

# Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 35-T3N-R66W

Brown 13N-26HZ

Plan B Rev 0

Design: Actual Field Surveys

## Sperry Drilling Services

### Standard Report

11 June, 2012

Well Coordinates: 1,307,948.38 N, 3,209,000.29 E (40° 10' 34.66" N, 104° 45' 07.33" W)

Ground Level: 5,020.00 ft

Local Coordinate Origin: Centered on Well Brown 13N-26HZ

Viewing Datum: RKB 22' @ 5042.00ft (Nabors M40)

TVDs to System: N

North Reference: True

Unit System: API - US Survey Feet - Custom

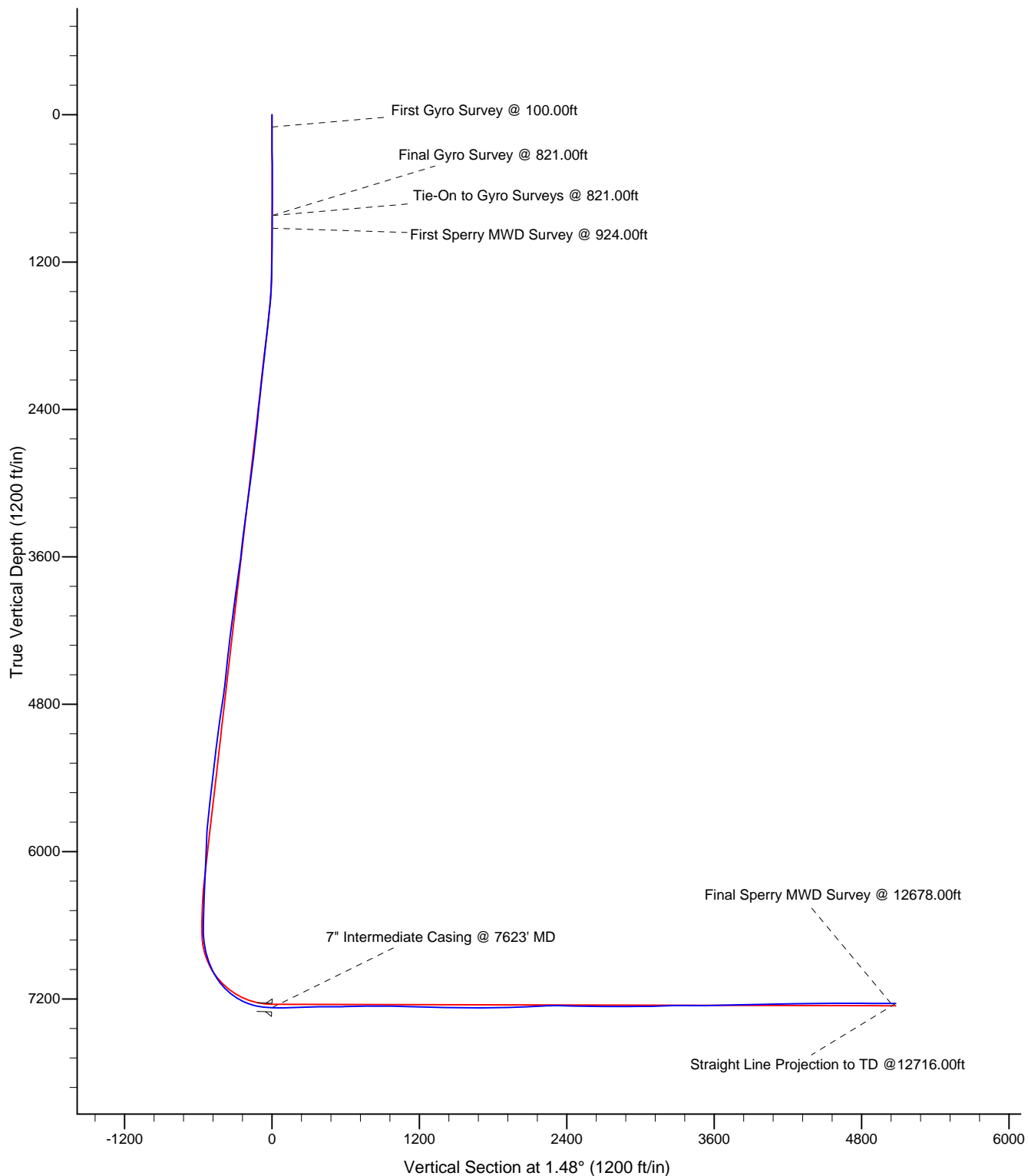
Geodetic Scale Factor Applied

Version: 2003.16 Build: 43I

**HALLIBURTON**

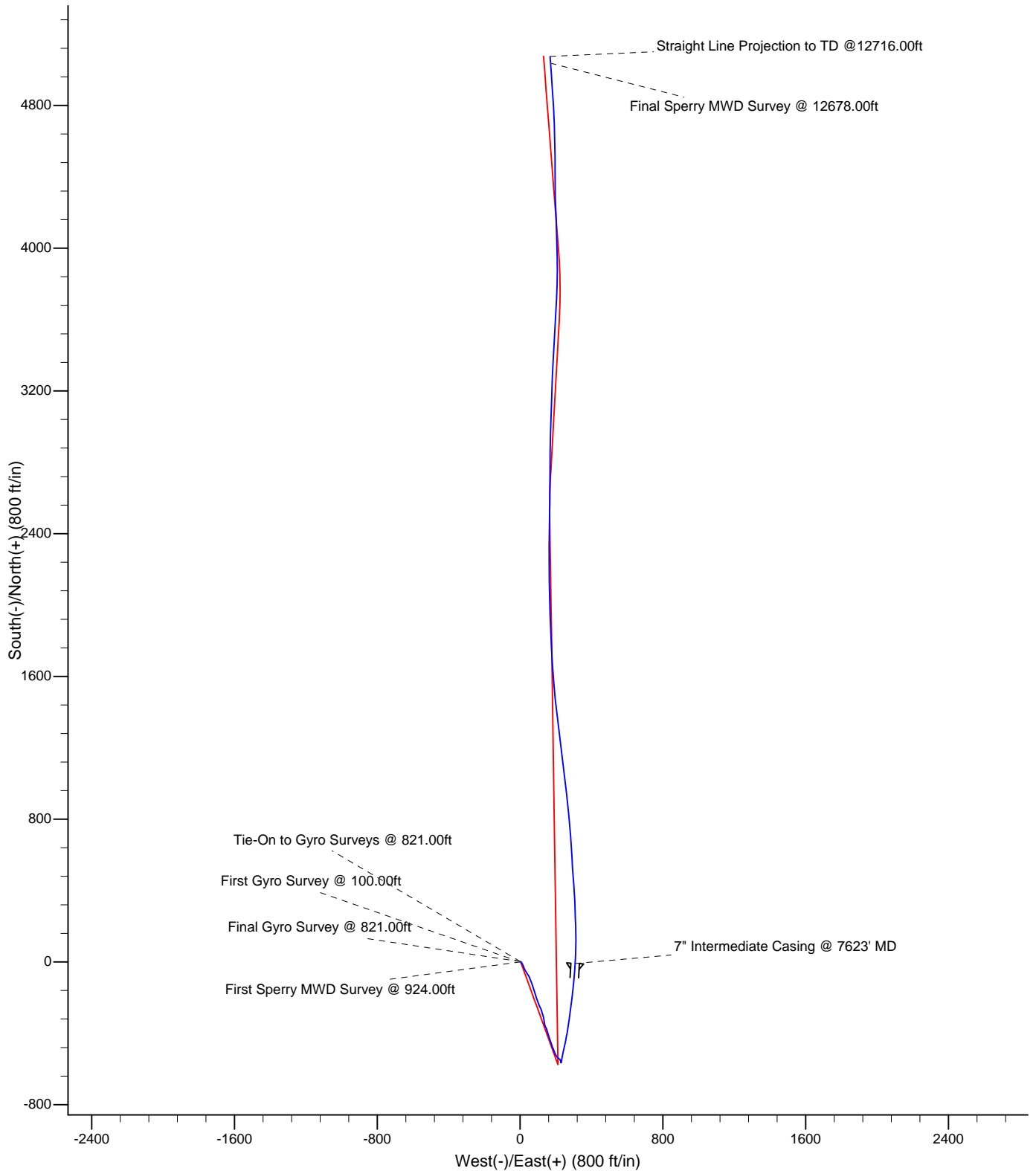
## LEGEND

- Brown 13N-26HZ, Plan B Rev 0, Plan B Rev 0 Proposal V0
- Actual Field Surveys



## LEGEND

- Brown 13N-26HZ, Plan B Rev 0, Plan B Rev 0 Proposal V0
- Actual Field Surveys



**Design Report for Brown 13N-26HZ - Actual Field Surveys**

| Measured Depth (ft)   | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) |
|---|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|
| 0.00  | 0.00            | 0.00        | 0.00                | 0.00       | 0.00       | 0.00                  | 0.00                  |
| 100.00  | 0.34            | 328.99      | 100.00              | 0.25       | -0.15      | 0.25                  | 0.33                  |
| <b>First Gyro Survey @ 100.00ft</b>                                     |                 |             |                     |            |            |                       |                       |
| 200.00  | 0.17            | 302.08      | 200.00              | 0.58       | -0.43      | 0.57                  | 0.20                  |
| 300.00  | 0.19            | 64.80       | 300.00              | 0.73       | -0.41      | 0.72                  | 0.31                  |
| 400.00  | 0.48            | 37.90       | 400.00              | 1.13       | 0.00       | 1.13                  | 0.33                  |
| 500.00  | 0.40            | 19.28       | 499.99              | 1.80       | 0.38       | 1.81                  | 0.16                  |
| 600.00  | 0.25            | 15.55       | 599.99              | 2.34       | 0.55       | 2.36                  | 0.15                  |
| 700.00  | 0.46            | 127.94      | 699.99              | 2.31       | 0.93       | 2.33                  | 0.60                  |
| 800.00  | 0.52            | 152.87      | 799.99              | 1.66       | 1.45       | 1.70                  | 0.22                  |
| 821.00  | 0.72            | 153.61      | 820.99              | 1.46       | 1.55       | 1.50                  | 0.97                  |
| <b>Final Gyro Survey @ 821.00ft - Tie-On to Gyro Surveys @ 821.00ft</b> |                 |             |                     |            |            |                       |                       |
| 924.00  | 0.72            | 158.73      | 923.98              | 0.27       | 2.07       | 0.32                  | 0.06                  |
| <b>First Sperry MWD Survey @ 924.00ft</b>                               |                 |             |                     |            |            |                       |                       |
| 1,016.00  | 0.73            | 94.15       | 1,015.97            | -0.31      | 2.87       | -0.24                 | 0.84                  |
| 1,108.00  | 0.62            | 93.65       | 1,107.97            | -0.39      | 3.95       | -0.28                 | 0.12                  |
| 1,200.00  | 0.70            | 112.24      | 1,199.96            | -0.63      | 4.97       | -0.50                 | 0.25                  |
| 1,292.00  | 1.81            | 127.47      | 1,291.94            | -1.73      | 6.64       | -1.55                 | 1.25                  |
| 1,383.00  | 3.30            | 148.60      | 1,382.84            | -4.84      | 9.15       | -4.60                 | 1.91                  |
| 1,475.00  | 4.58            | 154.51      | 1,474.63            | -10.41     | 12.11      | -10.10                | 1.46                  |
| 1,567.00  | 6.60            | 155.67      | 1,566.18            | -18.55     | 15.86      | -18.13                | 2.20                  |
| 1,659.00  | 6.46            | 157.70      | 1,657.59            | -28.15     | 20.01      | -27.63                | 0.29                  |
| 1,751.00  | 7.50            | 155.21      | 1,748.90            | -38.39     | 24.49      | -37.75                | 1.18                  |
| 1,843.00  | 6.96            | 150.62      | 1,840.17            | -48.70     | 29.74      | -47.91                | 0.86                  |
| 1,935.00  | 8.19            | 153.24      | 1,931.37            | -59.41     | 35.43      | -58.47                | 1.39                  |
| 2,027.00  | 7.35            | 139.05      | 2,022.53            | -69.71     | 42.23      | -68.59                | 2.27                  |
| 2,118.00  | 7.89            | 151.16      | 2,112.73            | -79.57     | 49.06      | -78.28                | 1.86                  |
| 2,213.00  | 6.47            | 161.21      | 2,206.99            | -90.35     | 53.93      | -88.93                | 1.99                  |
| 2,309.00  | 6.32            | 154.38      | 2,302.39            | -100.24    | 57.96      | -98.70                | 0.81                  |
| 2,403.00  | 6.88            | 163.17      | 2,395.77            | -110.29    | 61.83      | -108.66               | 1.23                  |
| 2,499.00  | 6.61            | 158.53      | 2,491.11            | -120.94    | 65.51      | -119.20               | 0.63                  |
| 2,593.00  | 5.89            | 161.97      | 2,584.55            | -130.56    | 68.99      | -128.73               | 0.86                  |
| 2,689.00  | 7.19            | 163.03      | 2,679.92            | -140.99    | 72.27      | -139.07               | 1.36                  |
| 2,784.00  | 6.50            | 161.48      | 2,774.25            | -151.78    | 75.71      | -149.76               | 0.75                  |
| 2,878.00  | 8.28            | 162.14      | 2,867.46            | -163.26    | 79.47      | -161.15               | 1.90                  |
| 2,973.00  | 7.81            | 160.94      | 2,961.53            | -175.88    | 83.68      | -173.65               | 0.53                  |
| 3,068.00  | 7.15            | 159.82      | 3,055.72            | -187.53    | 87.83      | -185.19               | 0.71                  |
| 3,163.00  | 9.03            | 165.33      | 3,149.77            | -200.29    | 91.76      | -197.84               | 2.14                  |
| 3,258.00  | 7.85            | 163.24      | 3,243.74            | -213.71    | 95.51      | -211.17               | 1.28                  |
| 3,352.00  | 7.30            | 161.68      | 3,336.92            | -225.53    | 99.24      | -222.88               | 0.62                  |
| 3,447.00  | 8.24            | 154.13      | 3,431.05            | -237.39    | 104.11     | -234.61               | 1.46                  |
| 3,542.00  | 7.38            | 154.12      | 3,525.17            | -249.00    | 109.74     | -246.07               | 0.91                  |
| 3,638.00  | 7.67            | 153.73      | 3,620.34            | -260.29    | 115.27     | -257.22               | 0.31                  |
| 3,733.00  | 9.48            | 163.79      | 3,714.28            | -273.49    | 120.26     | -270.28               | 2.47                  |
| 3,828.00  | 7.75            | 163.71      | 3,808.20            | -287.15    | 124.24     | -283.84               | 1.82                  |
| 3,922.00  | 7.04            | 164.53      | 3,901.42            | -298.79    | 127.56     | -295.38               | 0.76                  |
| 4,018.00  | 8.81            | 165.32      | 3,996.50            | -311.57    | 130.99     | -308.07               | 1.85                  |
| 4,113.00  | 7.47            | 169.81      | 4,090.54            | -324.69    | 133.93     | -321.11               | 1.56                  |
| 4,206.00  | 7.30            | 175.03      | 4,182.77            | -336.52    | 135.51     | -332.90               | 0.74                  |
| 4,302.00  | 6.60            | 170.11      | 4,278.07            | -348.04    | 136.98     | -344.37               | 0.96                  |

