



Job Number: MD-131153  
 Company: Devon Energy  
 Lease/Well: Jasper 32 State Com 3H  
 Location: Eddy Co., NM  
 Rig Name: Scan Texas  
 RKB: 26  
 G.L. or M.S.L.: 3266.5

State/Country: NM / USA  
 Declination: 7.70  
 Grid: 7.57  
 File name: C:\USERS\LEAM\DESKTOP\JASPER-1\SURVEYS\1311  
 Date/Time: 11-Oct-13 / 18:45  
 Curve Name: As Drilled

15- 40035

## LEAM Drilling Systems

WINSERVE SURVEY CALCULATIONS  
 Minimum Curvature Method  
 Vertical Section Plane 179.94  
 Vertical Section Referenced to Wellhead  
 Rectangular Coordinates Referenced to Wellhead

| Measured<br>Depth<br>FT                                | Incl<br>Angle<br>Deg | Drift<br>Direction<br>Deg | True<br>Vertical<br>Depth | N-S<br>FT | E-W<br>FT | Vertical<br>Section<br>FT | CLOSURE<br>Distance<br>FT | Direction<br>Deg | Dogleg<br>Severity<br>Deg/100 |
|--------------------------------------------------------|----------------------|---------------------------|---------------------------|-----------|-----------|---------------------------|---------------------------|------------------|-------------------------------|
| .00                                                    | .00                  | .00                       | .00                       | .00       | .00       | .00                       | .00                       | .00              | .00                           |
| The following are Vaughn Energy Services gyro surveys. |                      |                           |                           |           |           |                           |                           |                  |                               |
| 200.00                                                 | .31                  | 208.51                    | 200.00                    | -.48      | -.26      | .48                       | .54                       | 208.51           | .15                           |
| 400.00                                                 | .02                  | 178.56                    | 400.00                    | -.99      | -.52      | .99                       | 1.11                      | 207.61           | .15                           |
| 600.00                                                 | .45                  | 138.41                    | 600.00                    | -1.61     | .01       | 1.61                      | 1.61                      | 179.76           | .22                           |
| 800.00                                                 | .45                  | 107.62                    | 799.99                    | -2.43     | 1.28      | 2.43                      | 2.75                      | 152.32           | .12                           |
| 1000.00                                                | 1.33                 | 89.32                     | 999.96                    | -2.64     | 4.35      | 2.65                      | 5.09                      | 121.31           | .46                           |
| 1200.00                                                | 1.36                 | 105.24                    | 1199.91                   | -3.24     | 8.96      | 3.25                      | 9.52                      | 109.89           | .19                           |
| 1400.00                                                | 1.22                 | 138.09                    | 1399.86                   | -5.45     | 12.67     | 5.46                      | 13.79                     | 113.27           | .37                           |
| 1600.00                                                | 1.27                 | 152.26                    | 1599.82                   | -8.99     | 15.12     | 9.01                      | 17.60                     | 120.74           | .16                           |
| 1800.00                                                | 1.01                 | 153.69                    | 1799.78                   | -12.54    | 16.94     | 12.55                     | 21.07                     | 126.51           | .13                           |
| 2000.00                                                | .89                  | 186.79                    | 1999.75                   | -15.66    | 17.53     | 15.68                     | 23.51                     | 131.77           | .28                           |
| 2200.00                                                | .85                  | 226.68                    | 2199.73                   | -18.22    | 16.27     | 18.24                     | 24.43                     | 138.23           | .30                           |
| 2400.00                                                | .61                  | 262.45                    | 2399.71                   | -19.38    | 14.14     | 19.39                     | 23.98                     | 143.89           | .25                           |
| 2600.00                                                | .35                  | 276.76                    | 2599.71                   | -19.44    | 12.47     | 19.46                     | 23.10                     | 147.32           | .14                           |
| 2800.00                                                | .25                  | 39.32                     | 2799.70                   | -19.03    | 12.14     | 19.05                     | 22.58                     | 147.46           | .26                           |
| 3000.00                                                | .24                  | 140.21                    | 2999.70                   | -19.02    | 12.69     | 19.03                     | 22.86                     | 146.29           | .19                           |
| 3200.00                                                | .23                  | 155.66                    | 3199.70                   | -19.71    | 13.12     | 19.72                     | 23.68                     | 146.34           | .03                           |
| 3400.00                                                | .66                  | 224.08                    | 3399.70                   | -20.90    | 12.49     | 20.91                     | 24.35                     | 149.15           | .31                           |
| 3600.00                                                | .40                  | 255.10                    | 3599.69                   | -21.91    | 11.01     | 21.92                     | 24.52                     | 153.32           | .19                           |
