



Project: Weld County, CO  
Site: Sec 25-T10N-R58W  
Well: Razor #250-2444  
Wellbore: Hz  
Design: APD

PROJECT DETAILS: Weld County, CO  
Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: Colorado Northern Zone  
System Datum: Mean Sea Level



Azimuths to True North  
Magnetic North: 7.84°  
Magnetic Field  
Strength: 53022.2snT  
Dip Angle: 67.38°  
Date: 5/21/2015  
Model: IGRF2010

#### FORMATION TOP DETAILS

| MDPath  | Formation |
|---------|-----------|
| 1550.00 | 1552.12   |
| 3500.00 | 3505.76   |
| 3650.00 | 3656.04   |
| 5444.00 | 5453.02   |
| 5464.00 | 5473.82   |
| 5480.00 | 5490.55   |
| 5494.00 | 5505.52   |
| 5498.00 | 5509.80   |
| 5515.00 | 5528.14   |
| 5545.00 | 5561.21   |
| 5557.00 | 5574.73   |
| 5565.00 | 5583.85   |
| 5589.00 | 5611.76   |
| 5605.00 | 5630.91   |
| 5634.00 | 5666.91   |
| 5647.00 | 5683.69   |
| 5689.00 | 5741.46   |
| 5697.00 | 5753.22   |
| 5711.00 | 5774.55   |
| 5729.00 | 5803.63   |
| 5746.00 | 5833.25   |
| 5773.00 | 5886.53   |
| 5782.00 | 5906.76   |
| 5797.00 | 5944.82   |
| 5832.00 | 6136.18   |

Upper Pierre  
Hygiene  
Lower Pierre  
P200 Marker  
P300 Marker  
P350 Marker  
Sharon Springs  
Niobrara  
Top A Chalk  
Top A Marl  
A Marl  
Top Upper B  
Base Upper B  
Top Lower B  
Base Lower B  
Top B Marl  
Top C Chalk  
Middle C Chalk  
Middle C Marl  
Lower C Chalk  
Lower C Marl  
Lower C Marker  
Top Ft. Hays  
Ft. Hays Marker  
Top Codell

#### WELL DETAILS: Razor #250-2444

| +N/-S | +E/-W | North      | Ground Level: | 4717.00    | Latitude         | Longitude         | Slot |
|-------|-------|------------|---------------|------------|------------------|-------------------|------|
| 0.00  | 0.00  | 1539955.51 | Easting       | 3467799.96 | 40° 48' 11.970 N | 103° 48' 36.700 W |      |

#### SECTION DETAILS

| Sec | MD       | Inc   | Azi    | TVD     | +N/-S    | +E/-W  | Dleg  | TFace  | VFace    | Target    |
|-----|----------|-------|--------|---------|----------|--------|-------|--------|----------|-----------|
| 1   | 0.00     | 0.00  | 0.00   | 0.00    | 0.00     | 0.00   | 0.00  | 0.00   | 0.00     |           |
| 2   | 300.00   | 0.00  | 0.00   | 300.00  | 0.00     | 0.00   | 0.00  | 0.00   | 0.00     |           |
| 3   | 475.00   | 3.50  | 140.00 | 474.89  | -4.09    | 3.43   | 2.00  | 140.00 | -4.04    |           |
| 4   | 4400.00  | 3.50  | 140.00 | 4392.57 | -187.65  | 157.46 | 0.00  | 0.00   | -185.13  |           |
| 5   | 4575.00  | 0.00  | 0.00   | 4567.46 | -191.74  | 160.89 | 2.00  | 180.00 | -189.17  |           |
| 6   | 5318.67  | 0.00  | 0.00   | 5311.13 | -191.74  | 160.89 | 0.00  | 0.00   | -189.17  |           |
| 7   | 6136.85  | 90.00 | 0.00   | 5832.00 | 329.13   | 160.92 | 11.00 | 0.00   | 331.63   | PBHL 2444 |
| 8   | 16004.19 | 90.00 | 0.00   | 5832.00 | 10196.46 | 161.43 | 0.00  | 0.00   | 10197.74 | PBHL 2444 |

#### ANNOTATIONS

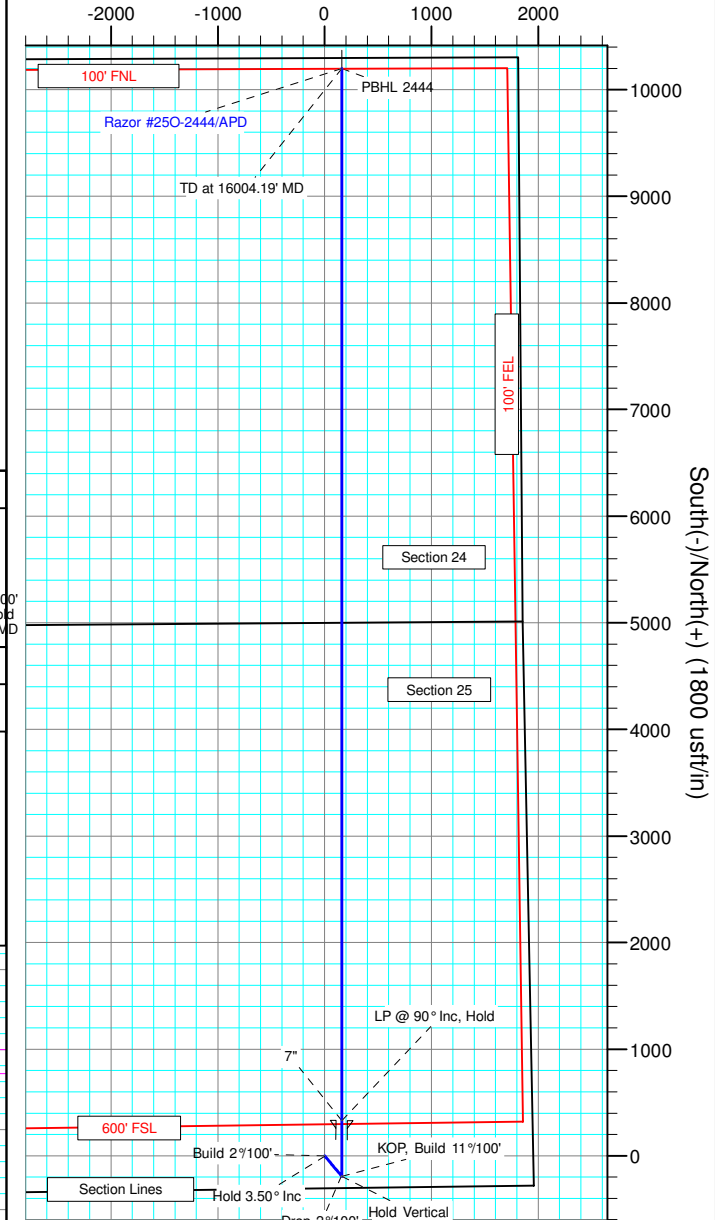
| TVD     | MD       | Inc   | Azi    | +N/-S    | +E/-W  | VFace    | Departure | Annotation          |
|---------|----------|-------|--------|----------|--------|----------|-----------|---------------------|
| 300.00  | 300.00   | 0.00  | 0.00   | 0.00     | 0.00   | 0.00     | 0.00      | Build 2°/100'       |
| 474.89  | 475.00   | 3.50  | 140.00 | -4.09    | 3.43   | -4.04    | 5.34      | Hold 3.50° Inc      |
| 4392.57 | 4400.00  | 3.50  | 140.00 | -187.65  | 157.46 | -185.13  | 244.96    | Drop 2°/100'        |
| 4567.46 | 4575.00  | 0.00  | 0.00   | -191.74  | 160.89 | -189.17  | 250.30    | Hold Vertical       |
| 5311.13 | 5318.67  | 0.00  | 0.00   | -191.74  | 160.89 | -189.17  | 250.30    | KOP, Build 11°/100' |
| 5832.00 | 6136.85  | 90.00 | 0.00   | 329.13   | 160.92 | 331.63   | 771.17    | LP @ 90° Inc, Hold  |
| 5832.00 | 16004.19 | 90.00 | 0.00   | 10196.46 | 161.43 | 10197.74 | 10638.51  | TD at 16004.19' MD  |