**Design Report for Brown 13N-26HZ - Actual Field Surveys**

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) |
|---------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|
| 4,397.00            | 7.34            | 157.96      | 4,372.37            | -359.04    | 140.20     | -355.29               | 1.73                  |
| 4,492.00            | 6.92            | 147.59      | 4,466.64            | -369.50    | 145.54     | -365.60               | 1.42                  |
| 4,587.00            | 6.13            | 163.36      | 4,561.03            | -379.19    | 150.06     | -375.17               | 2.05                  |
| 4,682.00            | 6.96            | 166.46      | 4,655.41            | -389.65    | 152.86     | -385.55               | 0.95                  |
| 4,777.00            | 9.13            | 161.00      | 4,749.47            | -402.37    | 156.67     | -398.18               | 2.42                  |
| 4,872.00            | 8.91            | 162.47      | 4,843.29            | -416.51    | 161.34     | -412.19               | 0.34                  |
| 4,968.00            | 8.46            | 162.55      | 4,938.19            | -430.34    | 165.69     | -425.90               | 0.47                  |
| 5,063.00            | 7.83            | 162.88      | 5,032.24            | -443.19    | 169.69     | -438.64               | 0.66                  |
| 5,158.00            | 7.56            | 158.53      | 5,126.38            | -455.19    | 173.89     | -450.53               | 0.68                  |
| 5,252.00            | 7.21            | 160.75      | 5,219.60            | -466.51    | 178.09     | -461.74               | 0.48                  |
| 5,348.00            | 7.68            | 162.43      | 5,314.79            | -478.31    | 182.02     | -473.44               | 0.54                  |
| 5,443.00            | 6.13            | 153.02      | 5,409.10            | -488.89    | 186.23     | -483.90               | 2.01                  |
| 5,538.00            | 7.12            | 163.45      | 5,503.47            | -499.05    | 190.21     | -493.96               | 1.64                  |
| 5,633.00            | 8.00            | 156.51      | 5,597.65            | -510.76    | 194.52     | -505.55               | 1.33                  |
| 5,728.00            | 6.11            | 150.21      | 5,691.92            | -521.21    | 199.67     | -515.86               | 2.15                  |
| 5,823.00            | 6.83            | 143.88      | 5,786.32            | -530.16    | 205.51     | -524.66               | 1.07                  |
| 5,918.00            | 4.92            | 133.87      | 5,880.82            | -537.55    | 211.78     | -531.88               | 2.27                  |
| 6,011.00            | 3.71            | 123.20      | 5,973.55            | -541.96    | 217.17     | -536.15               | 1.56                  |
| 6,107.00            | 2.84            | 137.03      | 6,069.40            | -545.40    | 221.39     | -539.48               | 1.22                  |
| 6,202.00            | 2.30            | 144.22      | 6,164.30            | -548.67    | 224.11     | -542.68               | 0.66                  |
| 6,297.00            | 3.52            | 166.19      | 6,259.18            | -553.05    | 225.92     | -547.01               | 1.72                  |
| 6,392.00            | 2.68            | 164.76      | 6,354.04            | -558.02    | 227.20     | -551.95               | 0.89                  |
| 6,487.00            | 1.79            | 170.02      | 6,448.97            | -561.63    | 228.04     | -555.53               | 0.96                  |
| 6,582.00            | 1.37            | 151.76      | 6,543.93            | -564.09    | 228.84     | -557.97               | 0.68                  |
| 6,614.00            | 1.11            | 164.85      | 6,575.92            | -564.73    | 229.10     | -558.60               | 1.20                  |
| 6,645.00            | 1.03            | 161.32      | 6,606.92            | -565.28    | 229.27     | -559.15               | 0.33                  |
| 6,677.00            | 0.66            | 66.57       | 6,638.92            | -565.48    | 229.53     | -559.34               | 3.96                  |
| 6,709.00            | 2.98            | 16.03       | 6,670.90            | -564.61    | 229.93     | -558.46               | 8.16                  |
| 6,740.00            | 4.45            | 19.66       | 6,701.83            | -562.70    | 230.56     | -556.54               | 4.80                  |
| 6,771.00            | 6.77            | 14.34       | 6,732.68            | -559.80    | 231.41     | -553.61               | 7.66                  |
| 6,803.00            | 9.54            | 7.23        | 6,764.36            | -555.34    | 232.21     | -549.13               | 9.20                  |
| 6,835.00            | 12.27           | 10.30       | 6,795.78            | -549.36    | 233.16     | -543.13               | 8.72                  |
| 6,866.00            | 14.12           | 10.22       | 6,825.96            | -542.40    | 234.42     | -536.14               | 5.97                  |
| 6,898.00            | 16.85           | 9.21        | 6,856.79            | -533.98    | 235.85     | -527.69               | 8.57                  |
| 6,930.00            | 19.08           | 10.58       | 6,887.23            | -524.26    | 237.55     | -517.92               | 7.09                  |
| 6,961.00            | 21.36           | 11.97       | 6,916.32            | -513.75    | 239.66     | -507.37               | 7.52                  |
| 6,993.00            | 24.53           | 12.17       | 6,945.78            | -501.55    | 242.27     | -495.11               | 9.91                  |
| 7,024.00            | 27.37           | 12.29       | 6,973.65            | -488.30    | 245.14     | -481.78               | 9.16                  |
| 7,056.00            | 30.13           | 12.23       | 7,001.71            | -473.26    | 248.41     | -466.66               | 8.63                  |
| 7,087.00            | 33.33           | 13.71       | 7,028.07            | -457.38    | 252.07     | -450.69               | 10.62                 |
| 7,119.00            | 36.94           | 10.67       | 7,054.24            | -439.38    | 255.94     | -432.60               | 12.53                 |
| 7,150.00            | 39.03           | 10.63       | 7,078.67            | -420.63    | 259.47     | -413.76               | 6.74                  |
| 7,182.00            | 42.87           | 9.18        | 7,102.84            | -399.97    | 263.06     | -393.02               | 12.36                 |
| 7,213.00            | 46.35           | 8.34        | 7,124.90            | -378.46    | 266.37     | -371.43               | 11.39                 |
| 7,245.00            | 49.61           | 9.17        | 7,146.32            | -354.97    | 270.00     | -347.85               | 10.37                 |
| 7,276.00            | 53.45           | 8.00        | 7,165.60            | -330.97    | 273.61     | -323.77               | 12.73                 |
| 7,308.00            | 56.83           | 7.92        | 7,183.89            | -304.97    | 277.25     | -297.68               | 10.56                 |
| 7,339.00            | 59.98           | 8.32        | 7,200.13            | -278.83    | 280.98     | -271.46               | 10.22                 |
| 7,371.00            | 63.72           | 8.05        | 7,215.22            | -250.91    | 284.99     | -243.44               | 11.71                 |
| 7,403.00            | 66.98           | 6.62        | 7,228.57            | -222.07    | 288.70     | -214.51               | 10.97                 |
| 7,434.00            | 70.37           | 6.41        | 7,239.84            | -193.38    | 291.98     | -185.75               | 10.95                 |

**Design Report for Brown 13N-26HZ - Actual Field Surveys**

| Measured Depth (ft)           | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) |
|-------------------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|
| 7,466.00                      | 74.12           | 6.76        | 7,249.60            | -163.11    | 295.47     | -155.40               | 11.76                 |
| 7,497.00                      | 77.51           | 5.64        | 7,257.19            | -133.24    | 298.71     | -125.45               | 11.48                 |
| 7,529.00                      | 81.29           | 4.81        | 7,263.08            | -101.92    | 301.58     | -94.07                | 12.08                 |
| 7,561.00                      | 85.54           | 5.33        | 7,266.75            | -70.26     | 304.39     | -62.35                | 13.38                 |
| 7,623.00                      | 87.70           | 3.22        | 7,270.40            | -8.55      | 309.00     | -0.54                 | 4.87                  |
| <b>7" Intermediate Casing</b> |                 |             |                     |            |            |                       |                       |
| 7,687.00                      | 89.94           | 1.04        | 7,271.72            | 55.38      | 311.37     | 63.43                 | 4.87                  |
| 7,782.00                      | 91.67           | 359.49      | 7,270.38            | 150.37     | 311.81     | 158.39                | 2.44                  |
| 7,876.00                      | 91.67           | 358.20      | 7,267.64            | 244.31     | 309.92     | 252.25                | 1.37                  |
| 7,972.00                      | 92.41           | 357.41      | 7,264.22            | 340.17     | 306.24     | 347.99                | 1.13                  |
| 8,067.00                      | 90.06           | 355.77      | 7,262.18            | 434.97     | 300.59     | 442.61                | 3.02                  |
| 8,161.00                      | 89.75           | 355.89      | 7,262.33            | 528.72     | 293.76     | 536.16                | 0.35                  |
| 8,256.00                      | 92.04           | 356.37      | 7,260.85            | 623.49     | 287.35     | 630.72                | 2.46                  |
| 8,351.00                      | 91.23           | 356.74      | 7,258.14            | 718.28     | 281.64     | 725.33                | 0.94                  |
| 8,446.00                      | 89.63           | 354.33      | 7,257.42            | 812.98     | 274.24     | 819.81                | 3.04                  |
| 8,541.00                      | 90.43           | 353.37      | 7,257.37            | 907.43     | 264.07     | 913.96                | 1.32                  |
| 8,635.00                      | 88.33           | 353.63      | 7,258.39            | 1,000.81   | 253.43     | 1,007.04              | 2.25                  |
| 8,730.00                      | 88.46           | 353.30      | 7,261.05            | 1,095.16   | 242.62     | 1,101.08              | 0.37                  |
| 8,825.00                      | 88.45           | 353.08      | 7,263.61            | 1,189.45   | 231.36     | 1,195.05              | 0.23                  |
| 8,921.00                      | 88.39           | 352.90      | 7,266.26            | 1,284.70   | 219.65     | 1,289.96              | 0.20                  |
| 9,016.00                      | 88.71           | 352.51      | 7,268.67            | 1,378.90   | 207.59     | 1,383.82              | 0.53                  |
| 9,111.00                      | 88.95           | 354.90      | 7,270.61            | 1,473.30   | 197.18     | 1,477.91              | 2.53                  |
| 9,205.00                      | 89.32           | 355.52      | 7,272.02            | 1,566.96   | 189.33     | 1,571.34              | 0.77                  |
| 9,301.00                      | 90.37           | 355.53      | 7,272.28            | 1,662.67   | 181.84     | 1,666.82              | 1.09                  |
| 9,396.00                      | 91.17           | 358.02      | 7,271.01            | 1,757.50   | 176.49     | 1,761.48              | 2.75                  |
| 9,491.00                      | 90.56           | 356.81      | 7,269.57            | 1,852.39   | 172.21     | 1,856.23              | 1.43                  |
| 9,587.00                      | 91.42           | 357.91      | 7,267.91            | 1,948.27   | 167.79     | 1,951.96              | 1.45                  |
| 9,682.00                      | 92.29           | 359.10      | 7,264.84            | 2,043.19   | 165.31     | 2,046.78              | 1.55                  |
| 9,777.00                      | 93.27           | 358.92      | 7,260.23            | 2,138.06   | 163.67     | 2,141.58              | 1.05                  |
| 9,871.00                      | 92.16           | 359.87      | 7,255.78            | 2,231.95   | 162.68     | 2,235.41              | 1.55                  |
| 9,966.00                      | 89.26           | 0.59        | 7,254.60            | 2,326.93   | 163.06     | 2,330.37              | 3.15                  |
| 10,062.00                     | 88.89           | 0.67        | 7,256.15            | 2,422.91   | 164.12     | 2,426.35              | 0.39                  |
| 10,157.00                     | 88.83           | 1.30        | 7,258.04            | 2,517.88   | 165.75     | 2,521.32              | 0.67                  |
| 10,251.00                     | 88.89           | 0.14        | 7,259.91            | 2,611.85   | 166.93     | 2,615.30              | 1.24                  |
| 10,346.00                     | 89.75           | 0.43        | 7,261.04            | 2,706.84   | 167.40     | 2,710.27              | 0.96                  |
| 10,441.00                     | 89.94           | 0.37        | 7,261.30            | 2,801.84   | 168.07     | 2,805.25              | 0.21                  |
| 10,536.00                     | 90.19           | 1.13        | 7,261.19            | 2,896.83   | 169.31     | 2,900.24              | 0.84                  |
| 10,631.00                     | 90.74           | 1.44        | 7,260.42            | 2,991.80   | 171.44     | 2,995.24              | 0.66                  |
| 10,726.00                     | 91.23           | 1.88        | 7,258.78            | 3,086.75   | 174.19     | 3,090.22              | 0.69                  |
| 10,821.00                     | 91.97           | 2.00        | 7,256.13            | 3,181.65   | 177.41     | 3,185.18              | 0.79                  |
| 10,916.00                     | 91.36           | 2.24        | 7,253.37            | 3,276.55   | 180.92     | 3,280.14              | 0.69                  |
| 11,011.00                     | 89.26           | 3.14        | 7,252.86            | 3,371.44   | 185.38     | 3,375.11              | 2.40                  |
| 11,106.00                     | 89.45           | 3.09        | 7,253.93            | 3,466.29   | 190.54     | 3,470.06              | 0.21                  |
| 11,201.00                     | 90.93           | 3.30        | 7,253.61            | 3,561.14   | 195.83     | 3,565.02              | 1.57                  |
| 11,295.00                     | 91.60           | 3.43        | 7,251.54            | 3,654.95   | 201.35     | 3,658.94              | 0.73                  |
| 11,389.00                     | 91.85           | 2.16        | 7,248.71            | 3,748.80   | 205.93     | 3,752.87              | 1.38                  |
| 11,483.00                     | 91.79           | 0.84        | 7,245.72            | 3,842.71   | 208.39     | 3,846.82              | 1.40                  |
| 11,578.00                     | 90.99           | 358.77      | 7,243.42            | 3,937.68   | 208.07     | 3,941.75              | 2.34                  |
| 11,673.00                     | 91.17           | 358.87      | 7,241.63            | 4,032.64   | 206.11     | 4,036.63              | 0.22                  |
| 11,767.00                     | 90.31           | 357.41      | 7,240.41            | 4,126.58   | 203.06     | 4,130.46              | 1.80                  |
| 11,863.00                     | 90.56           | 357.74      | 7,239.68            | 4,222.49   | 199.00     | 4,226.23              | 0.43                  |

