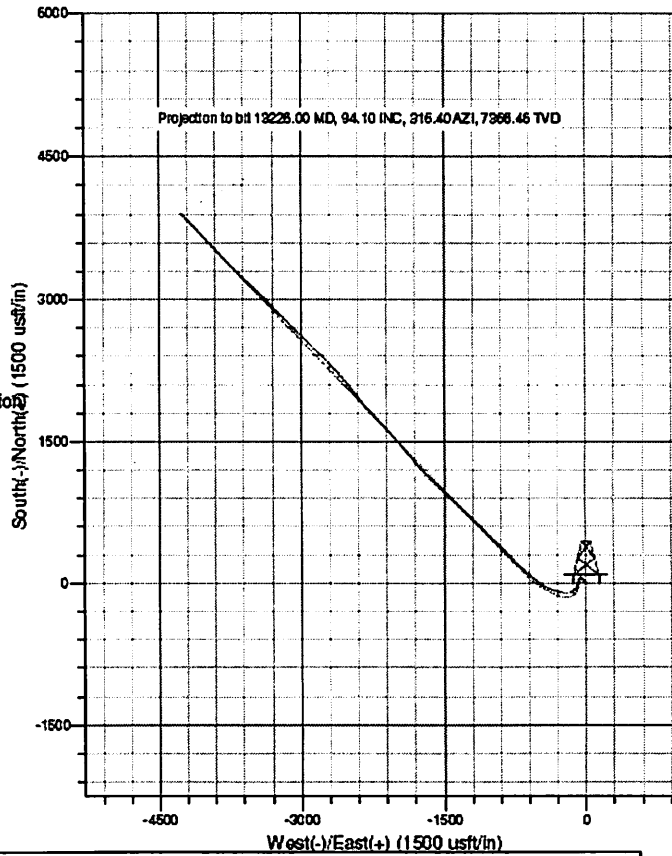
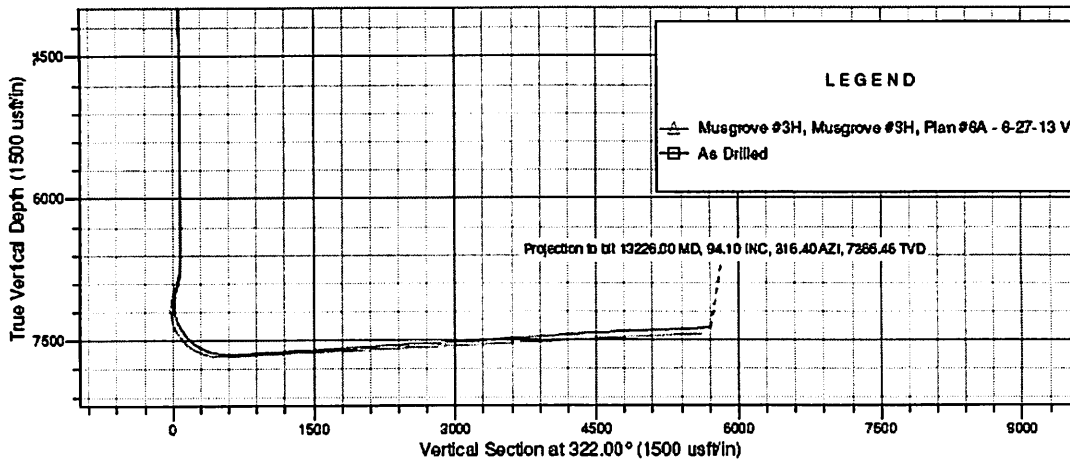


**PROJECT DETAILS: Taylor County, WV**  
 Geodetic System: US State Plane 1927 (Exact solution)  
 Datum: NAD 1927 (NADCON CONUS)  
 Ellipsoid: Clarke 1866  
 Zone: West Virginia North 4701  
 System Datum: Mean Sea Level



**WELL DETAILS: Musgrove #3H**

| +N/-S | +E/-W | Northing    | Easting      | Ground Level: | Latitude       | Longitude     |
|-------|-------|-------------|--------------|---------------|----------------|---------------|
| 0.00  | 0.00  | 312510.5354 | 1833594.6800 | 1415.00       | 39°21'23.508 N | 80°5'18.564 W |



**LEGEND**

- ▲ Musgrove #3H, Musgrove #3H, Plan #6A - 6-27-13 V0
- As Drilled

Musgrove 3H Surveys

Job Number: DR130115  
 Company: Triana Energy  
 Lease/Well: Musgrove 3H  
 Location: Taylor County  
 C:\WINSERVE\MUSGRO~1.SVY  
 Rig Name: Pioneer 59

State/Country: WV  
 Declination:  
 Grid:  
 File name:  
 Date/Time: 04-Jul-13 / 21:36  
 Curve Name: Musgrove 3H - As

RKB:  
 Drilled  
 G.L. or M.S.L.:

