

# Minimum Radius of Curvature

**API: 05-123-46649**      **Well: Cinnamon Teal 35-4HN**      **Wellhead Location N+/S- : 40.613060**  
**Operator: Bison IV Operating**      **Area: DJ**      **E+/W- : -104.061233**  
**Rig:**      **Type: U-Lateral**      **Magnetic Declination: 7.32**  
**TD: 16,944'**      **Plane of Proposal: 1.15**

| Measured Depth Ft | Drift Angle Deg | Azimuth Direction Deg | Course Length Ft | TVD Ft | Vertical Section Ft | COORDINATES |        | CLOSURE     |               | Dog Leg Severity Deg/100' | Build / Drop Deg/100' | Left / Right Deg/100' |
|-------------------|-----------------|-----------------------|------------------|--------|---------------------|-------------|--------|-------------|---------------|---------------------------|-----------------------|-----------------------|
|                   |                 |                       |                  |        |                     | N-S Ft      | E-W Ft | Distance FT | Direction Deg |                           |                       |                       |
| 0.00              | 0.00            | 0.00                  |                  | 0.0    | 0.00                | 0.00        | 0.00   | 0.00        | 0.00          |                           |                       |                       |
| 6                 | 0.00            | 0.00                  | 6                | 6.0    | -38.52              | 0.00        | 0.00   | 0.00        | #DIV/0!       | 0.00                      |                       |                       |
| 142               | 0.20            | 356.00                | 136              | 142.0  | -38.28              | 0.24        | -0.02  | 0.24        | 356.00        | 0.15                      | 0.15                  | 261.76                |
| 232               | 0.50            | 5.00                  | 90               | 232.0  | -37.73              | 0.78        | 0.01   | 0.78        | 0.49          | 0.34                      | 0.33                  | -390.00               |
| 324               | 0.40            | 355.00                | 92               | 324.0  | -37.01              | 1.50        | 0.01   | 1.50        | 0.52          | 0.14                      | -0.11                 | 380.43                |
| 412               | 0.70            | 358.80                | 88               | 412.0  | -36.17              | 2.35        | -0.02  | 2.35        | 359.41        | 0.34                      | 0.34                  | 4.32                  |
| 499               | 0.80            | 7.90                  | 87               | 499.0  | -35.04              | 3.48        | 0.05   | 3.48        | 0.79          | 0.18                      | 0.11                  | -403.33               |
| 586               | 0.80            | 12.20                 | 87               | 586.0  | -33.84              | 4.68        | 0.26   | 4.68        | 3.18          | 0.07                      | 0.00                  | 4.94                  |
| 673               | 1.10            | 241.60                | 87               | 673.0  | -33.65              | 4.87        | -0.35  | 4.88        | 355.93        | 1.99                      | 0.34                  | 263.68                |
| 760               | 1.70            | 218.80                | 87               | 759.9  | -35.09              | 3.47        | -1.89  | 3.95        | 331.43        | 0.93                      | 0.69                  | -26.21                |
| 847               | 2.60            | 200.50                | 87               | 846.9  | -37.97              | 0.62        | -3.39  | 3.44        | 280.29        | 1.29                      | 1.03                  | -21.03                |
| 935               | 3.70            | 178.70                | 88               | 934.8  | -42.69              | -4.09       | -4.02  | 5.74        | 224.51        | 1.83                      | 1.25                  | -24.77                |
| 1022              | 5.60            | 175.20                | 87               | 1021.5 | -49.72              | -11.13      | -3.61  | 11.70       | 197.95        | 2.21                      | 2.18                  | -4.02                 |
| 1109              | 7.60            | 168.20                | 87               | 1107.9 | -59.55              | -20.99      | -2.07  | 21.09       | 185.64        | 2.47                      | 2.30                  | -8.05                 |
| 1196              | 9.70            | 169.00                | 87               | 1193.9 | -72.32              | -33.82      | 0.50   | 33.82       | 179.15        | 2.42                      | 2.41                  | 0.92                  |
| 1284              | 11.60           | 169.80                | 88               | 1280.4 | -88.24              | -49.81      | 3.48   | 49.93       | 176.00        | 2.17                      | 2.16                  | 0.91                  |
| 1371              | 11.70           | 170.00                | 87               | 1365.6 | -105.47             | -67.10      | 6.56   | 67.42       | 174.41        | 0.12                      | 0.11                  | 0.23                  |
| 1458              | 11.80           | 169.50                | 87               | 1450.8 | -122.84             | -84.54      | 9.72   | 85.09       | 173.44        | 0.16                      | 0.11                  | -0.57                 |
| 1545              | 11.40           | 168.10                | 87               | 1536.0 | -139.93             | -101.70     | 13.11  | 102.54      | 172.65        | 0.56                      | -0.46                 | -1.61                 |
| 1607              | 10.90           | 166.80                | 62               | 1596.8 | -151.58             | -113.40     | 15.71  | 114.48      | 172.11        | 0.90                      | -0.81                 | -2.10                 |
| 1692              | 10.57           | 168.92                | 85               | 1680.3 | -166.98             | -128.87     | 19.05  | 130.27      | 171.59        | 0.61                      | -0.39                 | 2.49                  |
| 1782              | 10.21           | 167.82                | 90               | 1768.8 | -182.81             | -144.77     | 22.32  | 146.48      | 171.24        | 0.46                      | -0.40                 | -1.22                 |