**Design Report for Brown 13N-26HZ - Actual Field Surveys**

| Measured Depth (ft)                               | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) |
|---|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|
| 11,958.00   | 90.86           | 359.52      | 7,238.51            | 4,317.45   | 196.73     | 4,321.10              | 1.90                  |
| 12,053.00   | 91.61           | 0.11        | 7,236.46            | 4,412.43   | 196.42     | 4,416.04              | 1.00                  |
| 12,147.00   | 90.12           | 358.96      | 7,235.04            | 4,506.41   | 195.66     | 4,509.97              | 2.00                  |
| 12,242.00   | 90.49           | 359.27      | 7,234.53            | 4,601.40   | 194.19     | 4,604.89              | 0.51                  |
| 12,338.00   | 89.63           | 357.65      | 7,234.43            | 4,697.36   | 191.61     | 4,700.75              | 1.91                  |
| 12,434.00   | 89.69           | 356.92      | 7,235.00            | 4,793.25   | 187.06     | 4,796.49              | 0.76                  |
| 12,529.00   | 89.14           | 355.62      | 7,235.97            | 4,888.04   | 180.88     | 4,891.09              | 1.49                  |
| 12,625.00   | 90.00           | 356.42      | 7,236.69            | 4,983.81   | 174.22     | 4,986.65              | 1.22                  |
| 12,678.00   | 90.06           | 356.15      | 7,236.67            | 5,036.70   | 170.79     | 5,039.43              | 0.52                  |
| <b>Final Sperry MWD Survey @ 12678.00ft</b>       |                 |             |                     |            |            |                       |                       |
| 12,716.00   | 90.06           | 356.15      | 7,236.63            | 5,074.61   | 168.24     | 5,077.26              | 0.00                  |
| <b>Straight Line Projection to TD @12716.00ft</b> |                 |             |                     |            |            |                       |                       |

**Design Annotations**

| Measured Depth (ft) | Vertical Depth (ft) | Local Coordinates |            | Comment                                    |
|---------------------|---------------------|-------------------|------------|--|
|                     |                     | +N/-S (ft)        | +E/-W (ft) |  |
| 100.00              | 100.00              | 0.25              | -0.15      | First Gyro Survey @ 100.00ft               |
| 821.00              | 820.99              | 1.46              | 1.55       | Final Gyro Survey @ 821.00ft               |
| 821.00              | 820.99              | 1.46              | 1.55       | Tie-On to Gyro Surveys @ 821.00ft          |
| 924.00              | 923.98              | 0.27              | 2.07       | First Sperry MWD Survey @ 924.00ft         |
| 12,678.00           | 7,236.67            | 5,036.70          | 170.79     | Final Sperry MWD Survey @ 12678.00ft       |
| 12,716.00           | 7,236.63            | 5,074.61          | 168.24     | Straight Line Projection to TD @12716.00ft |

**Vertical Section Information**

| Angle Type | Target             | Azimuth (°) | Origin Type | Origin +N/-S (ft) | Origin +E/-W (ft) | Start TVD (ft) |
|------------|--------------------|-------------|-------------|-------------------|-------------------|----------------|
| Target     | Brown 13N-26HZ_BHL | 1.48        | Slot        | 0.00              | 0.00              | 0.00           |

**Survey tool program**

| From (ft) | To (ft)   | Survey/Plan               | Survey Tool |
|-----------|-----------|---------------------------|-------------|
| 100.00    | 821.00    | Anadarko Supplied Surveys | NS-GYRO-MS  |
| 924.00    | 12,716.00 | Sperry MWD Surveys        | MWD         |

**Casing Details**

| Measured Depth (ft) | Vertical Depth (ft) | Name                   | Casing Diameter (") | Hole Diameter (") |
|---------------------|---------------------|------------------------|---------------------|-------------------|
| 7,623.00            | 7,270.40            | 7" Intermediate Casing | 7                   | 8-3/4             |

**Design Report for Brown 13N-26HZ - Actual Field Surveys****Targets**

| Target Name<br>- hit/miss target<br>- Shape   | Dip<br>Angle<br>(°) | Dip<br>Dir.<br>(°) | TVD<br>(ft) | +N/-S<br>(ft) | +E/-W<br>(ft) | Northing<br>(ft) | Easting<br>(ft) | Latitude  | Longitude   |
|---|---------------------|--------------------|-------------|---------------|---------------|------------------|-----------------|-----------|-------------|
| Brown Pad_Sec 35 I  | 0.00                | 0.00               | 0.00        | -24.81        | -16.92        | ,923.428091      | ,8,983.579254   | 40.176226 | -104.752098 |
| - actual wellpath misses target center by 30.03ft at 0.00ft MD (0.00 TVD, 0.00 N, 0.00 E)             |                     |                    |             |               |               |                  |                 |           |             |
| - Polygon   |                     |                    |             |               |               |                  |                 |           |             |
| Point 1   |                     |                    |             | -483.15       | 4,612.53      | 1,312,556.47     | 3,208,478.27    |           |             |
| Point 2   |                     |                    |             | -482.80       | 1,971.02      | 1,309,915.17     | 3,208,500.90    |           |             |
| Point 3   |                     |                    |             | -484.40       | -669.50       | 1,307,274.85     | 3,208,521.57    |           |             |
| Point 4   |                     |                    |             | 2,137.88      | -636.76       | 1,307,329.70     | 3,211,143.37    |           |             |
| Point 5   |                     |                    |             | 4,757.87      | -606.08       | 1,307,382.48     | 3,213,762.90    |           |             |
| Point 6   |                     |                    |             | 4,772.32      | 2,016.80      | 1,310,005.27     | 3,213,755.23    |           |             |
| Point 7   |                     |                    |             | 4,780.95      | 4,634.35      | 1,312,622.69     | 3,213,741.78    |           |             |
| Point 8   |                     |                    |             | 2,149.41      | 4,623.35      | 1,312,589.50     | 3,211,110.54    |           |             |
| Brown 13N-26HZ_W  | 0.00                | 0.00               | 7,251.51    | 3,600.00      | 220.00        | ,549.957321      | ,9,189.909279   | 40.186176 | -104.751250 |
| - actual wellpath misses target center by 21.91ft at 11241.25ft MD (7252.86 TVD, 3601.31 N, 198.17 E) |                     |                    |             |               |               |                  |                 |           |             |
| - Point   |                     |                    |             |               |               |                  |                 |           |             |
| Brown 13N-26HZ_S  | 0.00                | 0.00               | 0.00        | 0.00          | 0.00          | ,948.382136      | ,9,000.290384   | 40.176294 | -104.752037 |
| - actual wellpath hits target center  |                     |                    |             |               |               |                  |                 |           |             |
| - Point   |                     |                    |             |               |               |                  |                 |           |             |
| Brown 13N-26HZ_B  | 0.00                | 0.00               | 7,255.00    | 5,075.25      | 131.54        | ,024.341816      | ,9,089.011701   | 40.190226 | -104.751566 |
| - actual wellpath misses target center by 41.05ft at 12716.00ft MD (7236.63 TVD, 5074.61 N, 168.24 E) |                     |                    |             |               |               |                  |                 |           |             |
| - Point   |                     |                    |             |               |               |                  |                 |           |             |
| Brown 13N-26HZ_W  | 0.00                | 0.00               | 7,248.90    | 2,500.00      | 165.75        | ,449.585428      | ,9,144.941384   | 40.183157 | -104.751444 |
| - actual wellpath misses target center by 8.79ft at 10138.95ft MD (7257.67 TVD, 2499.83 N, 165.36 E)  |                     |                    |             |               |               |                  |                 |           |             |
| - Point   |                     |                    |             |               |               |                  |                 |           |             |
| Brown Pad_Sec 35  | 0.00                | 0.00               | 0.00        | -24.81        | -16.92        | ,923.428091      | ,8,983.579254   | 40.176226 | -104.752098 |
| - actual wellpath misses target center by 30.03ft at 0.00ft MD (0.00 TVD, 0.00 N, 0.00 E)             |                     |                    |             |               |               |                  |                 |           |             |
| - Polygon   |                     |                    |             |               |               |                  |                 |           |             |
| Point 1   |                     |                    |             | -23.06        | 4,154.40      | 1,312,102.26     | 3,208,942.19    |           |             |
| Point 2   |                     |                    |             | -22.78        | 1,974.85      | 1,309,922.88     | 3,208,960.85    |           |             |
| Point 3   |                     |                    |             | -24.10        | -203.70       | 1,307,744.49     | 3,208,977.91    |           |             |
| Point 4   |                     |                    |             | 2,132.14      | -176.78       | 1,307,789.60     | 3,211,133.75    |           |             |
| Point 5   |                     |                    |             | 4,301.68      | -150.10       | 1,307,834.57     | 3,213,302.90    |           |             |
| Point 6   |                     |                    |             | 4,310.57      | 2,011.11      | 1,309,995.69     | 3,213,293.56    |           |             |
| Point 7   |                     |                    |             | 4,319.10      | 4,172.40      | 1,312,156.88     | 3,213,283.86    |           |             |
| Point 8   |                     |                    |             | 4,310.57      | 2,011.13      | 1,309,995.71     | 3,213,293.56    |           |             |
| Point 9   |                     |                    |             | 4,301.68      | -150.09       | 1,307,834.58     | 3,213,302.90    |           |             |
| Point 10  |                     |                    |             | 2,132.14      | -176.76       | 1,307,789.62     | 3,211,133.75    |           |             |
| Point 11  |                     |                    |             | -24.10        | -203.69       | 1,307,744.50     | 3,208,977.91    |           |             |
| Point 12  |                     |                    |             | -22.78        | 1,974.87      | 1,309,922.90     | 3,208,960.85    |           |             |
| Point 13  |                     |                    |             | -23.06        | 4,154.41      | 1,312,102.27     | 3,208,942.19    |           |             |

**North Reference Sheet for Sec. 35-T3N-R66W - Brown 13N-26HZ - Plan B Rev 0**

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to True North Reference.

