

**TEXACO**  
Denver Region

V.G.W.U. # 60  
Estimate: 695003

36-175-34e  
B - 99°N 4 2308/E  
BHL = A - 789°N 4 1060/E

30-025-30716  
© 1999 Texaco Inc. - All Rights Reserved  
**SURVEY REPORT**  
Proprietary Information of Texaco Inc.



| Lateral: 0     |             | Proposed Direction: 80.9 |                     |                        |                      | Dog Leg Severity per: 100 feet |                  |             |
|----------------|-------------|--------------------------|---------------------|------------------------|----------------------|--------------------------------|------------------|-------------|
| Measured Depth | Inclination | Azimuth                  | True Vertical Depth | North/South Coordinate | East/West Coordinate | Vertical Section               | Dog Leg Severity | Survey Tool |
| 0              | 0.00        | 0.00                     | 0.00                | 0.00                   | 0.00                 | 0.00                           | 0.000            |             |
| 100            | 0.40        | 323.37                   | 100.00              | 0.28                   | -0.21                | -0.16                          | 0.40             |             |
| 200            | 0.04        | 12.78                    | 200.00              | 0.59                   | -0.41                | -0.31                          | 0.38             |             |
| 300            | 0.19        | 15.89                    | 300.00              | 0.79                   | -0.36                | -0.23                          | 0.15             |             |
| 400            | 0.20        | 7.38                     | 400.00              | 1.12                   | -0.29                | -0.11                          | 0.03             |             |
| 500            | 0.07        | 11.83                    | 500.00              | 1.35                   | -0.25                | -0.04                          | 0.13             |             |
| 600            | 0.06        | 8.35                     | 600.00              | 1.46                   | -0.23                | 0.00                           | 0.01             |             |
| 700            | 0.03        | 85.98                    | 700.00              | 1.52                   | -0.20                | 0.04                           | 0.06             |             |
| 800            | 0.16        | 184.98                   | 800.00              | 1.38                   | -0.19                | 0.04                           | 0.17             |             |
| 900            | 0.27        | 183.18                   | 900.00              | 1.01                   | -0.21                | -0.05                          | 0.11             |             |
| 1000           | 0.31        | 190.22                   | 1000.00             | 0.51                   | -0.27                | -0.19                          | 0.05             | GYRO        |
| 1100           | 0.34        | 188.91                   | 1099.99             | -0.05                  | -0.37                | -0.37                          | 0.03             |             |
| 1200           | 0.30        | 216.94                   | 1199.99             | -0.56                  | -0.57                | -0.65                          | 0.16             |             |
| 1300           | 0.20        | 267.50                   | 1299.99             | -0.77                  | -0.90                | -1.01                          | 0.23             |             |
| 1400           | 0.14        | 195.28                   | 1399.99             | -0.90                  | -1.11                | -1.24                          | 0.21             |             |
| 1500           | 0.36        | 202.09                   | 1499.99             | -1.31                  | -1.26                | -1.45                          | 0.22             |             |
| 1600           | 0.34        | 223.04                   | 1599.99             | -1.82                  | -1.58                | -1.85                          | 0.13             |             |
| 1700           | 0.10        | 102.94                   | 1699.99             | -2.05                  | -1.70                | -2.00                          | 0.40             |             |
| 1800           | 0.12        | 209.99                   | 1799.99             | -2.16                  | -1.66                | -1.98                          | 0.18             |             |
| 1900           | 0.09        | 197.89                   | 1899.99             | -2.33                  | -1.74                | -2.09                          | 0.04             |             |
| 2000           | 0.18        | 99.06                    | 1999.99             | -2.43                  | -1.61                | -1.97                          | 0.21             | GYRO        |
| 2100           | 0.26        | 29.81                    | 2099.99             | -2.26                  | -1.34                | -1.68                          | 0.26             |             |
| 2200           | 0.24        | 80.28                    | 2199.99             | -2.02                  | -1.02                | -1.33                          | 0.21             |             |
| 2300           | 0.40        | 81.63                    | 2299.98             | -1.94                  | -0.47                | -0.77                          | 0.16             |             |
