

WHITING PETROLEUM CORPORATION

Project: Weld County, CO  
Site: Horsetail #07F PAD  
Well: 0607  
Wellbore: OH  
Design: OH



Azimuths to True North  
Magnetic North: 7.58°  
  
Magnetic Field  
Strength: 52906.1nT  
Dip Angle: 67.35°  
Date: 2/19/2016  
Model: HDGM



PROJECT DETAILS: Weld County, CO

Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: Colorado Northern Zone Datum:  
GE 4898.8' + KB 20' @ 4918.80usft (Unit #406)

| ACTUAL CASING DETAILS |          |        |
|-----------------------|----------|--------|
| TVD                   | MD       | Name   |
| 1965.22               | 1980.00  | 9 5/8" |
| 5737.83               | 12691.00 | Casing |

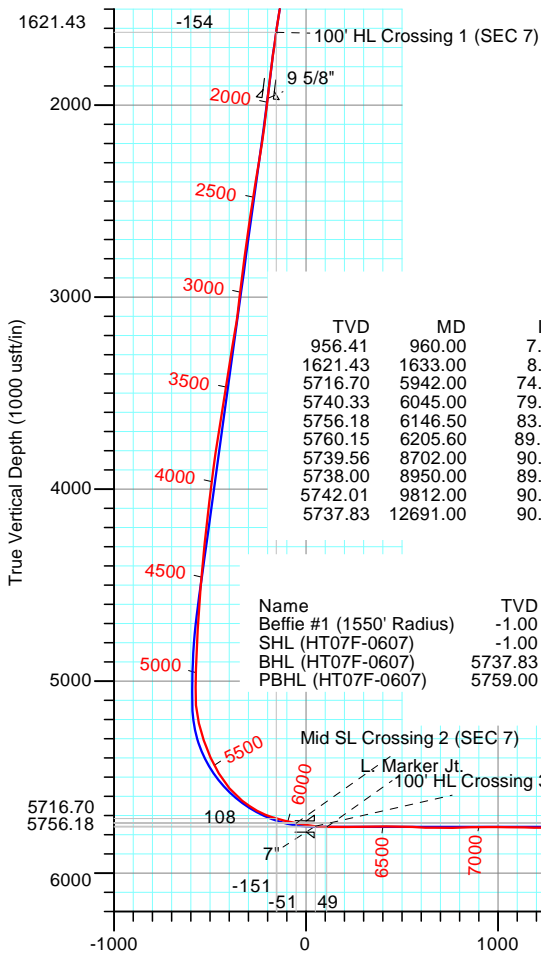
| LINE CALLS                 |                                   |
|----------------------------|-----------------------------------|
| SHL: 2598' FNL, 2267' FWL  | Sec 7-T10N-R57W                   |
| PBHL: 1336' FNL, 2123' FWL | Sec 6-T10N-R57W                   |
| BHL: 1324' FNL, 2126' FWL  | From the Federal Acreage Boundary |
|                            | Sec 6-T10N-R57W                   |

ANNOTATIONS

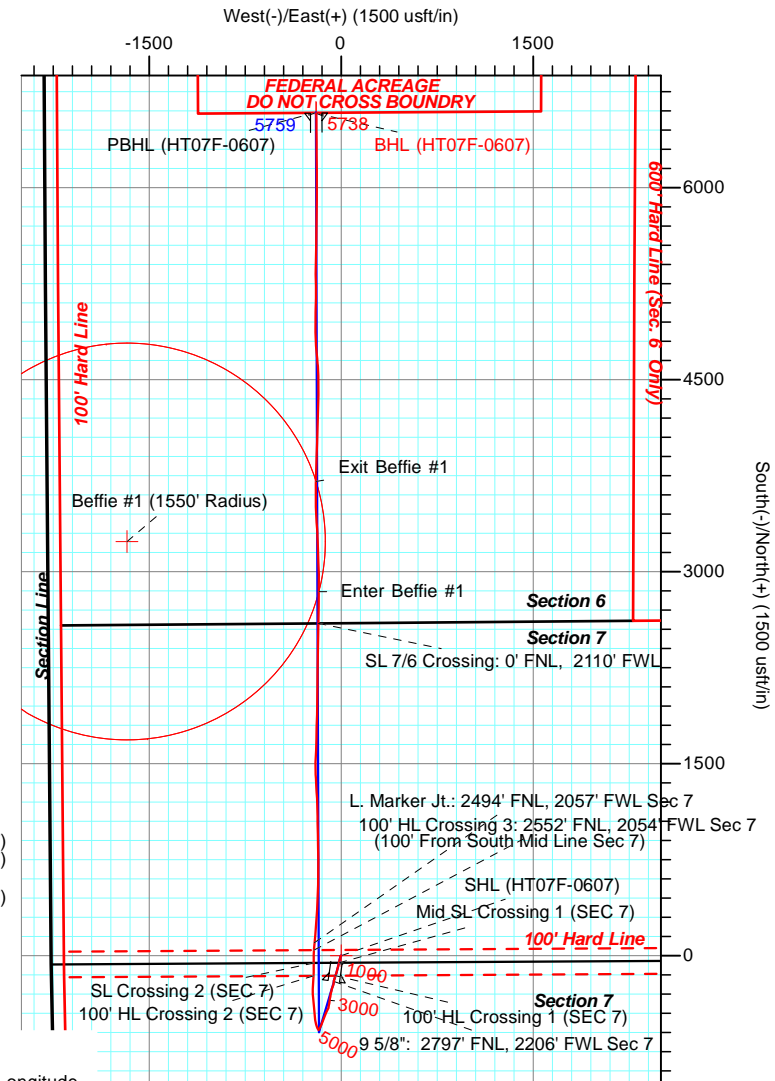
| TVD     | MD       | Inc   | Azi    | +N/-S   | +E/-W   | Vsect   | Departure | Annotation                 |
|---------|----------|-------|--------|---------|---------|---------|-----------|----------------------------|
| 956.41  | 960.00   | 7.44  | 192.93 | -56.09  | -17.84  | -55.53  | 63.72     | SL Crossing 1 (SEC 7)      |
| 1621.43 | 1633.00  | 8.86  | 198.04 | -155.68 | -44.82  | -154.26 | 166.98    | 100' HL Crossing 1 (SEC 7) |
| 5716.70 | 5942.00  | 74.18 | 3.40   | -157.27 | -216.89 | -150.69 | 1047.30   | 100' HL Crossing 2 (SEC 7) |
| 5740.33 | 6045.00  | 79.32 | 359.82 | -57.13  | -214.10 | -50.68  | 1147.49   | SL Crossing 2 (SEC 7)      |
| 5756.18 | 6146.50  | 83.36 | 1.39   | 43.10   | -213.77 | 49.50   | 1247.73   | 100' HL Crossing 3 (SEC 7) |
| 5760.15 | 6205.60  | 89.41 | 4.93   | 101.94  | -210.67 | 108.22  | 1306.64   | L. Marker Jt.              |
| 5739.56 | 8702.00  | 90.27 | 0.99   | 2595.76 | -179.24 | 2599.97 | 3802.34   | SL 7/6 Crossing            |
| 5738.00 | 8950.00  | 89.69 | 0.47   | 2843.71 | -174.82 | 2847.67 | 4050.33   | Enter Baffle #1            |
| 5742.01 | 9812.00  | 90.04 | 1.17   | 3704.79 | -197.29 | 3709.04 | 4912.02   | Exit Baffle #1             |
| 5737.83 | 12691.00 | 90.52 | 359.77 | 6581.51 | -194.51 | 6584.38 | 7790.00   | Projection                 |