Directional Drilling Contractors

WINSERVE SURVEY CALCULATIONS

Minimum Curvature Method

Vertical Section Plane 312.43

Vertical Section Referenced to offset from wellhead: EW =.00 Ft , NS=.00

Ft

Rectangular Coordinates Referenced to wellhead

| Measured<br>CLOSURE<br>Depth<br>Distance<br>FT | Incl<br>CLOSURE<br>Angle<br>Direction<br>Deg | Drift<br>Dogleg<br>Direction<br>Severity<br>Deg | True<br>Vertical<br>Depth | N-S<br>FT | E-W<br>FT | Vertical<br>Section<br>FT | FT    |
|--|--|---|---------------------------|-----------|-----------|---------------------------|-------|
| .00  | .00  | .00   | .00                       | .00       | .00       | .00                       |       |
| 2.65   | 234.00                                       | 1.30  | 312.89                    | 233.98    | 1.81      | -1.94                     | 2.65  |
| 7.03   | 481.00                                       | .80   | 284.89                    | 480.94    | 4.16      | -5.66                     | 6.99  |
| 9.57   | 733.00                                       | .40   | 302.79                    | 732.93    | 5.09      | -8.10                     | 9.41  |
| 12.42  | 1012.00                                      | .79   | 314.81                    | 1011.91   | 6.97      | -10.29                    | 12.29 |
| 13.66  | 1092.00                                      | 1.01  | 314.00                    | 1091.90   | 7.85      | -11.19                    | 13.55 |
| 14.80  | 1157.00                                      | 1.01  | 314.20                    | 1156.89   | 8.64      | -12.01                    | 14.70 |
| 15.92  | 1219.00                                      | 1.10  | 315.78                    | 1218.88   | 9.45      | -12.82                    | 15.84 |

Musgrove 3H Surveys

|              |      |        |         |       |        |       |
|--------------|------|--------|---------|-------|--------|-------|
| 1282.00      | 1.19 | 319.37 | 1281.87 | 10.38 | -13.66 | 17.09 |
| 17.16 307.23 |      | .18    |         |       |        |       |
| 1345.00      | 1.19 | 317.89 | 1344.85 | 11.36 | -14.53 | 18.39 |
| 18.44 308.03 |      | .05    |         |       |        |       |
| 1408.00      | 1.19 | 313.67 | 1407.84 | 12.30 | -15.44 | 19.69 |
| 19.74 308.54 |      | .14    |         |       |        |       |
| 1471.00      | 1.32 | 319.78 | 1470.82 | 13.31 | -16.38 | 21.07 |
| 21.10 309.09 |      | .30    |         |       |        |       |
| 1535.00      | 1.32 | 319.91 | 1534.81 | 14.43 | -17.33 | 22.53 |
| 22.55 309.79 |      | .00    |         |       |        |       |
| 1598.00      | 1.49 | 321.27 | 1597.79 | 15.63 | -18.31 | 24.06 |
| 24.07 310.48 |      | .27    |         |       |        |       |
| 1661.00      | 1.58 | 322.37 | 1660.77 | 16.95 | -19.35 | 25.72 |
| 25.73 311.22 |      | .15    |         |       |        |       |
| 1725.00      | 1.71 | 318.19 | 1724.74 | 18.36 | -20.53 | 27.54 |
| 27.54 311.81 |      | .28    |         |       |        |       |
| 1788.00      | 1.80 | 320.88 | 1787.71 | 19.83 | -21.78 | 29.46 |
| 29.46 312.32 |      | .19    |         |       |        |       |
| 1851.00      | 1.89 | 325.01 | 1850.68 | 21.45 | -23.00 | 31.45 |
| 31.45 313.00 |      | .25    |         |       |        |       |
| 1915.00      | 1.49 | 321.01 | 1914.65 | 22.96 | -24.13 | 33.30 |
| 33.31 313.58 |      | .65    |         |       |        |       |
| 1978.00      | 1.19 | 326.10 | 1977.63 | 24.14 | -25.01 | 34.75 |
| 34.76 313.99 |      | .51    |         |       |        |       |
| 2041.00      | 1.19 | 318.59 | 2040.62 | 25.18 | -25.81 | 36.03 |
| 36.05 314.29 |      | .25    |         |       |        |       |
| 2105.00      | .88  | 320.61 | 2104.61 | 26.05 | -26.56 | 37.18 |
| 37.20 314.45 |      | .49    |         |       |        |       |
| 2168.00      | .88  | 321.58 | 2167.60 | 26.81 | -27.17 | 38.14 |
| 38.17 314.62 |      | .02    |         |       |        |       |
| 2232.00      | .70  | 324.61 | 2231.59 | 27.51 | -27.70 | 39.01 |
| 39.04 314.81 |      | .29    |         |       |        |       |
| 2295.00      | .70  | 324.08 | 2294.59 | 28.14 | -28.15 | 39.76 |
| 39.80 314.99 |      | .01    |         |       |        |       |