#### DESIGN TARGET DETAILS

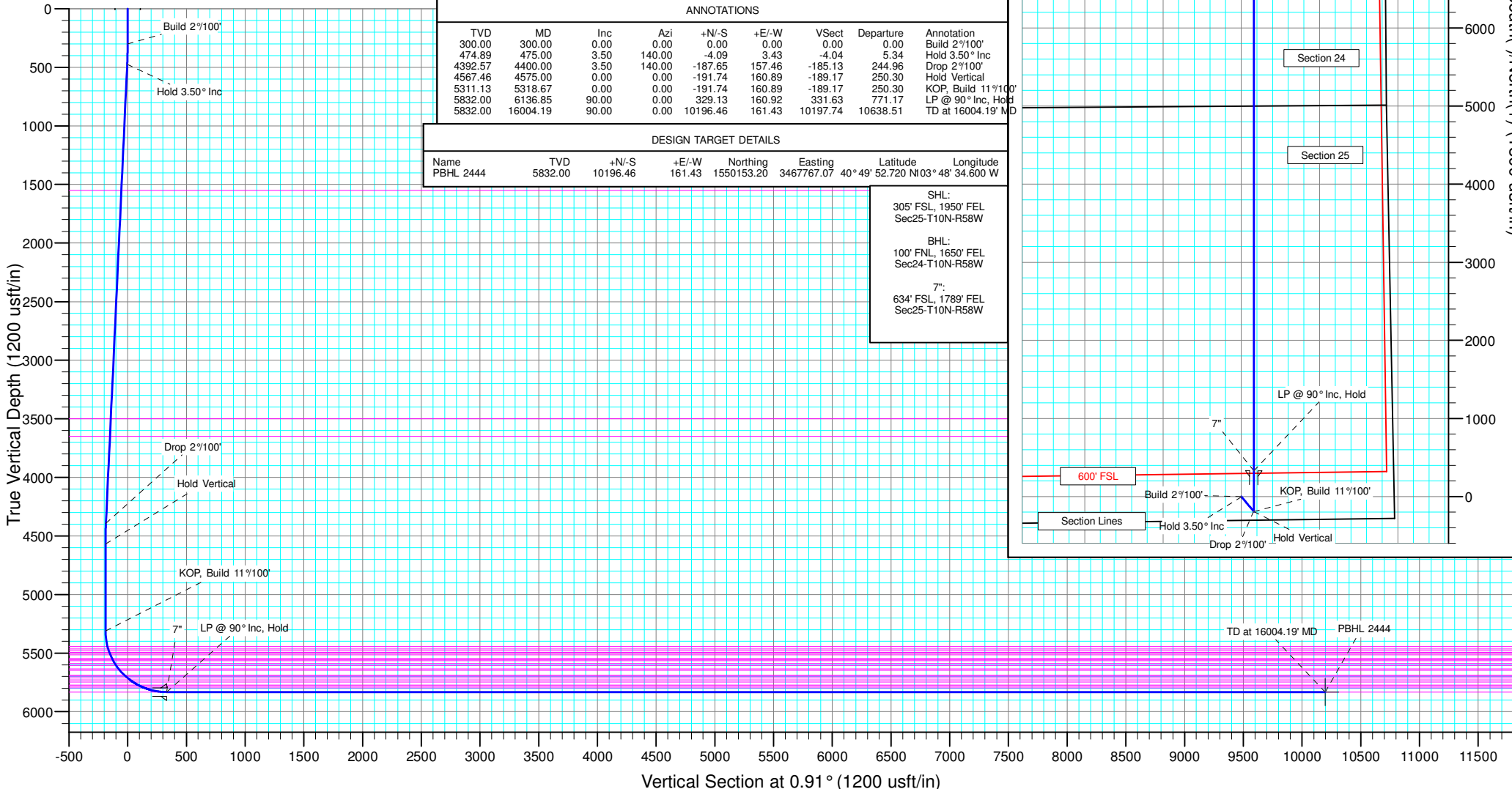
| Name      | TVD     | +N/-S    | +E/-W  | North      | Easting    | Latitude         | Longitude         |
|-----------|---------|----------|--------|------------|------------|------------------|-------------------|
| PBHL 2444 | 5832.00 | 10196.46 | 161.43 | 1550153.20 | 3467767.07 | 40° 49' 52.720 N | 103° 48' 34.600 W |

SHL:  
305' FSL, 1950' FEL  
Sec25-T10N-R58W  
BHL:  
100' FNL, 1650' FEL  
Sec24-T10N-R58W  
7":  
634' FSL, 1789' FEL  
Sec25-T10N-R58W

West(-)/East(+) (1800 usft/in)



South(-)/North(+) (1800 usft/in)





# **Whiting Petroleum Corp.**

**Weld County, CO  
Sec 25-T10N-R58W  
Razor #25O-2444**

**Hz**

**Plan: APD**

## **Standard Planning Report**

**22 May, 2015**



# WOG

## Planning Report

|                  |                         |                                     |  |
|------------------|-------------------------|-------------------------------------|--|
| <b>Database:</b> | LandmarkEDM             | <b>Local Co-ordinate Reference:</b> | Well Razor #25O-2444                   |
| <b>Company:</b>  | Whiting Petroleum Corp. | <b>TVD Reference:</b>               | KBE @ 4738.00usft (Original Well Elev) |
| <b>Project:</b>  | Weld County, CO         | <b>MD Reference:</b>                | KBE @ 4738.00usft (Original Well Elev) |
| <b>Site:</b>     | Sec 25-T10N-R58W        | <b>North Reference:</b>             | True                                   |
| <b>Well:</b>     | Razor #25O-2444         | <b>Survey Calculation Method:</b>   | Minimum Curvature                      |
| <b>Wellbore:</b> | Hz                      |                                     |  |
| <b>Design:</b>   | APD                     |                                     |  |

|                    |                           |                      |                |
|--------------------|---------------------------|----------------------|----------------|
| <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    |                      |                |

|                              |                  |                     |                   |                                     |
|------------------------------|------------------|---------------------|-------------------|-------------------------------------|
| <b>Site</b>                  | Sec 25-T10N-R58W |                     |                   |                                     |
| <b>Site Position:</b>        |                  | <b>Northing:</b>    | 1,544,564.45 usft | <b>Latitude:</b> 40° 48' 58.050 N   |
| <b>From:</b>                 | Lat/Long         | <b>Easting:</b>     | 3,464,883.62 usft | <b>Longitude:</b> 103° 49' 13.480 W |
| <b>Position Uncertainty:</b> | 0.00 usft        | <b>Slot Radius:</b> | 13.200 in         | <b>Grid Convergence:</b> 1.09 °     |

|                             |                 |                            |                  |                                    |
|-----------------------------|-----------------|----------------------------|------------------|------------------------------------|
| <b>Well</b>                 | Razor #25O-2444 |                            |                  |                                    |
| <b>Well Position</b>        | <b>+N/-S</b>    | -4,663.35 usft             | <b>Northing:</b> | 1,539,955.51 usft                  |
|                             | <b>+E/-W</b>    | 2,828.52 usft              | <b>Easting:</b>  | 3,467,799.96 usft                  |
| <b>Position Uncertainty</b> | 0.00 usft       | <b>Wellhead Elevation:</b> |                  | <b>Ground Level:</b> 4,717.00 usft |

|                  |                   |                    |                        |                      |                            |
|------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| <b>Wellbore</b>  | Hz                |                    |                        |                      |                            |
| <b>Magnetics</b> | <b>Model Name</b> | <b>Sample Date</b> | <b>Declination (°)</b> | <b>Dip Angle (°)</b> | <b>Field Strength (nT)</b> |
|                  | IGRF2010          | 5/21/2015          | 7.84                   | 67.38                | 53,022                     |

|                          |                                |                     |                      |                      |
|--------------------------|--------------------------------|---------------------|----------------------|----------------------|
| <b>Design</b>            | APD                            |                     |                      |                      |
| <b>Audit Notes:</b>      |                                |                     |                      |                      |
| <b>Version:</b>          | <b>Phase:</b>                  | PROTOTYPE           | <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                 | 0.91                 |

| <b>Plan Sections</b>  |                 |             |                       |              |              |                       |                      |                     |         |           |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-----------------------|----------------------|---------------------|---------|-----------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) | TFO (°) | Target    |
| 0.00                  | 0.00            | 0.00        | 0.00                  | 0.00         | 0.00         | 0.00                  | 0.00                 | 0.00                | 0.00    |           |
| 300.00                | 0.00            | 0.00        | 300.00                | 0.00         | 0.00         | 0.00                  | 0.00                 | 0.00                | 0.00    |           |
| 475.00                | 3.50            | 140.00      | 474.89                | -4.09        | 3.43         | 2.00                  | 2.00                 | 0.00                | 140.00  |           |
| 4,400.00              | 3.50            | 140.00      | 4,392.57              | -187.65      | 157.46       | 0.00                  | 0.00                 | 0.00                | 0.00    |           |
| 4,575.00              | 0.00            | 0.00        | 4,567.46              | -191.74      | 160.89       | 2.00                  | -2.00                | 0.00                | 180.00  |           |
| 5,318.67              | 0.00            | 0.00        | 5,311.13              | -191.74      | 160.89       | 0.00                  | 0.00                 | 0.00                | 0.00    |           |
| 6,136.85              | 90.00           | 0.00        | 5,832.00              | 329.13       | 160.92       | 11.00                 | 11.00                | 0.00                | 0.00    | PBHL 2444 |
| 16,004.19             | 90.00           | 0.00        | 5,832.00              | 10,196.46    | 161.43       | 0.00                  | 0.00                 | 0.00                | 0.00    | PBHL 2444 |