| 2400           | 0.52        | 52.47                    | 2399.98             | -1.61                  | 0.24                 | -0.02                          | 0.26             |             |
| 2500           | 0.50        | 45.14                    | 2499.98             | -1.03                  | 0.91                 | 0.73                           | 0.07             |             |
| 2600           | 0.77        | 60.25                    | 2599.97             | -0.38                  | 1.80                 | 1.71                           | 0.32             |             |
| 2700           | 0.94        | 43.19                    | 2699.96             | 0.55                   | 2.94                 | 2.99                           | 0.30             |             |
| 2800           | 0.74        | 48.77                    | 2799.95             | 1.57                   | 3.99                 | 4.19                           | 0.22             |             |
| 2900           | 0.80        | 63.07                    | 2899.94             | 2.31                   | 5.10                 | 5.40                           | 0.20             |             |
| 3000           | 0.82        | 44.66                    | 2999.93             | 3.14                   | 6.22                 | 6.64                           | 0.26             | GYRO        |
| 3100           | 0.59        | 58.52                    | 3099.92             | 3.92                   | 7.17                 | 7.69                           | 0.28             |             |
| 3200           | 0.65        | 10.92                    | 3199.92             | 4.74                   | 7.71                 | 8.36                           | 0.50             |             |
| 3300           | 0.61        | 22.72                    | 3299.91             | 5.79                   | 8.02                 | 8.84                           | 0.14             |             |
| 3400           | 0.52        | 345.48                   | 3399.91             | 6.72                   | 8.12                 | 9.08                           | 0.37             |             |
| 3500           | 0.70        | 337.04                   | 3499.90             | 7.72                   | 7.76                 | 8.89                           | 0.20             |             |
| 3600           | 0.75        | 345.94                   | 3599.89             | 8.92                   | 7.37                 | 8.69                           | 0.12             |             |
| 3700           | 0.69        | 339.90                   | 3699.89             | 10.12                  | 7.00                 | 8.51                           | 0.10             |             |
| 3800           | 0.55        | 328.75                   | 3799.88             | 11.10                  | 6.55                 | 8.22                           | 0.18             |             |
| 3900           | 0.66        | 316.19                   | 3899.87             | 11.92                  | 5.90                 | 7.71                           | 0.17             |             |
| 4000           | 0.65        | 314.71                   | 3999.87             | 12.74                  | 5.10                 | 7.05                           | 0.02             | GYRO        |
| 4100           | 0.61        | 311.51                   | 4099.86             | 13.49                  | 4.29                 | 6.37                           | 0.05             |             |
| 4200           | 0.77        | 310.42                   | 4199.85             | 14.28                  | 3.38                 | 5.60                           | 0.16             |             |
| 4300           | 0.70        | 322.21                   | 4299.85             | 15.19                  | 2.50                 | 4.87                           | 0.17             |             |
| 4400           | 0.74        | 330.15                   | 4399.84             | 16.24                  | 1.80                 | 4.35                           | 0.11             |             |
| 4500           | 0.73        | 337.04                   | 4499.83             | 17.38                  | 1.23                 | 3.97                           | 0.09             |             |
| 4600           | 0.72        | 357.90                   | 4599.82             | 18.60                  | 0.96                 | 3.89                           | 0.26             |             |
| 4700           | 0.81        | 0.25                     | 4699.81             | 19.93                  | 0.94                 | 4.08                           | 0.10             |             |
| 4800           | 0.99        | 6.66                     | 4799.80             | 21.50                  | 1.04                 | 4.43                           | 0.21             |             |
| 4900           | 1.17        | 12.81                    | 4899.78             | 23.35                  | 1.37                 | 5.05                           | 0.21             |             |
| 5000           | 1.18        | 15.93                    | 4999.76             | 25.34                  | 1.88                 | 5.86                           | 0.06             | GYRO        |
| 5100           | 1.22        | 7.76                     | 5099.74             | 27.38                  | 2.31                 | 6.61                           | 0.18             |             |