Musgrove 3H Surveys

| Measured<br>CLOSURE<br>Depth<br>Distance<br>FT | Incl<br>CLOSURE<br>Angle<br>Direction<br>Deg | Drift<br>Dogleg<br>Direction<br>Severity<br>Deg | True<br>Vertical<br>Depth | N-S<br>FT | E-W<br>FT | Vertical<br>Section<br>FT | FT    |
|--|--|---|---------------------------|-----------|-----------|---------------------------|-------|
|  | Deg  | Deg/100   |                           |           |           |                           |       |
| 40.52  | 2358.00<br>315.10                            | .62<br>.17                                      | 317.49                    | 2357.59   | 28.70     | -28.60                    | 40.47 |
| 41.21  | 2422.00<br>315.10                            | .62<br>.07                                      | 313.27                    | 2421.58   | 29.19     | -29.09                    | 41.17 |
| 41.88  | 2484.00<br>315.13                            | .62<br>.13                                      | 320.61                    | 2483.58   | 29.68     | -29.55                    | 41.83 |
| 42.67  | 2548.00<br>315.15                            | .79<br>.31                                      | 312.39                    | 2547.57   | 30.25     | -30.09                    | 42.62 |
| 43.53  | 2611.00<br>315.08                            | .79<br>.03                                      | 311.08                    | 2610.57   | 30.82     | -30.74                    | 43.49 |
| 44.39  | 2674.00<br>314.95                            | .79<br>.10                                      | 306.37                    | 2673.56   | 31.37     | -31.42                    | 44.35 |
| 45.30  | 2737.00<br>314.78                            | .88<br>.14                                      | 306.29                    | 2736.55   | 31.91     | -32.16                    | 45.26 |
| 52.09  | 3169.00<br>315.77                            | 1.00<br>.12                                     | 336.46                    | 3168.50   | 37.33     | -36.34                    | 52.01 |
| 56.89  | 3420.00<br>316.70                            | 1.25<br>.17                                     | 318.74                    | 3419.45   | 41.40     | -39.02                    | 56.73 |
| 61.65  | 3673.00<br>317.43                            | .96<br>.17                                      | 335.79                    | 3672.40   | 45.40     | -41.71                    | 61.42 |
| 67.85  | 3992.00<br>317.68                            | 1.33<br>.20                                     | 309.00                    | 3991.34   | 50.17     | -45.68                    | 67.57 |
| 73.45  | 4308.00<br>318.08                            | .81<br>.27                                      | 345.92                    | 4307.29   | 54.65     | -49.07                    | 73.09 |
| 77.15  | 4624.00<br>319.04                            | .63<br>.10                                      | 326.40                    | 4623.27   | 58.26     | -50.58                    | 76.64 |
| 79.59  | 5068.00<br>318.65                            | .22<br>.16                                      | 229.89                    | 5067.26   | 59.74     | -52.58                    | 79.12 |
| 80.41  | 5506.00<br>319.29                            | .50<br>.16                                      | 24.01                     | 5505.25   | 60.95     | -52.44                    | 79.83 |
| 81.58  | 6009.00<br>320.15                            | .18<br>.13                                      | 245.94                    | 6008.25   | 62.63     | -52.27                    | 80.84 |
| 84.61  | 6548.00<br>318.27                            | .72<br>.11                                      | 284.65                    | 6547.23   | 63.14     | -56.32                    | 84.17 |
| 84.98  | 6583.00<br>318.10                            | .72<br>.00                                      | 284.65                    | 6582.22   | 63.25     | -56.75                    | 84.56 |
| 85.16  | 6600.00<br>318.02                            | .72<br>.00                                      | 284.65                    | 6599.22   | 63.31     | -56.96                    | 84.75 |
| 85.25  | 6610.00<br>317.95                            | 1.00<br>4.60                                    | 259.80                    | 6609.22   | 63.31     | -57.10                    | 84.86 |
| 85.48  | 6642.00<br>317.29                            | 2.70<br>5.80                                    | 233.50                    | 6641.21   | 62.81     | -57.98                    | 85.17 |
| 85.54  | 6673.00<br>315.81                            | 5.50<br>9.20                                    | 225.40                    | 6672.12   | 61.33     | -59.63                    | 85.39 |