DESIGN TARGET DETAILS

| Name                     | TVD     | +N/-S   | +E/-W    | Northing   | Easting    | Latitude         | Longitude         |
|--------------------------|---------|---------|----------|------------|------------|------------------|-------------------|
| Baffle #1 (1550' Radius) | -1.00   | 3235.81 | -1674.33 | 1561549.56 | 3469684.53 | 40° 51' 44.942 N | 103° 48' 6.822 W  |
| SHL (HT07F-0607)         | -1.00   | 0.00    | 0.00     | 1558346.52 | 3471420.73 | 40° 51' 12.971 N | 103° 47' 45.031 W |
| BHL (HT07F-0607)         | 5737.83 | 6581.51 | -194.51  | 1564923.07 | 3471099.79 | 40° 52' 18.001 N | 103° 47' 47.563 W |
| PBHL (HT07F-0607)        | 5759.00 | 6588.46 | -198.03  | 1564929.96 | 3471096.13 | 40° 52' 18.070 N | 103° 47' 47.609 W |



Vertical Section at 358.28° (1000 usft/in)



LEAM DRILLING SYSTEMS LLC  
2010 East Davis, Conroe, Texas 77301  
Phone: 936/756-7577, Fax: 936/756-7595

Design: OH (0607/OH)  
Horsetail #07F PAD  
Created By: Nora Tucker  
Date: 12/12, May 13 2016  
Approved: \_\_\_\_\_  
Date: \_\_\_\_\_

# LEAM Drilling Systems LLC

## Survey Report

|                  |                               |                                     |  |
|------------------|-------------------------------|-------------------------------------|--|
| <b>Company:</b>  | WHITING PETROLEUM CORPORATION | <b>Local Co-ordinate Reference:</b> | Well 0607                                      |
| <b>Project:</b>  | Weld County, CO               | <b>TVD Reference:</b>               | GE 4898.8' + KB 20'? @ 4918.80usft (Unit #406) |
| <b>Site:</b>     | Horsetail #07F PAD            | <b>MD Reference:</b>                | GE 4898.8' + KB 20'? @ 4918.80usft (Unit #406) |
| <b>Well:</b>     | 0607                          | <b>North Reference:</b>             | True   |
| <b>Wellbore:</b> | OH                            | <b>Survey Calculation Method:</b>   | Minimum Curvature                              |
| <b>Design:</b>   | OH                            | <b>Database:</b>                    | EDM 5000.1 Multi_User Db                       |

|                    |                           |                      |                |
|--------------------|---------------------------|----------------------|----------------|
| <b>Project</b>     | Weld County, CO,          |                      |                |
| <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    |                      |                |

|                       |                    |              |                   |                   |                   |
|-----------------------|--------------------|--------------|-------------------|-------------------|-------------------|
| Site                  | Horsetail #07F PAD |              |                   |                   |                   |
| Site Position:        |                    | Northing:    | 1,558,346.52 usft | Latitude:         | 40° 51' 12.971 N  |
| From:                 | Map                | Easting:     | 3,471,420.73 usft | Longitude:        | 103° 47' 45.031 W |
| Position Uncertainty: | 0.00 usft          | Slot Radius: | 13-3/16 "         | Grid Convergence: | 1.10 °            |

|                      |       |           |                     |                   |               |                   |
|----------------------|-------|-----------|---------------------|-------------------|---------------|-------------------|
| Well                 | 0607  |           |                     |                   |               |                   |
| Well Position        | +N/-S | 0.00 usft | Northing:           | 1,558,346.52 usft | Latitude:     | 40° 51' 12.971 N  |
|                      | +E/-W | 0.00 usft | Easting:            | 3,471,420.73 usft | Longitude:    | 103° 47' 45.031 W |
| Position Uncertainty |       | 0.00 usft | Wellhead Elevation: | 0.00 usft         | Ground Level: | 4,898.80 usft     |