# WOG

## Planning Report

|                  |                         |                                     |  |
|------------------|-------------------------|-------------------------------------|--|
| <b>Database:</b> | LandmarkEDM             | <b>Local Co-ordinate Reference:</b> | Well Razor #25O-2444                   |
| <b>Company:</b>  | Whiting Petroleum Corp. | <b>TVD Reference:</b>               | KBE @ 4738.00usft (Original Well Elev) |
| <b>Project:</b>  | Weld County, CO         | <b>MD Reference:</b>                | KBE @ 4738.00usft (Original Well Elev) |
| <b>Site:</b>     | Sec 25-T10N-R58W        | <b>North Reference:</b>             | True                                   |
| <b>Well:</b>     | Razor #25O-2444         | <b>Survey Calculation Method:</b>   | Minimum Curvature                      |
| <b>Wellbore:</b> | Hz                      |                                     |  |
| <b>Design:</b>   | APD                     |                                     |  |

| Planned Survey        |                 |             |                       |              |              |                         |                       |                      |                     |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-----------------------|----------------------|---------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
| 0.00                  | 0.00            | 0.00        | 0.00                  | 0.00         | 0.00         | 0.00                    | 0.00                  | 0.00                 | 0.00                |
| 100.00                | 0.00            | 0.00        | 100.00                | 0.00         | 0.00         | 0.00                    | 0.00                  | 0.00                 | 0.00                |
| 200.00                | 0.00            | 0.00        | 200.00                | 0.00         | 0.00         | 0.00                    | 0.00                  | 0.00                 | 0.00                |
| 300.00                | 0.00            | 0.00        | 300.00                | 0.00         | 0.00         | 0.00                    | 0.00                  | 0.00                 | 0.00                |
| <b>Build 2°/100'</b>  |                 |             |                       |              |              |                         |                       |                      |                     |
| 400.00                | 2.00            | 140.00      | 399.98                | -1.34        | 1.12         | -1.32                   | 2.00                  | 2.00                 | 0.00                |
| 475.00                | 3.50            | 140.00      | 474.89                | -4.09        | 3.43         | -4.04                   | 2.00                  | 2.00                 | 0.00                |
| <b>Hold 3.50° Inc</b> |                 |             |                       |              |              |                         |                       |                      |                     |
| 500.00                | 3.50            | 140.00      | 499.84                | -5.26        | 4.42         | -5.19                   | 0.00                  | 0.00                 | 0.00                |
| 600.00                | 3.50            | 140.00      | 599.66                | -9.94        | 8.34         | -9.81                   | 0.00                  | 0.00                 | 0.00                |
| 700.00                | 3.50            | 140.00      | 699.47                | -14.62       | 12.26        | -14.42                  | 0.00                  | 0.00                 | 0.00                |
| 800.00                | 3.50            | 140.00      | 799.29                | -19.29       | 16.19        | -19.03                  | 0.00                  | 0.00                 | 0.00                |
| 900.00                | 3.50            | 140.00      | 899.10                | -23.97       | 20.11        | -23.65                  | 0.00                  | 0.00                 | 0.00                |
| 1,000.00              | 3.50            | 140.00      | 998.91                | -28.65       | 24.04        | -28.26                  | 0.00                  | 0.00                 | 0.00                |
| 1,100.00              | 3.50            | 140.00      | 1,098.73              | -33.32       | 27.96        | -32.88                  | 0.00                  | 0.00                 | 0.00                |
| 1,200.00              | 3.50            | 140.00      | 1,198.54              | -38.00       | 31.88        | -37.49                  | 0.00                  | 0.00                 | 0.00                |
| 1,300.00              | 3.50            | 140.00      | 1,298.35              | -42.68       | 35.81        | -42.10                  | 0.00                  | 0.00                 | 0.00                |
| 1,400.00              | 3.50            | 140.00      | 1,398.17              | -47.35       | 39.73        | -46.72                  | 0.00                  | 0.00                 | 0.00                |
| 1,500.00              | 3.50            | 140.00      | 1,497.98              | -52.03       | 43.66        | -51.33                  | 0.00                  | 0.00                 | 0.00                |
| 1,552.12              | 3.50            | 140.00      | 1,550.00              | -54.47       | 45.70        | -53.74                  | 0.00                  | 0.00                 | 0.00                |
| <b>Upper Pierre</b>   |                 |             |                       |              |              |                         |                       |                      |                     |
| 1,600.00              | 3.50            | 140.00      | 1,597.79              | -56.70       | 47.58        | -55.94                  | 0.00                  | 0.00                 | 0.00                |
| 1,700.00              | 3.50            | 140.00      | 1,697.61              | -61.38       | 51.51        | -60.56                  | 0.00                  | 0.00                 | 0.00                |
| 1,800.00              | 3.50            | 140.00      | 1,797.42              | -66.06       | 55.43        | -65.17                  | 0.00                  | 0.00                 | 0.00                |
| 1,900.00              | 3.50            | 140.00      | 1,897.23              | -70.73       | 59.35        | -69.79                  | 0.00                  | 0.00                 | 0.00                |
| 2,000.00              | 3.50            | 140.00      | 1,997.05              | -75.41       | 63.28        | -74.40                  | 0.00                  | 0.00                 | 0.00                |
| 2,100.00              | 3.50            | 140.00      | 2,096.86              | -80.09       | 67.20        | -79.01                  | 0.00                  | 0.00                 | 0.00                |
| 2,200.00              | 3.50            | 140.00      | 2,196.67              | -84.76       | 71.13        | -83.63                  | 0.00                  | 0.00                 | 0.00                |
| 2,300.00              | 3.50            | 140.00      | 2,296.49              | -89.44       | 75.05        | -88.24                  | 0.00                  | 0.00                 | 0.00                |
| 2,400.00              | 3.50            | 140.00      | 2,396.30              | -94.12       | 78.97        | -92.86                  | 0.00                  | 0.00                 | 0.00                |
| 2,500.00              | 3.50            | 140.00      | 2,496.11              | -98.79       | 82.90        | -97.47                  | 0.00                  | 0.00                 | 0.00                |
| 2,600.00              | 3.50            | 140.00      | 2,595.93              | -103.47      | 86.82        | -102.08                 | 0.00                  | 0.00                 | 0.00                |
| 2,700.00              | 3.50            | 140.00      | 2,695.74              | -108.15      | 90.75        | -106.70                 | 0.00                  | 0.00                 | 0.00                |
| 2,800.00              | 3.50            | 140.00      | 2,795.55              | -112.82      | 94.67        | -111.31                 | 0.00                  | 0.00                 | 0.00                |
| 2,900.00              | 3.50            | 140.00      | 2,895.37              | -117.50      | 98.59        | -115.93                 | 0.00                  | 0.00                 | 0.00                |
| 3,000.00              | 3.50            | 140.00      | 2,995.18              | -122.18      | 102.52       | -120.54                 | 0.00                  | 0.00                 | 0.00                |
| 3,100.00              | 3.50            | 140.00      | 3,095.00              | -126.85      | 106.44       | -125.15                 | 0.00                  | 0.00                 | 0.00                |
| 3,200.00              | 3.50            | 140.00      | 3,194.81              | -131.53      | 110.37       | -129.77                 | 0.00                  | 0.00                 | 0.00                |
| 3,300.00              | 3.50            | 140.00      | 3,294.62              | -136.21      | 114.29       | -134.38                 | 0.00                  | 0.00                 | 0.00                |
| 3,400.00              | 3.50            | 140.00      | 3,394.44              | -140.88      | 118.22       | -138.99                 | 0.00                  | 0.00                 | 0.00                |
| 3,500.00              | 3.50            | 140.00      | 3,494.25              | -145.56      | 122.14       | -143.61                 | 0.00                  | 0.00                 | 0.00                |
| 3,505.76              | 3.50            | 140.00      | 3,500.00              | -145.83      | 122.37       | -143.87                 | 0.00                  | 0.00                 | 0.00                |
| <b>Hygiene</b>        |                 |             |                       |              |              |                         |                       |                      |                     |
| 3,600.00              | 3.50            | 140.00      | 3,594.06              | -150.24      | 126.06       | -148.22                 | 0.00                  | 0.00                 | 0.00                |
| 3,656.04              | 3.50            | 140.00      | 3,650.00              | -152.86      | 128.26       | -150.81                 | 0.00                  | 0.00                 | 0.00                |
| <b>Lower Pierre</b>   |                 |             |                       |              |              |                         |                       |                      |                     |
| 3,700.00              | 3.50            | 140.00      | 3,693.88              | -154.91      | 129.99       | -152.84                 | 0.00                  | 0.00                 | 0.00                |
| 3,800.00              | 3.50            | 140.00      | 3,793.69              | -159.59      | 133.91       | -157.45                 | 0.00                  | 0.00                 | 0.00                |
| 3,900.00              | 3.50            | 140.00      | 3,893.50              | -164.27      | 137.84       | -162.06                 | 0.00                  | 0.00                 | 0.00                |
| 4,000.00              | 3.50            | 140.00      | 3,993.32              | -168.94      | 141.76       | -166.68                 | 0.00                  | 0.00                 | 0.00                |
| 4,100.00              | 3.50            | 140.00      | 4,093.13              | -173.62      | 145.68       | -171.29                 | 0.00                  | 0.00                 | 0.00                |
| 4,200.00              | 3.50            | 140.00      | 4,192.94              | -178.30      | 149.61       | -175.91                 | 0.00                  | 0.00                 | 0.00                |
| 4,300.00              | 3.50            | 140.00      | 4,292.76              | -182.97      | 153.53       | -180.52                 | 0.00                  | 0.00                 | 0.00                |
| 4,400.00              | 3.50            | 140.00      | 4,392.57              | -187.65      | 157.46       | -185.13                 | 0.00                  | 0.00                 | 0.00                |