| 1872              | 12.44           | 162.59                | 90               | 1857.1 | -199.77             | -161.82     | 26.90  | 164.04      | 170.56        | 2.73                      | 2.48                  | -5.81                 |
| 1961              | 14.72           | 157.17                | 89               | 1943.6 | -219.19             | -181.39     | 34.16  | 184.58      | 169.34        | 2.93                      | 2.56                  | -6.09                 |
| 2051              | 14.46           | 155.79                | 90               | 2030.7 | -239.79             | -202.18     | 43.20  | 206.74      | 167.94        | 0.48                      | -0.29                 | -1.53                 |
| 2140              | 13.98           | 156.28                | 89               | 2117.0 | -259.58             | -222.16     | 52.08  | 228.18      | 166.81        | 0.56                      | -0.54                 | 0.55                  |
| 2230              | 14.99           | 152.96                | 90               | 2204.1 | -279.71             | -242.48     | 61.75  | 250.22      | 165.71        | 1.45                      | 1.12                  | -3.69                 |
| 2320              | 14.65           | 152.64                | 90               | 2291.1 | -299.97             | -262.95     | 72.27  | 272.70      | 164.63        | 0.39                      | -0.38                 | -0.36                 |
| 2409              | 14.19           | 152.71                | 89               | 2377.3 | -319.45             | -282.64     | 82.44  | 294.42      | 163.74        | 0.52                      | -0.52                 | 0.08                  |
| 2499              | 15.50           | 149.53                | 90               | 2464.3 | -339.39             | -302.81     | 93.60  | 316.95      | 162.82        | 1.71                      | 1.46                  | -3.53                 |
| 2589              | 15.15           | 147.30                | 90               | 2551.1 | -359.40             | -323.07     | 106.05 | 340.04      | 161.83        | 0.76                      | -0.39                 | -2.48                 |
| 2678              | 15.01           | 147.20                | 89               | 2637.0 | -378.62             | -342.55     | 118.58 | 362.49      | 160.91        | 0.16                      | -0.16                 | -0.11                 |
| 2768              | 14.91           | 146.95                | 90               | 2724.0 | -397.86             | -362.05     | 131.21 | 385.09      | 160.08        | 0.13                      | -0.11                 | -0.28                 |
| 2857              | 14.48           | 152.65                | 89               | 2810.1 | -417.11             | -381.53     | 142.56 | 407.30      | 159.51        | 1.69                      | -0.48                 | 6.40                  |
| 2947              | 14.31           | 151.93                | 90               | 2897.3 | -436.71             | -401.34     | 152.97 | 429.50      | 159.14        | 0.27                      | -0.19                 | -0.80                 |
| 3036              | 13.62           | 151.24                | 89               | 2983.6 | -455.39             | -420.23     | 163.18 | 450.80      | 158.78        | 0.80                      | -0.78                 | -0.78                 |
| 3126              | 13.91           | 156.11                | 90               | 3071.0 | -474.38             | -439.41     | 172.66 | 472.12      | 158.55        | 1.33                      | 0.32                  | 5.41                  |
| 3216              | 12.67           | 155.33                | 90               | 3158.6 | -493.06             | -458.27     | 181.16 | 492.78      | 158.43        | 1.39                      | -1.38                 | -0.87                 |
| 3305              | 13.72           | 154.20                | 89               | 3245.3 | -511.26             | -476.65     | 189.83 | 513.06      | 158.28        | 1.21                      | 1.18                  | -1.27                 |
| 3395              | 13.82           | 152.84                | 90               | 3332.7 | -530.23             | -495.82     | 199.38 | 534.41      | 158.09        | 0.38                      | 0.11                  | -1.51                 |
| 3485              | 14.35           | 151.71                | 90               | 3420.0 | -549.41             | -515.20     | 209.58 | 556.20      | 157.86        | 0.66                      | 0.59                  | -1.26                 |
| 3574              | 14.52           | 151.71                | 89               | 3506.2 | -568.73             | -534.74     | 220.09 | 578.26      | 157.63        | 0.19                      | 0.19                  | 0.00                  |
| 3664              | 14.74           | 149.57                | 90               | 3593.3 | -588.31             | -554.55     | 231.24 | 600.83      | 157.36        | 0.65                      | 0.24                  | -2.38                 |
| 3754              | 15.03           | 147.60                | 90               | 3680.2 | -607.79             | -574.27     | 243.29 | 623.68      | 157.04        | 0.65                      | 0.32                  | -2.19                 |
| 3843              | 15.22           | 147.06                | 89               | 3766.2 | -627.08             | -593.82     | 255.83 | 646.58      | 156.69        | 0.27                      | 0.21                  | -0.61                 |
| 3933              | 14.51           | 154.56                | 90               | 3853.2 | -646.95             | -613.92     | 267.09 | 669.50      | 156.49        | 2.28                      | -0.79                 | 8.33                  |
| 4022              | 13.44           | 154.87                | 89               | 3939.5 | -666.20             | -633.35     | 276.28 | 690.99      | 156.43        | 1.21                      | -1.20                 | 0.35                  |
| 4112              | 14.19           | 155.17                | 90               | 4026.9 | -685.49             | -652.83     | 285.35 | 712.47      | 156.39        | 0.84                      | 0.83                  | 0.33                  |