|                  |                   |                    |                        |                      |                            |
|------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| <b>Wellbore</b>  | OH                |                    |                        |                      |                            |
| <b>Magnetics</b> | <b>Model Name</b> | <b>Sample Date</b> | <b>Declination (°)</b> | <b>Dip Angle (°)</b> | <b>Field Strength (nT)</b> |
|                  | HDGM              | 2/19/2016          | 7.58                   | 67.35                | 52,906                     |

|                          |                                |                     |                     |                      |      |
|--------------------------|--------------------------------|---------------------|---------------------|----------------------|------|
| <b>Design</b>            | OH                             |                     |                     |                      |      |
| <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) (usft)</b> | <b>+N/-S (usft)</b> | <b>+E/-W (usft)</b> | <b>Direction (°)</b> |      |
|                          | 0.00                           | 0.00                | 0.00                | 358.28               |      |

|                       |                  |                          |                  |                    |  |
|-----------------------|------------------|--------------------------|------------------|--------------------|--|
| <b>Survey Program</b> | <b>Date</b>      | 5/12/2016                |                  |                    |  |
| <b>From (usft)</b>    | <b>To (usft)</b> | <b>Survey (Wellbore)</b> | <b>Tool Name</b> | <b>Description</b> |  |
| 140.00                | 12,646.00        | Survey #1 (OH)           | LEAM_MWD         | LEAM MWD           |  |
| 12,691.00             | 12,691.00        | Survey #2 (OH)           | Project          | Projection         |  |

|                              |                        |                    |                              |                     |                     |                                |                                |                               |                              |  |
|------------------------------|------------------------|--------------------|------------------------------|---------------------|---------------------|--------------------------------|--------------------------------|-------------------------------|------------------------------|--|
| <b>Survey</b>                |                        |                    |                              |                     |                     |                                |                                |                               |                              |  |
| <b>Measured Depth (usft)</b> | <b>Inclination (°)</b> | <b>Azimuth (°)</b> | <b>Vertical Depth (usft)</b> | <b>+N/-S (usft)</b> | <b>+E/-W (usft)</b> | <b>Vertical Section (usft)</b> | <b>Dogleg Rate (°/100usft)</b> | <b>Build Rate (°/100usft)</b> | <b>Turn Rate (°/100usft)</b> |  |
| 0.00                         | 0.00                   | 0.00               | 0.00                         | 0.00                | 0.00                | 0.00                           | 0.00                           | 0.00                          | 0.00                         |  |
| 140.00                       | 0.62                   | 349.81             | 140.00                       | 0.75                | -0.13               | 0.75                           | 0.44                           | 0.44                          | 0.00                         |  |
| 231.00                       | 0.52                   | 352.78             | 230.99                       | 1.64                | -0.27               | 1.65                           | 0.11                           | -0.11                         | 3.26                         |  |
| 322.00                       | 0.75                   | 198.91             | 321.99                       | 1.49                | -0.52               | 1.50                           | 1.36                           | 0.25                          | -169.09                      |  |
| 414.00                       | 1.93                   | 238.19             | 413.97                       | 0.10                | -2.03               | 0.16                           | 1.55                           | 1.28                          | 42.70                        |  |
| 506.00                       | 3.47                   | 204.36             | 505.87                       | -3.25               | -4.49               | -3.12                          | 2.34                           | 1.67                          | -36.77                       |  |
| 598.00                       | 5.09                   | 198.03             | 597.61                       | -9.67               | -6.91               | -9.46                          | 1.83                           | 1.76                          | -6.88                        |  |
| 689.00                       | 7.47                   | 193.02             | 688.05                       | -19.27              | -9.49               | -18.98                         | 2.68                           | 2.62                          | -5.51                        |  |
| 781.00                       | 8.75                   | 193.63             | 779.13                       | -31.90              | -12.49              | -31.51                         | 1.39                           | 1.39                          | 0.66                         |  |
| 872.00                       | 7.81                   | 191.63             | 869.18                       | -44.69              | -15.36              | -44.20                         | 1.08                           | -1.03                         | -2.20                        |  |

# LEAM Drilling Systems LLC

## Survey Report

|                  |                               |                                     |  |
|------------------|-------------------------------|-------------------------------------|--|
| <b>Company:</b>  | WHITING PETROLEUM CORPORATION | <b>Local Co-ordinate Reference:</b> | Well 0607                                      |
| <b>Project:</b>  | Weld County, CO               | <b>TVD Reference:</b>               | GE 4898.8' + KB 20'? @ 4918.80usft (Unit #406) |
| <b>Site:</b>     | Horsetail #07F PAD            | <b>MD Reference:</b>                | GE 4898.8' + KB 20'? @ 4918.80usft (Unit #406) |
| <b>Well:</b>     | 0607                          | <b>North Reference:</b>             | True   |
| <b>Wellbore:</b> | OH                            | <b>Survey Calculation Method:</b>   | Minimum Curvature                              |
| <b>Design:</b>   | OH                            | <b>Database:</b>                    | EDM 5000.1 Multi_User Db                       |

