

30-015-42975

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Tie-in Date: 05/23/2015

Date Completed: 06/02/2015

# PathFinder – a Schlumberger company NM OIL CONSERVATION Survey Report

JUN 29 2015

RECEIVED

CHEVRON U.S.A. INC.  
WHITE CITY 21 25 27 FED COM #5H  
EDDY COUNTY, NM  
API#: 30-015-42975 Rig: NABORS M51  
PathFinder Office Supervisor: QUN XU  
PathFinder Field Engineers: T. CRAMER

Survey Horiz. Reference: WELLHEAD  
Ref Coordinates: LAT: 32.6323827 N LON: 104.11594032 W  
GRID Reference: NAD27 new mexico east Transverse Mercator  
Ref GRID Coord: X: 541335.0000 Y: 403401.0000  
North Aligned To: GRID NORTH  
Total Magnetic Correction: 7.50° EAST TO GRID  
Vertical Section Plane: 355.00  
Survey Vert. Reference: 23.00' Rotary Table To Ground  
Altitude: 3128.00' Ground To MSL

Survey Calculations by RX4 using Minimum Curvature

| Measured<br>Depth<br>(ft)                 | Incl<br>(deg) | Drift<br>Dir.<br>(deg) | TVD<br>(ft) | Course<br>Length<br>(ft) | Vertical<br>Section<br>(ft) | TOTAL<br>Rectangular Offsets<br>(ft) (ft) |         | Closure<br>Dist Dir<br>(ft) (deg) |        | DLS<br>(dg/100ft) | TEMP<br>(F) |
|-------------------------------------------|---------------|------------------------|-------------|--------------------------|-----------------------------|-------------------------------------------|---------|-----------------------------------|--------|-------------------|-------------|
| ORIGIN OF WELL AT SURFACE.                |               |                        |             |                          |                             |                                           |         |                                   |        |                   |             |
| 0.00                                      | 0.00          | 231.00                 | 0.00        | 0.00                     | 0.00                        | 0.00                                      | 0.00    | 0.00@                             | 0.00   | 0.00              | 0.00        |
| THE FOLLOWING ARE PATHFINDER MWD SURVEYS. |               |                        |             |                          |                             |                                           |         |                                   |        |                   |             |
| 431.00                                    | 2.55          | 25.33                  | 430.86      | 431.00                   | 8.28                        | 8.67 N                                    | 4.10 E  | 9.59@                             | 25.33  | 0.59              | 86.57       |
| 522.00                                    | 0.70          | 47.69                  | 521.82      | 91.00                    | 10.36                       | 10.87 N                                   | 5.38 E  | 12.13@                            | 26.33  | 2.11              | 97.41       |
| 712.00                                    | 0.26          | 77.38                  | 711.81      | 190.00                   | 11.12                       | 11.75 N                                   | 6.66 E  | 13.50@                            | 29.55  | 0.26              | 104.64      |
| 897.00                                    | 0.26          | 4.22                   | 896.81      | 185.00                   | 11.59                       | 12.26 N                                   | 7.10 E  | 14.16@                            | 30.08  | 0.17              | 115.48      |
| 1083.00                                   | 0.26          | 355.91                 | 1082.81     | 186.00                   | 12.43                       | 13.10 N                                   | 7.10 E  | 14.90@                            | 28.46  | 0.02              | 122.71      |
| 1273.00                                   | 1.06          | 35.89                  | 1272.79     | 190.00                   | 14.19                       | 14.95 N                                   | 8.10 E  | 17.01@                            | 28.44  | 0.46              | 115.48      |
| 1464.00                                   | 2.11          | 84.64                  | 1463.73     | 191.00                   | 15.55                       | 16.71 N                                   | 12.64 E | 20.95@                            | 37.09  | 0.85              | 115.48      |
| 1559.00                                   | 0.26          | 163.15                 | 1558.70     | 95.00                    | 15.35                       | 16.67 N                                   | 14.44 E | 22.05@                            | 40.90  | 2.18              | 115.48      |
| 1750.00                                   | 1.06          | 108.83                 | 1749.69     | 191.00                   | 14.21                       | 15.68 N                                   | 16.24 E | 22.58@                            | 45.99  | 0.49              | 119.09      |
| 1940.00                                   | 1.67          | 97.82                  | 1939.64     | 190.00                   | 12.89                       | 14.74 N                                   | 20.64 E | 25.37@                            | 54.47  | 0.35              | 119.09      |
| 2036.00                                   | 1.76          | 92.75                  | 2035.59     | 96.00                    | 12.38                       | 14.48 N                                   | 23.50 E | 27.61@                            | 58.36  | 0.18              | 115.48      |
| 2135.00                                   | 1.67          | 91.43                  | 2134.55     | 99.00                    | 12.01                       | 14.37 N                                   | 26.46 E | 30.11@                            | 61.50  | 0.10              | 93.80       |
| 2326.00                                   | 1.76          | 96.16                  | 2325.46     | 191.00                   | 11.13                       | 13.99 N                                   | 32.16 E | 35.07@                            | 66.50  | 0.09              | 97.41       |
| 2516.00                                   | 1.76          | 86.55                  | 2515.37     | 190.00                   | 10.49                       | 13.85 N                                   | 37.98 E | 40.42@                            | 69.96  | 0.16              | 101.02      |
| 2706.00                                   | 1.32          | 286.58                 | 2705.35     | 190.00                   | 11.21                       | 14.65 N                                   | 38.79 E | 41.46@                            | 69.31  | 1.60              | 101.02      |
| 2897.00                                   | 1.32          | 278.67                 | 2896.30     | 191.00                   | 12.54                       | 15.61 N                                   | 34.51 E | 37.87@                            | 65.66  | 0.10              | 104.64      |
| 3088.00                                   | 1.32          | 277.83                 | 3087.25     | 191.00                   | 13.55                       | 16.24 N                                   | 30.15 E | 34.25@                            | 61.69  | 0.01              | 108.25      |
| 3183.00                                   | 1.23          | 276.70                 | 3182.22     | 95.00                    | 14.00                       | 16.51 N                                   | 28.06 E | 32.55@                            | 59.53  | 0.10              | 108.25      |
| 3278.00                                   | 4.31          | 251.43                 | 3277.10     | 95.00                    | 13.37                       | 15.49 N                                   | 23.66 E | 28.28@                            | 56.79  | 3.41              | 108.25      |
| 3374.00                                   | 6.86          | 244.74                 | 3372.64     | 96.00                    | 10.54                       | 11.89 N                                   | 15.05 E | 19.18@                            | 51.68  | 2.74              | 108.25      |
| 3564.00                                   | 6.51          | 241.85                 | 3561.35     | 190.00                   | 2.37                        | 1.97 N                                    | 4.71 W  | 5.10@                             | 292.72 | 0.25              | 108.25      |