Vertical Depths are relative to RKB 22' @ 5042.00ft (Nabors M40). Northing and Easting are relative to Brown 13N-26HZ

Coordinate System is US State Plane 1983, Colorado Northern Zone using datum North American Datum 1983, ellipsoid GRS 1980

Projection method is Lambert Conformal Conic (2 parallel)

Central Meridian is -105.500000°, Longitude Origin:0.000000°, Latitude Origin:40.783333°

False Easting: 3,000,000.000644ft, False Northing: 1,000,000.001308ft, Scale Reduction: 0.99995769

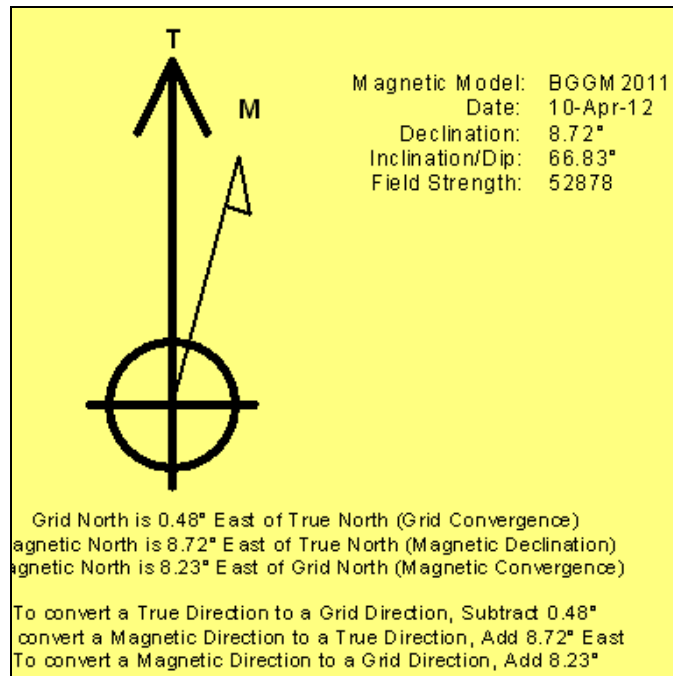
Grid Coordinates of Well: 1,307,948.382136 ft N, 3,209,000.290384 ft E

Geographical Coordinates of Well: 40° 10' 34.66" N, 104° 45' 07.33" W

Grid Convergence at Surface is: 0.48°

Based upon Minimum Curvature type calculations, at a Measured Depth of 12,716.00ft the Bottom Hole Displacement is 5,077.40ft in the Direction of 1.90° (True).

Magnetic Convergence at surface is: -8.23° (10 April 2012, , BGGM2011)



# **Anadarko Petroleum Corp.**

**Weld County, CO (NAD 83)**

**Sec. 35-T3N-R66W**

**Brown 13N-26HZ**

**Plan B Rev 0**

**Design: Actual Field Surveys**

## **Survey Report - Geographic**

**11 June, 2012**

# Halliburton Company

## Survey Report - Geographic

|  |   |
|--|---|
| <b>Company:</b> Anadarko Petroleum Corp. | <b>Local Co-ordinate Reference:</b> Well Brown 13N-26HZ |
| <b>Project:</b> Weld County, CO (NAD 83) | <b>TVD Reference:</b> RKB 22' @ 5042.00ft (Nabors M40)  |
| <b>Site:</b> Sec. 35-T3N-R66W            | <b>MD Reference:</b> RKB 22' @ 5042.00ft (Nabors M40)   |
| <b>Well:</b> Brown 13N-26HZ              | <b>North Reference:</b> True                            |
| <b>Wellbore:</b> Plan B Rev 0            | <b>Survey Calculation Method:</b> Minimum Curvature     |
| <b>Design:</b> Actual Field Surveys      | <b>Database:</b> EDM 2003.16 Single User Db             |

|   |                                     |
|---|-------------------------------------|
| <b>Project</b> Weld County, CO (NAD 83)     |                                     |
| <b>Map System:</b> US State Plane 1983      | <b>System Datum:</b> Mean Sea Level |
| <b>Geo Datum:</b> North American Datum 1983 |                                     |
| <b>Map Zone:</b> Colorado Northern Zone     | Using geodetic scale factor         |

|                                      |                                     |                                 |
|--------------------------------------|-------------------------------------|---------------------------------|
| <b>Site</b> Sec. 35-T3N-R66W         |                                     |                                 |
| <b>Site Position:</b>                | <b>Northing:</b> 1,307,923.461379ft | <b>Latitude:</b> 40.176226      |
| <b>From:</b> Lat/Long                | <b>Easting:</b> 3,208,983.578973ft  | <b>Longitude:</b> -104.752098   |
| <b>Position Uncertainty:</b> 0.00 ft | <b>Slot Radius:</b> "               | <b>Grid Convergence:</b> 0.48 ° |

|                             |                      |                                      |                                 |
|-----------------------------|----------------------|--------------------------------------|---------------------------------|
| <b>Well</b> Brown 13N-26HZ  |                      |                                      |                                 |
| <b>Well Position</b>        | <b>+N/-S</b> 0.00 ft | <b>Northing:</b> 1,307,948.382136 ft | <b>Latitude:</b> 40.176294      |
|                             | <b>+E/-W</b> 0.00 ft | <b>Easting:</b> 3,209,000.290384 ft  | <b>Longitude:</b> -104.752037   |
| <b>Position Uncertainty</b> | 0.00 ft              | <b>Wellhead Elevation:</b> ft        | <b>Ground Level:</b> 5,020.00ft |

|                              |                   |                    |                        |                      |                            |
|------------------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| <b>Wellbore</b> Plan B Rev 0 |                   |                    |                        |                      |                            |
| <b>Magnetics</b>             | <b>Model Name</b> | <b>Sample Date</b> | <b>Declination (°)</b> | <b>Dip Angle (°)</b> | <b>Field Strength (nT)</b> |
|                              | BGGM2011          | 2012-04-10         | 8.72                   | 66.83                | 52,878                     |

|                                    |                              |                           |                   |                      |
|------------------------------------|------------------------------|---------------------------|-------------------|----------------------|
| <b>Design</b> Actual Field Surveys |                              |                           |                   |                      |
| <b>Audit Notes:</b>                |                              |                           |                   |                      |
| <b>Version:</b> 1.0                | <b>Phase:</b> ACTUAL         | <b>Tie On Depth:</b> 0.00 |                   |                      |
| <b>Vertical Section:</b>           | <b>Depth From (TVD) (ft)</b> | <b>+N/-S (ft)</b>         | <b>+E/-W (ft)</b> | <b>Direction (°)</b> |
|                                    | 0.00                         | 0.00                      | 0.00              | 1.48                 |

|                       |                |   |                  |                                  |
|-----------------------|----------------|---|------------------|----------------------------------|
| <b>Survey Program</b> |                | <b>Date</b> 2012-06-11                  |                  |                                  |
| <b>From (ft)</b>      | <b>To (ft)</b> | <b>Survey (Wellbore)</b>                | <b>Tool Name</b> | <b>Description</b>               |
| 100.00                | 821.00         | Anadarko Supplied Surveys (Plan B Rev 0 | NS-GYRO-MS       | North sensing gyrocompassing m/s |
| 924.00                | 12,716.00      | Sperry MWD Surveys (Plan B Rev 0)       | MWD              | MWD - Standard                   |

# Halliburton Company

## Survey Report - Geographic

|                  |                          |                                     |                                  |
|------------------|--------------------------|-------------------------------------|----------------------------------|
| <b>Company:</b>  | Anadarko Petroleum Corp. | <b>Local Co-ordinate Reference:</b> | Well Brown 13N-26HZ              |
| <b>Project:</b>  | Weld County, CO (NAD 83) | <b>TVD Reference:</b>               | RKB 22' @ 5042.00ft (Nabors M40) |
| <b>Site:</b>     | Sec. 35-T3N-R66W         | <b>MD Reference:</b>                | RKB 22' @ 5042.00ft (Nabors M40) |
| <b>Well:</b>     | Brown 13N-26HZ           | <b>North Reference:</b>             | True                             |
| <b>Wellbore:</b> | Plan B Rev 0             | <b>Survey Calculation Method:</b>   | Minimum Curvature                |
| <b>Design:</b>   | Actual Field Surveys     | <b>Database:</b>                    | EDM 2003.16 Single User Db       |