| 4201              | 12.96           | 156.46                | 89               | 4113.4 | -704.37             | -671.88     | 293.92 | 733.36      | 156.37        | 1.42                      | -1.38                 | 1.45                  |
| 4291              | 13.77           | 156.89                | 90               | 4201.0 | -723.30             | -690.99     | 302.15 | 754.16      | 156.38        | 0.91                      | 0.90                  | 0.48                  |
| 4381              | 12.65           | 158.03                | 90               | 4288.6 | -742.13             | -709.98     | 310.04 | 774.72      | 156.41        | 1.28                      | -1.24                 | 1.27                  |
| 4470              | 13.30           | 154.47                | 89               | 4375.3 | -760.24             | -728.26     | 318.10 | 794.70      | 156.40        | 1.16                      | 0.73                  | -4.00                 |
| 4559              | 13.86           | 153.63                | 89               | 4461.8 | -778.84             | -747.04     | 327.25 | 815.58      | 156.34        | 0.67                      | 0.63                  | -0.94                 |
| 4649              | 14.54           | 156.33                | 90               | 4549.1 | -798.66             | -767.05     | 336.57 | 837.64      | 156.31        | 1.05                      | 0.76                  | 3.00                  |
| 4738              | 13.56           | 145.67                | 89               | 4635.4 | -817.30             | -785.90     | 346.94 | 859.08      | 156.18        | 3.10                      | -1.10                 | -11.98                |
| 4828              | 14.12           | 146.29                | 90               | 4722.8 | -834.90             | -803.75     | 358.99 | 880.27      | 155.93        | 0.64                      | 0.62                  | 0.69                  |
| 4918              | 13.56           | 147.73                | 90               | 4810.2 | -852.71             | -821.80     | 370.71 | 901.55      | 155.72        | 0.73                      | -0.62                 | 1.60                  |
| 5007              | 13.79           | 153.15                | 89               | 4896.7 | -870.79             | -840.09     | 381.07 | 922.48      | 155.60        | 1.46                      | 0.26                  | 6.09                  |

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|-------------------|-----------------|-----------------------|------------------|--------|---------------------|-------------|--------|-------------|---------------|---------------------------|-----------------------|-----------------------|
|                   |                 |                       |                  |        |                     | N-S Ft      | E-W Ft | Distance FT | Direction Deg |                           |                       |                       |
| 5097              | 14.26           | 156.00                | 90               | 4984.0 | -890.29             | -859.78     | 390.43 | 944.28      | 155.58        | 0.93                      | 0.52                  | 3.17                  |
| 5187              | 13.76           | 154.82                | 90               | 5071.3 | -909.92             | -879.60     | 399.49 | 966.07      | 155.57        | 0.64                      | -0.56                 | -1.31                 |
| 5276              | 12.89           | 151.39                | 89               | 5157.9 | -928.02             | -897.89     | 408.75 | 986.55      | 155.52        | 1.32                      | -0.98                 | -3.85                 |
| 5366              | 12.19           | 148.76                | 90               | 5245.8 | -944.76             | -914.83     | 418.48 | 1006.00     | 155.42        | 1.00                      | -0.78                 | -2.92                 |
| 5456              | 13.05           | 149.82                | 90               | 5333.6 | -961.46             | -931.74     | 428.52 | 1025.55     | 155.30        | 0.99                      | 0.96                  | 1.18                  |
| 5546              | 11.47           | 143.10                | 90               | 5421.6 | -977.19             | -947.68     | 439.00 | 1044.42     | 155.14        | 2.36                      | -1.76                 | -7.47                 |
| 5635              | 15.85           | 81.95                 | 89               | 5508.4 | -982.24             | -953.08     | 456.44 | 1056.74     | 154.41        | 16.08                     | 4.92                  | -68.71                |
| 5725              | 16.49           | 48.76                 | 90               | 5595.1 | -971.64             | -942.92     | 478.26 | 1057.27     | 153.11        | 10.16                     | 0.71                  | -36.88                |
| 5815              | 17.15           | 49.95                 | 90               | 5681.2 | -954.29             | -925.96     | 498.02 | 1051.39     | 151.73        | 0.83                      | 0.73                  | 1.32                  |
| 5904              | 18.01           | 38.77                 | 89               | 5766.1 | -934.75             | -906.78     | 516.69 | 1043.66     | 150.33        | 3.91                      | 0.97                  | -12.56                |
| 5994              | 23.51           | 14.57                 | 90               | 5850.4 | -906.19             | -878.49     | 529.95 | 1025.96     | 148.90        | 11.20                     | 6.11                  | -26.89                |
| 6084              | 30.45           | 9.41                  | 90               | 5930.5 | -866.11             | -838.56     | 538.21 | 996.42      | 147.31        | 8.13                      | 7.71                  | -5.73                 |
| 6173              | 36.00           | 5.00                  | 89               | 6005.0 | -817.65             | -790.21     | 544.18 | 959.46      | 145.45        | 6.80                      | 6.24                  | -4.96                 |
| 6263              | 43.84           | 1.22                  | 90               | 6073.9 | -759.99             | -732.60     | 547.15 | 914.37      | 143.25        | 9.12                      | 8.71                  | -4.20                 |