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CHEVRON U.S.A. INC.  
 WHITE CITY 21 25 27 FED COM #5H  
 EDDY COUNTY, NM  
 API#: 30-015-42975      Rig: NABORS M51

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| Measured<br>Depth<br>(ft) | Incl<br>(deg) | Drift<br>Dir.<br>(deg) | TVD<br>(ft) | Course<br>Length<br>(ft) | Vertical<br>Section<br>(ft) | TOTAL<br>Rectangular Offsets |          | Closure<br>Dist Dir<br>(ft) (deg) |        | DLS<br>(dg/100ft) | TEMP<br>(F) |
|---------------------------|---------------|------------------------|-------------|--------------------------|-----------------------------|------------------------------|----------|-----------------------------------|--------|-------------------|-------------|
| 3755.00                   | 6.33          | 240.45                 | 3751.15     | 191.00                   | -6.26                       | 8.33 S                       | 23.41 W  | 24.85@                            | 250.41 | 0.13              | 108.25      |
| 3945.00                   | 7.91          | 225.86                 | 3939.70     | 190.00                   | -18.86                      | 22.60 S                      | 41.91 W  | 47.62@                            | 241.66 | 1.26              | 111.87      |
| 4136.00                   | 7.30          | 223.41                 | 4129.02     | 191.00                   | -35.22                      | 40.57 S                      | 59.68 W  | 72.17@                            | 235.79 | 0.36              | 111.87      |
| 4327.00                   | 6.51          | 219.98                 | 4318.63     | 191.00                   | -50.93                      | 57.68 S                      | 74.98 W  | 94.60@                            | 232.43 | 0.47              | 115.48      |
| 4518.00                   | 7.83          | 240.50                 | 4508.16     | 191.00                   | -63.99                      | 72.39 S                      | 93.26 W  | 118.06@                           | 232.18 | 1.50              | 115.48      |
| 4708.00                   | 7.39          | 238.46                 | 4696.49     | 190.00                   | -74.81                      | 85.15 S                      | 114.94 W | 143.05@                           | 233.47 | 0.27              | 115.48      |
| 4899.00                   | 6.86          | 235.64                 | 4886.01     | 191.00                   | -85.89                      | 98.02 S                      | 134.83 W | 166.69@                           | 233.98 | 0.33              | 115.48      |
| 5089.00                   | 7.47          | 244.19                 | 5074.53     | 190.00                   | -95.85                      | 109.80 S                     | 155.31 W | 190.20@                           | 234.74 | 0.65              | 115.48      |
| 5280.00                   | 8.09          | 246.18                 | 5263.78     | 191.00                   | -104.59                     | 120.63 S                     | 178.78 W | 215.68@                           | 235.99 | 0.35              | 115.48      |
| 5470.00                   | 7.56          | 243.73                 | 5452.01     | 190.00                   | -113.44                     | 131.57 S                     | 202.22 W | 241.25@                           | 236.95 | 0.33              | 115.48      |
| 5661.00                   | 6.95          | 244.58                 | 5641.48     | 191.00                   | -122.03                     | 142.09 S                     | 223.93 W | 265.20@                           | 237.60 | 0.32              | 119.09      |
| 5851.00                   | 6.95          | 230.98                 | 5830.09     | 190.00                   | -132.47                     | 154.26 S                     | 243.24 W | 288.03@                           | 237.62 | 0.86              | 119.09      |
| 6042.00                   | 8.35          | 223.25                 | 6019.39     | 191.00                   | -148.17                     | 171.64 S                     | 261.72 W | 312.98@                           | 236.74 | 0.91              | 122.71      |
| 6232.00                   | 10.29         | 215.86                 | 6206.88     | 190.00                   | -170.20                     | 195.44 S                     | 281.12 W | 342.38@                           | 235.19 | 1.20              | 122.71      |
| 6423.00                   | 9.15          | 211.57                 | 6395.14     | 191.00                   | -195.30                     | 222.21 S                     | 299.06 W | 372.58@                           | 233.39 | 0.71              | 122.71      |
| 6614.00                   | 7.12          | 213.08                 | 6584.21     | 191.00                   | -216.81                     | 245.07 S                     | 313.48 W | 397.90@                           | 231.98 | 1.07              | 126.32      |
| 6709.00                   | 4.84          | 210.98                 | 6678.69     | 95.00                    | -224.69                     | 253.44 S                     | 318.75 W | 407.23@                           | 231.51 | 2.41              | 126.32      |
| 6805.00                   | 2.29          | 209.12                 | 6774.49     | 96.00                    | -229.56                     | 258.59 S                     | 321.77 W | 412.80@                           | 231.21 | 2.66              | 126.32      |
| 6876.00                   | 0.79          | 194.76                 | 6845.47     | 71.00                    | -231.19                     | 260.30 S                     | 322.59 W | 414.51@                           | 231.10 | 2.17              | 129.94      |
| 6936.00                   | 0.88          | 340.96                 | 6905.46     | 60.00                    | -231.14                     | 260.26 S                     | 322.84 W | 414.69@                           | 231.13 | 2.66              | 119.09      |
| 6985.00                   | 6.42          | 340.43                 | 6954.35     | 49.00                    | -228.12                     | 257.32 S                     | 323.88 W | 413.66@                           | 231.53 | 11.31             | 119.09      |
| 7030.00                   | 11.08         | 343.10                 | 6998.81     | 45.00                    | -221.45                     | 250.81 S                     | 325.99 W | 411.31@                           | 232.43 | 10.39             | 119.09      |
| 7081.00                   | 15.74         | 343.68                 | 7048.40     | 51.00                    | -209.86                     | 239.48 S                     | 329.36 W | 407.22@                           | 233.98 | 9.14              | 122.71      |
| 7128.00                   | 20.49         | 345.30                 | 7093.06     | 47.00                    | -195.49                     | 225.40 S                     | 333.24 W | 402.31@                           | 235.93 | 10.16             | 122.71      |
| 7176.00                   | 25.32         | 349.24                 | 7137.27     | 48.00                    | -176.99                     | 207.17 S                     | 337.29 W | 395.83@                           | 238.44 | 10.55             | 122.71      |
| 7223.00                   | 30.16         | 351.07                 | 7178.85     | 47.00                    | -155.20                     | 185.62 S                     | 341.00 W | 388.25@                           | 241.44 | 10.46             | 122.71      |
| 7271.00                   | 33.85         | 351.52                 | 7219.55     | 48.00                    | -129.82                     | 160.48 S                     | 344.84 W | 380.36@                           | 245.04 | 7.70              | 122.71      |