| Survey                            |                 |             |                       |              |              |                         |                         |                        |                       |
|-----------------------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| Measured Depth (usft)             | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
| 960.00                            | 7.44            | 192.93      | 956.41                | -56.09       | -17.84       | -55.53                  | 0.47                    | -0.42                  | 1.47                  |
| <b>SL Crossing 1 (SEC 7)</b>      |                 |             |                       |              |              |                         |                         |                        |                       |
| 964.00                            | 7.42            | 192.99      | 960.37                | -56.60       | -17.96       | -56.03                  | 0.47                    | -0.42                  | 1.55                  |
| 1,056.00                          | 8.68            | 193.85      | 1,051.46              | -69.13       | -20.96       | -68.47                  | 1.38                    | 1.37                   | 0.93                  |
| 1,147.00                          | 9.00            | 194.84      | 1,141.38              | -82.67       | -24.42       | -81.90                  | 0.39                    | 0.35                   | 1.09                  |
| 1,239.00                          | 8.83            | 193.91      | 1,232.27              | -96.48       | -27.96       | -95.60                  | 0.24                    | -0.18                  | -1.01                 |
| 1,331.00                          | 9.16            | 194.34      | 1,323.14              | -110.43      | -31.47       | -109.44                 | 0.37                    | 0.36                   | 0.47                  |
| 1,423.00                          | 9.02            | 195.94      | 1,413.98              | -124.46      | -35.27       | -123.35                 | 0.31                    | -0.15                  | 1.74                  |
| 1,514.00                          | 9.02            | 196.78      | 1,503.86              | -138.15      | -39.29       | -136.91                 | 0.14                    | 0.00                   | 0.92                  |
| 1,605.00                          | 8.79            | 197.96      | 1,593.76              | -151.59      | -43.49       | -150.22                 | 0.32                    | -0.25                  | 1.30                  |
| 1,633.00                          | 8.86            | 198.04      | 1,621.43              | -155.68      | -44.82       | -154.26                 | 0.26                    | 0.26                   | 0.27                  |
| <b>100' HL Crossing 1 (SEC 7)</b> |                 |             |                       |              |              |                         |                         |                        |                       |
| 1,698.00                          | 9.03            | 198.21      | 1,685.64              | -165.29      | -47.96       | -163.77                 | 0.26                    | 0.26                   | 0.27                  |
| 1,789.00                          | 7.52            | 196.12      | 1,775.69              | -177.79      | -51.85       | -176.15                 | 1.69                    | -1.66                  | -2.30                 |
| 1,883.00                          | 6.65            | 197.28      | 1,868.97              | -188.90      | -55.17       | -187.16                 | 0.94                    | -0.93                  | 1.23                  |
| 1,978.00                          | 7.65            | 187.95      | 1,963.23              | -200.41      | -57.68       | -198.59                 | 1.61                    | 1.05                   | -9.82                 |
| 1,980.00                          | 7.64            | 187.95      | 1,965.22              | -200.68      | -57.72       | -198.85                 | 0.69                    | -0.69                  | 0.18                  |
| <b>9 5/8"</b>                     |                 |             |                       |              |              |                         |                         |                        |                       |
| 2,124.00                          | 6.64            | 188.26      | 2,108.10              | -218.39      | -60.24       | -216.49                 | 0.69                    | -0.69                  | 0.21                  |
| 2,219.00                          | 9.73            | 198.42      | 2,202.12              | -231.45      | -63.56       | -229.44                 | 3.58                    | 3.25                   | 10.69                 |
| 2,314.00                          | 10.05           | 197.61      | 2,295.71              | -246.96      | -68.61       | -244.79                 | 0.37                    | 0.34                   | -0.85                 |
| 2,409.00                          | 9.72            | 196.75      | 2,389.30              | -262.54      | -73.43       | -260.22                 | 0.38                    | -0.35                  | -0.91                 |
| 2,497.00                          | 9.15            | 194.62      | 2,476.11              | -276.43      | -77.33       | -273.98                 | 0.76                    | -0.65                  | -2.42                 |
| 2,529.00                          | 8.93            | 192.47      | 2,507.71              | -281.32      | -78.51       | -278.83                 | 1.26                    | -0.69                  | -6.72                 |
| 2,622.00                          | 8.36            | 192.05      | 2,599.66              | -294.98      | -81.48       | -292.40                 | 0.62                    | -0.61                  | -0.45                 |
| 2,717.00                          | 7.91            | 190.51      | 2,693.70              | -308.16      | -84.12       | -305.49                 | 0.53                    | -0.47                  | -1.62                 |
| 2,811.00                          | 7.70            | 188.46      | 2,786.83              | -320.74      | -86.22       | -318.01                 | 0.37                    | -0.22                  | -2.18                 |
| 2,906.00                          | 7.53            | 187.83      | 2,880.99              | -333.21      | -88.01       | -330.41                 | 0.20                    | -0.18                  | -0.66                 |
| 3,000.00                          | 6.95            | 188.69      | 2,974.24              | -344.93      | -89.71       | -342.08                 | 0.63                    | -0.62                  | 0.91                  |
| 3,095.00                          | 6.68            | 190.89      | 3,068.57              | -356.04      | -91.62       | -353.13                 | 0.40                    | -0.28                  | 2.32                  |
| 3,189.00                          | 10.19           | 188.71      | 3,161.54              | -369.63      | -93.91       | -366.64                 | 3.75                    | 3.73                   | -2.32                 |
| 3,284.00                          | 9.46            | 190.35      | 3,255.15              | -385.62      | -96.59       | -382.54                 | 0.82                    | -0.77                  | 1.73                  |
| 3,378.00                          | 8.27            | 187.94      | 3,348.02              | -399.91      | -98.91       | -396.76                 | 1.33                    | -1.27                  | -2.56                 |
| 3,472.00                          | 10.14           | 201.83      | 3,440.82              | -414.29      | -102.92      | -411.02                 | 3.08                    | 1.99                   | 14.78                 |
| 3,567.00                          | 10.25           | 204.72      | 3,534.32              | -429.73      | -109.56      | -426.25                 | 0.55                    | 0.12                   | 3.04                  |
| 3,662.00                          | 10.15           | 205.33      | 3,627.82              | -444.98      | -116.68      | -441.27                 | 0.15                    | -0.11                  | 0.64                  |
| 3,756.00                          | 10.00           | 204.13      | 3,720.37              | -459.91      | -123.56      | -456.00                 | 0.27                    | -0.16                  | -1.28                 |
| 3,851.00                          | 9.31            | 202.78      | 3,814.02              | -474.52      | -129.91      | -470.41                 | 0.76                    | -0.73                  | -1.42                 |
| 3,946.00                          | 8.32            | 200.59      | 3,907.90              | -488.04      | -135.30      | -483.76                 | 1.10                    | -1.04                  | -2.31                 |
| 4,040.00                          | 7.16            | 199.24      | 4,001.04              | -499.94      | -139.62      | -495.53                 | 1.25                    | -1.23                  | -1.44                 |
| 4,134.00                          | 6.80            | 200.91      | 4,094.35              | -510.67      | -143.54      | -506.13                 | 0.44                    | -0.38                  | 1.78                  |
| 4,228.00                          | 6.69            | 201.56      | 4,187.70              | -520.96      | -147.54      | -516.30                 | 0.14                    | -0.12                  | 0.69                  |
| 4,323.00                          | 6.32            | 202.64      | 4,282.08              | -530.93      | -151.58      | -526.14                 | 0.41                    | -0.39                  | 1.14                  |