| 3800.00                                                | .15                  | 274.90                    | 3799.68                   | -22.06    | 10.07     | 22.07                     | 24.26                     | 155.46           | .13                           |
| 4000.00                                                | .78                  | 330.58                    | 3999.68                   | -20.86    | 9.14      | 20.87                     | 22.77                     | 156.32           | .35                           |
| 4200.00                                                | .99                  | 345.85                    | 4199.65                   | -17.99    | 8.05      | 18.00                     | 19.72                     | 155.89           | .16                           |
| 4400.00                                                | 1.46                 | 352.99                    | 4399.61                   | -13.79    | 7.32      | 13.80                     | 15.61                     | 152.04           | .25                           |
| 4600.00                                                | 1.38                 | 351.71                    | 4599.55                   | -8.88     | 6.66      | 8.89                      | 11.10                     | 143.12           | .04                           |
| 4800.00                                                | 1.67                 | 319.13                    | 4799.48                   | -4.29     | 4.41      | 4.30                      | 6.15                      | 134.23           | .45                           |

| Measured<br>Depth<br>FT             | Incl<br>Angle<br>Deg | Drift<br>Direction<br>Deg | True<br>Vertical<br>Depth | N-S<br>FT | E-W<br>FT | Vertical<br>Section<br>FT | C L O S U R E  |                  | Dogleg<br>Severity<br>Deg/100 |
|-------------------------------------|----------------------|---------------------------|---------------------------|-----------|-----------|---------------------------|----------------|------------------|-------------------------------|
|                                     |                      |                           |                           |           |           |                           | Distance<br>FT | Direction<br>Deg |                               |
| 5000.00                             | 1.69                 | 310.35                    | 4999.39                   | -.18      | .25       | .18                       | .31            | 125.14           | .13                           |
| 5200.00                             | 2.12                 | 291.73                    | 5199.28                   | 3.10      | -5.43     | -3.11                     | 6.25           | 299.72           | .37                           |
| 5400.00                             | 2.75                 | 303.66                    | 5399.10                   | 7.13      | -12.86    | -7.14                     | 14.70          | 299.00           | .40                           |
| 5600.00                             | 3.09                 | 298.62                    | 5598.84                   | 12.37     | -21.59    | -12.39                    | 24.88          | 299.82           | .21                           |
| 5800.00                             | 2.99                 | 298.26                    | 5798.56                   | 17.42     | -30.91    | -17.45                    | 35.48          | 299.41           | .05                           |
| 6000.00                             | 3.20                 | 299.51                    | 5998.27                   | 22.64     | -40.36    | -22.68                    | 46.28          | 299.29           | .11                           |
| 6200.00                             | 3.64                 | 296.34                    | 6197.91                   | 28.21     | -50.91    | -28.26                    | 58.20          | 298.99           | .24                           |
| 6400.00                             | 3.71                 | 302.82                    | 6397.50                   | 34.53     | -62.04    | -34.60                    | 71.00          | 299.10           | .21                           |
| 6600.00                             | 3.41                 | 296.75                    | 6597.12                   | 40.72     | -72.79    | -40.79                    | 83.40          | 299.22           | .24                           |
| 6730.00                             | 2.85                 | 294.69                    | 6726.92                   | 43.81     | -79.18    | -43.89                    | 90.49          | 298.95           | .44                           |
| The following are LEAM MWD surveys. |                      |                           |                           |           |           |                           |                |                  |                               |
| 6791.00                             | 2.90                 | 281.61                    | 6787.85                   | 44.75     | -82.07    | -44.84                    | 93.48          | 298.60           | 1.08                          |
| 6904.00                             | 2.55                 | 281.44                    | 6900.72                   | 45.82     | -87.33    | -45.92                    | 98.62          | 297.69           | .31                           |
| 6998.00                             | 2.64                 | 278.10                    | 6994.62                   | 46.54     | -91.52    | -46.64                    | 102.68         | 296.96           | .19                           |
| 7093.00                             | 2.81                 | 268.96                    | 7089.52                   | 46.81     | -96.02    | -46.91                    | 106.82         | 295.99           | .49                           |
| 7187.00                             | 2.99                 | 255.77                    | 7183.40                   | 46.17     | -100.70   | -46.27                    | 110.78         | 294.63           | .73                           |
| 7282.00                             | 3.61                 | 228.35                    | 7278.25                   | 43.57     | -105.34   | -43.68                    | 113.99         | 292.47           | 1.76                          |