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| Measured<br>Depth<br>(ft) | Incl<br>(deg) | Drift<br>Dir.<br>(deg) | TVD<br>(ft) | Course<br>Length<br>(ft) | Vertical<br>Section<br>(ft) | TOTAL<br>Rectangular Offsets |          | Closure<br>Dist Dir |        | DLS<br>(dg/100ft) | TEMP<br>(F) |
|---------------------------|---------------|------------------------|-------------|--------------------------|-----------------------------|------------------------------|----------|---------------------|--------|-------------------|-------------|
| (ft)                      | (deg)         | (deg)                  | (ft)        | (ft)                     | (ft)                        | (ft)                         | (ft)     | (ft)                | (deg)  |                   |             |
| 7318.00                   | 38.78         | 354.44                 | 7257.41     | 47.00                    | -102.01                     | 132.87 S                     | 348.20 W | 372.69@             | 249.11 | 11.11             | 126.32      |
| 7367.00                   | 43.97         | 359.82                 | 7294.18     | 49.00                    | -69.69                      | 100.55 S                     | 349.74 W | 363.91@             | 253.96 | 12.83             | 126.32      |
| 7414.00                   | 49.86         | 0.38                   | 7326.27     | 47.00                    | -35.51                      | 66.24 S                      | 349.68 W | 355.89@             | 259.27 | 12.56             | 126.32      |
| 7462.00                   | 55.40         | 357.25                 | 7355.40     | 48.00                    | 2.53                        | 28.12 S                      | 350.50 W | 351.63@             | 265.41 | 12.65             | 126.32      |
| 7510.00                   | 61.38         | 355.61                 | 7380.55     | 48.00                    | 43.38                       | 12.65 N                      | 353.07 W | 353.29@             | 272.05 | 12.79             | 126.32      |
| 7557.00                   | 67.44         | 355.67                 | 7400.84     | 47.00                    | 85.74                       | 54.90 N                      | 356.29 W | 360.49@             | 278.76 | 12.89             | 126.32      |
| 7604.00                   | 75.18         | 356.58                 | 7415.89     | 47.00                    | 130.22                      | 99.29 N                      | 359.28 W | 372.75@             | 285.45 | 16.57             | 126.32      |
| 7652.00                   | 81.69         | 359.08                 | 7425.51     | 48.00                    | 177.16                      | 146.25 N                     | 361.05 W | 389.55@             | 292.05 | 14.49             | 126.32      |
| 7739.00                   | 88.81         | 1.97                   | 7432.71     | 87.00                    | 263.39                      | 232.88 N                     | 360.25 W | 428.97@             | 302.88 | 8.83              | 122.71      |
| 7834.00                   | 88.55         | 2.79                   | 7434.90     | 95.00                    | 357.58                      | 327.77 N                     | 356.30 W | 484.14@             | 312.61 | 0.90              | 122.71      |
| 7929.00                   | 88.64         | 3.60                   | 7437.23     | 95.00                    | 451.58                      | 422.60 N                     | 351.01 W | 549.36@             | 320.29 | 0.86              | 122.71      |
| 8025.00                   | 88.72         | 2.39                   | 7439.44     | 96.00                    | 546.62                      | 518.44 N                     | 346.00 W | 623.29@             | 326.28 | 1.26              | 126.32      |
| 8120.00                   | 90.22         | 0.26                   | 7440.32     | 95.00                    | 641.03                      | 613.40 N                     | 343.80 W | 703.18@             | 330.73 | 2.74              | 126.32      |
| 8215.00                   | 90.84         | 1.49                   | 7439.44     | 95.00                    | 735.52                      | 708.38 N                     | 342.35 W | 786.77@             | 334.21 | 1.45              | 126.32      |
| 8311.00                   | 91.01         | 1.63                   | 7437.89     | 96.00                    | 830.88                      | 804.34 N                     | 339.74 W | 873.14@             | 337.10 | 0.23              | 129.94      |
| 8406.00                   | 91.89         | 1.98                   | 7435.49     | 95.00                    | 925.18                      | 899.26 N                     | 336.74 W | 960.24@             | 339.47 | 1.00              | 129.94      |
| 8502.00                   | 90.22         | 1.16                   | 7433.72     | 96.00                    | 1020.53                     | 995.20 N                     | 334.11 W | 1049.79@            | 341.44 | 1.94              | 129.94      |
| 8596.00                   | 89.60         | 0.82                   | 7433.87     | 94.00                    | 1114.02                     | 1089.19 N                    | 332.49 W | 1138.80@            | 343.02 | 0.75              | 133.55      |
| 8692.00                   | 89.16         | 359.57                 | 7434.90     | 96.00                    | 1209.62                     | 1185.18 N                    | 332.16 W | 1230.84@            | 344.34 | 1.38              | 129.94      |
| 8787.00                   | 88.72         | 359.01                 | 7436.66     | 95.00                    | 1304.33                     | 1280.15 N                    | 333.34 W | 1322.84@            | 345.40 | 0.75              | 133.55      |
| 8882.00                   | 88.46         | 359.59                 | 7439.00     | 95.00                    | 1399.04                     | 1375.12 N                    | 334.50 W | 1415.22@            | 346.33 | 0.67              | 129.94      |
| 8977.00                   | 88.20         | 0.41                   | 7441.77     | 95.00                    | 1493.63                     | 1470.08 N                    | 334.50 W | 1507.65@            | 347.18 | 0.90              | 133.55      |
| 9073.00                   | 89.52         | 358.78                 | 7443.68     | 96.00                    | 1589.30                     | 1566.05 N                    | 335.18 W | 1601.52@            | 347.92 | 2.18              | 129.94      |
| 9168.00                   | 89.87         | 358.91                 | 7444.18     | 95.00                    | 1684.09                     | 1661.03 N                    | 337.09 W | 1694.89@            | 348.53 | 0.39              | 129.94      |
| 9264.00                   | 89.43         | 356.88                 | 7444.77     | 96.00                    | 1779.96                     | 1756.96 N                    | 340.62 W | 1789.67@            | 349.03 | 2.16              | 129.94      |
| 9359.00                   | 90.66         | 355.66                 | 7444.70     | 95.00                    | 1874.93                     | 1851.75 N                    | 346.80 W | 1883.95@            | 349.39 | 1.82              | 129.94      |
| 9454.00                   | 90.40         | 356.10                 | 7443.82     | 95.00                    | 1969.91                     | 1946.50 N                    | 353.63 W | 1978.36@            | 349.70 | 0.54              | 133.55      |