| Survey  |                 |             |                     |            |            |                   |                  |           |             |
|---|-----------------|-------------|---------------------|------------|------------|-------------------|------------------|-----------|-------------|
| Measured Depth (ft)   | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Map Northing (ft) | Map Easting (ft) | Latitude  | Longitude   |
| 0.00  | 0.00            | 0.00        | 0.00                | 0.00       | 0.00       | 07,948.382136     | 09,000.290384    | 40.176294 | -104.752037 |
| 100.00  | 0.34            | 328.99      | 100.00              | 0.25       | -0.15      | 07,948.631408     | 09,000.137676    | 40.176295 | -104.752038 |
| <b>First Gyro Survey @ 100.00ft</b>                                     |                 |             |                     |            |            |                   |                  |           |             |
| 200.00  | 0.17            | 302.08      | 200.00              | 0.58       | -0.43      | 07,948.958402     | 08,999.858611    | 40.176296 | -104.752039 |
| 300.00  | 0.19            | 64.80       | 300.00              | 0.73       | -0.41      | 07,949.106461     | 08,999.878532    | 40.176296 | -104.752039 |
| 400.00  | 0.48            | 37.90       | 400.00              | 1.13       | 0.00       | 07,949.512949     | 09,000.281943    | 40.176298 | -104.752037 |
| 500.00  | 0.40            | 19.28       | 499.99              | 1.80       | 0.38       | 07,950.182840     | 09,000.652657    | 40.176299 | -104.752036 |
| 600.00  | 0.25            | 15.55       | 599.99              | 2.34       | 0.55       | 07,950.728921     | 09,000.823407    | 40.176301 | -104.752035 |
| 700.00  | 0.46            | 127.94      | 699.99              | 2.31       | 0.93       | 07,950.699249     | 09,001.196437    | 40.176301 | -104.752034 |
| 800.00  | 0.52            | 152.87      | 799.99              | 1.66       | 1.45       | 07,950.054398     | 09,001.723038    | 40.176299 | -104.752032 |
| 821.00  | 0.72            | 153.61      | 820.99              | 1.46       | 1.55       | 07,949.851298     | 09,001.827353    | 40.176298 | -104.752032 |
| <b>Final Gyro Survey @ 821.00ft - Tie-On to Gyro Surveys @ 821.00ft</b> |                 |             |                     |            |            |                   |                  |           |             |
| 924.00  | 0.72            | 158.73      | 923.98              | 0.27       | 2.07       | 07,948.669024     | 09,002.361758    | 40.176295 | -104.752030 |
| <b>First Sperry MWD Survey @ 924.00ft</b>                               |                 |             |                     |            |            |                   |                  |           |             |
| 1,016.00  | 0.73            | 94.15       | 1,015.97            | -0.31      | 2.87       | 07,948.094685     | 09,003.160829    | 40.176294 | -104.752027 |
| 1,108.00  | 0.62            | 93.65       | 1,107.97            | -0.39      | 3.95       | 07,948.029710     | 09,004.242648    | 40.176293 | -104.752023 |
| 1,200.00  | 0.70            | 112.24      | 1,199.96            | -0.63      | 4.97       | 07,947.793915     | 09,005.261554    | 40.176293 | -104.752019 |
| 1,292.00  | 1.81            | 127.47      | 1,291.94            | -1.73      | 6.64       | 07,946.711497     | 09,006.944045    | 40.176290 | -104.752013 |
| 1,383.00  | 3.30            | 148.60      | 1,382.84            | -4.84      | 9.15       | 07,943.622773     | 09,009.475491    | 40.176281 | -104.752004 |
| 1,475.00  | 4.58            | 154.51      | 1,474.63            | -10.41     | 12.11      | 07,938.072164     | 09,012.482782    | 40.176266 | -104.751994 |
| 1,567.00  | 6.60            | 155.67      | 1,566.18            | -18.55     | 15.86      | 07,929.970510     | 09,016.310480    | 40.176243 | -104.751980 |
| 1,659.00  | 6.46            | 157.70      | 1,657.59            | -28.15     | 20.01      | 07,920.400262     | 09,020.533282    | 40.176217 | -104.751966 |
| 1,751.00  | 7.50            | 155.21      | 1,748.90            | -38.39     | 24.49      | 07,910.199266     | 09,025.100809    | 40.176189 | -104.751950 |
| 1,843.00  | 6.96            | 150.62      | 1,840.17            | -48.70     | 29.74      | 07,899.936084     | 09,030.439610    | 40.176161 | -104.751931 |
| 1,935.00  | 8.19            | 153.24      | 1,931.37            | -59.41     | 35.43      | 07,889.276066     | 09,036.214893    | 40.176131 | -104.751910 |
| 2,027.00  | 7.35            | 139.05      | 2,022.53            | -69.71     | 42.23      | 07,879.037317     | 09,043.109365    | 40.176103 | -104.751886 |
| 2,118.00  | 7.89            | 151.16      | 2,112.73            | -79.57     | 49.06      | 07,869.227414     | 09,050.020316    | 40.176076 | -104.751862 |
| 2,213.00  | 6.47            | 161.21      | 2,206.99            | -90.35     | 53.93      | 07,858.489483     | 09,054.980541    | 40.176046 | -104.751844 |
| 2,309.00  | 6.32            | 154.38      | 2,302.39            | -100.24    | 57.96      | 07,848.639148     | 09,059.090597    | 40.176019 | -104.751830 |
| 2,403.00  | 6.88            | 163.17      | 2,395.77            | -110.29    | 61.83      | 07,838.618079     | 09,063.042504    | 40.175992 | -104.751816 |
| 2,499.00  | 6.61            | 158.53      | 2,491.11            | -120.94    | 65.51      | 07,828.004354     | 09,066.819177    | 40.175962 | -104.751803 |
| 2,593.00  | 5.89            | 161.97      | 2,584.55            | -130.56    | 68.99      | 07,818.413209     | 09,070.373139    | 40.175936 | -104.751790 |
| 2,689.00  | 7.19            | 163.03      | 2,679.92            | -140.99    | 72.27      | 07,808.011295     | 09,073.739048    | 40.175907 | -104.751779 |
| 2,784.00  | 6.50            | 161.48      | 2,774.25            | -151.78    | 75.71      | 07,797.256111     | 09,077.272969    | 40.175878 | -104.751766 |
| 2,878.00  | 8.28            | 162.14      | 2,867.46            | -163.26    | 79.47      | 07,785.800507     | 09,081.135721    | 40.175846 | -104.751753 |
| 2,973.00  | 7.81            | 160.94      | 2,961.53            | -175.88    | 83.68      | 07,773.225186     | 09,085.447561    | 40.175812 | -104.751738 |
| 3,068.00  | 7.15            | 159.82      | 3,055.72            | -187.53    | 87.83      | 07,761.610829     | 09,089.692921    | 40.175780 | -104.751723 |
| 3,163.00  | 9.03            | 165.33      | 3,149.77            | -200.29    | 91.76      | 07,748.882179     | 09,093.728249    | 40.175745 | -104.751709 |
| 3,258.00  | 7.85            | 163.24      | 3,243.74            | -213.71    | 95.51      | 07,735.490287     | 09,097.600141    | 40.175708 | -104.751695 |
| 3,352.00  | 7.30            | 161.68      | 3,336.92            | -225.53    | 99.24      | 07,723.706620     | 09,101.427780    | 40.175675 | -104.751682 |
| 3,447.00  | 8.24            | 154.13      | 3,431.05            | -237.39    | 104.11     | 07,711.892890     | 09,106.395164    | 40.175643 | -104.751665 |
| 3,542.00  | 7.38            | 154.12      | 3,525.17            | -249.00    | 109.74     | 07,700.326177     | 09,112.126368    | 40.175611 | -104.751644 |
| 3,638.00  | 7.67            | 153.73      | 3,620.34            | -260.29    | 115.27     | 07,689.081655     | 09,117.747886    | 40.175580 | -104.751625 |
| 3,733.00  | 9.48            | 163.79      | 3,714.28            | -273.49    | 120.26     | 07,675.925626     | 09,122.849453    | 40.175544 | -104.751607 |
| 3,828.00  | 7.75            | 163.71      | 3,808.20            | -287.15    | 124.24     | 07,662.298572     | 09,126.945362    | 40.175506 | -104.751593 |
| 3,922.00  | 7.04            | 164.53      | 3,901.42            | -298.79    | 127.56     | 07,650.692004     | 09,130.357587    | 40.175474 | -104.751581 |
| 4,018.00  | 8.81            | 165.32      | 3,996.50            | -311.57    | 130.99     | 07,637.939467     | 09,133.897643    | 40.175439 | -104.751568 |
| 4,113.00  | 7.47            | 169.81      | 4,090.54            | -324.69    | 133.93     | 07,624.849058     | 09,136.944340    | 40.175403 | -104.751558 |
| 4,206.00  | 7.30            | 175.03      | 4,182.77            | -336.52    | 135.51     | 07,613.026913     | 09,138.625445    | 40.175371 | -104.751552 |
| 4,302.00  | 6.60            | 170.11      | 4,278.07            | -348.04    | 136.98     | 07,601.528846     | 09,140.198425    | 40.175339 | -104.751547 |
| 4,397.00  | 7.34            | 157.96      | 4,372.37            | -359.04    | 140.20     | 07,590.552692     | 09,143.506133    | 40.175309 | -104.751536 |
| 4,492.00  | 6.92            | 147.59      | 4,466.64            | -369.50    | 145.54     | 07,580.141593     | 09,148.938734    | 40.175280 | -104.751516 |
| 4,587.00  | 6.13            | 163.36      | 4,561.03            | -379.19    | 150.06     | 07,570.488157     | 09,153.540409    | 40.175254 | -104.751500 |
| 4,682.00  | 6.96            | 166.46      | 4,655.41            | -389.65    | 152.86     | 07,560.056609     | 09,156.428512    | 40.175225 | -104.751490 |
| 4,777.00  | 9.13            | 161.00      | 4,749.47            | -402.37    | 156.67     | 07,547.365623     | 09,160.337464    | 40.175190 | -104.751477 |

# Halliburton Company

## Survey Report - Geographic

|                  |                          |                                     |                                  |
|------------------|--------------------------|-------------------------------------|----------------------------------|
| <b>Company:</b>  | Anadarko Petroleum Corp. | <b>Local Co-ordinate Reference:</b> | Well Brown 13N-26HZ              |
| <b>Project:</b>  | Weld County, CO (NAD 83) | <b>TVD Reference:</b>               | RKB 22' @ 5042.00ft (Nabors M40) |
| <b>Site:</b>     | Sec. 35-T3N-R66W         | <b>MD Reference:</b>                | RKB 22' @ 5042.00ft (Nabors M40) |
| <b>Well:</b>     | Brown 13N-26HZ           | <b>North Reference:</b>             | True                             |
| <b>Wellbore:</b> | Plan B Rev 0             | <b>Survey Calculation Method:</b>   | Minimum Curvature                |
| <b>Design:</b>   | Actual Field Surveys     | <b>Database:</b>                    | EDM 2003.16 Single User Db       |

| Survey                        |                 |             |                     |           |           |                   |                  |           |             |  |
|-------------------------------|-----------------|-------------|---------------------|-----------|-----------|-------------------|------------------|-----------|-------------|--|
| Measured Depth (ft)           | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N-S (ft) | +E-W (ft) | Map Northing (ft) | Map Easting (ft) | Latitude  | Longitude   |  |
| 4,872.00                      | 8.91            | 162.47      | 4,843.29            | -416.51   | 161.34    | 07,533.264367     | 09,165.126165    | 40.175151 | -104.751460 |  |
| 4,968.00                      | 8.46            | 162.55      | 4,938.19            | -430.34   | 165.69    | 07,519.476281     | 09,169.599352    | 40.175113 | -104.751444 |  |
| 5,063.00                      | 7.83            | 162.88      | 5,032.24            | -443.19   | 169.69    | 07,506.659952     | 09,173.707964    | 40.175078 | -104.751430 |  |
| 5,158.00                      | 7.56            | 158.53      | 5,126.38            | -455.19   | 173.89    | 07,494.696061     | 09,178.001162    | 40.175045 | -104.751415 |  |
| 5,252.00                      | 7.21            | 160.75      | 5,219.60            | -466.51   | 178.09    | 07,483.408939     | 09,182.304399    | 40.175014 | -104.751400 |  |
| 5,348.00                      | 7.68            | 162.43      | 5,314.79            | -478.31   | 182.02    | 07,471.639903     | 09,186.326250    | 40.174981 | -104.751386 |  |
| 5,443.00                      | 6.13            | 153.02      | 5,409.10            | -488.89   | 186.23    | 07,461.103311     | 09,190.632926    | 40.174952 | -104.751371 |  |
| 5,538.00                      | 7.12            | 163.45      | 5,503.47            | -499.05   | 190.21    | 07,450.973192     | 09,194.696851    | 40.174924 | -104.751357 |  |
| 5,633.00                      | 8.00            | 156.51      | 5,597.65            | -510.76   | 194.52    | 07,439.303497     | 09,199.107466    | 40.174892 | -104.751341 |  |
| 5,728.00                      | 6.11            | 150.21      | 5,691.92            | -521.21   | 199.67    | 07,428.896057     | 09,204.342552    | 40.174864 | -104.751323 |  |
| 5,823.00                      | 6.83            | 143.88      | 5,786.32            | -530.16   | 205.51    | 07,419.995040     | 09,210.259469    | 40.174839 | -104.751302 |  |
| 5,918.00                      | 4.92            | 133.87      | 5,880.82            | -537.55   | 211.78    | 07,412.661265     | 09,216.588802    | 40.174819 | -104.751279 |  |
| 6,011.00                      | 3.71            | 123.20      | 5,973.55            | -541.96   | 217.17    | 07,408.295502     | 09,222.018625    | 40.174807 | -104.751260 |  |
| 6,107.00                      | 2.84            | 137.03      | 6,069.40            | -545.40   | 221.39    | 07,404.890365     | 09,226.267439    | 40.174797 | -104.751245 |  |
| 6,202.00                      | 2.30            | 144.22      | 6,164.30            | -548.67   | 224.11    | 07,401.644960     | 09,229.013536    | 40.174788 | -104.751235 |  |
| 6,297.00                      | 3.52            | 166.19      | 6,259.18            | -553.05   | 225.92    | 07,397.281740     | 09,230.861135    | 40.174776 | -104.751229 |  |
| 6,392.00                      | 2.68            | 164.76      | 6,354.04            | -558.02   | 227.20    | 07,392.317893     | 09,232.182979    | 40.174763 | -104.751224 |  |
| 6,487.00                      | 1.79            | 170.02      | 6,448.97            | -561.63   | 228.04    | 07,388.721029     | 09,233.054284    | 40.174753 | -104.751221 |  |
| 6,582.00                      | 1.37            | 151.76      | 6,543.93            | -564.09   | 228.84    | 07,386.266131     | 09,233.869488    | 40.174746 | -104.751218 |  |
| 6,614.00                      | 1.11            | 164.85      | 6,575.92            | -564.73   | 229.10    | 07,385.632202     | 09,234.136844    | 40.174744 | -104.751217 |  |
| 6,645.00                      | 1.03            | 161.32      | 6,606.92            | -565.28   | 229.27    | 07,385.079881     | 09,234.309215    | 40.174743 | -104.751217 |  |
| 6,677.00                      | 0.66            | 66.57       | 6,638.92            | -565.48   | 229.53    | 07,384.882912     | 09,234.572109    | 40.174742 | -104.751216 |  |
| 6,709.00                      | 2.98            | 16.03       | 6,670.90            | -564.61   | 229.93    | 07,385.759099     | 09,234.963584    | 40.174745 | -104.751214 |  |
| 6,740.00                      | 4.45            | 19.66       | 6,701.83            | -562.70   | 230.56    | 07,387.671344     | 09,235.574611    | 40.174750 | -104.751212 |  |
| 6,771.00                      | 6.77            | 14.34       | 6,732.68            | -559.80   | 231.41    | 07,390.581561     | 09,236.407344    | 40.174758 | -104.751209 |  |
| 6,803.00                      | 9.54            | 7.23        | 6,764.36            | -555.34   | 232.21    | 07,395.047022     | 09,237.170734    | 40.174770 | -104.751206 |  |
| 6,835.00                      | 12.27           | 10.30       | 6,795.78            | -549.36   | 233.16    | 07,401.031880     | 09,238.062145    | 40.174786 | -104.751203 |  |
| 6,866.00                      | 14.12           | 10.22       | 6,825.96            | -542.40   | 234.42    | 07,408.004813     | 09,239.263317    | 40.174806 | -104.751198 |  |
| 6,898.00                      | 16.85           | 9.21        | 6,856.79            | -533.98   | 235.85    | 07,416.437281     | 09,240.627308    | 40.174829 | -104.751193 |  |
| 6,930.00                      | 19.08           | 10.58       | 6,887.23            | -524.26   | 237.55    | 07,426.171533     | 09,242.248027    | 40.174855 | -104.751187 |  |
| 6,961.00                      | 21.36           | 11.97       | 6,916.32            | -513.75   | 239.66    | 07,436.693274     | 09,244.260727    | 40.174884 | -104.751180 |  |
| 6,993.00                      | 24.53           | 12.17       | 6,945.78            | -501.55   | 242.27    | 07,448.911790     | 09,246.767329    | 40.174918 | -104.751170 |  |
| 7,024.00                      | 27.37           | 12.29       | 6,973.65            | -488.30   | 245.14    | 07,462.190807     | 09,249.529313    | 40.174954 | -104.751160 |  |
| 7,056.00                      | 30.13           | 12.23       | 7,001.71            | -473.26   | 248.41    | 07,477.256436     | 09,252.669937    | 40.174995 | -104.751148 |  |
| 7,087.00                      | 33.33           | 13.71       | 7,028.07            | -457.38   | 252.07    | 07,493.168345     | 09,256.203393    | 40.175039 | -104.751135 |  |
| 7,119.00                      | 36.94           | 10.67       | 7,054.24            | -439.38   | 255.94    | 07,511.197175     | 09,259.916850    | 40.175088 | -104.751121 |  |
| 7,150.00                      | 39.03           | 10.63       | 7,078.67            | -420.63   | 259.47    | 07,529.974901     | 09,263.284078    | 40.175140 | -104.751109 |  |
| 7,182.00                      | 42.87           | 9.18        | 7,102.84            | -399.97   | 263.06    | 07,550.660535     | 09,266.706228    | 40.175196 | -104.751096 |  |
| 7,213.00                      | 46.35           | 8.34        | 7,124.90            | -378.46   | 266.37    | 07,572.200474     | 09,269.834661    | 40.175256 | -104.751084 |  |
| 7,245.00                      | 49.61           | 9.17        | 7,146.32            | -354.97   | 270.00    | 07,595.721125     | 09,273.258557    | 40.175320 | -104.751071 |  |
| 7,276.00                      | 53.45           | 8.00        | 7,165.60            | -330.97   | 273.61    | 07,619.744517     | 09,276.671660    | 40.175386 | -104.751058 |  |
| 7,308.00                      | 56.83           | 7.92        | 7,183.89            | -304.97   | 277.25    | 07,645.774074     | 09,280.087376    | 40.175457 | -104.751045 |  |
| 7,339.00                      | 59.98           | 8.32        | 7,200.13            | -278.83   | 280.98    | 07,671.940138     | 09,283.597314    | 40.175529 | -104.751032 |  |
| 7,371.00                      | 63.72           | 8.05        | 7,215.22            | -250.91   | 284.99    | 07,699.894484     | 09,287.376571    | 40.175606 | -104.751017 |  |
| 7,403.00                      | 66.98           | 6.62        | 7,228.57            | -222.07   | 288.70    | 07,728.765131     | 09,290.840847    | 40.175685 | -104.751004 |  |
| 7,434.00                      | 70.37           | 6.41        | 7,239.84            | -193.38   | 291.98    | 07,757.477414     | 09,293.874085    | 40.175764 | -104.750992 |  |
| 7,466.00                      | 74.12           | 6.76        | 7,249.60            | -163.11   | 295.47    | 07,787.773725     | 09,297.113726    | 40.175847 | -104.750980 |  |
| 7,497.00                      | 77.51           | 5.64        | 7,257.19            | -133.24   | 298.71    | 07,817.673104     | 09,300.104683    | 40.175929 | -104.750968 |  |
| 7,529.00                      | 81.29           | 4.81        | 7,263.08            | -101.92   | 301.58    | 07,849.012196     | 09,302.702787    | 40.176015 | -104.750958 |  |
| 7,561.00                      | 85.54           | 5.33        | 7,266.75            | -70.26    | 304.39    | 07,880.690515     | 09,305.244792    | 40.176102 | -104.750948 |  |
| 7,623.00                      | 87.70           | 3.22        | 7,270.40            | -8.55     | 309.00    | 07,942.437721     | 09,309.333510    | 40.176271 | -104.750931 |  |
| <b>7" Intermediate Casing</b> |                 |             |                     |           |           |                   |                  |           |             |  |
| 7,687.00                      | 89.94           | 1.04        | 7,271.72            | 55.38     | 311.37    | 08,006.387233     | 09,311.169119    | 40.176446 | -104.750923 |  |
| 7,782.00                      | 91.67           | 359.49      | 7,270.38            | 150.37    | 311.81    | 08,101.366644     | 09,310.807540    | 40.176707 | -104.750921 |  |
| 7,876.00                      | 91.67           | 358.20      | 7,267.64            | 244.31    | 309.92    | 08,195.282349     | 09,308.121434    | 40.176965 | -104.750928 |  |