# WOG

## Planning Report

|                  |                         |                                     |  |
|------------------|-------------------------|-------------------------------------|--|
| <b>Database:</b> | LandmarkEDM             | <b>Local Co-ordinate Reference:</b> | Well Razor #25O-2444                   |
| <b>Company:</b>  | Whiting Petroleum Corp. | <b>TVD Reference:</b>               | KBE @ 4738.00usft (Original Well Elev) |
| <b>Project:</b>  | Weld County, CO         | <b>MD Reference:</b>                | KBE @ 4738.00usft (Original Well Elev) |
| <b>Site:</b>     | Sec 25-T10N-R58W        | <b>North Reference:</b>             | True                                   |
| <b>Well:</b>     | Razor #25O-2444         | <b>Survey Calculation Method:</b>   | Minimum Curvature                      |
| <b>Wellbore:</b> | Hz                      |                                     |  |
| <b>Design:</b>   | APD                     |                                     |  |

| Planned Survey             |                 |             |                       |              |              |                         |                       |                      |                     |
|----------------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-----------------------|----------------------|---------------------|
| Measured Depth (usft)      | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
| <b>Drop 2°/100'</b>        |                 |             |                       |              |              |                         |                       |                      |                     |
| 4,500.00                   | 1.50            | 140.00      | 4,492.47              | -190.99      | 160.26       | -188.43                 | 2.00                  | -2.00                | 0.00                |
| 4,575.00                   | 0.00            | 0.00        | 4,567.46              | -191.74      | 160.89       | -189.17                 | 2.00                  | -2.00                | 0.00                |
| <b>Hold Vertical</b>       |                 |             |                       |              |              |                         |                       |                      |                     |
| 4,600.00                   | 0.00            | 0.00        | 4,592.46              | -191.74      | 160.89       | -189.17                 | 0.00                  | 0.00                 | 0.00                |
| 4,700.00                   | 0.00            | 0.00        | 4,692.46              | -191.74      | 160.89       | -189.17                 | 0.00                  | 0.00                 | 0.00                |
| 4,800.00                   | 0.00            | 0.00        | 4,792.46              | -191.74      | 160.89       | -189.17                 | 0.00                  | 0.00                 | 0.00                |
| 4,900.00                   | 0.00            | 0.00        | 4,892.46              | -191.74      | 160.89       | -189.17                 | 0.00                  | 0.00                 | 0.00                |
| 5,000.00                   | 0.00            | 0.00        | 4,992.46              | -191.74      | 160.89       | -189.17                 | 0.00                  | 0.00                 | 0.00                |
| 5,100.00                   | 0.00            | 0.00        | 5,092.46              | -191.74      | 160.89       | -189.17                 | 0.00                  | 0.00                 | 0.00                |
| 5,200.00                   | 0.00            | 0.00        | 5,192.46              | -191.74      | 160.89       | -189.17                 | 0.00                  | 0.00                 | 0.00                |
| 5,300.00                   | 0.00            | 0.00        | 5,292.46              | -191.74      | 160.89       | -189.17                 | 0.00                  | 0.00                 | 0.00                |
| 5,318.67                   | 0.00            | 0.00        | 5,311.13              | -191.74      | 160.89       | -189.17                 | 0.00                  | 0.00                 | 0.00                |
| <b>KOP, Build 11°/100'</b> |                 |             |                       |              |              |                         |                       |                      |                     |
| 5,350.00                   | 3.45            | 0.00        | 5,342.44              | -190.80      | 160.89       | -188.23                 | 11.00                 | 11.00                | 0.00                |
| 5,400.00                   | 8.95            | 0.00        | 5,392.13              | -185.41      | 160.89       | -182.84                 | 11.00                 | 11.00                | 0.00                |
| 5,450.00                   | 14.45           | 0.00        | 5,441.07              | -175.27      | 160.89       | -172.70                 | 11.00                 | 11.00                | 0.00                |
| 5,453.02                   | 14.78           | 0.00        | 5,444.00              | -174.51      | 160.89       | -171.94                 | 11.00                 | 11.00                | 0.00                |
| <b>P200 Marker</b>         |                 |             |                       |              |              |                         |                       |                      |                     |
| 5,473.82                   | 17.07           | 0.00        | 5,464.00              | -168.80      | 160.89       | -166.24                 | 11.00                 | 11.00                | 0.00                |
| <b>P300 Marker</b>         |                 |             |                       |              |              |                         |                       |                      |                     |
| 5,490.65                   | 18.92           | 0.00        | 5,480.00              | -163.61      | 160.89       | -161.04                 | 11.00                 | 11.00                | 0.00                |
| <b>P350 Marker</b>         |                 |             |                       |              |              |                         |                       |                      |                     |
| 5,500.00                   | 19.95           | 0.00        | 5,488.82              | -160.50      | 160.89       | -157.93                 | 11.00                 | 11.00                | 0.00                |
| 5,505.52                   | 20.55           | 0.00        | 5,494.00              | -158.59      | 160.89       | -156.02                 | 11.00                 | 11.00                | 0.00                |
| <b>Sharon Springs</b>      |                 |             |                       |              |              |                         |                       |                      |                     |
| 5,509.80                   | 21.02           | 0.00        | 5,498.00              | -157.07      | 160.89       | -154.50                 | 11.00                 | 11.00                | 0.00                |
| <b>Niobrara</b>            |                 |             |                       |              |              |                         |                       |                      |                     |
| 5,528.14                   | 23.04           | 0.00        | 5,515.00              | -150.19      | 160.89       | -147.62                 | 11.00                 | 11.00                | 0.00                |
| <b>Top A Chalk</b>         |                 |             |                       |              |              |                         |                       |                      |                     |
| 5,550.00                   | 25.45           | 0.00        | 5,534.93              | -141.21      | 160.89       | -138.65                 | 11.00                 | 11.00                | 0.00                |
| 5,561.21                   | 26.68           | 0.00        | 5,545.00              | -136.29      | 160.89       | -133.72                 | 11.00                 | 11.00                | 0.00                |
| <b>Top A Marl</b>          |                 |             |                       |              |              |                         |                       |                      |                     |
| 5,574.73                   | 28.17           | 0.00        | 5,557.00              | -130.06      | 160.89       | -127.50                 | 11.00                 | 11.00                | 0.00                |
| <b>A Marl</b>              |                 |             |                       |              |              |                         |                       |                      |                     |
| 5,583.85                   | 29.17           | 0.00        | 5,565.00              | -125.69      | 160.89       | -123.12                 | 11.00                 | 11.00                | 0.00                |
| <b>Top Upper B</b>         |                 |             |                       |              |              |                         |                       |                      |                     |
| 5,600.00                   | 30.95           | 0.00        | 5,578.98              | -117.60      | 160.90       | -115.03                 | 11.00                 | 11.00                | 0.00                |
| 5,611.76                   | 32.24           | 0.00        | 5,589.00              | -111.43      | 160.90       | -108.87                 | 11.00                 | 11.00                | 0.00                |
| <b>Base Upper B</b>        |                 |             |                       |              |              |                         |                       |                      |                     |
| 5,630.91                   | 34.35           | 0.00        | 5,605.00              | -100.93      | 160.90       | -98.37                  | 11.00                 | 11.00                | 0.00                |
| <b>Top Lower B</b>         |                 |             |                       |              |              |                         |                       |                      |                     |
| 5,650.00                   | 36.45           | 0.00        | 5,620.56              | -89.87       | 160.90       | -87.31                  | 11.00                 | 11.00                | 0.00                |
| 5,666.91                   | 38.31           | 0.00        | 5,634.00              | -79.60       | 160.90       | -77.05                  | 11.00                 | 11.00                | 0.00                |
| <b>Base Lower B</b>        |                 |             |                       |              |              |                         |                       |                      |                     |
| 5,683.69                   | 40.15           | 0.00        | 5,647.00              | -68.99       | 160.90       | -66.43                  | 11.00                 | 11.00                | 0.00                |
| <b>Top B Marl</b>          |                 |             |                       |              |              |                         |                       |                      |                     |
| 5,700.00                   | 41.95           | 0.00        | 5,659.30              | -58.28       | 160.90       | -55.73                  | 11.00                 | 11.00                | 0.00                |
| 5,741.46                   | 46.51           | 0.00        | 5,689.00              | -29.37       | 160.90       | -26.82                  | 11.00                 | 11.00                | 0.00                |
| <b>Top C Chalk</b>         |                 |             |                       |              |              |                         |                       |                      |                     |
| 5,750.00                   | 47.45           | 0.00        | 5,694.83              | -23.13       | 160.90       | -20.58                  | 11.00                 | 11.00                | 0.00                |
| 5,753.22                   | 47.80           | 0.00        | 5,697.00              | -20.74       | 160.90       | -18.19                  | 11.00                 | 11.00                | 0.00                |