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| Measured<br>Depth<br>(ft) | Incl<br>(deg) | Drift<br>Dir.<br>(deg) | TVD<br>(ft) | Course<br>Length<br>(ft) | Vertical<br>Section<br>(ft) | TOTAL<br>Rectangular Offsets |          | Closure<br>Dist Dir |        | DLS<br>(dg/100ft) | TEMP<br>(F) |
|---------------------------|---------------|------------------------|-------------|--------------------------|-----------------------------|------------------------------|----------|---------------------|--------|-------------------|-------------|
| (ft)                      | (deg)         | (deg)                  | (ft)        | (ft)                     | (ft)                        | (ft)                         | (ft)     | (ft)                | (deg)  |                   |             |
| 9549.00                   | 90.40         | 356.83                 | 7443.15     | 95.00                    | 2064.88                     | 2041.32 N                    | 359.48 W | 2072.73@            | 350.01 | 0.77              | 133.55      |
| 9644.00                   | 90.40         | 357.41                 | 7442.49     | 95.00                    | 2159.81                     | 2136.19 N                    | 364.26 W | 2167.03@            | 350.32 | 0.61              | 133.55      |
| 9741.00                   | 90.04         | 357.61                 | 7442.12     | 97.00                    | 2256.72                     | 2233.10 N                    | 368.47 W | 2263.30@            | 350.63 | 0.42              | 129.94      |
| 9835.00                   | 90.04         | 358.22                 | 7442.05     | 94.00                    | 2350.60                     | 2327.04 N                    | 371.89 W | 2356.57@            | 350.92 | 0.65              | 133.55      |
| 9931.00                   | 90.13         | 358.27                 | 7441.91     | 96.00                    | 2446.44                     | 2422.99 N                    | 374.83 W | 2451.82@            | 351.21 | 0.11              | 133.55      |
| 10026.00                  | 90.04         | 358.04                 | 7441.77     | 95.00                    | 2541.30                     | 2517.94 N                    | 377.89 W | 2546.14@            | 351.46 | 0.26              | 133.55      |
| 10121.00                  | 90.13         | 358.47                 | 7441.63     | 95.00                    | 2636.14                     | 2612.90 N                    | 380.78 W | 2640.50@            | 351.71 | 0.46              | 133.55      |
| 10216.00                  | 89.87         | 359.00                 | 7441.63     | 95.00                    | 2730.94                     | 2707.88 N                    | 382.88 W | 2734.81@            | 351.95 | 0.62              | 133.55      |
| 10311.00                  | 90.04         | 359.23                 | 7441.70     | 95.00                    | 2825.70                     | 2802.87 N                    | 384.35 W | 2829.09@            | 352.19 | 0.30              | 137.17      |
| 10407.00                  | 90.31         | 359.94                 | 7441.41     | 96.00                    | 2921.39                     | 2898.86 N                    | 385.04 W | 2924.32@            | 352.43 | 0.79              | 133.55      |
| 10502.00                  | 90.48         | 0.22                   | 7440.76     | 95.00                    | 3016.01                     | 2993.86 N                    | 384.91 W | 3018.50@            | 352.67 | 0.34              | 137.17      |
| 10597.00                  | 90.75         | 0.28                   | 7439.74     | 95.00                    | 3110.61                     | 3088.85 N                    | 384.49 W | 3112.69@            | 352.90 | 0.29              | 137.17      |
| 10692.00                  | 90.92         | 0.69                   | 7438.35     | 95.00                    | 3205.16                     | 3183.84 N                    | 383.69 W | 3206.88@            | 353.13 | 0.47              | 137.17      |
| 10788.00                  | 90.66         | 1.00                   | 7437.03     | 96.00                    | 3300.66                     | 3279.82 N                    | 382.28 W | 3302.02@            | 353.35 | 0.42              | 137.17      |
| 10883.00                  | 89.78         | 359.29                 | 7436.66     | 95.00                    | 3395.27                     | 3374.81 N                    | 382.03 W | 3396.37@            | 353.54 | 2.02              | 133.55      |
| 10978.00                  | 90.04         | 359.13                 | 7436.81     | 95.00                    | 3490.01                     | 3469.80 N                    | 383.34 W | 3490.92@            | 353.70 | 0.32              | 137.17      |
| 11074.00                  | 90.04         | 359.97                 | 7436.74     | 96.00                    | 3585.71                     | 3565.80 N                    | 384.10 W | 3586.43@            | 353.85 | 0.87              | 137.17      |
| 11169.00                  | 90.22         | 359.87                 | 7436.53     | 95.00                    | 3680.36                     | 3660.80 N                    | 384.23 W | 3680.91@            | 354.01 | 0.22              | 137.17      |
| 11264.00                  | 90.57         | 0.72                   | 7435.87     | 95.00                    | 3774.95                     | 3755.80 N                    | 383.74 W | 3775.35@            | 354.17 | 0.97              | 140.78      |
| 11359.00                  | 90.13         | 0.93                   | 7435.29     | 95.00                    | 3869.46                     | 3850.78 N                    | 382.37 W | 3869.72@            | 354.33 | 0.51              | 137.17      |
| 11455.00                  | 89.69         | 359.31                 | 7435.44     | 96.00                    | 3965.07                     | 3946.78 N                    | 382.17 W | 3965.24@            | 354.47 | 1.75              | 137.17      |
| 11550.00                  | 87.93         | 357.62                 | 7437.42     | 95.00                    | 4059.87                     | 4041.72 N                    | 384.72 W | 4059.99@            | 354.56 | 2.57              | 137.17      |
| 11645.00                  | 88.20         | 357.13                 | 7440.63     | 95.00                    | 4154.73                     | 4136.56 N                    | 389.07 W | 4154.82@            | 354.63 | 0.59              | 137.17      |
| 11740.00                  | 87.93         | 357.32                 | 7443.83     | 95.00                    | 4249.61                     | 4231.40 N                    | 393.66 W | 4249.67@            | 354.68 | 0.35              | 140.78      |
| 11836.00                  | 88.20         | 357.02                 | 7447.08     | 96.00                    | 4345.48                     | 4327.23 N                    | 398.40 W | 4345.53@            | 354.74 | 0.42              | 137.17      |
| 11931.00                  | 89.60         | 356.38                 | 7448.90     | 95.00                    | 4440.42                     | 4422.05 N                    | 403.87 W | 4440.45@            | 354.78 | 1.62              | 137.17      |
| 12026.00                  | 89.96         | 356.93                 | 7449.26     | 95.00                    | 4535.38                     | 4516.89 N                    | 409.41 W | 4535.40@            | 354.82 | 0.69              | 140.78      |