| 6353              | 50.78           | 2.16                  | 90               | 6134.9 | -693.88             | -666.52     | 549.13 | 863.59      | 140.52        | 7.75                      | 7.71                  | 1.04                  |
| 6442              | 58.65           | 0.99                  | 89               | 6186.3 | -621.29             | -593.96     | 551.09 | 810.24      | 137.14        | 8.91                      | 8.84                  | -1.31                 |
| 6532              | 65.07           | 359.52                | 90               | 6228.7 | -541.98             | -514.64     | 551.41 | 754.26      | 133.02        | 7.28                      | 7.13                  | 398.37                |
| 6622              | 73.85           | 359.11                | 90               | 6260.3 | -457.83             | -430.45     | 550.40 | 698.73      | 128.03        | 9.76                      | 9.76                  | -0.46                 |
| 6711              | 79.95           | 0.89                  | 89               | 6280.4 | -371.21             | -343.81     | 550.42 | 648.97      | 121.99        | 7.13                      | 6.85                  | -402.49               |
| 6801              | 88.61           | 3.43                  | 90               | 6289.4 | -281.77             | -254.41     | 553.80 | 609.45      | 114.67        | 10.02                     | 9.62                  | 2.82                  |
| 6914              | 90.02           | 1.90                  | 113              | 6290.8 | -168.82             | -141.55     | 559.06 | 576.70      | 104.21        | 1.84                      | 1.25                  | -1.35                 |
| 7004              | 90.15           | 2.30                  | 90               | 6290.6 | -78.83              | -51.61      | 562.35 | 564.72      | 95.24         | 0.47                      | 0.14                  | 0.44                  |
| 7094              | 90.90           | 2.02                  | 90               | 6289.8 | 11.15               | 38.32       | 565.75 | 567.04      | 86.13         | 0.89                      | 0.83                  | -0.31                 |
| 7183              | 91.50           | 1.33                  | 89               | 6287.9 | 100.13              | 127.26      | 568.35 | 582.42      | 77.38         | 1.03                      | 0.67                  | -0.78                 |
| 7273              | 91.00           | 1.05                  | 90               | 6286.0 | 190.10              | 217.22      | 570.22 | 610.19      | 69.15         | 0.64                      | -0.56                 | -0.31                 |
| 7362              | 90.05           | 1.39                  | 89               | 6285.1 | 279.10              | 306.19      | 572.11 | 648.90      | 61.84         | 1.13                      | -1.07                 | 0.38                  |
| 7452              | 91.49           | 1.34                  | 90               | 6283.9 | 369.09              | 396.16      | 574.25 | 697.65      | 55.40         | 1.60                      | 1.60                  | -0.06                 |
| 7542              | 90.11           | 1.28                  | 90               | 6282.7 | 459.08              | 486.12      | 576.31 | 753.96      | 49.85         | 1.53                      | -1.53                 | -0.07                 |
| 7631              | 89.46           | 1.44                  | 89               | 6283.0 | 548.07              | 575.10      | 578.42 | 815.67      | 45.17         | 0.75                      | -0.73                 | 0.18                  |
| 7721              | 90.22           | 1.00                  | 90               | 6283.3 | 638.07              | 665.08      | 580.34 | 882.68      | 41.11         | 0.98                      | 0.84                  | -0.49                 |
| 7810              | 91.68           | 0.71                  | 89               | 6281.8 | 727.06              | 754.05      | 581.67 | 952.33      | 37.65         | 1.67                      | 1.64                  | -0.33                 |
| 7900              | 89.87           | 0.53                  | 90               | 6280.6 | 817.04              | 844.03      | 582.64 | 1025.60     | 34.62         | 2.02                      | -2.01                 | -0.20                 |
| 7990              | 89.19           | 1.67                  | 90               | 6281.3 | 907.04              | 934.01      | 584.37 | 1101.76     | 32.03         | 1.47                      | -0.76                 | 1.27                  |
| 8079              | 89.62           | 1.07                  | 89               | 6282.2 | 996.03              | 1022.98     | 586.50 | 1179.18     | 29.83         | 0.83                      | 0.48                  | -0.67                 |
| 8169              | 89.85           | 359.89                | 90               | 6282.7 | 1086.02             | 1112.98     | 587.25 | 1258.40     | 27.82         | 1.34                      | 0.26                  | 398.69                |
| 8259              | 89.78           | 358.10                | 90               | 6282.9 | 1175.95             | 1202.96     | 585.67 | 1337.95     | 25.96         | 1.99                      | -0.08                 | -1.99                 |
| 8348              | 89.44           | 358.15                | 89               | 6283.6 | 1264.83             | 1291.91     | 582.76 | 1417.26     | 24.28         | 0.39                      | -0.38                 | 0.06                  |
| 8438              | 89.97           | 0.05                  | 90               | 6284.0 | 1354.76             | 1381.89     | 581.35 | 1499.20     | 22.82         | 2.19                      | 0.59                  | -397.89               |
| 8527              | 89.64           | 1.23                  | 89               | 6284.3 | 1443.76             | 1470.88     | 582.34 | 1581.97     | 21.60         | 1.38                      | -0.37                 | 1.33                  |
| 8617              | 89.51           | 2.51                  | 90               | 6285.0 | 1533.75             | 1560.83     | 585.28 | 1666.96     | 20.55         | 1.43                      | -0.14                 | 1.42                  |