| 7313.00                             | 6.16                 | 199.87                    | 7309.13                   | 41.36     | -106.63   | -41.47                    | 114.37         | 291.20           | 11.12                         |
| 7344.00                             | 9.94                 | 187.75                    | 7339.83                   | 37.14     | -107.56   | -37.25                    | 113.79         | 289.05           | 13.30                         |
| 7376.00                             | 14.07                | 183.53                    | 7371.12                   | 30.52     | -108.17   | -30.63                    | 112.39         | 285.75           | 13.19                         |
| 7407.00                             | 15.74                | 181.95                    | 7401.08                   | 22.55     | -108.54   | -22.67                    | 110.86         | 281.74           | 5.54                          |
| 7438.00                             | 17.59                | 179.84                    | 7430.77                   | 13.67     | -108.67   | -13.78                    | 109.53         | 277.17           | 6.28                          |
| 7470.00                             | 20.40                | 178.61                    | 7461.03                   | 3.25      | -108.53   | -3.37                     | 108.57         | 271.72           | 8.87                          |
| 7501.00                             | 23.13                | 177.02                    | 7489.81                   | -8.23     | -108.08   | 8.12                      | 108.39         | 265.64           | 9.01                          |
| 7532.00                             | 25.59                | 175.79                    | 7518.05                   | -20.99    | -107.27   | 20.88                     | 109.30         | 258.93           | 8.10                          |
| 7564.00                             | 28.31                | 176.67                    | 7546.58                   | -35.46    | -106.32   | 35.35                     | 112.08         | 251.56           | 8.59                          |
| 7595.00                             | 31.39                | 177.02                    | 7573.46                   | -50.87    | -105.47   | 50.75                     | 117.10         | 244.25           | 9.95                          |
| 7627.00                             | 34.82                | 178.25                    | 7600.26                   | -68.32    | -104.76   | 68.21                     | 125.07         | 236.89           | 10.92                         |
| 7659.00                             | 38.34                | 178.96                    | 7625.95                   | -87.39    | -104.30   | 87.28                     | 136.07         | 230.04           | 11.08                         |
| 7690.00                             | 41.94                | 178.61                    | 7649.65                   | -107.36   | -103.88   | 107.25                    | 149.39         | 224.05           | 11.64                         |
| 7722.00                             | 43.88                | 176.85                    | 7673.09                   | -129.13   | -103.01   | 129.02                    | 165.18         | 218.58           | 7.13                          |
| 7753.00                             | 46.69                | 175.09                    | 7694.90                   | -151.10   | -101.45   | 150.99                    | 182.00         | 213.88           | 9.92                          |
| 7785.00                             | 50.21                | 173.86                    | 7716.12                   | -174.93   | -99.14    | 174.83                    | 201.07         | 209.54           | 11.37                         |
| 7816.00                             | 54.08                | 173.33                    | 7735.14                   | -199.25   | -96.41    | 199.15                    | 221.35         | 205.82           | 12.56                         |
| 7847.00                             | 57.33                | 172.80                    | 7752.60                   | -224.67   | -93.31    | 224.57                    | 243.28         | 202.55           | 10.58                         |
| 7879.00                             | 61.20                | 173.33                    | 7768.95                   | -251.97   | -89.99    | 251.87                    | 267.56         | 199.65           | 12.18                         |
| 7910.00                             | 65.77                | 174.03                    | 7782.79                   | -279.53   | -86.94    | 279.44                    | 292.74         | 197.28           | 14.88                         |
| 7941.00                             | 69.91                | 174.56                    | 7794.48                   | -308.09   | -84.09    | 308.01                    | 319.36         | 195.27           | 13.45                         |
| 7973.00                             | 74.48                | 175.79                    | 7804.26                   | -338.44   | -81.54    | 338.36                    | 348.13         | 193.55           | 14.74                         |
| 8004.00                             | 79.32                | 177.20                    | 7811.29                   | -368.57   | -79.69    | 368.49                    | 377.09         | 192.20           | 16.23                         |
| 8078.00                             | 90.66                | 178.96                    | 7817.74                   | -442.12   | -77.24    | 442.04                    | 448.82         | 189.91           | 15.51                         |
| 8140.00                             | 92.33                | 179.48                    | 7816.12                   | -504.10   | -76.39    | 504.02                    | 509.85         | 188.62           | 2.82                          |
| 8235.00                             | 90.40                | 179.66                    | 7813.86                   | -599.06   | -75.68    | 598.98                    | 603.82         | 187.20           | 2.04                          |
| 8329.00                             | 90.48                | 179.84                    | 7813.14                   | -693.06   | -75.27    | 692.98                    | 697.13         | 186.20           | .21                           |