# WOG

## Planning Report

|                  |                         |                                     |  |
|------------------|-------------------------|-------------------------------------|--|
| <b>Database:</b> | LandmarkEDM             | <b>Local Co-ordinate Reference:</b> | Well Razor #250-2444                   |
| <b>Company:</b>  | Whiting Petroleum Corp. | <b>TVD Reference:</b>               | KBE @ 4738.00usft (Original Well Elev) |
| <b>Project:</b>  | Weld County, CO         | <b>MD Reference:</b>                | KBE @ 4738.00usft (Original Well Elev) |
| <b>Site:</b>     | Sec 25-T10N-R58W        | <b>North Reference:</b>             | True                                   |
| <b>Well:</b>     | Razor #250-2444         | <b>Survey Calculation Method:</b>   | Minimum Curvature                      |
| <b>Wellbore:</b> | Hz                      |                                     |  |
| <b>Design:</b>   | APD                     |                                     |  |

| Planned Survey                 |                 |             |                       |              |              |                         |                       |                      |                     |  |
|--------------------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-----------------------|----------------------|---------------------|--|
| Measured Depth (usft)          | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |  |
| <b>Middle C Chalk</b>          |                 |             |                       |              |              |                         |                       |                      |                     |  |
| 5,774.55                       | 50.15           | 0.00        | 5,711.00              | -4.65        | 160.90       | -2.11                   | 11.00                 | 11.00                | 0.00                |  |
| <b>Middle C Marl</b>           |                 |             |                       |              |              |                         |                       |                      |                     |  |
| 5,800.00                       | 52.95           | 0.00        | 5,726.82              | 15.27        | 160.90       | 17.82                   | 11.00                 | 11.00                | 0.00                |  |
| 5,803.63                       | 53.35           | 0.00        | 5,729.00              | 18.18        | 160.90       | 20.72                   | 11.00                 | 11.00                | 0.00                |  |
| <b>Lower C Chalk</b>           |                 |             |                       |              |              |                         |                       |                      |                     |  |
| 5,833.25                       | 56.60           | 0.00        | 5,746.00              | 42.43        | 160.90       | 44.97                   | 11.00                 | 11.00                | 0.00                |  |
| <b>Lower C Marl</b>            |                 |             |                       |              |              |                         |                       |                      |                     |  |
| 5,850.00                       | 58.45           | 0.00        | 5,754.99              | 56.56        | 160.90       | 59.10                   | 11.00                 | 11.00                | 0.00                |  |
| 5,886.53                       | 62.46           | 0.00        | 5,773.00              | 88.33        | 160.91       | 90.87                   | 11.00                 | 11.00                | 0.00                |  |
| <b>Lower C Marker</b>          |                 |             |                       |              |              |                         |                       |                      |                     |  |
| 5,900.00                       | 63.95           | 0.00        | 5,779.07              | 100.36       | 160.91       | 102.89                  | 11.00                 | 11.00                | 0.00                |  |
| 5,906.76                       | 64.69           | 0.00        | 5,782.00              | 106.44       | 160.91       | 108.98                  | 11.00                 | 11.00                | 0.00                |  |
| <b>Top Ft. Hays</b>            |                 |             |                       |              |              |                         |                       |                      |                     |  |
| 5,944.82                       | 68.88           | 0.00        | 5,797.00              | 141.41       | 160.91       | 143.94                  | 11.00                 | 11.00                | 0.00                |  |
| <b>Ft. Hays Marker</b>         |                 |             |                       |              |              |                         |                       |                      |                     |  |
| 5,950.00                       | 69.45           | 0.00        | 5,798.84              | 146.26       | 160.91       | 148.79                  | 11.00                 | 11.00                | 0.00                |  |
| 6,000.00                       | 74.95           | 0.00        | 5,814.13              | 193.85       | 160.91       | 196.37                  | 11.00                 | 11.00                | 0.00                |  |
| 6,050.00                       | 80.45           | 0.00        | 5,824.78              | 242.68       | 160.91       | 245.20                  | 11.00                 | 11.00                | 0.00                |  |
| 6,100.00                       | 85.95           | 0.00        | 5,830.70              | 292.31       | 160.92       | 294.82                  | 11.00                 | 11.00                | 0.00                |  |
| 6,136.18                       | 89.93           | 0.00        | 5,832.00              | 328.46       | 160.92       | 330.96                  | 11.00                 | 11.00                | 0.00                |  |
| <b>Top Codell</b>              |                 |             |                       |              |              |                         |                       |                      |                     |  |
| 6,136.85                       | 90.00           | 0.00        | 5,832.00              | 329.13       | 160.92       | 331.63                  | 10.99                 | 10.99                | 0.00                |  |
| <b>LP @ 90° Inc, Hold - 7"</b> |                 |             |                       |              |              |                         |                       |                      |                     |  |
| 6,200.00                       | 90.00           | 0.00        | 5,832.00              | 392.28       | 160.92       | 394.78                  | 0.00                  | 0.00                 | 0.00                |  |