| 8707              | 90.14           | 2.88                  | 90               | 6285.3 | 1623.71             | 1650.73     | 589.51 | 1752.84     | 19.65         | 0.81                      | 0.70                  | 0.41                  |
| 8796              | 89.72           | 0.53                  | 89               | 6285.4 | 1712.70             | 1739.69     | 592.16 | 1837.70     | 18.80         | 2.68                      | -0.47                 | -2.64                 |
| 8886              | 89.47           | 2.33                  | 90               | 6286.0 | 1802.70             | 1829.65     | 594.40 | 1923.78     | 18.00         | 2.02                      | -0.28                 | 2.00                  |
| 8975              | 90.07           | 2.22                  | 89               | 6286.4 | 1891.68             | 1918.58     | 597.94 | 2009.60     | 17.31         | 0.69                      | 0.67                  | -0.12                 |
| 9065              | 89.90           | 0.33                  | 90               | 6286.4 | 1981.67             | 2008.55     | 599.94 | 2096.24     | 16.63         | 2.11                      | -0.19                 | -2.10                 |
| 9155              | 90.27           | 0.95                  | 90               | 6286.3 | 2071.67             | 2098.55     | 600.94 | 2182.90     | 15.98         | 0.80                      | 0.41                  | 0.69                  |
| 9244              | 89.85           | 2.47                  | 89               | 6286.2 | 2160.66             | 2187.50     | 603.60 | 2269.25     | 15.43         | 1.77                      | -0.47                 | 1.71                  |
| 9334              | 90.91           | 2.25                  | 90               | 6285.6 | 2250.64             | 2277.43     | 607.31 | 2357.01     | 14.93         | 1.20                      | 1.18                  | -0.24                 |
| 9424              | 91.87           | 1.66                  | 90               | 6283.4 | 2340.60             | 2367.34     | 610.37 | 2444.77     | 14.46         | 1.25                      | 1.07                  | -0.66                 |
| 9514              | 90.44           | 1.49                  | 90               | 6281.6 | 2430.58             | 2457.29     | 612.85 | 2532.56     | 14.00         | 1.60                      | -1.59                 | -0.19                 |
| 9603              | 89.55           | 2.24                  | 89               | 6281.6 | 2519.57             | 2546.24     | 615.74 | 2619.63     | 13.59         | 1.31                      | -1.00                 | 0.84                  |
| 9693              | 89.35           | 1.17                  | 90               | 6282.4 | 2609.56             | 2636.20     | 618.42 | 2707.76     | 13.20         | 1.21                      | -0.22                 | -1.19                 |
| 9783              | 89.24           | 2.56                  | 90               | 6283.5 | 2699.54             | 2726.14     | 621.35 | 2796.05     | 12.84         | 1.55                      | -0.12                 | 1.54                  |
| 9872              | 89.35           | 2.39                  | 89               | 6284.6 | 2788.51             | 2815.05     | 625.19 | 2883.64     | 12.52         | 0.23                      | 0.12                  | -0.19                 |
| 9962              | 90.15           | 1.08                  | 90               | 6285.0 | 2878.51             | 2905.00     | 627.92 | 2972.09     | 12.20         | 1.71                      | 0.89                  | -1.46                 |
| 10052             | 89.12           | 2.12                  | 90               | 6285.6 | 2968.50             | 2994.97     | 630.43 | 3060.60     | 11.89         | 1.63                      | -1.14                 | 1.16                  |
| 10141             | 89.37           | 1.55                  | 89               | 6286.8 | 3057.48             | 3083.91     | 633.28 | 3148.26     | 11.60         | 0.70                      | 0.28                  | -0.64                 |
| 10231             | 90.40           | 1.88                  | 90               | 6287.0 | 3147.48             | 3173.87     | 635.97 | 3236.96     | 11.33         | 1.20                      | 1.14                  | 0.37                  |

# Minimum Radius of Curvature

**API: 05-123-46649**      **Well: Cinnamon Teal 35-4HN**      **Wellhead Location N+/S- : 40.613060**  
**Operator: Bison IV Operating**      **Area: DJ**      **E+/W- : -104.061233**  
**Rig:**      **Type: U-Lateral**      **Magnetic Declination: 7.32**  
**TD: 16,944'**      **Plane of Proposal: 1.15**

| Measured Depth Ft | Drift Angle Deg | Azimuth Direction Deg | Course Length Ft | TVD Ft | Vertical Section Ft | COORDINATES |         | CLOSURE     |               | Dog Leg Severity Deg/100' | Build / Drop Deg/100' | Left / Right Deg/100' |
|-------------------|-----------------|-----------------------|------------------|--------|---------------------|-------------|---------|-------------|---------------|---------------------------|-----------------------|-----------------------|
|                   |                 |                       |                  |        |                     | N-S Ft      | E-W Ft  | Distance FT | Direction Deg |                           |                       |                       |
| 10320             | 91.24           | 1.40                  | 89               | 6285.7 | 3236.46             | 3262.82     | 638.52  | 3324.71     | 11.07         | 1.09                      | 0.94                  | -0.54                 |
| 10410             | 89.68           | 1.29                  | 90               | 6285.0 | 3326.46             | 3352.79     | 640.63  | 3413.45     | 10.82         | 1.74                      | -1.73                 | -0.12                 |
| 10499             | 90.19           | 0.69                  | 89               | 6285.1 | 3415.46             | 3441.78     | 642.17  | 3501.17     | 10.57         | 0.88                      | 0.57                  | -0.67                 |