Musgrove 3H Surveys

|         |        |        |         |         |         |       |
|---------|--------|--------|---------|---------|---------|-------|
| 6705.00 | 8.50   | 217.30 | 6703.88 | 58.37   | -62.15  | 85.26 |
| 85.27   | 313.20 | 9.85   |         |         |         |       |
| 6737.00 | 11.30  | 217.30 | 6735.40 | 54.00   | -65.49  | 84.77 |
| 84.88   | 309.51 | 8.75   |         |         |         |       |
| 6769.00 | 14.00  | 219.10 | 6766.62 | 48.50   | -69.83  | 84.26 |
| 85.02   | 304.78 | 8.53   |         |         |         |       |
| 6800.00 | 16.30  | 214.10 | 6796.54 | 41.98   | -74.63  | 83.41 |
| 85.63   | 299.36 | 8.53   |         |         |         |       |
| 6832.00 | 18.40  | 207.80 | 6827.09 | 33.80   | -79.51  | 81.49 |
| 86.39   | 293.03 | 8.80   |         |         |         |       |
| 6864.00 | 20.20  | 202.50 | 6857.29 | 24.22   | -83.98  | 78.33 |
| 87.40   | 286.09 | 7.84   |         |         |         |       |
| 6895.00 | 23.20  | 198.00 | 6886.09 | 13.47   | -87.91  | 73.98 |
| 88.94   | 278.71 | 11.06  |         |         |         |       |
| 6927.00 | 25.80  | 194.80 | 6915.21 | .74     | -91.64  | 68.14 |
| 91.64   | 270.46 | 9.12   |         |         |         |       |
| 6958.00 | 28.80  | 193.00 | 6942.76 | -13.06  | -95.05  | 61.34 |
| 95.94   | 262.17 | 10.04  |         |         |         |       |
| 6990.00 | 29.60  | 194.80 | 6970.69 | -28.22  | -98.80  | 53.89 |
| 102.75  | 254.06 | 3.71   |         |         |         |       |
| 7021.00 | 26.30  | 201.80 | 6998.08 | -42.00  | -103.31 | 47.91 |
| 111.52  | 247.87 | 15.00  |         |         |         |       |
| 7053.00 | 22.90  | 209.60 | 7027.18 | -54.00  | -109.02 | 44.03 |
| 121.66  | 243.65 | 14.67  |         |         |         |       |
| 7085.00 | 22.30  | 218.70 | 7056.73 | -64.16  | -115.89 | 42.25 |
| 132.47  | 241.03 | 11.08  |         |         |         |       |
| 7116.00 | 21.00  | 224.30 | 7085.54 | -72.73  | -123.45 | 42.05 |
| 143.28  | 239.50 | 7.87   |         |         |         |       |
| 7148.00 | 22.20  | 230.00 | 7115.30 | -80.72  | -132.09 | 43.03 |
| 154.80  | 238.57 | 7.55   |         |         |         |       |
| 7179.00 | 24.00  | 237.70 | 7143.82 | -87.85  | -141.90 | 45.47 |
| 166.90  | 238.24 | 11.33  |         |         |         |       |
| 7211.00 | 25.30  | 245.10 | 7172.91 | -94.21  | -153.61 | 49.82 |
| 180.20  | 238.48 | 10.46  |         |         |         |       |
| 7243.00 | 26.60  | 251.40 | 7201.69 | -99.38  | -166.61 | 55.93 |
| 193.99  | 239.19 | 9.52   |         |         |         |       |
| 7274.00 | 28.50  | 258.10 | 7229.18 | -103.12 | -180.43 | 63.60 |
| 207.81  | 240.25 | 11.72  |         |         |         |       |
| 7306.00 | 30.00  | 264.80 | 7257.11 | -105.42 | -195.87 | 73.45 |
| 222.43  | 241.71 | 11.25  |         |         |         |       |

Musgrove 3H Surveys

| Measured<br>CLOSURE<br>Depth<br>Distance<br>FT | Incl<br>CLOSURE<br>Angle<br>Direction<br>Deg | Drift<br>Dogleg<br>Direction<br>Severity<br>Deg | True<br>Vertical<br>Depth | N-S<br>FT | E-W<br>FT | Vertical<br>Section<br>FT | FT |
|--|--|---|---------------------------|-----------|-----------|---------------------------|----|
| 7338.00  | 31.70  | 270.40  | 7284.58                   | -106.08   | -212.25   | 85.09                     |    |
| 237.28   | 243.44                                       | 10.42   |                           |           |           |                           |    |
| 7369.00  | 33.30  | 274.60  | 7310.73                   | -105.34   | -228.88   | 97.86                     |    |
| 251.96   | 245.29                                       | 8.92  |                           |           |           |                           |    |
| 7400.00  | 35.00  | 278.50  | 7336.39                   | -103.35   | -246.16   | 111.96                    |    |
| 266.97   | 247.23                                       | 8.94  |                           |           |           |                           |    |
| 7432.00  | 36.90  | 281.60  | 7362.29                   | -100.06   | -264.65   | 127.83                    |    |
| 282.93   | 249.29                                       | 8.22  |                           |           |           |                           |    |
| 7463.00  | 39.10  | 284.80  | 7386.72                   | -95.69    | -283.22   | 144.48                    |    |
| 298.95   | 251.33                                       | 9.52  |                           |           |           |                           |    |
| 7494.00  | 40.00  | 288.00  | 7410.63                   | -90.11    | -302.15   | 162.22                    |    |
| 315.30   | 253.39                                       | 7.18  |                           |           |           |                           |    |
| 7526.00  | 43.40  | 289.00  | 7434.52                   | -83.35    | -322.33   | 181.68                    |    |
| 332.93   | 255.50                                       | 10.83   |                           |           |           |                           |    |
| 7557.00  | 46.80  | 290.10  | 7456.40                   | -76.00    | -343.02   | 201.91                    |    |
| 351.33   | 257.51                                       | 11.25   |                           |           |           |                           |    |
| 7588.00  | 49.80  | 291.10  | 7477.02                   | -67.85    | -364.68   | 223.39                    |    |
| 370.94   | 259.46                                       | 9.97  |                           |           |           |                           |    |
| 7620.00  | 52.30  | 292.50  | 7497.13                   | -58.61    | -387.78   | 246.68                    |    |
| 392.18   | 261.41                                       | 8.52  |                           |           |           |                           |    |
| 7651.00  | 53.70  | 296.00  | 7515.79                   | -48.43    | -410.34   | 270.20                    |    |
| 413.19   | 263.27                                       | 10.08   |                           |           |           |                           |    |
| 7683.00  | 55.70  | 298.90  | 7534.28                   | -36.39    | -433.51   | 295.42                    |    |
| 435.03   | 265.20                                       | 9.68  |                           |           |           |                           |    |
| 7714.00  | 58.40  | 301.30  | 7551.15                   | -23.34    | -456.01   | 320.83                    |    |
| 456.60   | 267.07                                       | 10.86   |                           |           |           |                           |    |
| 7746.00  | 61.70  | 303.40  | 7567.12                   | -8.50     | -479.42   | 348.13                    |    |
| 479.50   | 268.98                                       | 11.78   |                           |           |           |                           |    |
| 7778.00  | 65.00  | 305.50  | 7581.47                   | 7.68      | -503.00   | 376.44                    |    |
| 503.05   | 270.87                                       | 11.86   |                           |           |           |                           |    |
| 7809.00  | 68.00  | 307.30  | 7593.83                   | 24.55     | -525.87   | 404.71                    |    |
| 526.44   | 272.67                                       | 11.05   |                           |           |           |                           |    |
| 7841.00  | 71.00  | 308.40  | 7605.04                   | 42.94     | -549.53   | 434.59                    |    |
| 551.21   | 274.47                                       | 9.91  |                           |           |           |                           |    |
| 7873.00  | 73.90  | 310.10  | 7614.69                   | 62.25     | -573.15   | 465.04                    |    |
| 576.52   | 276.20                                       | 10.38   |                           |           |           |                           |    |
| 7905.00  | 76.70  | 311.90  | 7622.81                   | 82.55     | -596.51   | 495.98                    |    |
| 602.19   | 277.88                                       | 10.30   |                           |           |           |                           |    |