# PathFinder – a Schlumberger company

## Survey Report

CHEVRON U.S.A. INC.  
 WHITE CITY 21 25 27 FED COM #5H  
 EDDY COUNTY, NM  
 API#: 30-015-42975      Rig: NABORS M51

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| Measured<br>Depth<br>(ft)                          | Incl<br>(deg) | Drift<br>Dir.<br>(deg) | TVD<br>(ft) | Course<br>Length<br>(ft) | Vertical<br>Section<br>(ft) | TOTAL<br>Rectangular Offsets |          | Closure<br>Dist Dir |        | DLS<br>(dg/100ft) | TEMP<br>(F) |
|----------------------------------------------------|---------------|------------------------|-------------|--------------------------|-----------------------------|------------------------------|----------|---------------------|--------|-------------------|-------------|
|                                                    |               |                        |             |                          |                             | (ft)                         | (ft)     | (ft)                | (deg)  |                   |             |
| 12122.00                                           | 89.78         | 356.89                 | 7449.48     | 96.00                    | 4631.33                     | 4612.75 N                    | 414.58 W | 4631.34@            | 354.86 | 0.19              | 140.78      |
| 12217.00                                           | 89.43         | 357.14                 | 7450.14     | 95.00                    | 4726.26                     | 4707.61 N                    | 419.53 W | 4726.27@            | 354.91 | 0.45              | 140.78      |
| 12266.00                                           | 89.34         | 356.79                 | 7450.66     | 49.00                    | 4775.23                     | 4756.54 N                    | 422.13 W | 4775.24@            | 354.93 | 0.74              | 140.78      |
| STRAIGHT LINE PROJECTION TO BIT DEPTH AT 12326'MD. |               |                        |             |                          |                             |                              |          |                     |        |                   |             |
| 12326.00                                           | 89.34         | 356.79                 | 7451.35     | 60.00                    | 4835.20                     | 4816.44 N                    | 425.49 W | 4835.20@            | 354.95 | 0.00              | 0.00        |