| 10589             | 91.07           | 359.91                | 90               | 6284.1 | 3505.44             | 3531.77     | 642.64  | 3589.76     | 10.31         | 1.31                      | 0.98                  | 399.13                |
| 10679             | 92.72           | 359.72                | 90               | 6281.1 | 3595.36             | 3621.72     | 642.35  | 3678.24     | 10.06         | 1.85                      | 1.83                  | -0.21                 |
| 10768             | 91.13           | 348.46                | 89               | 6278.1 | 3683.49             | 3710.05     | 633.20  | 3763.70     | 9.69          | 12.77                     | -1.79                 | -12.65                |
| 10858             | 88.42           | 339.69                | 90               | 6278.5 | 3769.43             | 3796.50     | 608.54  | 3844.96     | 9.11          | 10.20                     | -3.01                 | -9.74                 |
| 10948             | 89.11           | 334.54                | 90               | 6280.4 | 3851.58             | 3879.37     | 573.56  | 3921.54     | 8.41          | 5.77                      | 0.77                  | -5.72                 |
| 11037             | 88.86           | 329.93                | 89               | 6282.0 | 3929.45             | 3958.09     | 532.12  | 3993.70     | 7.66          | 5.19                      | -0.28                 | -5.18                 |
| 11127             | 88.17           | 325.20                | 90               | 6284.3 | 4004.38             | 4034.00     | 483.88  | 4062.92     | 6.84          | 5.31                      | -0.77                 | -5.26                 |
| 11217             | 89.08           | 320.42                | 90               | 6286.5 | 4074.93             | 4105.66     | 429.51  | 4128.06     | 5.97          | 5.40                      | 1.01                  | -5.31                 |
| 11306             | 89.68           | 315.20                | 89               | 6287.4 | 4139.64             | 4171.57     | 369.76  | 4187.93     | 5.07          | 5.90                      | 0.67                  | -5.87                 |
| 11396             | 89.05           | 310.11                | 90               | 6288.4 | 4199.25             | 4232.53     | 303.59  | 4243.40     | 4.10          | 5.70                      | -0.70                 | -5.66                 |
| 11485             | 89.81           | 304.82                | 89               | 6289.3 | 4251.94             | 4286.64     | 232.98  | 4292.97     | 3.11          | 6.00                      | 0.85                  | -5.94                 |
| 11575             | 89.26           | 299.16                | 90               | 6290.0 | 4298.06             | 4334.30     | 156.68  | 4337.13     | 2.07          | 6.32                      | -0.61                 | -6.29                 |
| 11664             | 89.15           | 290.28                | 89               | 6291.3 | 4333.61             | 4371.48     | 75.93   | 4372.14     | 1.00          | 9.98                      | -0.12                 | -9.98                 |
| 11754             | 91.05           | 280.17                | 90               | 6291.1 | 4355.46             | 4395.08     | -10.80  | 4395.10     | 359.86        | 11.43                     | 2.11                  | -11.23                |
| 11844             | 90.59           | 269.16                | 90               | 6289.8 | 4360.97             | 4402.39     | -100.35 | 4403.53     | 358.69        | 12.24                     | -0.51                 | -12.23                |
| 11933             | 90.87           | 261.25                | 89               | 6288.7 | 4351.76             | 4394.96     | -188.96 | 4399.02     | 357.54        | 8.89                      | 0.31                  | -8.89                 |
| 12023             | 91.52           | 254.01                | 90               | 6286.8 | 4330.74             | 4375.70     | -276.80 | 4384.44     | 356.38        | 8.08                      | 0.72                  | -8.04                 |
| 12112             | 90.57           | 247.28                | 89               | 6285.2 | 4299.59             | 4346.22     | -360.70 | 4361.16     | 355.26        | 7.64                      | -1.07                 | -7.56                 |
| 12202             | 91.62           | 241.34                | 90               | 6283.5 | 4258.98             | 4307.23     | -441.75 | 4329.82     | 354.14        | 6.70                      | 1.17                  | -6.60                 |
| 12292             | 90.99           | 236.25                | 90               | 6281.4 | 4210.84             | 4260.63     | -518.69 | 4292.09     | 353.06        | 5.70                      | -0.70                 | -5.66                 |
| 12381             | 90.31           | 231.66                | 89               | 6280.4 | 4157.06             | 4208.28     | -590.62 | 4249.52     | 352.01        | 5.21                      | -0.76                 | -5.16                 |
| 12471             | 90.17           | 226.71                | 90               | 6280.0 | 4096.90             | 4149.47     | -658.72 | 4201.43     | 350.98        | 5.50                      | -0.16                 | -5.50                 |
| 12560             | 87.48           | 218.97                | 89               | 6281.9 | 4030.51             | 4084.28     | -719.17 | 4147.11     | 350.01        | 9.20                      | -3.02                 | -8.70                 |
| 12650             | 88.11           | 211.33                | 90               | 6285.3 | 3956.01             | 4010.80     | -770.91 | 4084.22     | 349.12        | 8.51                      | 0.70                  | -8.49                 |
| 12739             | 88.91           | 202.27                | 89               | 6287.6 | 3875.89             | 3931.47     | -810.98 | 4014.24     | 348.34        | 10.22                     | 0.90                  | -10.18                |
| 12829             | 89.07           | 194.20                | 90               | 6289.2 | 3789.94             | 3846.08     | -839.11 | 3936.55     | 347.69        | 8.97                      | 0.18                  | -8.97                 |