Musgrove 3H Surveys

|         |        |        |         |        |          |         |
|---------|--------|--------|---------|--------|----------|---------|
| 7936.00 | 78.40  | 312.60 | 7629.49 | 102.91 | -618.91  | 526.25  |
| 627.41  | 279.44 | 5.91   |         |        |          |         |
| 7967.00 | 79.80  | 312.90 | 7635.35 | 123.57 | -641.27  | 556.69  |
| 653.06  | 280.91 | 4.62   |         |        |          |         |
| 7999.00 | 81.20  | 313.60 | 7640.63 | 145.19 | -664.25  | 588.25  |
| 679.94  | 282.33 | 4.88   |         |        |          |         |
| 8031.00 | 83.40  | 314.00 | 7644.92 | 167.14 | -687.14  | 619.95  |
| 707.18  | 283.67 | 6.99   |         |        |          |         |
| 8062.00 | 86.60  | 314.30 | 7647.62 | 188.65 | -709.30  | 650.81  |
| 733.96  | 284.89 | 10.37  |         |        |          |         |
| 8094.00 | 90.10  | 315.40 | 7648.54 | 211.21 | -731.97  | 682.77  |
| 761.83  | 286.10 | 11.46  |         |        |          |         |
| 8125.00 | 93.30  | 315.70 | 7647.62 | 233.32 | -753.67  | 713.70  |
| 788.96  | 287.20 | 10.37  |         |        |          |         |
| 8189.00 | 93.80  | 316.40 | 7643.66 | 279.31 | -798.00  | 777.45  |
| 845.47  | 289.29 | 1.34   |         |        |          |         |
| 8252.00 | 94.20  | 316.40 | 7639.27 | 324.82 | -841.34  | 840.15  |
| 901.86  | 291.11 | .63    |         |        |          |         |
| 8315.00 | 93.90  | 314.70 | 7634.82 | 369.68 | -885.35  | 902.89  |
| 959.43  | 292.66 | 2.73   |         |        |          |         |
| 8379.00 | 92.80  | 314.30 | 7631.08 | 414.46 | -930.91  | 966.74  |
| 1019.01 | 294.00 | 1.83   |         |        |          |         |
| 8442.00 | 92.50  | 314.70 | 7628.16 | 458.57 | -975.80  | 1029.63 |
| 1078.18 | 295.17 | .79    |         |        |          |         |
| 8506.00 | 93.10  | 315.00 | 7625.04 | 503.65 | -1021.12 | 1093.50 |
| 1138.57 | 296.25 | 1.05   |         |        |          |         |
| 8568.00 | 93.40  | 315.00 | 7621.52 | 547.42 | -1064.89 | 1155.34 |
| 1197.36 | 297.21 | .48    |         |        |          |         |
| 8632.00 | 93.30  | 314.70 | 7617.78 | 592.48 | -1110.19 | 1219.17 |
| 1258.39 | 298.09 | .49    |         |        |          |         |
| 8695.00 | 93.60  | 314.30 | 7613.99 | 636.56 | -1155.04 | 1282.02 |
| 1318.83 | 298.86 | .79    |         |        |          |         |
| 8758.00 | 93.90  | 314.70 | 7609.87 | 680.62 | -1199.88 | 1344.84 |
| 1379.48 | 299.56 | .79    |         |        |          |         |
| 8821.00 | 94.00  | 313.60 | 7605.53 | 724.40 | -1244.97 | 1407.66 |
| 1440.39 | 300.19 | 1.75   |         |        |          |         |
| 8884.00 | 92.00  | 312.90 | 7602.24 | 767.50 | -1290.79 | 1470.56 |
| 1501.74 | 300.74 | 3.36   |         |        |          |         |
| 8946.00 | 91.90  | 312.60 | 7600.13 | 809.57 | -1336.30 | 1532.53 |
| 1562.40 | 301.21 | .51    |         |        |          |         |
| 9010.00 | 92.20  | 312.90 | 7597.84 | 852.98 | -1383.26 | 1596.49 |
| 1625.11 | 301.66 | .66    |         |        |          |         |
| 9073.00 | 92.20  | 312.60 | 7595.42 | 895.71 | -1429.49 | 1659.44 |
| 1686.93 | 302.07 | .48    |         |        |          |         |