| MD   | INC   | AZI    | TVD     | CL   | SECT    | RCN     | RCE     | CLDIST | CLDIR  |
|------|-------|--------|---------|------|---------|---------|---------|--------|--------|
| feet | deg   | deg    | feet    | feet | feet    | feet    | feet    | feet   | deg    |
| 0    | 0     | 231    | 0       | 0    | 0       | 0       | 0       | 0      | 0      |
| 431  | 2.55  | 25.33  | 430.86  | 431  | 8.28    | 8.67    | 4.1     | 9.59   | 25.33  |
| 522  | 0.7   | 47.69  | 521.82  | 91   | 10.36   | 10.87   | 5.38    | 12.13  | 26.33  |
| 712  | 0.26  | 77.38  | 711.81  | 190  | 11.12   | 11.75   | 6.66    | 13.5   | 29.55  |
| 897  | 0.26  | 4.22   | 896.81  | 185  | 11.59   | 12.26   | 7.1     | 14.16  | 30.08  |
| 1083 | 0.26  | 355.91 | 1082.81 | 186  | 12.43   | 13.1    | 7.1     | 14.9   | 28.46  |
| 1273 | 1.06  | 35.89  | 1272.79 | 190  | 14.19   | 14.95   | 8.1     | 17.01  | 28.44  |
| 1464 | 2.11  | 84.64  | 1463.73 | 191  | 15.55   | 16.71   | 12.64   | 20.95  | 37.09  |
| 1559 | 0.26  | 163.15 | 1558.7  | 95   | 15.35   | 16.67   | 14.44   | 22.05  | 40.9   |
| 1750 | 1.06  | 108.83 | 1749.69 | 191  | 14.21   | 15.68   | 16.24   | 22.58  | 45.99  |
| 1940 | 1.67  | 97.82  | 1939.64 | 190  | 12.89   | 14.74   | 20.64   | 25.37  | 54.47  |
| 2036 | 1.76  | 92.75  | 2035.59 | 96   | 12.38   | 14.48   | 23.5    | 27.61  | 58.36  |
| 2135 | 1.67  | 91.43  | 2134.55 | 99   | 12.01   | 14.37   | 26.46   | 30.11  | 61.5   |
| 2326 | 1.76  | 96.16  | 2325.46 | 191  | 11.13   | 13.99   | 32.16   | 35.07  | 66.5   |
| 2516 | 1.76  | 86.55  | 2515.37 | 190  | 10.49   | 13.85   | 37.98   | 40.42  | 69.96  |
| 2706 | 1.32  | 286.58 | 2705.35 | 190  | 11.21   | 14.65   | 38.79   | 41.46  | 69.31  |
| 2897 | 1.32  | 278.67 | 2896.3  | 191  | 12.54   | 15.61   | 34.51   | 37.87  | 65.66  |
| 3088 | 1.32  | 277.83 | 3087.25 | 191  | 13.55   | 16.24   | 30.15   | 34.25  | 61.69  |
| 3183 | 1.23  | 276.7  | 3182.22 | 95   | 14      | 16.51   | 28.06   | 32.55  | 59.53  |
| 3278 | 4.31  | 251.43 | 3277.1  | 95   | 13.37   | 15.49   | 23.66   | 28.28  | 56.79  |
| 3374 | 6.86  | 244.74 | 3372.64 | 96   | 10.54   | 11.89   | 15.05   | 19.18  | 51.68  |
| 3564 | 6.51  | 241.85 | 3561.35 | 190  | 2.37    | 1.97    | -4.71   | 5.1    | 292.72 |
| 3755 | 6.33  | 240.45 | 3751.15 | 191  | -6.26   | -8.33   | -23.41  | 24.85  | 250.41 |
| 3945 | 7.91  | 225.86 | 3939.7  | 190  | -18.86  | -22.6   | -41.91  | 47.62  | 241.66 |
| 4136 | 7.3   | 223.41 | 4129.02 | 191  | -35.22  | -40.57  | -59.68  | 72.17  | 235.79 |
| 4327 | 6.51  | 219.98 | 4318.63 | 191  | -50.93  | -57.68  | -74.98  | 94.6   | 232.43 |
| 4518 | 7.83  | 240.5  | 4508.16 | 191  | -63.99  | -72.39  | -93.26  | 118.06 | 232.18 |
| 4708 | 7.39  | 238.46 | 4696.49 | 190  | -74.81  | -85.15  | -114.94 | 143.05 | 233.47 |
| 4899 | 6.86  | 235.64 | 4886.01 | 191  | -85.89  | -98.02  | -134.83 | 166.69 | 233.98 |
| 5089 | 7.47  | 244.19 | 5074.53 | 190  | -95.85  | -109.8  | -155.31 | 190.2  | 234.74 |
| 5280 | 8.09  | 246.18 | 5263.78 | 191  | -104.59 | -120.63 | -178.78 | 215.68 | 235.99 |
| 5470 | 7.56  | 243.73 | 5452.01 | 190  | -113.44 | -131.57 | -202.22 | 241.25 | 236.95 |
| 5661 | 6.95  | 244.58 | 5641.48 | 191  | -122.03 | -142.09 | -223.93 | 265.2  | 237.6  |
| 5851 | 6.95  | 230.98 | 5830.09 | 190  | -132.47 | -154.26 | -243.24 | 288.03 | 237.62 |
| 6042 | 8.35  | 223.25 | 6019.39 | 191  | -148.17 | -171.64 | -261.72 | 312.98 | 236.74 |
| 6232 | 10.29 | 215.86 | 6206.88 | 190  | -170.2  | -195.44 | -281.12 | 342.38 | 235.19 |
| 6423 | 9.15  | 211.57 | 6395.14 | 191  | -195.3  | -222.21 | -299.06 | 372.58 | 233.39 |
| 6614 | 7.12  | 213.08 | 6584.21 | 191  | -216.81 | -245.07 | -313.48 | 397.9  | 231.98 |
| 6709 | 4.84  | 210.98 | 6678.69 | 95   | -224.69 | -253.44 | -318.75 | 407.23 | 231.51 |
| 6805 | 2.29  | 209.12 | 6774.49 | 96   | -229.56 | -258.59 | -321.77 | 412.8  | 231.21 |
| 6876 | 0.79  | 194.76 | 6845.47 | 71   | -231.19 | -260.3  | -322.59 | 414.51 | 231.1  |
| 6936 | 0.88  | 340.96 | 6905.46 | 60   | -231.14 | -260.26 | -322.84 | 414.69 | 231.13 |
| 6985 | 6.42  | 340.43 | 6954.35 | 49   | -228.12 | -257.32 | -323.88 | 413.66 | 231.53 |