|      |       |        |         |        |         |         |       |            |
|------|-------|--------|---------|--------|---------|---------|-------|------------|
| 5200 | 1.28  | 3.05   | 5199.72 | 29.55  | 2.51    | 7.15    | 0.12  |            |
| 5300 | 1.06  | 353.84 | 5299.70 | 31.59  | 2.47    | 7.43    | 0.29  |            |
| 5400 | 1.17  | 4.37   | 5399.68 | 33.53  | 2.45    | 7.72    | 0.23  |            |
| 5500 | 0.81  | 353.44 | 5499.66 | 35.25  | 2.45    | 7.99    | 0.40  |            |
| 5600 | 1.13  | 336.15 | 5599.65 | 36.85  | 1.97    | 7.77    | 0.43  |            |
| 5700 | 1.19  | 359.34 | 5699.63 | 38.79  | 1.56    | 7.67    | 0.47  |            |
| 5800 | 1.05  | 354.49 | 5799.61 | 40.74  | 1.46    | 7.88    | 0.17  |            |
| 5875 | 1.28  | 340.38 | 5874.49 | 42.21  | 1.11    | 7.77    | 0.49  | GYRO       |
| 5875 | 1.28  | 340.38 | 5874.59 | 42.21  | 1.11    | 7.77    | 0.49  | GYRO       |
| 5925 | 11.80 | 80.10  | 5924.24 | 43.62  | 5.97    | 12.80   | 24.16 |            |
| 5957 | 28.00 | 82.10  | 5954.23 | 45.23  | 16.71   | 23.65   | 50.66 |            |
| 5988 | 44.50 | 83.80  | 5979.15 | 47.42  | 34.84   | 41.90   | 53.32 |            |
| 6020 | 61.50 | 83.60  | 5998.33 | 50.22  | 60.15   | 67.34   | 53.13 |            |
| 6049 | 77.20 | 80.20  | 6008.53 | 54.07  | 86.92   | 94.38   | 55.23 |            |
| 6055 | 80.20 | 83.60  | 6009.76 | 53.89  | 92.86   | 100.22  | 53.43 |            |
| 6080 | 84.60 | 80.30  | 6013.43 | 59.25  | 117.07  | 124.97  | 23.87 |            |
| 6112 | 86.30 | 80.30  | 6015.97 | 64.62  | 148.51  | 156.86  | 5.31  |            |
| 6144 | 86.80 | 80.40  | 6017.89 | 69.98  | 180.00  | 188.80  | 1.59  |            |
| 6175 | 87.20 | 80.70  | 6019.52 | 75.06  | 210.54  | 219.76  | 1.61  |            |
| 6207 | 86.60 | 80.80  | 6021.25 | 80.20  | 242.08  | 251.71  | 1.90  |            |
| 6239 | 86.60 | 80.90  | 6023.15 | 85.28  | 273.61  | 283.66  | 0.31  |            |
| 6270 | 87.70 | 81.50  | 6024.69 | 90.01  | 304.21  | 314.62  | 4.04  |            |
| 6301 | 90.00 | 82.30  | 6025.31 | 94.38  | 334.89  | 345.61  | 7.86  |            |
| 6333 | 90.10 | 82.80  | 6025.28 | 98.53  | 366.62  | 377.59  | 1.59  |            |
| 6364 | 88.40 | 82.80  | 6025.69 | 102.41 | 397.37  | 408.57  | 5.48  |            |
| 6396 | 88.30 | 82.30  | 6026.61 | 106.56 | 429.09  | 440.54  | 1.59  |            |
| 6399 | 88.90 | 83.00  | 6026.51 | 106.74 | 432.10  | 443.54  | 1.54  | PROJECTION |
| 6428 | 86.20 | 81.60  | 6028.14 | 111.04 | 460.74  | 472.50  | 6.92  |            |
| 6459 | 86.70 | 81.70  | 6030.06 | 115.53 | 491.35  | 503.44  | 1.64  |            |
| 6491 | 89.80 | 82.20  | 6031.04 | 120.01 | 523.02  | 535.41  | 9.81  |            |
| 6522 | 90.90 | 82.40  | 6030.85 | 124.16 | 553.74  | 566.40  | 3.61  |            |
| 6553 | 90.60 | 82.30  | 6030.44 | 128.29 | 584.46  | 597.39  | 1.02  |            |
| 6584 | 89.30 | 82.20  | 6030.47 | 132.47 | 615.17  | 628.38  | 4.21  |            |
| 6612 | 88.20 | 82.40  | 6031.08 | 136.22 | 642.91  | 656.37  | 3.99  |            |
| 6648 | 88.80 | 82.50  | 6032.02 | 140.95 | 678.59  | 692.34  | 1.69  |            |
| 6678 | 90.20 | 82.60  | 6032.29 | 144.84 | 708.33  | 722.33  | 4.68  |            |
| 6710 | 90.70 | 82.30  | 6032.04 | 149.04 | 740.06  | 754.31  | 1.82  |            |
| 6740 | 90.60 | 82.00  | 6031.70 | 153.14 | 769.77  | 784.30  | 1.05  |            |
| 6771 | 87.90 | 81.60  | 6032.10 | 157.56 | 800.45  | 815.29  | 8.80  |            |
| 6803 | 87.90 | 81.30  | 6033.27 | 162.31 | 832.07  | 847.27  | 0.94  |            |
| 6835 | 88.90 | 81.30  | 6034.17 | 167.15 | 863.69  | 879.26  | 3.13  |            |
| 6867 | 91.50 | 82.70  | 6034.06 | 171.60 | 895.38  | 911.25  | 9.23  |            |
| 6898 | 89.20 | 82.50  | 6033.87 | 175.60 | 926.12  | 942.23  | 7.45  |            |
| 6930 | 88.80 | 82.20  | 6034.42 | 179.86 | 957.83  | 974.22  | 1.56  |            |
| 6962 | 90.90 | 84.60  | 6034.51 | 183.53 | 989.61  | 1006.18 | 9.97  |            |
| 6997 | 90.30 | 85.30  | 6034.14 | 186.61 | 1024.47 | 1041.09 | 2.63  |            |
| 7025 | 91.60 | 85.30  | 6033.68 | 188.91 | 1052.37 | 1069.01 | 4.64  |            |
| 7057 | 91.60 | 85.70  | 6032.78 | 191.42 | 1084.26 | 1100.89 | 1.25  |            |
| 7089 | 92.60 | 86.30  | 6031.61 | 193.65 | 1116.16 | 1132.74 | 3.64  |            |
| 7121 | 93.20 | 86.40  | 6029.99 | 195.68 | 1148.06 | 1164.56 | 1.90  |            |
| 7152 | 93.90 | 86.50  | 6028.07 | 197.60 | 1178.94 | 1195.35 | 2.28  |            |
| 7184 | 93.80 | 86.90  | 6025.92 | 199.44 | 1210.81 | 1227.12 | 1.29  |            |
| 7221 | 93.80 | 86.90  | 6023.47 | 201.43 | 1247.68 | 1263.83 | 0.00  |            |