Musgrove 3H Surveys

| Measured<br>CLOSURE<br>Depth<br>Distance<br>FT | Incl<br>CLOSURE<br>Angle<br>Direction<br>Deg<br>Deg/100 | Drift<br>Dogleg<br>Direction<br>Severity<br>Deg | True<br>Vertical<br>Depth | N-S<br>FT | E-W<br>FT | Vertical<br>Section<br>FT | FT |
|--|---|---|---------------------------|-----------|-----------|---------------------------|----|
| 9136.00  | 92.20   | 312.20  | 7593.00                   | 938.16    | -1475.98  | 1722.39                   |    |
| 1748.90  | 302.44  | .63   |                           |           |           |                           |    |
| 9199.00  | 93.10   | 314.00  | 7590.09                   | 981.16    | -1521.93  | 1785.32                   |    |
| 1810.78  | 302.81  | 3.19  |                           |           |           |                           |    |
| 9262.00  | 94.40   | 315.00  | 7585.97                   | 1025.22   | -1566.77  | 1848.14                   |    |
| 1872.39  | 303.20  | 2.60  |                           |           |           |                           |    |
| 9325.00  | 93.90   | 315.00  | 7581.41                   | 1069.65   | -1611.20  | 1910.91                   |    |
| 1933.94  | 303.58  | .79   |                           |           |           |                           |    |
| 9388.00  | 92.50   | 316.10  | 7577.89                   | 1114.55   | -1655.24  | 1973.72                   |    |
| 1995.51  | 303.95  | 2.82  |                           |           |           |                           |    |
| 9452.00  | 93.50   | 317.50  | 7574.54                   | 1161.14   | -1698.99  | 2037.44                   |    |
| 2057.87  | 304.35  | 2.69  |                           |           |           |                           |    |
| 9515.00  | 94.40   | 319.20  | 7570.20                   | 1208.10   | -1740.76  | 2099.95                   |    |
| 2118.90  | 304.76  | 3.05  |                           |           |           |                           |    |
| 9578.00  | 94.10   | 318.90  | 7565.53                   | 1255.55   | -1781.94  | 2162.36                   |    |
| 2179.84  | 305.17  | .67   |                           |           |           |                           |    |
| 9641.00  | 94.00   | 319.60  | 7561.08                   | 1303.16   | -1822.96  | 2224.76                   |    |
| 2240.85  | 305.56  | 1.12  |                           |           |           |                           |    |
| 9704.00  | 93.80   | 319.20  | 7556.80                   | 1350.88   | -1863.86  | 2287.15                   |    |
| 2301.93  | 305.93  | .71   |                           |           |           |                           |    |
| 9768.00  | 93.60   | 320.70  | 7552.67                   | 1399.77   | -1904.96  | 2350.46                   |    |
| 2363.94  | 306.31  | 2.36  |                           |           |           |                           |    |
| 9830.00  | 93.60   | 319.60  | 7548.77                   | 1447.28   | -1944.60  | 2411.78                   |    |
| 2424.07  | 306.66  | 1.77  |                           |           |           |                           |    |
| 9893.00  | 93.50   | 319.60  | 7544.87                   | 1495.16   | -1985.36  | 2474.17                   |    |
| 2485.39  | 306.98  | .16   |                           |           |           |                           |    |
| 9956.00  | 93.10   | 318.90  | 7541.25                   | 1542.81   | -2026.41  | 2536.62                   |    |
| 2546.88  | 307.28  | 1.28  |                           |           |           |                           |    |
| 10020.00                                       | 92.80   | 318.20  | 7537.95                   | 1590.71   | -2068.72  | 2600.17                   |    |
| 2609.60  | 307.56  | 1.19  |                           |           |           |                           |    |
| 10083.00                                       | 92.40   | 316.40  | 7535.09                   | 1636.96   | -2111.40  | 2662.87                   |    |
| 2671.64  | 307.79  | 2.92  |                           |           |           |                           |    |