|       |       |        |         |    |         |         |         |         |        |
|-------|-------|--------|---------|----|---------|---------|---------|---------|--------|
| 7030  | 11.08 | 343.1  | 6998.81 | 45 | -221.45 | -250.81 | -325.99 | 411.31  | 232.43 |
| 7081  | 15.74 | 343.68 | 7048.4  | 51 | -209.86 | -239.48 | -329.36 | 407.22  | 233.98 |
| 7128  | 20.49 | 345.3  | 7093.06 | 47 | -195.49 | -225.4  | -333.24 | 402.31  | 235.93 |
| 7176  | 25.32 | 349.24 | 7137.27 | 48 | -176.99 | -207.17 | -337.29 | 395.83  | 238.44 |
| 7223  | 30.16 | 351.07 | 7178.85 | 47 | -155.2  | -185.62 | -341    | 388.25  | 241.44 |
| 7271  | 33.85 | 351.52 | 7219.55 | 48 | -129.82 | -160.48 | -344.84 | 380.36  | 245.04 |
| 7318  | 38.78 | 354.44 | 7257.41 | 47 | -102.01 | -132.87 | -348.2  | 372.69  | 249.11 |
| 7367  | 43.97 | 359.82 | 7294.18 | 49 | -69.69  | -100.55 | -349.74 | 363.91  | 253.96 |
| 7414  | 49.86 | 0.38   | 7326.27 | 47 | -35.51  | -66.24  | -349.68 | 355.89  | 259.27 |
| 7462  | 55.4  | 357.25 | 7355.4  | 48 | 2.53    | -28.12  | -350.5  | 351.63  | 265.41 |
| 7510  | 61.38 | 355.61 | 7380.55 | 48 | 43.38   | 12.65   | -353.07 | 353.29  | 272.05 |
| 7557  | 67.44 | 355.67 | 7400.84 | 47 | 85.74   | 54.9    | -356.29 | 360.49  | 278.76 |
| 7604  | 75.18 | 356.58 | 7415.89 | 47 | 130.22  | 99.29   | -359.28 | 372.75  | 285.45 |
| 7652  | 81.69 | 359.08 | 7425.51 | 48 | 177.16  | 146.25  | -361.05 | 389.55  | 292.05 |
| 7739  | 88.81 | 1.97   | 7432.71 | 87 | 263.39  | 232.88  | -360.25 | 428.97  | 302.88 |
| 7834  | 88.55 | 2.79   | 7434.9  | 95 | 357.58  | 327.77  | -356.3  | 484.14  | 312.61 |
| 7929  | 88.64 | 3.6    | 7437.23 | 95 | 451.58  | 422.6   | -351.01 | 549.36  | 320.29 |
| 8025  | 88.72 | 2.39   | 7439.44 | 96 | 546.62  | 518.44  | -346    | 623.29  | 326.28 |
| 8120  | 90.22 | 0.26   | 7440.32 | 95 | 641.03  | 613.4   | -343.8  | 703.18  | 330.73 |
| 8215  | 90.84 | 1.49   | 7439.44 | 95 | 735.52  | 708.38  | -342.35 | 786.77  | 334.21 |
| 8311  | 91.01 | 1.63   | 7437.89 | 96 | 830.88  | 804.34  | -339.74 | 873.14  | 337.1  |
| 8406  | 91.89 | 1.98   | 7435.49 | 95 | 925.18  | 899.26  | -336.74 | 960.24  | 339.47 |
| 8502  | 90.22 | 1.16   | 7433.72 | 96 | 1020.53 | 995.2   | -334.11 | 1049.79 | 341.44 |
| 8596  | 89.6  | 0.82   | 7433.87 | 94 | 1114.02 | 1089.19 | -332.49 | 1138.8  | 343.02 |
| 8692  | 89.16 | 359.57 | 7434.9  | 96 | 1209.62 | 1185.18 | -332.16 | 1230.84 | 344.34 |
| 8787  | 88.72 | 359.01 | 7436.66 | 95 | 1304.33 | 1280.15 | -333.34 | 1322.84 | 345.4  |
| 8882  | 88.46 | 359.59 | 7439    | 95 | 1399.04 | 1375.12 | -334.5  | 1415.22 | 346.33 |
| 8977  | 88.2  | 0.41   | 7441.77 | 95 | 1493.63 | 1470.08 | -334.5  | 1507.65 | 347.18 |
| 9073  | 89.52 | 358.78 | 7443.68 | 96 | 1589.3  | 1566.05 | -335.18 | 1601.52 | 347.92 |
| 9168  | 89.87 | 358.91 | 7444.18 | 95 | 1684.09 | 1661.03 | -337.09 | 1694.89 | 348.53 |
| 9264  | 89.43 | 356.88 | 7444.77 | 96 | 1779.96 | 1756.96 | -340.62 | 1789.67 | 349.03 |
| 9359  | 90.66 | 355.66 | 7444.7  | 95 | 1874.93 | 1851.75 | -346.8  | 1883.95 | 349.39 |
| 9454  | 90.4  | 356.1  | 7443.82 | 95 | 1969.91 | 1946.5  | -353.63 | 1978.36 | 349.7  |
| 9549  | 90.4  | 356.83 | 7443.15 | 95 | 2064.88 | 2041.32 | -359.48 | 2072.73 | 350.01 |
| 9644  | 90.4  | 357.41 | 7442.49 | 95 | 2159.81 | 2136.19 | -364.26 | 2167.03 | 350.32 |
| 9741  | 90.04 | 357.61 | 7442.12 | 97 | 2256.72 | 2233.1  | -368.47 | 2263.3  | 350.63 |
| 9835  | 90.04 | 358.22 | 7442.05 | 94 | 2350.6  | 2327.04 | -371.89 | 2356.57 | 350.92 |
| 9931  | 90.13 | 358.27 | 7441.91 | 96 | 2446.44 | 2422.99 | -374.83 | 2451.82 | 351.21 |
| 10026 | 90.04 | 358.04 | 7441.77 | 95 | 2541.3  | 2517.94 | -377.89 | 2546.14 | 351.46 |
| 10121 | 90.13 | 358.47 | 7441.63 | 95 | 2636.14 | 2612.9  | -380.78 | 2640.5  | 351.71 |
| 10216 | 89.87 | 359    | 7441.63 | 95 | 2730.94 | 2707.88 | -382.88 | 2734.81 | 351.95 |
| 10311 | 90.04 | 359.23 | 7441.7  | 95 | 2825.7  | 2802.87 | -384.35 | 2829.09 | 352.19 |
| 10407 | 90.31 | 359.94 | 7441.41 | 96 | 2921.39 | 2898.86 | -385.04 | 2924.32 | 352.43 |
| 10502 | 90.48 | 0.22   | 7440.76 | 95 | 3016.01 | 2993.86 | -384.91 | 3018.5  | 352.67 |
| 10597 | 90.75 | 0.28   | 7439.74 | 95 | 3110.61 | 3088.85 | -384.49 | 3112.69 | 352.9  |
| 10692 | 90.92 | 0.69   | 7438.35 | 95 | 3205.16 | 3183.84 | -383.69 | 3206.88 | 353.13 |
| 10788 | 90.66 | 1      | 7437.03 | 96 | 3300.66 | 3279.82 | -382.28 | 3302.02 | 353.35 |