| 12918             | 89.56           | 187.01                | 89               | 6290.3 | 3702.22             | 3758.66     | -855.48 | 3854.78     | 347.18        | 8.10                      | 0.55                  | -8.08                 |
| 13008             | 89.45           | 186.13                | 90               | 6291.1 | 3612.62             | 3669.25     | -865.78 | 3770.01     | 346.72        | 0.99                      | -0.12                 | -0.98                 |
| 13098             | 89.59           | 185.28                | 90               | 6291.8 | 3522.91             | 3579.70     | -874.72 | 3685.03     | 346.27        | 0.96                      | 0.16                  | -0.94                 |
| 13187             | 88.17           | 183.20                | 89               | 6293.6 | 3434.07             | 3490.97     | -881.30 | 3600.50     | 345.83        | 2.83                      | -1.60                 | -2.34                 |
| 13277             | 86.27           | 182.89                | 90               | 6297.9 | 3344.22             | 3401.21     | -886.08 | 3514.73     | 345.40        | 2.14                      | -2.11                 | -0.34                 |
| 13366             | 85.63           | 181.37                | 89               | 6304.2 | 3255.46             | 3312.50     | -889.38 | 3429.81     | 344.97        | 1.85                      | -0.72                 | -1.71                 |
| 13456             | 85.94           | 180.35                | 90               | 6310.8 | 3165.71             | 3222.75     | -890.72 | 3343.58     | 344.55        | 1.18                      | 0.34                  | -1.13                 |
| 13546             | 84.97           | 181.16                | 90               | 6318.0 | 3076.00             | 3133.04     | -891.90 | 3257.52     | 344.11        | 1.40                      | -1.08                 | 0.90                  |
| 13635             | 85.08           | 181.34                | 89               | 6325.7 | 2987.33             | 3044.40     | -893.84 | 3172.90     | 343.64        | 0.24                      | 0.12                  | 0.20                  |
| 13725             | 84.79           | 181.32                | 90               | 6333.6 | 2897.68             | 2954.78     | -895.92 | 3087.62     | 343.13        | 0.32                      | -0.32                 | -0.02                 |
| 13814             | 84.69           | 181.33                | 89               | 6341.8 | 2809.06             | 2866.17     | -897.97 | 3003.55     | 342.60        | 0.11                      | -0.11                 | 0.01                  |
| 13904             | 84.63           | 181.71                | 90               | 6350.2 | 2719.45             | 2776.60     | -900.35 | 2918.92     | 342.03        | 0.43                      | -0.07                 | 0.42                  |
| 13993             | 84.28           | 181.83                | 89               | 6358.8 | 2630.87             | 2688.06     | -903.08 | 2835.70     | 341.43        | 0.42                      | -0.39                 | 0.13                  |
| 14083             | 84.59           | 181.85                | 90               | 6367.5 | 2541.30             | 2598.53     | -905.96 | 2751.93     | 340.78        | 0.35                      | 0.34                  | 0.02                  |
| 14172             | 84.65           | 181.61                | 89               | 6375.8 | 2452.70             | 2509.96     | -908.63 | 2669.36     | 340.10        | 0.28                      | 0.07                  | -0.27                 |
| 14262             | 83.84           | 181.68                | 90               | 6384.9 | 2363.16             | 2420.45     | -911.20 | 2586.28     | 339.37        | 0.90                      | -0.90                 | 0.08                  |
| 14352             | 84.65           | 180.90                | 90               | 6393.9 | 2273.61             | 2330.93     | -913.22 | 2503.44     | 338.61        | 1.25                      | 0.90                  | -0.87                 |
| 14441             | 86.47           | 180.84                | 89               | 6400.8 | 2184.89             | 2242.21     | -914.57 | 2421.56     | 337.81        | 2.05                      | 2.04                  | -0.07                 |
| 14531             | 88.31           | 180.66                | 90               | 6404.9 | 2094.98             | 2152.31     | -915.74 | 2339.03     | 336.95        | 2.05                      | 2.04                  | -0.20                 |
| 14621             | 90.27           | 180.97                | 90               | 6406.0 | 2005.00             | 2062.33     | -917.02 | 2257.02     | 336.03        | 2.20                      | 2.18                  | 0.34                  |
| 14710             | 90.34           | 181.83                | 89               | 6405.5 | 1916.00             | 1973.36     | -919.20 | 2176.94     | 335.02        | 0.97                      | 0.08                  | 0.97                  |
| 14800             | 91.26           | 181.56                | 90               | 6404.3 | 1826.01             | 1883.41     | -921.86 | 2096.92     | 333.92        | 1.07                      | 1.02                  | -0.30                 |
| 14889             | 90.22           | 181.33                | 89               | 6403.1 | 1737.02             | 1794.45     | -924.10 | 2018.42     | 332.75        | 1.20                      | -1.17                 | -0.26                 |
| 14979             | 90.00           | 179.73                | 90               | 6402.9 | 1647.03             | 1704.46     | -924.94 | 1939.25     | 331.51        | 1.79                      | -0.24                 | -1.78                 |
| 15069             | 90.11           | 177.92                | 90               | 6402.9 | 1557.11             | 1614.48     | -923.09 | 1859.74     | 330.24        | 2.01                      | 0.12                  | -2.01                 |
| 15158             | 89.04           | 179.22                | 89               | 6403.5 | 1468.21             | 1525.51     | -920.87 | 1781.91     | 328.88        | 1.89                      | -1.20                 | 1.46                  |