# Halliburton Company

## Survey Report - Geographic

|                  |                          |                                     |                                  |
|------------------|--------------------------|-------------------------------------|----------------------------------|
| <b>Company:</b>  | Anadarko Petroleum Corp. | <b>Local Co-ordinate Reference:</b> | Well Brown 13N-26HZ              |
| <b>Project:</b>  | Weld County, CO (NAD 83) | <b>TVD Reference:</b>               | RKB 22' @ 5042.00ft (Nabors M40) |
| <b>Site:</b>     | Sec. 35-T3N-R66W         | <b>MD Reference:</b>                | RKB 22' @ 5042.00ft (Nabors M40) |
| <b>Well:</b>     | Brown 13N-26HZ           | <b>North Reference:</b>             | True                             |
| <b>Wellbore:</b> | Plan B Rev 0             | <b>Survey Calculation Method:</b>   | Minimum Curvature                |
| <b>Design:</b>   | Actual Field Surveys     | <b>Database:</b>                    | EDM 2003.16 Single User Db       |

| Survey  |                 |             |                     |            |            |                   |                  |           |             |  |
|---|-----------------|-------------|---------------------|------------|------------|-------------------|------------------|-----------|-------------|--|
| Measured Depth (ft)                               | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Map Northing (ft) | Map Easting (ft) | Latitude  | Longitude   |  |
| 7,972.00  | 92.41           | 357.41      | 7,264.22            | 340.17     | 306.24     | 08,291.111232     | 09,303.638812    | 40.177228 | -104.750941 |  |
| 8,067.00  | 90.06           | 355.77      | 7,262.18            | 434.97     | 300.59     | 08,385.856049     | 09,297.190314    | 40.177488 | -104.750962 |  |
| 8,161.00  | 89.75           | 355.89      | 7,262.33            | 528.72     | 293.76     | 08,479.541988     | 09,289.564825    | 40.177746 | -104.750986 |  |
| 8,256.00  | 92.04           | 356.37      | 7,260.85            | 623.49     | 287.35     | 08,574.245756     | 09,282.355312    | 40.178006 | -104.751009 |  |
| 8,351.00  | 91.23           | 356.74      | 7,258.14            | 718.28     | 281.64     | 08,668.979016     | 09,275.850125    | 40.178266 | -104.751029 |  |
| 8,446.00  | 89.63           | 354.33      | 7,257.42            | 812.98     | 274.24     | 08,763.608208     | 09,267.656994    | 40.178526 | -104.751056 |  |
| 8,541.00  | 90.43           | 353.37      | 7,257.37            | 907.43     | 264.07     | 08,857.966386     | 09,256.683832    | 40.178785 | -104.751092 |  |
| 8,635.00  | 88.33           | 353.63      | 7,258.39            | 1,000.81   | 253.43     | 08,951.254345     | 09,245.257095    | 40.179042 | -104.751130 |  |
| 8,730.00  | 88.46           | 353.30      | 7,261.05            | 1,095.16   | 242.62     | 09,045.501398     | 09,233.654473    | 40.179301 | -104.751169 |  |
| 8,825.00  | 88.45           | 353.08      | 7,263.61            | 1,189.45   | 231.36     | 09,139.694484     | 09,221.599283    | 40.179559 | -104.751209 |  |
| 8,921.00  | 88.39           | 352.90      | 7,266.26            | 1,284.70   | 219.65     | 09,234.834402     | 09,209.085223    | 40.179821 | -104.751251 |  |
| 9,016.00  | 88.71           | 352.51      | 7,268.67            | 1,378.90   | 207.59     | 09,328.925898     | 09,196.232598    | 40.180079 | -104.751294 |  |
| 9,111.00  | 88.95           | 354.90      | 7,270.61            | 1,473.30   | 197.18     | 09,423.231316     | 09,185.023693    | 40.180339 | -104.751332 |  |
| 9,205.00  | 89.32           | 355.52      | 7,272.02            | 1,566.96   | 189.33     | 09,516.818232     | 09,176.385934    | 40.180596 | -104.751360 |  |
| 9,301.00  | 90.37           | 355.53      | 7,272.28            | 1,662.67   | 181.84     | 09,612.453254     | 09,168.089113    | 40.180858 | -104.751386 |  |
| 9,396.00  | 91.17           | 358.02      | 7,271.01            | 1,757.50   | 176.49     | 09,707.233535     | 09,161.945993    | 40.181119 | -104.751406 |  |
| 9,491.00  | 90.56           | 356.81      | 7,269.57            | 1,852.39   | 172.21     | 09,802.080308     | 09,156.861850    | 40.181379 | -104.751421 |  |
| 9,587.00  | 91.42           | 357.91      | 7,267.91            | 1,948.27   | 167.79     | 09,897.916967     | 09,151.632341    | 40.181642 | -104.751437 |  |
| 9,682.00  | 92.29           | 359.10      | 7,264.84            | 2,043.19   | 165.31     | 09,992.803946     | 09,148.354579    | 40.181903 | -104.751446 |  |
| 9,777.00  | 93.27           | 358.92      | 7,260.23            | 2,138.06   | 163.67     | 10,087.655568     | 09,145.915122    | 40.182163 | -104.751451 |  |
| 9,871.00  | 92.16           | 359.87      | 7,255.78            | 2,231.95   | 162.68     | 10,181.526603     | 09,144.132266    | 40.182421 | -104.751455 |  |
| 9,966.00  | 89.26           | 0.59        | 7,254.60            | 2,326.93   | 163.06     | 10,276.503598     | 09,143.712592    | 40.182682 | -104.751454 |  |
| 10,062.00   | 88.89           | 0.67        | 7,256.15            | 2,422.91   | 164.12     | 10,372.486537     | 09,143.958371    | 40.182945 | -104.751450 |  |
| 10,157.00   | 88.83           | 1.30        | 7,258.04            | 2,517.88   | 165.75     | 10,467.459590     | 09,144.790027    | 40.183206 | -104.751444 |  |
| 10,251.00   | 88.89           | 0.14        | 7,259.91            | 2,611.85   | 166.93     | 10,561.434594     | 09,145.178275    | 40.183464 | -104.751440 |  |
| 10,346.00   | 89.75           | 0.43        | 7,261.04            | 2,706.84   | 167.40     | 10,656.422323     | 09,144.849571    | 40.183725 | -104.751438 |  |
| 10,441.00   | 89.94           | 0.37        | 7,261.30            | 2,801.84   | 168.07     | 10,751.417807     | 09,144.711487    | 40.183985 | -104.751436 |  |
| 10,536.00   | 90.19           | 1.13        | 7,261.19            | 2,896.83   | 169.31     | 10,846.411925     | 09,145.153694    | 40.184246 | -104.751431 |  |
| 10,631.00   | 90.74           | 1.44        | 7,260.42            | 2,991.80   | 171.44     | 10,941.394997     | 09,146.482830    | 40.184507 | -104.751424 |  |
| 10,726.00   | 91.23           | 1.88        | 7,258.78            | 3,086.75   | 174.19     | 11,036.356386     | 09,148.433353    | 40.184768 | -104.751414 |  |
| 10,821.00   | 91.97           | 2.00        | 7,256.13            | 3,181.65   | 177.41     | 11,131.283963     | 09,150.847341    | 40.185028 | -104.751402 |  |
| 10,916.00   | 91.36           | 2.24        | 7,253.37            | 3,276.55   | 180.92     | 11,226.200576     | 09,153.559506    | 40.185289 | -104.751390 |  |
| 11,011.00   | 89.26           | 3.14        | 7,252.86            | 3,371.44   | 185.38     | 11,321.118427     | 09,157.217099    | 40.185549 | -104.751374 |  |
| 11,106.00   | 89.45           | 3.09        | 7,253.93            | 3,466.29   | 190.54     | 11,416.008156     | 09,161.578652    | 40.185809 | -104.751355 |  |
| 11,201.00   | 90.93           | 3.30        | 7,253.61            | 3,561.14   | 195.83     | 11,510.894549     | 09,166.072819    | 40.186070 | -104.751336 |  |
| 11,295.00   | 91.60           | 3.43        | 7,251.54            | 3,654.95   | 201.35     | 11,604.748276     | 09,170.797204    | 40.186327 | -104.751317 |  |
| 11,389.00   | 91.85           | 2.16        | 7,248.71            | 3,748.80   | 205.93     | 11,698.623236     | 09,174.586908    | 40.186585 | -104.751300 |  |
| 11,483.00   | 91.79           | 0.84        | 7,245.72            | 3,842.71   | 208.39     | 11,792.554964     | 09,176.253887    | 40.186843 | -104.751291 |  |
| 11,578.00   | 90.99           | 358.77      | 7,243.42            | 3,937.68   | 208.07     | 11,887.510391     | 09,175.129435    | 40.187103 | -104.751293 |  |
| 11,673.00   | 91.17           | 358.87      | 7,241.63            | 4,032.64   | 206.11     | 11,982.449426     | 09,172.372599    | 40.187364 | -104.751300 |  |
| 11,767.00   | 90.31           | 357.41      | 7,240.41            | 4,126.58   | 203.06     | 12,076.355588     | 09,168.529764    | 40.187622 | -104.751310 |  |
| 11,863.00   | 90.56           | 357.74      | 7,239.68            | 4,222.49   | 199.00     | 12,172.224914     | 09,163.659332    | 40.187885 | -104.751325 |  |
| 11,958.00   | 90.86           | 359.52      | 7,238.51            | 4,317.45   | 196.73     | 12,267.159984     | 09,160.587453    | 40.188146 | -104.751333 |  |
| 12,053.00   | 91.61           | 0.11        | 7,236.46            | 4,412.43   | 196.42     | 12,362.126338     | 09,159.479669    | 40.188407 | -104.751334 |  |
| 12,147.00   | 90.12           | 358.96      | 7,235.04            | 4,506.41   | 195.66     | 12,456.094548     | 09,157.924105    | 40.188665 | -104.751337 |  |
| 12,242.00   | 90.49           | 359.27      | 7,234.53            | 4,601.40   | 194.19     | 12,551.061814     | 09,155.655750    | 40.188925 | -104.751342 |  |
| 12,338.00   | 89.63           | 357.65      | 7,234.43            | 4,697.36   | 191.61     | 12,646.993756     | 09,152.266690    | 40.189189 | -104.751351 |  |
| 12,434.00   | 89.69           | 356.92      | 7,235.00            | 4,793.25   | 187.06     | 12,742.837833     | 09,146.911052    | 40.189452 | -104.751368 |  |
| 12,529.00   | 89.14           | 355.62      | 7,235.97            | 4,888.04   | 180.88     | 12,837.569754     | 09,139.932346    | 40.189712 | -104.751390 |  |
| 12,625.00   | 90.00           | 356.42      | 7,236.69            | 4,983.81   | 174.22     | 12,933.270207     | 09,132.462298    | 40.189975 | -104.751414 |  |
| 12,678.00   | 90.06           | 356.15      | 7,236.67            | 5,036.70   | 170.79     | 12,986.125695     | 09,128.582425    | 40.190120 | -104.751426 |  |
| <b>Final Sperry MWD Survey @ 12678.00ft</b>       |                 |             |                     |            |            |                   |                  |           |             |  |
| 12,716.00   | 90.06           | 356.15      | 7,236.63            | 5,074.61   | 168.24     | 13,024.015444     | 09,125.711345    | 40.190224 | -104.751435 |  |
| <b>Straight Line Projection to TD @12716.00ft</b> |                 |             |                     |            |            |                   |                  |           |             |  |