# LEAM Drilling Systems LLC

## Survey Report

|                  |                               |                                     |  |
|------------------|-------------------------------|-------------------------------------|--|
| <b>Company:</b>  | WHITING PETROLEUM CORPORATION | <b>Local Co-ordinate Reference:</b> | Well 0607                                      |
| <b>Project:</b>  | Weld County, CO               | <b>TVD Reference:</b>               | GE 4898.8' + KB 20'? @ 4918.80usft (Unit #406) |
| <b>Site:</b>     | Horsetail #07F PAD            | <b>MD Reference:</b>                | GE 4898.8' + KB 20'? @ 4918.80usft (Unit #406) |
| <b>Well:</b>     | 0607                          | <b>North Reference:</b>             | True   |
| <b>Wellbore:</b> | OH                            | <b>Survey Calculation Method:</b>   | Minimum Curvature                              |
| <b>Design:</b>   | OH                            | <b>Database:</b>                    | EDM 5000.1 Multi_User Db                       |

| Survey                     |                 |             |                       |              |              |                         |                         |                        |                       |
|----------------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| Measured Depth (usft)      | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
| 4,418.00                   | 6.03            | 203.62      | 4,376.53              | -540.33      | -155.60      | -535.42                 | 0.32                    | -0.31                  | 1.03                  |
| 4,512.00                   | 5.91            | 201.75      | 4,470.02              | -549.35      | -159.37      | -544.32                 | 0.24                    | -0.13                  | -1.99                 |
| 4,606.00                   | 5.15            | 206.53      | 4,563.58              | -557.62      | -163.05      | -552.47                 | 0.94                    | -0.81                  | 5.09                  |
| 4,700.00                   | 4.38            | 211.37      | 4,657.26              | -564.46      | -166.80      | -559.20                 | 0.92                    | -0.82                  | 5.15                  |
| 4,794.00                   | 3.65            | 214.73      | 4,751.03              | -569.98      | -170.37      | -564.61                 | 0.82                    | -0.78                  | 3.57                  |
| 4,887.00                   | 2.94            | 211.03      | 4,843.87              | -574.46      | -173.29      | -569.00                 | 0.80                    | -0.76                  | -3.98                 |
| 4,981.00                   | 2.00            | 211.84      | 4,937.79              | -577.92      | -175.40      | -572.39                 | 1.00                    | -1.00                  | 0.86                  |
| 5,076.00                   | 1.56            | 204.44      | 5,032.74              | -580.50      | -176.80      | -574.94                 | 0.52                    | -0.46                  | -7.79                 |
| 5,170.00                   | 5.13            | 321.30      | 5,126.62              | -578.39      | -179.96      | -572.73                 | 6.38                    | 3.80                   | 124.32                |
| 5,264.00                   | 15.29           | 336.82      | 5,219.02              | -563.67      | -187.49      | -557.79                 | 11.10                   | 10.81                  | 16.51                 |
| 5,359.00                   | 19.17           | 341.35      | 5,309.75              | -537.37      | -197.41      | -531.20                 | 4.32                    | 4.08                   | 4.77                  |
| 5,454.00                   | 23.97           | 355.37      | 5,398.13              | -503.31      | -203.97      | -496.96                 | 7.38                    | 5.05                   | 14.76                 |
| 5,548.00                   | 30.54           | 355.35      | 5,481.65              | -460.43      | -207.45      | -454.00                 | 6.99                    | 6.99                   | -0.02                 |
| 5,643.00                   | 41.11           | 353.59      | 5,558.56              | -405.18      | -212.91      | -398.61                 | 11.18                   | 11.13                  | -1.85                 |
| 5,737.00                   | 51.15           | 354.41      | 5,623.63              | -337.87      | -219.94      | -331.11                 | 10.70                   | 10.68                  | 0.87                  |
| 5,784.00                   | 56.16           | 357.73      | 5,651.48              | -300.12      | -222.50      | -293.30                 | 12.08                   | 10.66                  | 7.06                  |
| 5,831.00                   | 60.82           | 1.96        | 5,676.04              | -260.07      | -222.57      | -253.28                 | 12.53                   | 9.91                   | 9.00                  |
| 5,878.00                   | 67.54           | 3.30        | 5,696.50              | -217.84      | -220.62      | -211.12                 | 14.53                   | 14.30                  | 2.85                  |
| 5,923.00                   | 73.67           | 3.70        | 5,711.44              | -175.49      | -218.02      | -168.87                 | 13.65                   | 13.62                  | 0.89                  |
| 5,942.00                   | 74.18           | 3.40        | 5,716.70              | -157.27      | -216.89      | -150.69                 | 3.08                    | 2.68                   | -1.58                 |
| 100' HL Crossing 1 (SEC 7) |                 |             |                       |              |              |                         |                         |                        |                       |
| 5,970.00                   | 74.93           | 2.96        | 5,724.16              | -130.32      | -215.40      | -123.80                 | 3.08                    | 2.68                   | -1.57                 |
| 6,017.00                   | 78.52           | 0.26        | 5,734.95              | -84.61       | -214.12      | -78.14                  | 9.47                    | 7.64                   | -5.74                 |
| 6,045.00                   | 79.32           | 359.82      | 5,740.33              | -57.13       | -214.10      | -50.68                  | 3.26                    | 2.87                   | -1.58                 |
| SL Crossing 2 (SEC 7)      |                 |             |                       |              |              |                         |                         |                        |                       |
| 6,064.00                   | 79.87           | 359.52      | 5,743.76              | -38.44       | -214.21      | -31.99                  | 3.26                    | 2.87                   | -1.57                 |
| 6,111.00                   | 81.31           | 0.29        | 5,751.44              | 7.92         | -214.29      | 14.35                   | 3.46                    | 3.06                   | 1.64                  |
| 6,146.50                   | 83.36           | 1.39        | 5,756.18              | 43.10        | -213.77      | 49.50                   | 6.54                    | 5.76                   | 3.11                  |
| 100' HL Crossing 1 (SEC 7) |                 |             |                       |              |              |                         |                         |                        |                       |
| 6,158.00                   | 84.02           | 1.75        | 5,757.44              | 54.53        | -213.45      | 60.91                   | 6.54                    | 5.77                   | 3.09                  |
| 6,205.00                   | 89.40           | 4.92        | 5,760.14              | 101.35       | -210.72      | 107.63                  | 13.28                   | 11.45                  | 6.74                  |
| 6,205.60                   | 89.41           | 4.93        | 5,760.15              | 101.94       | -210.67      | 108.22                  | 2.28                    | 1.84                   | 1.33                  |
| L. Marker Jt.              |                 |             |                       |              |              |                         |                         |                        |                       |
| 6,301.00                   | 91.17           | 6.20        | 5,759.66              | 196.89       | -201.42      | 202.84                  | 2.28                    | 1.84                   | 1.33                  |
| 6,395.00                   | 90.72           | 4.77        | 5,758.11              | 290.44       | -192.44      | 296.09                  | 1.59                    | -0.48                  | -1.52                 |
| 6,489.00                   | 89.98           | 2.24        | 5,757.54              | 384.26       | -186.69      | 389.69                  | 2.80                    | -0.79                  | -2.69                 |
| 6,583.00                   | 88.43           | 2.04        | 5,758.84              | 478.18       | -183.18      | 483.46                  | 1.66                    | -1.65                  | -0.21                 |
| 6,675.00                   | 88.04           | 0.79        | 5,761.68              | 570.10       | -180.91      | 575.28                  | 1.42                    | -0.42                  | -1.36                 |
| 6,770.00                   | 89.33           | 0.07        | 5,763.86              | 665.07       | -180.20      | 670.18                  | 1.55                    | 1.36                   | -0.76                 |
| 6,864.00                   | 90.49           | 359.55      | 5,764.01              | 759.07       | -180.51      | 764.15                  | 1.35                    | 1.23                   | -0.55                 |
| 6,959.00                   | 91.95           | 358.83      | 5,761.98              | 854.04       | -181.85      | 859.11                  | 1.71                    | 1.54                   | -0.76                 |
| 7,052.00                   | 90.07           | 359.35      | 5,760.34              | 947.01       | -183.33      | 952.08                  | 2.10                    | -2.02                  | 0.56                  |
| 7,145.00                   | 88.75           | 359.42      | 5,761.30              | 1,039.99     | -184.33      | 1,045.06                | 1.42                    | -1.42                  | 0.08                  |
| 7,239.00                   | 89.23           | 358.00      | 5,762.96              | 1,133.95     | -186.44      | 1,139.04                | 1.59                    | 0.51                   | -1.51                 |