| 15248             | 88.57           | 182.35                | 90               | 6405.4 | 1378.24             | 1435.55     | -922.10 | 1706.19     | 327.29        | 3.52                      | -0.52                 | 3.48                  |
| 15337             | 90.04           | 181.47                | 89               | 6406.5 | 1289.26             | 1346.61     | -925.07 | 1633.74     | 325.51        | 1.92                      | 1.65                  | -0.99                 |
| 15427             | 89.88           | 181.21                | 90               | 6406.5 | 1199.26             | 1256.64     | -927.17 | 1561.66     | 323.58        | 0.34                      | -0.18                 | -0.29                 |

## Minimum Radius of Curvature

**API: 05-123-46649**      **Well: Cinnamon Teal 35-4HN**      **Wellhead Location N+/S- : 40.613060**  
**Operator: Bison IV Operating**      **Area: DJ**      **E+/W- : -104.061233**  
**Rig:**      **Type: U-Lateral**      **Magnetic Declination: 7.32**  
**TD: 16,944'**      **Plane of Proposal: 1.15**

| Measured Depth Ft | Drift Angle Deg | Azimuth Direction Deg | Course Length Ft | TVD Ft | Vertical Section Ft | COORDINATES |          | CLOSURE     |               | Dog Leg Severity Deg/100' | Build / Drop Deg/100' | Left / Right Deg/100' |
|-------------------|-----------------|-----------------------|------------------|--------|---------------------|-------------|----------|-------------|---------------|---------------------------|-----------------------|-----------------------|
|                   |                 |                       |                  |        |                     | N-S Ft      | E-W Ft   | Distance FT | Direction Deg |                           |                       |                       |
| 15517             | 90.29           | 180.03                | 90               | 6406.4 | 1109.26             | 1166.64     | -928.15  | 1490.81     | 321.50        | 1.39                      | 0.46                  | -1.31                 |
| 15606             | 90.68           | 180.17                | 89               | 6405.6 | 1020.28             | 1077.65     | -928.30  | 1422.34     | 319.26        | 0.47                      | 0.44                  | 0.16                  |
| 15696             | 91.06           | 178.66                | 90               | 6404.3 | 930.34              | 987.66      | -927.38  | 1354.81     | 316.80        | 1.73                      | 0.42                  | -1.68                 |
| 15785             | 90.74           | 180.88                | 89               | 6402.9 | 841.38              | 898.68      | -927.03  | 1291.13     | 314.11        | 2.52                      | -0.36                 | 2.49                  |
| 15875             | 90.60           | 175.88                | 90               | 6401.8 | 751.52              | 808.75      | -924.48  | 1228.31     | 311.18        | 5.56                      | -0.16                 | -5.56                 |
| 15964             | 90.69           | 176.05                | 89               | 6400.8 | 662.89              | 719.98      | -918.22  | 1166.83     | 308.10        | 0.22                      | 0.10                  | 0.19                  |
| 16054             | 90.21           | 177.79                | 90               | 6400.1 | 573.14              | 630.11      | -913.39  | 1109.65     | 304.60        | 2.01                      | -0.53                 | 1.93                  |
| 16143             | 90.85           | 183.03                | 89               | 6399.3 | 484.18              | 541.15      | -914.02  | 1062.21     | 300.63        | 5.93                      | 0.72                  | 5.89                  |
| 16233             | 91.25           | 182.31                | 90               | 6397.6 | 394.23              | 451.27      | -918.21  | 1023.11     | 296.17        | 0.92                      | 0.44                  | -0.80                 |
| 16322             | 91.82           | 182.24                | 89               | 6395.3 | 305.28              | 362.37      | -921.74  | 990.42      | 291.46        | 0.65                      | 0.64                  | -0.08                 |
| 16412             | 90.70           | 184.40                | 90               | 6393.3 | 215.37              | 272.55      | -926.96  | 966.19      | 286.38        | 2.70                      | -1.24                 | 2.40                  |
| 16502             | 90.58           | 188.37                | 90               | 6392.3 | 125.77              | 183.13      | -936.96  | 954.69      | 281.06        | 4.41                      | -0.13                 | 4.41                  |
| 16591             | 90.64           | 191.32                | 89               | 6391.3 | 37.81               | 95.45       | -952.18  | 956.95      | 275.72        | 3.32                      | 0.07                  | 3.31                  |
| 16639             | 91.09           | 191.51                | 48               | 6390.6 | -9.42               | 48.41       | -961.68  | 962.89      | 272.88        | 1.02                      | 0.94                  | 0.40                  |
| 16681             | 91.09           | 189.14                | 42               | 6389.8 | -50.87              | 7.10        | -969.20  | 969.23      | 270.42        | 5.64                      | 0.00                  | -5.64                 |
| 16771             | 90.52           | 186.81                | 90               | 6388.5 | -140.22             | -82.01      | -981.69  | 985.11      | 265.22        | 2.66                      | -0.63                 | -2.59                 |
| 16860             | 90.72           | 186.15                | 89               | 6387.6 | -228.83             | -170.44     | -991.73  | 1006.27     | 260.25        | 0.77                      | 0.22                  | -0.74                 |
| 16881             | 91.05           | 185.62                | 21               | 6387.3 | -249.75             | -191.33     | -993.88  | 1012.13     | 259.10        | 2.97                      | 1.57                  | -2.52                 |
| 16944             | 91.05           | 185.62                | 63               | 6386.1 | -312.55             | -254.01     | -1000.05 | 1031.81     | 255.75        | 0.00                      | 0.00                  | 0.00                  |