|       |       |        |         |    |         |         |         |         |        |
|-------|-------|--------|---------|----|---------|---------|---------|---------|--------|
| 10883 | 89.78 | 359.29 | 7436.66 | 95 | 3395.27 | 3374.81 | -382.03 | 3396.37 | 353.54 |
| 10978 | 90.04 | 359.13 | 7436.81 | 95 | 3490.01 | 3469.8  | -383.34 | 3490.92 | 353.7  |
| 11074 | 90.04 | 359.97 | 7436.74 | 96 | 3585.71 | 3565.8  | -384.1  | 3586.43 | 353.85 |
| 11169 | 90.22 | 359.87 | 7436.53 | 95 | 3680.36 | 3660.8  | -384.23 | 3680.91 | 354.01 |
| 11264 | 90.57 | 0.72   | 7435.87 | 95 | 3774.95 | 3755.8  | -383.74 | 3775.35 | 354.17 |
| 11359 | 90.13 | 0.93   | 7435.29 | 95 | 3869.46 | 3850.78 | -382.37 | 3869.72 | 354.33 |
| 11455 | 89.69 | 359.31 | 7435.44 | 96 | 3965.07 | 3946.78 | -382.17 | 3965.24 | 354.47 |
| 11550 | 87.93 | 357.62 | 7437.42 | 95 | 4059.87 | 4041.72 | -384.72 | 4059.99 | 354.56 |
| 11645 | 88.2  | 357.13 | 7440.63 | 95 | 4154.73 | 4136.56 | -389.07 | 4154.82 | 354.63 |
| 11740 | 87.93 | 357.32 | 7443.83 | 95 | 4249.61 | 4231.4  | -393.66 | 4249.67 | 354.68 |
| 11836 | 88.2  | 357.02 | 7447.08 | 96 | 4345.48 | 4327.23 | -398.4  | 4345.53 | 354.74 |
| 11931 | 89.6  | 356.38 | 7448.9  | 95 | 4440.42 | 4422.05 | -403.87 | 4440.45 | 354.78 |
| 12026 | 89.96 | 356.93 | 7449.26 | 95 | 4535.38 | 4516.89 | -409.41 | 4535.4  | 354.82 |
| 12122 | 89.78 | 356.89 | 7449.48 | 96 | 4631.33 | 4612.75 | -414.58 | 4631.34 | 354.86 |
| 12217 | 89.43 | 357.14 | 7450.14 | 95 | 4726.26 | 4707.61 | -419.53 | 4726.27 | 354.91 |
| 12266 | 89.34 | 356.79 | 7450.66 | 49 | 4775.23 | 4756.54 | -422.13 | 4775.24 | 354.93 |
| 12326 | 89.34 | 356.79 | 7451.35 | 60 | 4835.2  | 4816.44 | -425.49 | 4835.2  | 354.95 |

| DLS         | TEMP   |
|-------------|--------|
| deg/100ft F |        |
| 0           |        |
| 0.59        | 86.57  |
| 2.11        | 97.41  |
| 0.26        | 104.64 |
| 0.17        | 115.48 |
| 0.02        | 122.71 |
| 0.46        | 115.48 |
| 0.85        | 115.48 |
| 2.18        | 115.48 |
| 0.49        | 119.09 |
| 0.35        | 119.09 |
| 0.18        | 115.48 |
| 0.1         | 93.8   |
| 0.09        | 97.41  |
| 0.16        | 101.02 |
| 1.6         | 101.02 |
| 0.1         | 104.64 |
| 0.01        | 108.25 |
| 0.1         | 108.25 |
| 3.41        | 108.25 |
| 2.74        | 108.25 |
| 0.25        | 108.25 |
| 0.13        | 108.25 |
| 1.26        | 111.87 |
| 0.36        | 111.87 |
| 0.47        | 115.48 |
| 1.5         | 115.48 |
| 0.27        | 115.48 |
| 0.33        | 115.48 |
| 0.65        | 115.48 |
| 0.35        | 115.48 |
| 0.33        | 115.48 |
| 0.32        | 119.09 |
| 0.86        | 119.09 |
| 0.91        | 122.71 |
| 1.2         | 122.71 |
| 0.71        | 122.71 |
| 1.07        | 126.32 |
| 2.41        | 126.32 |
| 2.66        | 126.32 |
| 2.17        | 129.94 |
| 2.66        | 119.09 |
| 11.31       | 119.09 |

|       |        |
|-------|--------|
| 10.39 | 119.09 |
| 9.14  | 122.71 |
| 10.16 | 122.71 |
| 10.55 | 122.71 |
| 10.46 | 122.71 |
| 7.7   | 122.71 |
| 11.11 | 126.32 |
| 12.83 | 126.32 |
| 12.56 | 126.32 |
| 12.65 | 126.32 |
| 12.79 | 126.32 |
| 12.89 | 126.32 |
| 16.57 | 126.32 |
| 14.49 | 126.32 |
| 8.83  | 122.71 |
| 0.9   | 122.71 |
| 0.86  | 122.71 |
| 1.26  | 126.32 |
| 2.74  | 126.32 |
| 1.45  | 126.32 |
| 0.23  | 129.94 |
| 1     | 129.94 |
| 1.94  | 129.94 |
| 0.75  | 133.55 |
| 1.38  | 129.94 |
| 0.75  | 133.55 |
| 0.67  | 129.94 |
| 0.9   | 133.55 |
| 2.18  | 129.94 |
| 0.39  | 129.94 |
| 2.16  | 129.94 |
| 1.82  | 129.94 |
| 0.54  | 133.55 |
| 0.77  | 133.55 |
| 0.61  | 133.55 |
| 0.42  | 129.94 |
| 0.65  | 133.55 |
| 0.11  | 133.55 |
| 0.26  | 133.55 |
| 0.46  | 133.55 |
| 0.62  | 133.55 |
| 0.3   | 137.17 |
| 0.79  | 133.55 |
| 0.34  | 137.17 |
| 0.29  | 137.17 |
| 0.47  | 137.17 |
| 0.42  | 137.17 |

|      |        |
|------|--------|
| 2.02 | 133.55 |
| 0.32 | 137.17 |
| 0.87 | 137.17 |
| 0.22 | 137.17 |
| 0.97 | 140.78 |
| 0.51 | 137.17 |
| 1.75 | 137.17 |
| 2.57 | 137.17 |
| 0.59 | 137.17 |
| 0.35 | 140.78 |
| 0.42 | 137.17 |
| 1.62 | 137.17 |
| 0.69 | 140.78 |
| 0.19 | 140.78 |
| 0.45 | 140.78 |
| 0.74 | 140.78 |
| 0    |        |