# LEAM Drilling Systems LLC

## Survey Report

|                  |                               |                                     |  |
|------------------|-------------------------------|-------------------------------------|--|
| <b>Company:</b>  | WHITING PETROLEUM CORPORATION | <b>Local Co-ordinate Reference:</b> | Well 0607                                      |
| <b>Project:</b>  | Weld County, CO               | <b>TVD Reference:</b>               | GE 4898.8' + KB 20'? @ 4918.80usft (Unit #406) |
| <b>Site:</b>     | Horsetail #07F PAD            | <b>MD Reference:</b>                | GE 4898.8' + KB 20'? @ 4918.80usft (Unit #406) |
| <b>Well:</b>     | 0607                          | <b>North Reference:</b>             | True   |
| <b>Wellbore:</b> | OH                            | <b>Survey Calculation Method:</b>   | Minimum Curvature                              |
| <b>Design:</b>   | OH                            | <b>Database:</b>                    | EDM 5000.1 Multi_User Db                       |

| Survey                |                 |             |                       |              |              |                         |                         |                        |                       |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
| 7,333.00              | 90.23           | 357.69      | 5,763.40              | 1,227.88     | -189.98      | 1,233.03                | 1.11                    | 1.06                   | -0.33                 |
| 7,427.00              | 90.13           | 356.09      | 5,763.11              | 1,321.74     | -195.08      | 1,327.00                | 1.71                    | -0.11                  | -1.70                 |
| 7,520.00              | 91.98           | 357.62      | 5,761.39              | 1,414.58     | -200.18      | 1,419.95                | 2.58                    | 1.99                   | 1.65                  |
| 7,614.00              | 92.75           | 1.68        | 5,757.51              | 1,508.48     | -200.75      | 1,513.82                | 4.39                    | 0.82                   | 4.32                  |
| 7,708.00              | 91.85           | 3.14        | 5,753.74              | 1,602.32     | -196.80      | 1,607.50                | 1.82                    | -0.96                  | 1.55                  |
| 7,802.00              | 89.60           | 1.24        | 5,752.55              | 1,696.23     | -193.21      | 1,701.26                | 3.13                    | -2.39                  | -2.02                 |
| 7,894.00              | 89.04           | 0.86        | 5,753.64              | 1,788.21     | -191.53      | 1,793.15                | 0.74                    | -0.61                  | -0.41                 |
| 7,986.00              | 92.22           | 1.47        | 5,752.63              | 1,880.17     | -189.66      | 1,885.02                | 3.52                    | 3.46                   | 0.66                  |
| 8,078.00              | 93.52           | 1.23        | 5,748.02              | 1,972.03     | -187.49      | 1,976.77                | 1.44                    | 1.41                   | -0.26                 |
| 8,169.00              | 91.74           | 0.45        | 5,743.85              | 2,062.92     | -186.16      | 2,067.58                | 2.14                    | -1.96                  | -0.86                 |
| 8,261.00              | 90.84           | 0.38        | 5,741.78              | 2,154.89     | -185.49      | 2,159.49                | 0.98                    | -0.98                  | -0.08                 |
| 8,352.00              | 92.15           | 0.19        | 5,739.40              | 2,245.86     | -185.04      | 2,250.40                | 1.45                    | 1.44                   | -0.21                 |
| 8,444.00              | 90.31           | 1.91        | 5,737.43              | 2,337.81     | -183.36      | 2,342.26                | 2.74                    | -2.00                  | 1.87                  |
| 8,536.00              | 89.14           | 0.92        | 5,737.87              | 2,429.78     | -181.08      | 2,434.12                | 1.67                    | -1.27                  | -1.08                 |
| 8,627.00              | 89.18           | 0.32        | 5,739.20              | 2,520.76     | -180.10      | 2,525.03                | 0.66                    | 0.04                   | -0.66                 |
| 8,702.00              | 90.27           | 0.99        | 5,739.56              | 2,595.76     | -179.24      | 2,599.97                | 1.71                    | 1.46                   | 0.89                  |
| SL 7/6 Crossing       |                 |             |                       |              |              |                         |                         |                        |                       |
| 8,719.00              | 90.52           | 1.14        | 5,739.45              | 2,612.75     | -178.93      | 2,616.95                | 1.71                    | 1.46                   | 0.89                  |
| 8,811.00              | 89.90           | 0.84        | 5,739.11              | 2,704.74     | -177.34      | 2,708.84                | 0.75                    | -0.67                  | -0.33                 |