# Halliburton Company

## Survey Report - Geographic

|                  |                          |                                     |                                  |
|------------------|--------------------------|-------------------------------------|----------------------------------|
| <b>Company:</b>  | Anadarko Petroleum Corp. | <b>Local Co-ordinate Reference:</b> | Well Brown 13N-26HZ              |
| <b>Project:</b>  | Weld County, CO (NAD 83) | <b>TVD Reference:</b>               | RKB 22' @ 5042.00ft (Nabors M40) |
| <b>Site:</b>     | Sec. 35-T3N-R66W         | <b>MD Reference:</b>                | RKB 22' @ 5042.00ft (Nabors M40) |
| <b>Well:</b>     | Brown 13N-26HZ           | <b>North Reference:</b>             | True                             |
| <b>Wellbore:</b> | Plan B Rev 0             | <b>Survey Calculation Method:</b>   | Minimum Curvature                |
| <b>Design:</b>   | Actual Field Surveys     | <b>Database:</b>                    | EDM 2003.16 Single User Db       |

| Targets   |           |          |          |          |          |                |                |           |             |
|---|-----------|----------|----------|----------|----------|----------------|----------------|-----------|-------------|
| Target Name   | Dip Angle | Dip Dir. | TVD      | +N/S     | +E/W     | Northing       | Easting        | Latitude  | Longitude   |
| - hit/miss target   | (°)       | (°)      | (ft)     | (ft)     | (ft)     | (ft)           | (ft)           |           |             |
| - Shape   |           |          |          |          |          |                |                |           |             |
| Brown Pad_Sec 35 Li   | 0.00      | 0.00     | 0.00     | -24.81   | -16.92   | 307,923.428091 | 208,983.579254 | 40.176226 | -104.752098 |
| - actual wellpath misses target center by 30.03ft at 0.00ft MD (0.00 TVD, 0.00 N, 0.00 E)             |           |          |          |          |          |                |                |           |             |
| - Polygon   |           |          |          |          |          |                |                |           |             |
| Point 1   |           |          | 0.00     | 4,612.53 | -483.15  | 1,312,556.47   | 3,208,478.27   |           |             |
| Point 2   |           |          | 0.00     | 1,971.02 | -482.80  | 1,309,915.17   | 3,208,500.90   |           |             |
| Point 3   |           |          | 0.00     | -669.50  | -484.40  | 1,307,274.85   | 3,208,521.57   |           |             |
| Point 4   |           |          | 0.00     | -636.76  | 2,137.88 | 1,307,329.70   | 3,211,143.37   |           |             |
| Point 5   |           |          | 0.00     | -606.08  | 4,757.87 | 1,307,382.48   | 3,213,762.90   |           |             |
| Point 6   |           |          | 0.00     | 2,016.80 | 4,772.32 | 1,310,005.27   | 3,213,755.23   |           |             |
| Point 7   |           |          | 0.00     | 4,634.35 | 4,780.95 | 1,312,622.69   | 3,213,741.78   |           |             |
| Point 8   |           |          | 0.00     | 4,623.35 | 2,149.41 | 1,312,589.50   | 3,211,110.54   |           |             |
| Brown 13N-26HZ_WF   | 0.00      | 0.00     | 7,251.51 | 3,600.00 | 220.00   | 311,549.957321 | 209,189.909279 | 40.186176 | -104.751250 |
| - actual wellpath misses target center by 21.91ft at 11241.25ft MD (7252.86 TVD, 3601.31 N, 198.17 E) |           |          |          |          |          |                |                |           |             |
| - Point   |           |          |          |          |          |                |                |           |             |
| Brown 13N-26HZ_SH   | 0.00      | 0.00     | 0.00     | 0.00     | 0.00     | 307,948.382136 | 209,000.290384 | 40.176294 | -104.752037 |
| - actual wellpath hits target center  |           |          |          |          |          |                |                |           |             |
| - Point   |           |          |          |          |          |                |                |           |             |
| Brown 13N-26HZ_BH   | 0.00      | 0.00     | 7,255.00 | 5,075.25 | 131.54   | 313,024.341816 | 209,089.011701 | 40.190226 | -104.751566 |
| - actual wellpath misses target center by 41.05ft at 12716.00ft MD (7236.63 TVD, 5074.61 N, 168.24 E) |           |          |          |          |          |                |                |           |             |
| - Point   |           |          |          |          |          |                |                |           |             |
| Brown 13N-26HZ_WF   | 0.00      | 0.00     | 7,248.90 | 2,500.00 | 165.75   | 310,449.585428 | 209,144.941384 | 40.183157 | -104.751444 |
| - actual wellpath misses target center by 8.79ft at 10138.95ft MD (7257.67 TVD, 2499.83 N, 165.36 E)  |           |          |          |          |          |                |                |           |             |
| - Point   |           |          |          |          |          |                |                |           |             |
| Brown Pad_Sec 35 4c   | 0.00      | 0.00     | 0.00     | -24.81   | -16.92   | 307,923.428091 | 208,983.579254 | 40.176226 | -104.752098 |
| - actual wellpath misses target center by 30.03ft at 0.00ft MD (0.00 TVD, 0.00 N, 0.00 E)             |           |          |          |          |          |                |                |           |             |
| - Polygon   |           |          |          |          |          |                |                |           |             |
| Point 1   |           |          | 0.00     | 4,154.40 | -23.06   | 1,312,102.26   | 3,208,942.19   |           |             |
| Point 2   |           |          | 0.00     | 1,974.85 | -22.78   | 1,309,922.88   | 3,208,960.85   |           |             |
| Point 3   |           |          | 0.00     | -203.70  | -24.10   | 1,307,744.49   | 3,208,977.91   |           |             |
| Point 4   |           |          | 0.00     | -176.78  | 2,132.14 | 1,307,789.60   | 3,211,133.75   |           |             |
| Point 5   |           |          | 0.00     | -150.10  | 4,301.68 | 1,307,834.57   | 3,213,302.90   |           |             |
| Point 6   |           |          | 0.00     | 2,011.11 | 4,310.57 | 1,309,995.69   | 3,213,293.56   |           |             |
| Point 7   |           |          | 0.00     | 4,172.40 | 4,319.10 | 1,312,156.88   | 3,213,283.86   |           |             |
| Point 8   |           |          | 0.00     | 2,011.13 | 4,310.57 | 1,309,995.71   | 3,213,293.56   |           |             |
| Point 9   |           |          | 0.00     | -150.09  | 4,301.68 | 1,307,834.58   | 3,213,302.90   |           |             |
| Point 10  |           |          | 0.00     | -176.76  | 2,132.14 | 1,307,789.62   | 3,211,133.75   |           |             |
| Point 11  |           |          | 0.00     | -203.69  | -24.10   | 1,307,744.50   | 3,208,977.91   |           |             |
| Point 12  |           |          | 0.00     | 1,974.87 | -22.78   | 1,309,922.90   | 3,208,960.85   |           |             |
| Point 13  |           |          | 0.00     | 4,154.41 | -23.06   | 1,312,102.27   | 3,208,942.19   |           |             |

| Casing Points       |                     |                        |                     |                   |
|---------------------|---------------------|------------------------|---------------------|-------------------|
| Measured Depth (ft) | Vertical Depth (ft) | Name                   | Casing Diameter (") | Hole Diameter (") |
| 7,623.00            | 7,270.40            | 7" Intermediate Casing | 7                   | 8-3/4             |

# Halliburton Company

## Survey Report - Geographic

|                  |                          |                                     |                                  |
|------------------|--------------------------|-------------------------------------|----------------------------------|
| <b>Company:</b>  | Anadarko Petroleum Corp. | <b>Local Co-ordinate Reference:</b> | Well Brown 13N-26HZ              |
| <b>Project:</b>  | Weld County, CO (NAD 83) | <b>TVD Reference:</b>               | RKB 22' @ 5042.00ft (Nabors M40) |
| <b>Site:</b>     | Sec. 35-T3N-R66W         | <b>MD Reference:</b>                | RKB 22' @ 5042.00ft (Nabors M40) |
| <b>Well:</b>     | Brown 13N-26HZ           | <b>North Reference:</b>             | True                             |
| <b>Wellbore:</b> | Plan B Rev 0             | <b>Survey Calculation Method:</b>   | Minimum Curvature                |
| <b>Design:</b>   | Actual Field Surveys     | <b>Database:</b>                    | EDM 2003.16 Single User Db       |