Musgrove 3H Surveys

|          |        |        |         |         |          |         |
|----------|--------|--------|---------|---------|----------|---------|
| 10145.00 | 92.20  | 317.50 | 7532.61 | 1682.23 | -2153.69 | 2724.63 |
| 2732.82  | 307.99 | 1.80   |         |         |          |         |
| 10208.00 | 92.20  | 317.50 | 7530.19 | 1728.65 | -2196.22 | 2787.34 |
| 2794.93  | 308.21 | .00    |         |         |          |         |
| 10271.00 | 92.60  | 317.80 | 7527.55 | 1775.17 | -2238.62 | 2850.02 |
| 2857.04  | 308.41 | .79    |         |         |          |         |
| 10334.00 | 92.80  | 318.50 | 7524.58 | 1822.04 | -2280.61 | 2912.64 |
| 2919.08  | 308.62 | 1.15   |         |         |          |         |
|          |        |        |         |         |          |         |
| 10397.00 | 92.90  | 319.60 | 7521.45 | 1869.57 | -2321.85 | 2975.14 |
| 2980.98  | 308.84 | 1.75   |         |         |          |         |
| 10460.00 | 92.90  | 320.70 | 7518.26 | 1917.87 | -2362.16 | 3037.48 |
| 3042.70  | 309.07 | 1.74   |         |         |          |         |
| 10524.00 | 92.90  | 321.70 | 7515.02 | 1967.68 | -2402.22 | 3100.65 |
| 3105.22  | 309.32 | 1.56   |         |         |          |         |
| 10587.00 | 92.90  | 322.10 | 7511.84 | 2017.20 | -2441.04 | 3162.72 |
| 3166.66  | 309.57 | .63    |         |         |          |         |
| 10650.00 | 93.60  | 321.40 | 7508.26 | 2066.59 | -2479.98 | 3224.78 |
| 3228.17  | 309.80 | 1.57   |         |         |          |         |
|          |        |        |         |         |          |         |
| 10713.00 | 93.60  | 321.00 | 7504.31 | 2115.59 | -2519.38 | 3286.92 |
| 3289.83  | 310.02 | .63    |         |         |          |         |
| 10776.00 | 94.00  | 318.90 | 7500.13 | 2163.71 | -2559.82 | 3349.24 |
| 3351.77  | 310.21 | 3.39   |         |         |          |         |
| 10838.00 | 94.10  | 317.80 | 7495.75 | 2209.92 | -2600.92 | 3410.76 |
| 3413.00  | 310.35 | 1.78   |         |         |          |         |
| 10902.00 | 94.00  | 317.10 | 7491.23 | 2256.95 | -2644.09 | 3474.35 |
| 3476.36  | 310.48 | 1.10   |         |         |          |         |
| 10965.00 | 94.20  | 317.50 | 7486.73 | 2303.13 | -2686.71 | 3536.96 |
| 3538.76  | 310.60 | .71    |         |         |          |         |
|          |        |        |         |         |          |         |
| 11029.00 | 94.30  | 317.80 | 7481.99 | 2350.30 | -2729.70 | 3600.52 |
| 3602.11  | 310.73 | .49    |         |         |          |         |
| 11092.00 | 93.20  | 316.10 | 7477.87 | 2396.24 | -2772.62 | 3663.19 |
| 3664.61  | 310.84 | 3.21   |         |         |          |         |
| 11155.00 | 93.00  | 314.30 | 7474.46 | 2440.87 | -2816.94 | 3726.02 |
| 3727.33  | 310.91 | 2.87   |         |         |          |         |
| 11218.00 | 93.00  | 314.30 | 7471.16 | 2484.81 | -2861.97 | 3788.90 |
| 3790.14  | 310.97 | .00    |         |         |          |         |
| 11280.00 | 93.60  | 315.00 | 7467.59 | 2528.31 | -2906.00 | 3850.75 |
| 3851.91  | 311.02 | 1.49   |         |         |          |         |
|          |        |        |         |         |          |         |
| 11343.00 | 93.60  | 315.00 | 7463.64 | 2572.77 | -2950.46 | 3913.56 |
| 3914.64  | 311.09 | .00    |         |         |          |         |
| 11407.00 | 93.60  | 315.00 | 7459.62 | 2617.94 | -2995.63 | 3977.37 |
| 3978.36  | 311.15 | .00    |         |         |          |         |
| 11470.00 | 93.60  | 314.30 | 7455.66 | 2662.12 | -3040.36 | 4040.20 |
| 4041.12  | 311.21 | 1.11   |         |         |          |         |
| 11532.00 | 93.70  | 315.00 | 7451.71 | 2705.61 | -3084.38 | 4102.03 |
| 4102.89  | 311.26 | 1.14   |         |         |          |         |
| 11594.00 | 93.90  | 315.00 | 7447.61 | 2749.35 | -3128.12 | 4163.83 |
| 4164.62  | 311.31 | .32    |         |         |          |         |
|          |        |        |         |         |          |         |
| 11658.00 | 94.20  | 315.40 | 7443.09 | 2794.65 | -3173.10 | 4227.59 |
| 4228.32  | 311.37 | .78    |         |         |          |         |