| 8424.00                             | 89.96                | 179.48                    | 7812.77                   | -788.05   | -74.71    | 787.98                    | 791.59         | 185.42           | .67                           |
| 8518.00                             | 89.52                | 177.55                    | 7813.20                   | -882.02   | -72.27    | 881.94                    | 884.97         | 184.68           | 2.11                          |

| Measured<br>Depth<br>FT               | Incl<br>Angle<br>Deg | Drift<br>Direction<br>Deg | True<br>Vertical<br>Depth | N-S<br>FT | E-W<br>FT | Vertical<br>Section<br>FT | C L O S U R E  |                  | Dogleg<br>Severity<br>Deg/100 |
|---------------------------------------|----------------------|---------------------------|---------------------------|-----------|-----------|---------------------------|----------------|------------------|-------------------------------|
|                                       |                      |                           |                           |           |           |                           | Distance<br>FT | Direction<br>Deg |                               |
| 8613.00                               | 90.13                | 178.61                    | 7813.49                   | -976.96   | -69.09    | 976.89                    | 979.40         | 184.05           | 1.29                          |
| 8708.00                               | 88.81                | 178.25                    | 7814.37                   | -1071.92  | -66.49    | 1071.85                   | 1073.98        | 183.55           | 1.44                          |
| 8803.00                               | 89.52                | 178.78                    | 7815.75                   | -1166.88  | -64.02    | 1166.81                   | 1168.63        | 183.14           | .93                           |
| 8897.00                               | 88.72                | 177.20                    | 7817.20                   | -1260.80  | -60.73    | 1260.74                   | 1262.27        | 182.76           | 1.88                          |
| 8991.00                               | 89.52                | 178.25                    | 7818.64                   | -1354.72  | -57.00    | 1354.66                   | 1355.92        | 182.41           | 1.40                          |
|                                       |                      |                           |                           |           |           |                           |                |                  |                               |
| 9085.00                               | 87.93                | 176.50                    | 7820.73                   | -1448.59  | -52.69    | 1448.53                   | 1449.55        | 182.08           | 2.51                          |
| 9180.00                               | 87.32                | 177.02                    | 7824.67                   | -1543.35  | -47.33    | 1543.30                   | 1544.08        | 181.76           | .84                           |
| 9274.00                               | 88.11                | 178.08                    | 7828.42                   | -1637.19  | -43.32    | 1637.15                   | 1637.76        | 181.52           | 1.41                          |
| 9368.00                               | 90.13                | 177.20                    | 7829.86                   | -1731.10  | -39.44    | 1731.05                   | 1731.54        | 181.31           | 2.34                          |
| 9462.00                               | 89.52                | 177.37                    | 7830.15                   | -1824.99  | -34.99    | 1824.95                   | 1825.32        | 181.10           | .67                           |
|                                       |                      |                           |                           |           |           |                           |                |                  |                               |
| 9556.00                               | 89.08                | 177.55                    | 7831.30                   | -1918.89  | -30.83    | 1918.86                   | 1919.14        | 180.92           | .51                           |
| 9651.00                               | 90.22                | 178.08                    | 7831.88                   | -2013.82  | -27.20    | 2013.79                   | 2014.00        | 180.77           | 1.32                          |
| 9745.00                               | 89.52                | 178.25                    | 7832.09                   | -2107.77  | -24.19    | 2107.74                   | 2107.91        | 180.66           | .77                           |
| 9840.00                               | 88.90                | 178.43                    | 7833.40                   | -2202.72  | -21.44    | 2202.69                   | 2202.82        | 180.56           | .68                           |
| 9934.00                               | 90.57                | 178.78                    | 7833.83                   | -2296.69  | -19.15    | 2296.66                   | 2296.77        | 180.48           | 1.82                          |
|                                       |                      |                           |                           |           |           |                           |                |                  |                               |
| 10028.00                              | 90.22                | 178.08                    | 7833.19                   | -2390.65  | -16.58    | 2390.63                   | 2390.71        | 180.40           | .83                           |
| 10122.00                              | 90.75                | 178.25                    | 7832.39                   | -2484.60  | -13.57    | 2484.58                   | 2484.63        | 180.31           | .59                           |
| 10217.00                              | 90.84                | 178.25                    | 7831.07                   | -2579.54  | -10.67    | 2579.53                   | 2579.56        | 180.24           | .09                           |