| 6,300.00                       | 90.00           | 0.00        | 5,832.00              | 492.28       | 160.93       | 494.76                  | 0.00                  | 0.00                 | 0.00                |  |
| 6,400.00                       | 90.00           | 0.00        | 5,832.00              | 592.28       | 160.93       | 594.75                  | 0.00                  | 0.00                 | 0.00                |  |
| 6,500.00                       | 90.00           | 0.00        | 5,832.00              | 692.28       | 160.94       | 694.74                  | 0.00                  | 0.00                 | 0.00                |  |
| 6,600.00                       | 90.00           | 0.00        | 5,832.00              | 792.28       | 160.94       | 794.73                  | 0.00                  | 0.00                 | 0.00                |  |
| 6,700.00                       | 90.00           | 0.00        | 5,832.00              | 892.28       | 160.95       | 894.71                  | 0.00                  | 0.00                 | 0.00                |  |
| 6,800.00                       | 90.00           | 0.00        | 5,832.00              | 992.28       | 160.95       | 994.70                  | 0.00                  | 0.00                 | 0.00                |  |
| 6,900.00                       | 90.00           | 0.00        | 5,832.00              | 1,092.28     | 160.96       | 1,094.69                | 0.00                  | 0.00                 | 0.00                |  |
| 7,000.00                       | 90.00           | 0.00        | 5,832.00              | 1,192.28     | 160.96       | 1,194.68                | 0.00                  | 0.00                 | 0.00                |  |
| 7,100.00                       | 90.00           | 0.00        | 5,832.00              | 1,292.28     | 160.97       | 1,294.66                | 0.00                  | 0.00                 | 0.00                |  |
| 7,200.00                       | 90.00           | 0.00        | 5,832.00              | 1,392.28     | 160.97       | 1,394.65                | 0.00                  | 0.00                 | 0.00                |  |
| 7,300.00                       | 90.00           | 0.00        | 5,832.00              | 1,492.28     | 160.98       | 1,494.64                | 0.00                  | 0.00                 | 0.00                |  |
| 7,400.00                       | 90.00           | 0.00        | 5,832.00              | 1,592.28     | 160.98       | 1,594.63                | 0.00                  | 0.00                 | 0.00                |  |
| 7,500.00                       | 90.00           | 0.00        | 5,832.00              | 1,692.28     | 160.99       | 1,694.61                | 0.00                  | 0.00                 | 0.00                |  |
| 7,600.00                       | 90.00           | 0.00        | 5,832.00              | 1,792.28     | 160.99       | 1,794.60                | 0.00                  | 0.00                 | 0.00                |  |
| 7,700.00                       | 90.00           | 0.00        | 5,832.00              | 1,892.28     | 161.00       | 1,894.59                | 0.00                  | 0.00                 | 0.00                |  |
| 7,800.00                       | 90.00           | 0.00        | 5,832.00              | 1,992.28     | 161.00       | 1,994.58                | 0.00                  | 0.00                 | 0.00                |  |
| 7,900.00                       | 90.00           | 0.00        | 5,832.00              | 2,092.28     | 161.01       | 2,094.56                | 0.00                  | 0.00                 | 0.00                |  |
| 8,000.00                       | 90.00           | 0.00        | 5,832.00              | 2,192.28     | 161.02       | 2,194.55                | 0.00                  | 0.00                 | 0.00                |  |
| 8,100.00                       | 90.00           | 0.00        | 5,832.00              | 2,292.28     | 161.02       | 2,294.54                | 0.00                  | 0.00                 | 0.00                |  |
| 8,200.00                       | 90.00           | 0.00        | 5,832.00              | 2,392.28     | 161.03       | 2,394.53                | 0.00                  | 0.00                 | 0.00                |  |
| 8,300.00                       | 90.00           | 0.00        | 5,832.00              | 2,492.28     | 161.03       | 2,494.51                | 0.00                  | 0.00                 | 0.00                |  |
| 8,400.00                       | 90.00           | 0.00        | 5,832.00              | 2,592.28     | 161.04       | 2,594.50                | 0.00                  | 0.00                 | 0.00                |  |
| 8,500.00                       | 90.00           | 0.00        | 5,832.00              | 2,692.28     | 161.04       | 2,694.49                | 0.00                  | 0.00                 | 0.00                |  |
| 8,600.00                       | 90.00           | 0.00        | 5,832.00              | 2,792.28     | 161.05       | 2,794.48                | 0.00                  | 0.00                 | 0.00                |  |
| 8,700.00                       | 90.00           | 0.00        | 5,832.00              | 2,892.28     | 161.05       | 2,894.46                | 0.00                  | 0.00                 | 0.00                |  |
| 8,800.00                       | 90.00           | 0.00        | 5,832.00              | 2,992.28     | 161.06       | 2,994.45                | 0.00                  | 0.00                 | 0.00                |  |
| 8,900.00                       | 90.00           | 0.00        | 5,832.00              | 3,092.28     | 161.06       | 3,094.44                | 0.00                  | 0.00                 | 0.00                |  |
| 9,000.00                       | 90.00           | 0.00        | 5,832.00              | 3,192.28     | 161.07       | 3,194.43                | 0.00                  | 0.00                 | 0.00                |  |



# WOG

## Planning Report

|                  |                         |                                     |  |
|------------------|-------------------------|-------------------------------------|--|
| <b>Database:</b> | LandmarkEDM             | <b>Local Co-ordinate Reference:</b> | Well Razor #25O-2444                   |
| <b>Company:</b>  | Whiting Petroleum Corp. | <b>TVD Reference:</b>               | KBE @ 4738.00usft (Original Well Elev) |
| <b>Project:</b>  | Weld County, CO         | <b>MD Reference:</b>                | KBE @ 4738.00usft (Original Well Elev) |
| <b>Site:</b>     | Sec 25-T10N-R58W        | <b>North Reference:</b>             | True                                   |
| <b>Well:</b>     | Razor #25O-2444         | <b>Survey Calculation Method:</b>   | Minimum Curvature                      |
| <b>Wellbore:</b> | Hz                      |                                     |  |
| <b>Design:</b>   | APD                     |                                     |  |