| 8,902.00              | 91.09           | 1.36        | 5,738.32              | 2,795.72     | -175.59      | 2,799.73                | 1.43                    | 1.31                   | 0.57                  |
| 8,950.00              | 89.69           | 0.47        | 5,738.00              | 2,843.71     | -174.82      | 2,847.67                | 3.46                    | -2.92                  | -1.85                 |
| Enter Baffle #1       |                 |             |                       |              |              |                         |                         |                        |                       |
| 8,994.00              | 88.40           | 359.66      | 5,738.73              | 2,887.70     | -174.77      | 2,891.65                | 3.46                    | -2.92                  | -1.85                 |
| 9,086.00              | 87.63           | 358.96      | 5,741.92              | 2,979.64     | -175.88      | 2,983.57                | 1.13                    | -0.84                  | -0.76                 |
| 9,178.00              | 87.81           | 358.11      | 5,745.58              | 3,071.53     | -178.23      | 3,075.50                | 0.94                    | 0.20                   | -0.92                 |
| 9,269.00              | 88.19           | 357.58      | 5,748.75              | 3,162.41     | -181.65      | 3,166.44                | 0.72                    | 0.42                   | -0.58                 |
| 9,361.00              | 90.52           | 358.46      | 5,749.79              | 3,254.35     | -184.83      | 3,258.43                | 2.71                    | 2.53                   | 0.96                  |
| 9,452.00              | 89.95           | 355.36      | 5,749.42              | 3,345.20     | -189.73      | 3,349.39                | 3.46                    | -0.63                  | -3.41                 |
| 9,544.00              | 92.07           | 356.87      | 5,747.80              | 3,436.97     | -195.96      | 3,441.30                | 2.83                    | 2.30                   | 1.64                  |
| 9,636.00              | 91.89           | 358.87      | 5,744.62              | 3,528.84     | -199.38      | 3,533.24                | 2.18                    | -0.20                  | 2.17                  |
| 9,730.00              | 90.67           | 1.42        | 5,742.52              | 3,622.81     | -199.14      | 3,627.16                | 3.01                    | -1.30                  | 2.71                  |
| 9,812.00              | 90.04           | 1.17        | 5,742.01              | 3,704.79     | -197.29      | 3,709.04                | 0.83                    | -0.77                  | -0.31                 |
| Exit Baffle #1        |                 |             |                       |              |              |                         |                         |                        |                       |
| 9,824.00              | 89.95           | 1.13        | 5,742.01              | 3,716.79     | -197.05      | 3,721.03                | 0.83                    | -0.77                  | -0.31                 |
| 9,920.00              | 90.09           | 1.83        | 5,741.97              | 3,812.75     | -194.57      | 3,816.88                | 0.74                    | 0.15                   | 0.73                  |
| 10,014.00             | 90.71           | 1.77        | 5,741.32              | 3,906.70     | -191.62      | 3,910.70                | 0.66                    | 0.66                   | -0.06                 |
| 10,109.00             | 91.83           | 1.42        | 5,739.21              | 4,001.64     | -188.98      | 4,005.51                | 1.24                    | 1.18                   | -0.37                 |
| 10,204.00             | 92.02           | 0.77        | 5,736.02              | 4,096.57     | -187.16      | 4,100.34                | 0.71                    | 0.20                   | -0.68                 |
| 10,299.00             | 90.52           | 3.21        | 5,733.92              | 4,191.48     | -183.86      | 4,195.11                | 3.01                    | -1.58                  | 2.57                  |
| 10,393.00             | 86.81           | 1.98        | 5,736.10              | 4,285.34     | -179.61      | 4,288.80                | 4.16                    | -3.95                  | -1.31                 |
| 10,488.00             | 88.14           | 0.38        | 5,740.29              | 4,380.22     | -177.66      | 4,383.58                | 2.19                    | 1.40                   | -1.68                 |
| 10,582.00             | 88.44           | 358.20      | 5,743.10              | 4,474.17     | -178.82      | 4,477.52                | 2.34                    | 0.32                   | -2.32                 |
| 10,677.00             | 89.21           | 358.26      | 5,745.04              | 4,569.10     | -181.75      | 4,572.50                | 0.81                    | 0.81                   | 0.06                  |
| 10,772.00             | 88.00           | 354.36      | 5,747.36              | 4,663.86     | -187.86      | 4,667.39                | 4.30                    | -1.27                  | -4.11                 |