| 10311.00                              | 90.57                | 177.37                    | 7829.92                   | -2673.47  | -7.08     | 2673.46                   | 2673.47        | 180.15           | .98                           |
| 10406.00                              | 90.92                | 177.20                    | 7828.68                   | -2768.35  | -2.58     | 2768.35                   | 2768.35        | 180.05           | .41                           |
|                                       |                      |                           |                           |           |           |                           |                |                  |                               |
| 10500.00                              | 91.28                | 177.20                    | 7826.88                   | -2862.22  | 2.01      | 2862.22                   | 2862.22        | 179.96           | .38                           |
| 10594.00                              | 88.90                | 178.96                    | 7826.73                   | -2956.16  | 5.16      | 2956.16                   | 2956.16        | 179.90           | 3.15                          |
| 10688.00                              | 89.96                | 178.78                    | 7827.66                   | -3050.13  | 7.02      | 3050.14                   | 3050.14        | 179.87           | 1.14                          |
| 10783.00                              | 90.92                | 178.61                    | 7826.93                   | -3145.10  | 9.18      | 3145.11                   | 3145.12        | 179.83           | 1.03                          |
| 10877.00                              | 91.10                | 178.61                    | 7825.28                   | -3239.06  | 11.46     | 3239.07                   | 3239.08        | 179.80           | .19                           |
|                                       |                      |                           |                           |           |           |                           |                |                  |                               |
| 10971.00                              | 91.19                | 178.08                    | 7823.40                   | -3333.00  | 14.17     | 3333.02                   | 3333.03        | 179.76           | .57                           |
| 11065.00                              | 89.69                | 178.96                    | 7822.68                   | -3426.97  | 16.60     | 3426.98                   | 3427.01        | 179.72           | 1.85                          |
| 11160.00                              | 88.29                | 180.19                    | 7824.35                   | -3521.94  | 17.31     | 3521.96                   | 3521.99        | 179.72           | 1.96                          |
| 11254.00                              | 88.90                | 179.66                    | 7826.66                   | -3615.92  | 17.43     | 3615.93                   | 3615.96        | 179.72           | .86                           |
| 11349.00                              | 87.23                | 180.19                    | 7829.86                   | -3710.86  | 17.55     | 3710.87                   | 3710.90        | 179.73           | 1.84                          |
|                                       |                      |                           |                           |           |           |                           |                |                  |                               |
| 11443.00                              | 86.97                | 180.36                    | 7834.62                   | -3804.74  | 17.10     | 3804.75                   | 3804.77        | 179.74           | .33                           |
| 11538.00                              | 86.09                | 180.19                    | 7840.37                   | -3899.56  | 16.65     | 3899.58                   | 3899.60        | 179.76           | .94                           |
| 11632.00                              | 86.00                | 180.36                    | 7846.85                   | -3993.33  | 16.20     | 3993.35                   | 3993.37        | 179.77           | .20                           |
| 11726.00                              | 86.35                | 179.84                    | 7853.12                   | -4087.12  | 16.03     | 4087.14                   | 4087.16        | 179.78           | .67                           |
| 11820.00                              | 87.58                | 181.42                    | 7858.10                   | -4180.98  | 15.00     | 4181.00                   | 4181.01        | 179.79           | 2.13                          |
|                                       |                      |                           |                           |           |           |                           |                |                  |                               |
| 11915.00                              | 89.87                | 181.59                    | 7860.21                   | -4275.92  | 12.51     | 4275.93                   | 4275.94        | 179.83           | 2.42                          |
| 12009.00                              | 90.13                | 180.89                    | 7860.21                   | -4369.90  | 10.47     | 4369.91                   | 4369.91        | 179.86           | .79                           |
| 12103.00                              | 90.75                | 181.07                    | 7859.49                   | -4463.88  | 8.87      | 4463.89                   | 4463.89        | 179.89           | .69                           |
| 12189.00                              | 90.57                | 181.42                    | 7858.50                   | -4549.85  | 7.00      | 4549.86                   | 4549.86        | 179.91           | .46                           |
| Straight line projection to bit @ TD. |                      |                           |                           |           |           |                           |                |                  |                               |
| 12239.00                              | 90.57                | 181.42                    | 7858.00                   | -4599.84  | 5.76      | 4599.84                   | 4599.84        | 179.93           | .00                           |