | 1.06 | -1.04 | 0.21 | |
| 7,420.00 | 86.60 | 183.30 | 3,972.26 | -3,779.30 | 16.40 | 3,779.24 | 0.90 | -0.32 | 0.84 | |
| 7,516.00 | 85.90 | 183.60 | 3,978.54 | -3,874.92 | 10.63 | 3,874.88 | 0.79 | -0.73 | 0.31 | |
| 7,612.00 | 85.20 | 183.80 | 3,985.99 | -3,970.43 | 4.46 | 3,970.40 | 0.76 | -0.73 | 0.21 | |
| 7,637.12 | 84.94 | 183.93 | 3,988.15 | -3,995.40 | 2.77 | 3,995.38 | 1.18 | -1.05 | 0.53 | |
| Loudenback 18 2H 4000' VS (5.19) | | | | | | | | | | |
| 7,707.00 | 84.20 | 184.30 | 3,994.77 | -4,064.78 | -2.22 | 4,064.78 | 1.18 | -1.05 | 0.53 | |
| 7,802.00 | 82.60 | 183.80 | 4,005.69 | -4,158.91 | -8.89 | 4,158.92 | 1.76 | -1.68 | -0.53 | |
| 7,880.00 | 80.30 | 184.20 | 4,017.28 | -4,235.85 | -14.27 | 4,235.88 | 2.99 | -2.95 | 0.51 | |
| Last MWD Survey | | | | | | | | | | |
| 7,925.00 | 80.30 | 184.20 | 4,024.86 | -4,280.09 | -17.52 | 4,280.12 | 0.00 | 0.00 | 0.00 | |
| Projection to TD - Loudenback 18 2H PBHL (5.19) | | | | | | | | | | |

| Design Annotations | | | | | |
|-----------------------|-----------------------|-------------------|--------------|------------------|--|
| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates | | Comment | |
| | | +N/-S (usft) | +E/-W (usft) | | |
| 7,880.00 | 4,017.28 | -4,235.85 | -14.27 | Last MWD Survey | |
| 7,925.00 | 4,024.86 | -4,280.09 | -17.52 | Projection to TD | |

Checked By: _____ Approved By: _____ Date: _____