# LEAM Drilling Systems LLC

## Survey Report

|                  |                               |                                     |  |
|------------------|-------------------------------|-------------------------------------|--|
| <b>Company:</b>  | WHITING PETROLEUM CORPORATION | <b>Local Co-ordinate Reference:</b> | Well 0607                                      |
| <b>Project:</b>  | Weld County, CO               | <b>TVD Reference:</b>               | GE 4898.8' + KB 20'? @ 4918.80usft (Unit #406) |
| <b>Site:</b>     | Horsetail #07F PAD            | <b>MD Reference:</b>                | GE 4898.8' + KB 20'? @ 4918.80usft (Unit #406) |
| <b>Well:</b>     | 0607                          | <b>North Reference:</b>             | True   |
| <b>Wellbore:</b> | OH                            | <b>Survey Calculation Method:</b>   | Minimum Curvature                              |
| <b>Design:</b>   | OH                            | <b>Database:</b>                    | EDM 5000.1 Multi_User Db                       |

| Survey                |                 |             |                       |              |              |                         |                         |                        |                       |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
| 10,867.00             | 89.69           | 355.40      | 5,749.27              | 4,758.45     | -196.34      | 4,762.20                | 2.09                    | 1.78                   | 1.09                  |
| 10,962.00             | 92.66           | 359.57      | 5,747.32              | 4,853.31     | -200.51      | 4,857.14                | 5.39                    | 3.13                   | 4.39                  |
| 11,057.00             | 91.75           | 0.15        | 5,743.67              | 4,948.24     | -200.74      | 4,952.03                | 1.14                    | -0.96                  | 0.61                  |
| 11,151.00             | 90.82           | 1.15        | 5,741.56              | 5,042.21     | -199.67      | 5,045.93                | 1.45                    | -0.99                  | 1.06                  |
| 11,245.00             | 91.72           | 1.01        | 5,739.48              | 5,136.17     | -197.90      | 5,139.79                | 0.97                    | 0.96                   | -0.15                 |
| 11,340.00             | 92.01           | 359.10      | 5,736.38              | 5,231.11     | -197.81      | 5,234.69                | 2.03                    | 0.31                   | -2.01                 |
| 11,433.00             | 90.11           | 358.62      | 5,734.66              | 5,324.07     | -199.66      | 5,327.67                | 2.11                    | -2.04                  | -0.52                 |
| 11,527.00             | 87.55           | 2.03        | 5,736.58              | 5,418.03     | -199.13      | 5,421.56                | 4.54                    | -2.72                  | 3.63                  |
| 11,621.00             | 87.31           | 1.63        | 5,740.80              | 5,511.89     | -196.13      | 5,515.29                | 0.50                    | -0.26                  | -0.43                 |
| 11,715.00             | 87.74           | 0.90        | 5,744.86              | 5,605.77     | -194.06      | 5,609.07                | 0.90                    | 0.46                   | -0.78                 |
| 11,807.00             | 88.09           | 0.25        | 5,748.21              | 5,697.71     | -193.13      | 5,700.94                | 0.80                    | 0.38                   | -0.71                 |
| 11,901.00             | 90.79           | 1.00        | 5,749.12              | 5,791.69     | -192.11      | 5,794.85                | 2.98                    | 2.87                   | 0.80                  |
| 11,994.00             | 91.85           | 0.47        | 5,746.98              | 5,884.66     | -190.92      | 5,887.73                | 1.27                    | 1.14                   | -0.57                 |
| 12,089.00             | 92.27           | 359.13      | 5,743.57              | 5,979.59     | -191.25      | 5,982.64                | 1.48                    | 0.44                   | -1.41                 |
| 12,184.00             | 90.26           | 359.55      | 5,741.47              | 6,074.56     | -192.34      | 6,077.59                | 2.16                    | -2.12                  | 0.44                  |
| 12,279.00             | 90.89           | 359.70      | 5,740.52              | 6,169.55     | -192.96      | 6,172.56                | 0.68                    | 0.66                   | 0.16                  |
| 12,373.00             | 89.27           | 0.31        | 5,740.39              | 6,263.55     | -192.95      | 6,266.51                | 1.84                    | -1.72                  | 0.65                  |
| 12,467.00             | 89.97           | 359.78      | 5,741.01              | 6,357.54     | -192.88      | 6,360.47                | 0.93                    | 0.74                   | -0.56                 |
| 12,561.00             | 91.54           | 359.30      | 5,739.77              | 6,451.53     | -193.64      | 6,454.43                | 1.75                    | 1.67                   | -0.51                 |
| 12,646.00             | 90.52           | 359.77      | 5,738.24              | 6,536.51     | -194.32      | 6,539.40                | 1.32                    | -1.20                  | 0.55                  |
| 12,691.00             | 90.52           | 359.77      | 5,737.83              | 6,581.51     | -194.51      | 6,584.38                | 0.00                    | 0.00                   | 0.00                  |
| Projection - Casing   |                 |             |                       |              |              |                         |                         |                        |                       |