| Planned Survey        |                 |             |                       |              |              |                         |                       |                      |                     |  |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-----------------------|----------------------|---------------------|--|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |  |
| 9,100.00              | 90.00           | 0.00        | 5,832.00              | 3,292.28     | 161.07       | 3,294.41                | 0.00                  | 0.00                 | 0.00                |  |
| 9,200.00              | 90.00           | 0.00        | 5,832.00              | 3,392.28     | 161.08       | 3,394.40                | 0.00                  | 0.00                 | 0.00                |  |
| 9,300.00              | 90.00           | 0.00        | 5,832.00              | 3,492.28     | 161.08       | 3,494.39                | 0.00                  | 0.00                 | 0.00                |  |
| 9,400.00              | 90.00           | 0.00        | 5,832.00              | 3,592.28     | 161.09       | 3,594.38                | 0.00                  | 0.00                 | 0.00                |  |
| 9,500.00              | 90.00           | 0.00        | 5,832.00              | 3,692.28     | 161.09       | 3,694.37                | 0.00                  | 0.00                 | 0.00                |  |
| 9,600.00              | 90.00           | 0.00        | 5,832.00              | 3,792.28     | 161.10       | 3,794.35                | 0.00                  | 0.00                 | 0.00                |  |
| 9,700.00              | 90.00           | 0.00        | 5,832.00              | 3,892.28     | 161.10       | 3,894.34                | 0.00                  | 0.00                 | 0.00                |  |
| 9,800.00              | 90.00           | 0.00        | 5,832.00              | 3,992.28     | 161.11       | 3,994.33                | 0.00                  | 0.00                 | 0.00                |  |
| 9,900.00              | 90.00           | 0.00        | 5,832.00              | 4,092.28     | 161.11       | 4,094.32                | 0.00                  | 0.00                 | 0.00                |  |
| 10,000.00             | 90.00           | 0.00        | 5,832.00              | 4,192.28     | 161.12       | 4,194.30                | 0.00                  | 0.00                 | 0.00                |  |
| 10,100.00             | 90.00           | 0.00        | 5,832.00              | 4,292.28     | 161.12       | 4,294.29                | 0.00                  | 0.00                 | 0.00                |  |
| 10,200.00             | 90.00           | 0.00        | 5,832.00              | 4,392.28     | 161.13       | 4,394.28                | 0.00                  | 0.00                 | 0.00                |  |
| 10,300.00             | 90.00           | 0.00        | 5,832.00              | 4,492.28     | 161.13       | 4,494.27                | 0.00                  | 0.00                 | 0.00                |  |
| 10,400.00             | 90.00           | 0.00        | 5,832.00              | 4,592.28     | 161.14       | 4,594.25                | 0.00                  | 0.00                 | 0.00                |  |
| 10,500.00             | 90.00           | 0.00        | 5,832.00              | 4,692.28     | 161.14       | 4,694.24                | 0.00                  | 0.00                 | 0.00                |  |
| 10,600.00             | 90.00           | 0.00        | 5,832.00              | 4,792.28     | 161.15       | 4,794.23                | 0.00                  | 0.00                 | 0.00                |  |
| 10,700.00             | 90.00           | 0.00        | 5,832.00              | 4,892.28     | 161.16       | 4,894.22                | 0.00                  | 0.00                 | 0.00                |  |
| 10,800.00             | 90.00           | 0.00        | 5,832.00              | 4,992.28     | 161.16       | 4,994.20                | 0.00                  | 0.00                 | 0.00                |  |
| 10,900.00             | 90.00           | 0.00        | 5,832.00              | 5,092.28     | 161.17       | 5,094.19                | 0.00                  | 0.00                 | 0.00                |  |
| 11,000.00             | 90.00           | 0.00        | 5,832.00              | 5,192.28     | 161.17       | 5,194.18                | 0.00                  | 0.00                 | 0.00                |  |
| 11,100.00             | 90.00           | 0.00        | 5,832.00              | 5,292.28     | 161.18       | 5,294.17                | 0.00                  | 0.00                 | 0.00                |  |
| 11,200.00             | 90.00           | 0.00        | 5,832.00              | 5,392.28     | 161.18       | 5,394.15                | 0.00                  | 0.00                 | 0.00                |  |
| 11,300.00             | 90.00           | 0.00        | 5,832.00              | 5,492.28     | 161.19       | 5,494.14                | 0.00                  | 0.00                 | 0.00                |  |
| 11,400.00             | 90.00           | 0.00        | 5,832.00              | 5,592.28     | 161.19       | 5,594.13                | 0.00                  | 0.00                 | 0.00                |  |
| 11,500.00             | 90.00           | 0.00        | 5,832.00              | 5,692.28     | 161.20       | 5,694.12                | 0.00                  | 0.00                 | 0.00                |  |
| 11,600.00             | 90.00           | 0.00        | 5,832.00              | 5,792.28     | 161.20       | 5,794.10                | 0.00                  | 0.00                 | 0.00                |  |
| 11,700.00             | 90.00           | 0.00        | 5,832.00              | 5,892.28     | 161.21       | 5,894.09                | 0.00                  | 0.00                 | 0.00                |  |
| 11,800.00             | 90.00           | 0.00        | 5,832.00              | 5,992.28     | 161.21       | 5,994.08                | 0.00                  | 0.00                 | 0.00                |  |
| 11,900.00             | 90.00           | 0.00        | 5,832.00              | 6,092.28     | 161.22       | 6,094.07                | 0.00                  | 0.00                 | 0.00                |  |
| 12,000.00             | 90.00           | 0.00        | 5,832.00              | 6,192.28     | 161.22       | 6,194.05                | 0.00                  | 0.00                 | 0.00                |  |
| 12,100.00             | 90.00           | 0.00        | 5,832.00              | 6,292.28     | 161.23       | 6,294.04                | 0.00                  | 0.00                 | 0.00                |  |
| 12,200.00             | 90.00           | 0.00        | 5,832.00              | 6,392.28     | 161.23       | 6,394.03                | 0.00                  | 0.00                 | 0.00                |  |
| 12,300.00             | 90.00           | 0.00        | 5,832.00              | 6,492.28     | 161.24       | 6,494.02                | 0.00                  | 0.00                 | 0.00                |  |
| 12,400.00             | 90.00           | 0.00        | 5,832.00              | 6,592.28     | 161.24       | 6,594.00                | 0.00                  | 0.00                 | 0.00                |  |
| 12,500.00             | 90.00           | 0.00        | 5,832.00              | 6,692.28     | 161.25       | 6,693.99                | 0.00                  | 0.00                 | 0.00                |  |
| 12,600.00             | 90.00           | 0.00        | 5,832.00              | 6,792.28     | 161.25       | 6,793.98                | 0.00                  | 0.00                 | 0.00                |  |
| 12,700.00             | 90.00           | 0.00        | 5,832.00              | 6,892.28     | 161.26       | 6,893.97                | 0.00                  | 0.00                 | 0.00                |  |
| 12,800.00             | 90.00           | 0.00        | 5,832.00              | 6,992.28     | 161.26       | 6,993.95                | 0.00                  | 0.00                 | 0.00                |  |
| 12,900.00             | 90.00           | 0.00        | 5,832.00              | 7,092.28     | 161.27       | 7,093.94                | 0.00                  | 0.00                 | 0.00                |  |
| 13,000.00             | 90.00           | 0.00        | 5,832.00              | 7,192.28     | 161.27       | 7,193.93                | 0.00                  | 0.00                 | 0.00                |  |
| 13,100.00             | 90.00           | 0.00        | 5,832.00              | 7,292.28     | 161.28       | 7,293.92                | 0.00                  | 0.00                 | 0.00                |  |
| 13,200.00             | 90.00           | 0.00        | 5,832.00              | 7,392.28     | 161.29       | 7,393.90                | 0.00                  | 0.00                 | 0.00                |  |
| 13,300.00             | 90.00           | 0.00        | 5,832.00              | 7,492.28     | 161.29       | 7,493.89                | 0.00                  | 0.00                 | 0.00                |  |
| 13,400.00             | 90.00           | 0.00        | 5,832.00              | 7,592.28     | 161.30       | 7,593.88                | 0.00                  | 0.00                 | 0.00                |  |
| 13,500.00             | 90.00           | 0.00        | 5,832.00              | 7,692.28     | 161.30       | 7,693.87                | 0.00                  | 0.00                 | 0.00                |  |
| 13,600.00             | 90.00           | 0.00        | 5,832.00              | 7,792.28     | 161.31       | 7,793.85                | 0.00                  | 0.00                 | 0.00                |  |
| 13,700.00             | 90.00           | 0.00        | 5,832.00              | 7,892.28     | 161.31       | 7,893.84                | 0.00                  | 0.00                 | 0.00                |  |
| 13,800.00             | 90.00           | 0.00        | 5,832.00              | 7,992.28     | 161.32       | 7,993.83                | 0.00                  | 0.00                 | 0.00                |  |
| 13,900.00             | 90.00           | 0.00        | 5,832.00              | 8,092.28     | 161.32       | 8,093.82                | 0.00                  | 0.00                 | 0.00                |  |
| 14,000.00             | 90.00           | 0.00        | 5,832.00              | 8,192.28     | 161.33       | 8,193.80                | 0.00                  | 0.00                 | 0.00                |  |
| 14,100.00             | 90.00           | 0.00        | 5,832.00              | 8,292.28     | 161.33       | 8,293.79                | 0.00                  | 0.00                 | 0.00                |  |
| 14,200.00             | 90.00           | 0.00        | 5,832.00              | 8,392.28     | 161.34       | 8,393.78                | 0.00                  | 0.00                 | 0.00                |  |
| 14,300.00             | 90.00           | 0.00        | 5,832.00              | 8,492.28     | 161.34       | 8,493.77                | 0.00                  | 0.00                 | 0.00                |  |
| 14,400.00             | 90.00           | 0.00        | 5,832.00              | 8,592.28     | 161.35       | 8,593.76                | 0.00                  | 0.00                 | 0.00                |  |