| Targets   |           |          |          |          |          |                |                |           |             |  |
|---|-----------|----------|----------|----------|----------|----------------|----------------|-----------|-------------|--|
| Target Name   | Dip Angle | Dip Dir. | TVD      | +N-S     | +E-W     | Northing       | Easting        | Latitude  | Longitude   |  |
| - hit/miss target   | (°)       | (°)      | (ft)     | (ft)     | (ft)     | (ft)           | (ft)           |           |             |  |
| - Shape   |           |          |          |          |          |                |                |           |             |  |
| Brown Pad_Sec 35 Li   | 0.00      | 0.00     | 0.00     | -24.81   | -16.92   | 307,923.428091 | 208,983.579254 | 40.176226 | -104.752098 |  |
| - actual wellpath misses target center by 30.03ft at 0.00ft MD (0.00 TVD, 0.00 N, 0.00 E)             |           |          |          |          |          |                |                |           |             |  |
| - Polygon   |           |          |          |          |          |                |                |           |             |  |
| Point 1   |           |          | 0.00     | 4,612.53 | -483.15  | 1,312,556.47   | 3,208,478.27   |           |             |  |
| Point 2   |           |          | 0.00     | 1,971.02 | -482.80  | 1,309,915.17   | 3,208,500.90   |           |             |  |
| Point 3   |           |          | 0.00     | -669.50  | -484.40  | 1,307,274.85   | 3,208,521.57   |           |             |  |
| Point 4   |           |          | 0.00     | -636.76  | 2,137.88 | 1,307,329.70   | 3,211,143.37   |           |             |  |
| Point 5   |           |          | 0.00     | -606.08  | 4,757.87 | 1,307,382.48   | 3,213,762.90   |           |             |  |
| Point 6   |           |          | 0.00     | 2,016.80 | 4,772.32 | 1,310,005.27   | 3,213,755.23   |           |             |  |
| Point 7   |           |          | 0.00     | 4,634.35 | 4,780.95 | 1,312,622.69   | 3,213,741.78   |           |             |  |
| Point 8   |           |          | 0.00     | 4,623.35 | 2,149.41 | 1,312,589.50   | 3,211,110.54   |           |             |  |
| Brown 13N-26HZ_WF   | 0.00      | 0.00     | 7,251.51 | 3,600.00 | 220.00   | 311,549.957321 | 209,189.909279 | 40.186176 | -104.751250 |  |
| - actual wellpath misses target center by 21.91ft at 11241.25ft MD (7252.86 TVD, 3601.31 N, 198.17 E) |           |          |          |          |          |                |                |           |             |  |
| - Point   |           |          |          |          |          |                |                |           |             |  |
| Brown 13N-26HZ_SH   | 0.00      | 0.00     | 0.00     | 0.00     | 0.00     | 307,948.382136 | 209,000.290384 | 40.176294 | -104.752037 |  |
| - actual wellpath hits target center  |           |          |          |          |          |                |                |           |             |  |
| - Point   |           |          |          |          |          |                |                |           |             |  |
| Brown 13N-26HZ_BH   | 0.00      | 0.00     | 7,255.00 | 5,075.25 | 131.54   | 313,024.341816 | 209,089.011701 | 40.190226 | -104.751566 |  |
| - actual wellpath misses target center by 41.05ft at 12716.00ft MD (7236.63 TVD, 5074.61 N, 168.24 E) |           |          |          |          |          |                |                |           |             |  |
| - Point   |           |          |          |          |          |                |                |           |             |  |
| Brown 13N-26HZ_WF   | 0.00      | 0.00     | 7,248.90 | 2,500.00 | 165.75   | 310,449.585428 | 209,144.941384 | 40.183157 | -104.751444 |  |
| - actual wellpath misses target center by 8.79ft at 10138.95ft MD (7257.67 TVD, 2499.83 N, 165.36 E)  |           |          |          |          |          |                |                |           |             |  |
| - Point   |           |          |          |          |          |                |                |           |             |  |
| Brown Pad_Sec 35 4c   | 0.00      | 0.00     | 0.00     | -24.81   | -16.92   | 307,923.428091 | 208,983.579254 | 40.176226 | -104.752098 |  |
| - actual wellpath misses target center by 30.03ft at 0.00ft MD (0.00 TVD, 0.00 N, 0.00 E)             |           |          |          |          |          |                |                |           |             |  |
| - Polygon   |           |          |          |          |          |                |                |           |             |  |
| Point 1   |           |          | 0.00     | 4,154.40 | -23.06   | 1,312,102.26   | 3,208,942.19   |           |             |  |
| Point 2   |           |          | 0.00     | 1,974.85 | -22.78   | 1,309,922.88   | 3,208,960.85   |           |             |  |
| Point 3   |           |          | 0.00     | -203.70  | -24.10   | 1,307,744.49   | 3,208,977.91   |           |             |  |
| Point 4   |           |          | 0.00     | -176.78  | 2,132.14 | 1,307,789.60   | 3,211,133.75   |           |             |  |
| Point 5   |           |          | 0.00     | -150.10  | 4,301.68 | 1,307,834.57   | 3,213,302.90   |           |             |  |
| Point 6   |           |          | 0.00     | 2,011.11 | 4,310.57 | 1,309,995.69   | 3,213,293.56   |           |             |  |
| Point 7   |           |          | 0.00     | 4,172.40 | 4,319.10 | 1,312,156.88   | 3,213,283.86   |           |             |  |
| Point 8   |           |          | 0.00     | 2,011.13 | 4,310.57 | 1,309,995.71   | 3,213,293.56   |           |             |  |
| Point 9   |           |          | 0.00     | -150.09  | 4,301.68 | 1,307,834.58   | 3,213,302.90   |           |             |  |
| Point 10  |           |          | 0.00     | -176.76  | 2,132.14 | 1,307,789.62   | 3,211,133.75   |           |             |  |
| Point 11  |           |          | 0.00     | -203.69  | -24.10   | 1,307,744.50   | 3,208,977.91   |           |             |  |
| Point 12  |           |          | 0.00     | 1,974.87 | -22.78   | 1,309,922.90   | 3,208,960.85   |           |             |  |
| Point 13  |           |          | 0.00     | 4,154.41 | -23.06   | 1,312,102.27   | 3,208,942.19   |           |             |  |

| Casing Points  |                |                        |                 |               |  |
|----------------|----------------|------------------------|-----------------|---------------|--|
| Measured Depth | Vertical Depth | Name                   | Casing Diameter | Hole Diameter |  |
| (ft)           | (ft)           |                        | (")             | (")           |  |
| 7,623.00       | 7,270.40       | 7" Intermediate Casing | 7               | 8-3/4         |  |

| Design Annotations |                |                   |       |                              |  |
|--------------------|----------------|-------------------|-------|------------------------------|--|
| Measured Depth     | Vertical Depth | Local Coordinates |       | Comment                      |  |
| (ft)               | (ft)           | +N-S              | +E-W  |                              |  |
|                    |                | (ft)              | (ft)  |                              |  |
| 100.00             | 100.00         | 0.25              | -0.15 | First Gyro Survey @ 100.00ft |  |
| 821.00             | 820.99         | 1.46              | 1.55  | Final Gyro Survey @ 821.00ft |  |

# Halliburton Company

## Survey Report - Geographic

|  |   |
|--|---|
| <b>Company:</b> Anadarko Petroleum Corp. | <b>Local Co-ordinate Reference:</b> Well Brown 13N-26HZ |
| <b>Project:</b> Weld County, CO (NAD 83) | <b>TVD Reference:</b> RKB 22' @ 5042.00ft (Nabors M40)  |
| <b>Site:</b> Sec. 35-T3N-R66W            | <b>MD Reference:</b> RKB 22' @ 5042.00ft (Nabors M40)   |
| <b>Well:</b> Brown 13N-26HZ              | <b>North Reference:</b> True                            |
| <b>Wellbore:</b> Plan B Rev 0            | <b>Survey Calculation Method:</b> Minimum Curvature     |
| <b>Design:</b> Actual Field Surveys      | <b>Database:</b> EDM 2003.16 Single User Db             |

| Targets   |           |          |          |          |          |                |                |           |             |
|---|-----------|----------|----------|----------|----------|----------------|----------------|-----------|-------------|
| Target Name   | Dip Angle | Dip Dir. | TVD      | +N/S     | +E/W     | Northing       | Easting        | Latitude  | Longitude   |
| - hit/miss target   | (°)       | (°)      | (ft)     | (ft)     | (ft)     | (ft)           | (ft)           |           |             |
| - Shape   |           |          |          |          |          |                |                |           |             |
| Brown Pad_Sec 35 Li   | 0.00      | 0.00     | 0.00     | -24.81   | -16.92   | 307,923.428091 | 208,983.579254 | 40.176226 | -104.752098 |
| - actual wellpath misses target center by 30.03ft at 0.00ft MD (0.00 TVD, 0.00 N, 0.00 E)             |           |          |          |          |          |                |                |           |             |
| - Polygon   |           |          |          |          |          |                |                |           |             |
| Point 1   |           |          | 0.00     | 4,612.53 | -483.15  | 1,312,556.47   | 3,208,478.27   |           |             |
| Point 2   |           |          | 0.00     | 1,971.02 | -482.80  | 1,309,915.17   | 3,208,500.90   |           |             |
| Point 3   |           |          | 0.00     | -669.50  | -484.40  | 1,307,274.85   | 3,208,521.57   |           |             |
| Point 4   |           |          | 0.00     | -636.76  | 2,137.88 | 1,307,329.70   | 3,211,143.37   |           |             |
| Point 5   |           |          | 0.00     | -606.08  | 4,757.87 | 1,307,382.48   | 3,213,762.90   |           |             |
| Point 6   |           |          | 0.00     | 2,016.80 | 4,772.32 | 1,310,005.27   | 3,213,755.23   |           |             |
| Point 7   |           |          | 0.00     | 4,634.35 | 4,780.95 | 1,312,622.69   | 3,213,741.78   |           |             |
| Point 8   |           |          | 0.00     | 4,623.35 | 2,149.41 | 1,312,589.50   | 3,211,110.54   |           |             |
| Brown 13N-26HZ_WF   | 0.00      | 0.00     | 7,251.51 | 3,600.00 | 220.00   | 311,549.957321 | 209,189.909279 | 40.186176 | -104.751250 |
| - actual wellpath misses target center by 21.91ft at 11241.25ft MD (7252.86 TVD, 3601.31 N, 198.17 E) |           |          |          |          |          |                |                |           |             |
| - Point   |           |          |          |          |          |                |                |           |             |
| Brown 13N-26HZ_SH   | 0.00      | 0.00     | 0.00     | 0.00     | 0.00     | 307,948.382136 | 209,000.290384 | 40.176294 | -104.752037 |
| - actual wellpath hits target center  |           |          |          |          |          |                |                |           |             |
| - Point   |           |          |          |          |          |                |                |           |             |
| Brown 13N-26HZ_BH   | 0.00      | 0.00     | 7,255.00 | 5,075.25 | 131.54   | 313,024.341816 | 209,089.011701 | 40.190226 | -104.751566 |
| - actual wellpath misses target center by 41.05ft at 12716.00ft MD (7236.63 TVD, 5074.61 N, 168.24 E) |           |          |          |          |          |                |                |           |             |
| - Point   |           |          |          |          |          |                |                |           |             |
| Brown 13N-26HZ_WF   | 0.00      | 0.00     | 7,248.90 | 2,500.00 | 165.75   | 310,449.585428 | 209,144.941384 | 40.183157 | -104.751444 |
| - actual wellpath misses target center by 8.79ft at 10138.95ft MD (7257.67 TVD, 2499.83 N, 165.36 E)  |           |          |          |          |          |                |                |           |             |
| - Point   |           |          |          |          |          |                |                |           |             |
| Brown Pad_Sec 35 4  | 0.00      | 0.00     | 0.00     | -24.81   | -16.92   | 307,923.428091 | 208,983.579254 | 40.176226 | -104.752098 |
| - actual wellpath misses target center by 30.03ft at 0.00ft MD (0.00 TVD, 0.00 N, 0.00 E)             |           |          |          |          |          |                |                |           |             |
| - Polygon   |           |          |          |          |          |                |                |           |             |
| Point 1   |           |          | 0.00     | 4,154.40 | -23.06   | 1,312,102.26   | 3,208,942.19   |           |             |
| Point 2   |           |          | 0.00     | 1,974.85 | -22.78   | 1,309,922.88   | 3,208,960.85   |           |             |
| Point 3   |           |          | 0.00     | -203.70  | -24.10   | 1,307,744.49   | 3,208,977.91   |           |             |
| Point 4   |           |          | 0.00     | -176.78  | 2,132.14 | 1,307,789.60   | 3,211,133.75   |           |             |
| Point 5   |           |          | 0.00     | -150.10  | 4,301.68 | 1,307,834.57   | 3,213,302.90   |           |             |
| Point 6   |           |          | 0.00     | 2,011.11 | 4,310.57 | 1,309,995.69   | 3,213,293.56   |           |             |
| Point 7   |           |          | 0.00     | 4,172.40 | 4,319.10 | 1,312,156.88   | 3,213,283.86   |           |             |
| Point 8   |           |          | 0.00     | 2,011.13 | 4,310.57 | 1,309,995.71   | 3,213,293.56   |           |             |
| Point 9   |           |          | 0.00     | -150.09  | 4,301.68 | 1,307,834.58   | 3,213,302.90   |           |             |
| Point 10  |           |          | 0.00     | -176.76  | 2,132.14 | 1,307,789.62   | 3,211,133.75   |           |             |
| Point 11  |           |          | 0.00     | -203.69  | -24.10   | 1,307,744.50   | 3,208,977.91   |           |             |
| Point 12  |           |          | 0.00     | 1,974.87 | -22.78   | 1,309,922.90   | 3,208,960.85   |           |             |
| Point 13  |           |          | 0.00     | 4,154.41 | -23.06   | 1,312,102.27   | 3,208,942.19   |           |             |

| Casing Points       |                     |          |                        |   |                   |
|---------------------|---------------------|----------|------------------------|---|-------------------|
| Measured Depth (ft) | Vertical Depth (ft) |          | Name                   | Casing Diameter (")                         | Hole Diameter (") |
| 7,623.00            | 7,270.40            |          | 7" Intermediate Casing | 7   | 8-3/4             |
| 821.00              | 820.99              | 1.46     | 1.55                   | Tie-On to Gyro Surveys @ 821.00ft           |                   |
| 924.00              | 923.98              | 0.27     | 2.07                   | First Sperry MWD Survey @ 924.00ft          |                   |
| 12,678.00           | 7,236.67            | 5,036.70 | 170.79                 | Final Sperry MWD Survey @ 12678.00ft        |                   |
| 12,716.00           | 7,236.63            | 5,074.61 | 168.24                 | Straight Line Projection to TD @ 12716.00ft |                   |

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_

# Halliburton Company

## Survey Report - Geographic

|                  |                          |                                     |                                  |
|------------------|--------------------------|-------------------------------------|----------------------------------|
| <b>Company:</b>  | Anadarko Petroleum Corp. | <b>Local Co-ordinate Reference:</b> | Well Brown 13N-26HZ              |
| <b>Project:</b>  | Weld County, CO (NAD 83) | <b>TVD Reference:</b>               | RKB 22' @ 5042.00ft (Nabors M40) |
| <b>Site:</b>     | Sec. 35-T3N-R66W         | <b>MD Reference:</b>                | RKB 22' @ 5042.00ft (Nabors M40) |
| <b>Well:</b>     | Brown 13N-26HZ           | <b>North Reference:</b>             | True                             |
| <b>Wellbore:</b> | Plan B Rev 0             | <b>Survey Calculation Method:</b>   | Minimum Curvature                |
| <b>Design:</b>   | Actual Field Surveys     | <b>Database:</b>                    | EDM 2003.16 Single User Db       |