Musgrove 3H Surveys

PAGE - 4

| Measured<br>CLOSURE<br>Depth<br>Distance<br>FT | Incl<br>CLOSURE<br>Angle<br>Direction<br>Deg<br>Deg/100 | Drift<br>Dogleg<br>Direction<br>Severity<br>Deg | True<br>Vertical<br>Depth | N-S<br>FT | E-W<br>FT | Vertical<br>Section<br>FT | FT |
|--|---|---|---------------------------|-----------|-----------|---------------------------|----|
| 11721.00                                       | 94.60   | 315.70  | 7438.25                   | 2839.49   | -3217.09  | 4290.32                   |    |
| 4290.97  | 311.43  | .79   |                           |           |           |                           |    |
| 11783.00                                       | 93.60   | 315.70  | 7433.82                   | 2883.75   | -3260.28  | 4352.06                   |    |
| 4352.64  | 311.49  | 1.61  |                           |           |           |                           |    |
| 11846.00                                       | 94.40   | 317.50  | 7429.42                   | 2929.41   | -3303.46  | 4414.73                   |    |
| 4415.23  | 311.57  | 3.12  |                           |           |           |                           |    |
| 11910.00                                       | 92.30   | 315.00  | 7425.68                   | 2975.55   | -3347.64  | 4478.47                   |    |
| 4478.91  | 311.63  | 5.10  |                           |           |           |                           |    |
| 11972.00                                       | 93.40   | 315.70  | 7422.60                   | 3019.61   | -3391.15  | 4540.31                   |    |
| 4540.70  | 311.68  | 2.10  |                           |           |           |                           |    |
| 12036.00                                       | 94.10   | 315.70  | 7418.42                   | 3065.31   | -3435.76  | 4604.07                   |    |
| 4604.41  | 311.74  | 1.09  |                           |           |           |                           |    |
| 12099.00                                       | 92.70   | 312.90  | 7414.68                   | 3109.23   | -3480.76  | 4666.92                   |    |
| 4667.23  | 311.77  | 4.96  |                           |           |           |                           |    |
| 12162.00                                       | 93.40   | 313.30  | 7411.33                   | 3152.21   | -3526.70  | 4729.83                   |    |
| 4730.12  | 311.79  | 1.28  |                           |           |           |                           |    |
| 12225.00                                       | 93.60   | 312.90  | 7407.48                   | 3195.18   | -3572.61  | 4792.70                   |    |
| 4792.99  | 311.81  | .71   |                           |           |           |                           |    |
| 12289.00                                       | 93.60   | 314.00  | 7403.46                   | 3239.11   | -3618.98  | 4856.57                   |    |
| 4856.83  | 311.83  | 1.72  |                           |           |           |                           |    |
| 12351.00                                       | 93.60   | 314.00  | 7399.57                   | 3282.09   | -3663.49  | 4918.42                   |    |
| 4918.67  | 311.86  | .00   |                           |           |           |                           |    |
| 12414.00                                       | 91.80   | 313.60  | 7396.60                   | 3325.64   | -3708.91  | 4981.33                   |    |
| 4981.56  | 311.88  | 2.93  |                           |           |           |                           |    |
| 12476.00                                       | 90.50   | 315.70  | 7395.36                   | 3369.20   | -3753.01  | 5043.27                   |    |
| 5043.47  | 311.92  | 3.98  |                           |           |           |                           |    |
| 12538.00                                       | 90.70   | 315.70  | 7394.71                   | 3413.58   | -3796.30  | 5105.16                   |    |
| 5105.33  | 311.96  | .32   |                           |           |           |                           |    |

Musgrove 3H Surveys

|                      |        |        |         |         |          |         |
|----------------------|--------|--------|---------|---------|----------|---------|
| 12601.00             | 91.00  | 316.10 | 7393.77 | 3458.81 | -3840.14 | 5168.04 |
| 5168.18              | 312.01 | .79    |         |         |          |         |
| 12664.00             | 91.20  | 316.80 | 7392.56 | 3504.46 | -3883.54 | 5230.87 |
| 5230.98              | 312.06 | 1.16   |         |         |          |         |
| 12726.00             | 91.40  | 316.10 | 7391.16 | 3549.39 | -3926.25 | 5292.70 |
| 5292.78              | 312.11 | 1.17   |         |         |          |         |
| 12790.00             | 91.70  | 315.70 | 7389.43 | 3595.33 | -3970.77 | 5356.56 |
| 5356.62              | 312.16 | .78    |         |         |          |         |
| 12852.00             | 92.20  | 316.40 | 7387.32 | 3639.94 | -4013.77 | 5418.40 |
| 5418.45              | 312.20 | 1.39   |         |         |          |         |
| 12915.00             | 92.60  | 316.40 | 7384.68 | 3685.52 | -4057.18 | 5481.20 |
| 5481.22              | 312.25 | .63    |         |         |          |         |
| 12979.00             | 92.90  | 316.10 | 7381.61 | 3731.70 | -4101.39 | 5544.98 |
| 5545.00              | 312.30 | .66    |         |         |          |         |
| 13040.00             | 92.90  | 315.70 | 7378.52 | 3775.45 | -4143.78 | 5605.79 |
| 5605.80              | 312.34 | .65    |         |         |          |         |
| 13106.00             | 93.60  | 316.10 | 7374.78 | 3822.77 | -4189.64 | 5671.56 |
| 5671.57              | 312.38 | 1.22   |         |         |          |         |
| 13166.00             | 94.10  | 316.40 | 7370.75 | 3866.02 | -4231.04 | 5731.29 |
| 5731.29              | 312.42 | .97    |         |         |          |         |
| Projection to Bit TD |        |        |         |         |          |         |
| 13226.00             | 94.10  | 316.40 | 7366.46 | 3909.35 | -4272.31 | 5791.00 |
| 5791.00              | 312.46 | .00    |         |         |          |         |