# WOG

## Planning Report

|                  |                         |                                     |  |
|------------------|-------------------------|-------------------------------------|--|
| <b>Database:</b> | LandmarkEDM             | <b>Local Co-ordinate Reference:</b> | Well Razor #25O-2444                   |
| <b>Company:</b>  | Whiting Petroleum Corp. | <b>TVD Reference:</b>               | KBE @ 4738.00usft (Original Well Elev) |
| <b>Project:</b>  | Weld County, CO         | <b>MD Reference:</b>                | KBE @ 4738.00usft (Original Well Elev) |
| <b>Site:</b>     | Sec 25-T10N-R58W        | <b>North Reference:</b>             | True                                   |
| <b>Well:</b>     | Razor #25O-2444         | <b>Survey Calculation Method:</b>   | Minimum Curvature                      |
| <b>Wellbore:</b> | Hz                      |                                     |  |
| <b>Design:</b>   | APD                     |                                     |  |

| Planned Survey        |                 |             |                       |              |              |                         |                       |                      |                     |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-----------------------|----------------------|---------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
| 14,500.00             | 90.00           | 0.00        | 5,832.00              | 8,692.28     | 161.35       | 8,693.74                | 0.00                  | 0.00                 | 0.00                |
| 14,600.00             | 90.00           | 0.00        | 5,832.00              | 8,792.28     | 161.36       | 8,793.73                | 0.00                  | 0.00                 | 0.00                |
| 14,700.00             | 90.00           | 0.00        | 5,832.00              | 8,892.28     | 161.36       | 8,893.72                | 0.00                  | 0.00                 | 0.00                |
| 14,800.00             | 90.00           | 0.00        | 5,832.00              | 8,992.28     | 161.37       | 8,993.71                | 0.00                  | 0.00                 | 0.00                |
| 14,900.00             | 90.00           | 0.00        | 5,832.00              | 9,092.28     | 161.37       | 9,093.69                | 0.00                  | 0.00                 | 0.00                |
| 15,000.00             | 90.00           | 0.00        | 5,832.00              | 9,192.28     | 161.38       | 9,193.68                | 0.00                  | 0.00                 | 0.00                |
| 15,100.00             | 90.00           | 0.00        | 5,832.00              | 9,292.28     | 161.38       | 9,293.67                | 0.00                  | 0.00                 | 0.00                |
| 15,200.00             | 90.00           | 0.00        | 5,832.00              | 9,392.28     | 161.39       | 9,393.66                | 0.00                  | 0.00                 | 0.00                |
| 15,300.00             | 90.00           | 0.00        | 5,832.00              | 9,492.28     | 161.39       | 9,493.64                | 0.00                  | 0.00                 | 0.00                |
| 15,400.00             | 90.00           | 0.00        | 5,832.00              | 9,592.28     | 161.40       | 9,593.63                | 0.00                  | 0.00                 | 0.00                |
| 15,500.00             | 90.00           | 0.00        | 5,832.00              | 9,692.28     | 161.40       | 9,693.62                | 0.00                  | 0.00                 | 0.00                |
| 15,600.00             | 90.00           | 0.00        | 5,832.00              | 9,792.28     | 161.41       | 9,793.61                | 0.00                  | 0.00                 | 0.00                |
| 15,700.00             | 90.00           | 0.00        | 5,832.00              | 9,892.28     | 161.41       | 9,893.59                | 0.00                  | 0.00                 | 0.00                |
| 15,800.00             | 90.00           | 0.00        | 5,832.00              | 9,992.28     | 161.42       | 9,993.58                | 0.00                  | 0.00                 | 0.00                |
| 15,900.00             | 90.00           | 0.00        | 5,832.00              | 10,092.28    | 161.43       | 10,093.57               | 0.00                  | 0.00                 | 0.00                |
| 16,004.19             | 90.00           | 0.00        | 5,832.00              | 10,196.46    | 161.43       | 10,197.74               | 0.00                  | 0.00                 | 0.00                |
| TD at 16004.19' MD    |                 |             |                       |              |              |                         |                       |                      |                     |

| Design Targets            |               |              |            |              |              |                 |                |                  |                   |
|---------------------------|---------------|--------------|------------|--------------|--------------|-----------------|----------------|------------------|-------------------|
| Target Name               | Dip Angle (°) | Dip Dir. (°) | TVD (usft) | +N/-S (usft) | +E/-W (usft) | Northing (usft) | Easting (usft) | Latitude         | Longitude         |
| - hit/miss target         |               |              |            |              |              |                 |                |                  |                   |
| - Shape                   |               |              |            |              |              |                 |                |                  |                   |
| PBHL 2444                 | 0.00          | 0.00         | 5,832.00   | 10,196.46    | 161.43       | 1,550,153.20    | 3,467,767.06   | 40° 49' 52.720 N | 103° 48' 34.600 W |
| - plan hits target center |               |              |            |              |              |                 |                |                  |                   |
| - Point                   |               |              |            |              |              |                 |                |                  |                   |

| Casing Points         |                       |      |                      |                    |  |
|-----------------------|-----------------------|------|----------------------|--------------------|--|
| Measured Depth (usft) | Vertical Depth (usft) | Name | Casing Diameter (in) | Hole Diameter (in) |  |
| 6,136.85              | 5,832.00              | 7"   | 7.000                | 8.750              |  |





# WOG

## Planning Report

|                  |                         |                                     |  |
|------------------|-------------------------|-------------------------------------|--|
| <b>Database:</b> | LandmarkEDM             | <b>Local Co-ordinate Reference:</b> | Well Razor #25O-2444                   |
| <b>Company:</b>  | Whiting Petroleum Corp. | <b>TVD Reference:</b>               | KBE @ 4738.00usft (Original Well Elev) |
| <b>Project:</b>  | Weld County, CO         | <b>MD Reference:</b>                | KBE @ 4738.00usft (Original Well Elev) |
| <b>Site:</b>     | Sec 25-T10N-R58W        | <b>North Reference:</b>             | True                                   |
| <b>Well:</b>     | Razor #25O-2444         | <b>Survey Calculation Method:</b>   | Minimum Curvature                      |
| <b>Wellbore:</b> | Hz                      |                                     |  |
| <b>Design:</b>   | APD                     |                                     |  |

| Formations            |                       |                 |           |         |                   |  |
|-----------------------|-----------------------|-----------------|-----------|---------|-------------------|--|
| Measured Depth (usft) | Vertical Depth (usft) | Name            | Lithology | Dip (°) | Dip Direction (°) |  |
| 1,552.12              | 1,550.00              | Upper Pierre    |           |         |                   |  |
| 3,505.76              | 3,500.00              | Hygiene         |           |         |                   |  |
| 3,656.04              | 3,650.00              | Lower Pierre    |           |         |                   |  |
| 5,453.02              | 5,444.00              | P200 Marker     |           |         |                   |  |
| 5,473.82              | 5,464.00              | P300 Marker     |           |         |                   |  |
| 5,490.65              | 5,480.00              | P350 Marker     |           |         |                   |  |
| 5,505.52              | 5,494.00              | Sharon Springs  |           |         |                   |  |
| 5,509.80              | 5,498.00              | Niobrara        |           |         |                   |  |
| 5,528.14              | 5,515.00              | Top A Chalk     |           |         |                   |  |
| 5,561.21              | 5,545.00              | Top A Marl      |           |         |                   |  |
| 5,574.73              | 5,557.00              | A Marl          |           |         |                   |  |
| 5,583.85              | 5,565.00              | Top Upper B     |           |         |                   |  |
| 5,611.76              | 5,589.00              | Base Upper B    |           |         |                   |  |
| 5,630.91              | 5,605.00              | Top Lower B     |           |         |                   |  |
| 5,666.91              | 5,634.00              | Base Lower B    |           |         |                   |  |
| 5,683.69              | 5,647.00              | Top B Marl      |           |         |                   |  |
| 5,741.46              | 5,689.00              | Top C Chalk     |           |         |                   |  |
| 5,753.22              | 5,697.00              | Middle C Chalk  |           |         |                   |  |
| 5,774.55              | 5,711.00              | Middle C Marl   |           |         |                   |  |
| 5,803.63              | 5,729.00              | Lower C Chalk   |           |         |                   |  |
| 5,833.25              | 5,746.00              | Lower C Marl    |           |         |                   |  |
| 5,886.53              | 5,773.00              | Lower C Marker  |           |         |                   |  |
| 5,906.76              | 5,782.00              | Top Ft. Hays    |           |         |                   |  |
| 5,944.82              | 5,797.00              | Ft. Hays Marker |           |         |                   |  |
| 6,136.18              | 5,832.00              | Top Codell      |           |         |                   |  |

| Plan Annotations      |                       |                   |              |                     |
|-----------------------|-----------------------|-------------------|--------------|---------------------|
| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates |              | Comment             |
|                       |                       | +N/-S (usft)      | +E/-W (usft) |                     |
| 300.00                | 300.00                | 0.00              | 0.00         | Build 2°/100'       |
| 475.00                | 474.89                | -4.09             | 3.43         | Hold 3.50° Inc      |
| 4,400.00              | 4,392.57              | -187.65           | 157.46       | Drop 2°/100'        |
| 4,575.00              | 4,567.46              | -191.74           | 160.89       | Hold Vertical       |
| 5,318.67              | 5,311.13              | -191.74           | 160.89       | KOP, Build 11°/100' |
| 6,136.85              | 5,832.00              | 329.13            | 160.92       | LP @ 90° Inc, Hold  |
| 16,004.19             | 5,832.00              | 10,196.46         | 161.43       | TD at 16004.19' MD  |