



# **Fram Americas LLC**

**Whitewater Revival**

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**Mansur 33-4-D**

**Mansur 33-4-D**

**Plan: Mansur 33-4-D ST1**

## **Standard Planning Report**

**13 June, 2014**

|                  |                    |                                     |                             |
|------------------|--------------------|-------------------------------------|-----------------------------|
| <b>Database:</b> | Compass DB         | <b>Local Co-ordinate Reference:</b> | Well Mansur 33-4-D          |
| <b>Company:</b>  | Fram Americas LLC  | <b>TVD Reference:</b>               | RKB @ 6224.00usft (Craig 7) |
| <b>Project:</b>  | Whitewater Revival | <b>MD Reference:</b>                | RKB @ 6224.00usft (Craig 7) |
| <b>Site:</b>     | Whitewater Revival | <b>North Reference:</b>             | True                        |
| <b>Well:</b>     | Mansur 33-4-D      | <b>Survey Calculation Method:</b>   | Minimum Curvature           |
| <b>Wellbore:</b> | Mansur 33-4-D      |                                     |                             |
| <b>Design:</b>   | Mansur 33-4-D ST1  |                                     |                             |

|                    |                           |                      |                             |
|--------------------|---------------------------|----------------------|-----------------------------|
| <b>Project</b>     | Whitewater Revival        |                      |                             |
| <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 Central Zone     |                      | Using geodetic scale factor |

| Site                  |           | Whitewater Revival |                    |                   |             |
|-----------------------|-----------|--------------------|--------------------|-------------------|-------------|
| Site Position:        |           | Northing:          | 1,424,018.050 usft | Latitude:         | 38.965490   |
| From:                 | Lat/Long  | Easting:           | 2,222,914.096 usft | Longitude:        | -108.233480 |
| Position Uncertainty: | 0.00 usft | Slot Radius:       | 13-3/16 "          | Grid Convergence: | -1.72       |

|                      |               |             |                     |                    |               |               |
|----------------------|---------------|-------------|---------------------|--------------------|---------------|---------------|
| Well                 | Mansur 33-4-D |             |                     |                    |               |               |
| Well Position        | +N/-S         | -12.86 usft | Northing:           | 1,424,004.736 usft | Latitude:     | 38.965455     |
|                      | +E/-W         | 15.32 usft  | Easting:            | 2,222,929.022 usft | Longitude:    | -108.233426   |
| Position Uncertainty |               | 0.00 usft   | Wellhead Elevation: | 6,216.00 usft      | Ground Level: | 6,216.00 usft |

|                  |                   |                    |                        |                      |                            |
|------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| <b>Wellbore</b>  | Mansur 33-4-D     |                    |                        |                      |                            |
| <b>Magnetics</b> | <b>Model Name</b> | <b>Sample Date</b> | <b>Declination (°)</b> | <b>Dip Angle (°)</b> | <b>Field Strength (nT)</b> |
|                  | IGRF2010          | 6/5/2014           | 10.01                  | 65.18                | 51,628                     |

|                          |                                |                     |                     |                      |        |
|--------------------------|--------------------------------|---------------------|---------------------|----------------------|--------|
| <b>Design</b>            | Mansur 33-4-D ST1              |                     |                     |                      |        |
| <b>Audit Notes:</b>      |                                |                     |                     |                      |        |
| <b>Version:</b>          | 1                              | <b>Phase:</b>       | PROTOTYPE           | <b>Tie On Depth:</b> | 999.70 |
| <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                | 290.67               |        |

| <b>Plan Sections</b>  |                 |             |                       |              |              |                         |                        |                       |         |                     |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|------------------------|-----------------------|---------|---------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) | TFO (°) | Target              |
| 1,000.00              | 1.04            | 285.71      | 999.83                | -9.00        | -9.79        | 0.00                    | 0.00                   | 0.00                  | 0.00    |                     |
| 1,689.82              | 21.73           | 291.53      | 1,672.41              | 40.10        | -135.98      | 3.00                    | 3.00                   | 0.84                  | 6.10    | Mansur 33-4-D Secor |
| 3,580.20              | 21.73           | 291.53      | 3,428.47              | 296.96       | -787.02      | 0.00                    | 0.00                   | 0.00                  | 0.00    | Mansur 33-4-D Secor |

|                  |                    |                                     |                             |
|------------------|--------------------|-------------------------------------|-----------------------------|
| <b>Database:</b> | Compass DB         | <b>Local Co-ordinate Reference:</b> | Well Mansur 33-4-D          |
| <b>Company:</b>  | Fram Americas LLC  | <b>TVD Reference:</b>               | RKB @ 6224.00usft (Craig 7) |
| <b>Project:</b>  | Whitewater Revival | <b>MD Reference:</b>                | RKB @ 6224.00usft (Craig 7) |
| <b>Site:</b>     | Whitewater Revival | <b>North Reference:</b>             | True                        |
| <b>Well:</b>     | Mansur 33-4-D      | <b>Survey Calculation Method:</b>   | Minimum Curvature           |
| <b>Wellbore:</b> | Mansur 33-4-D      |                                     |                             |
| <b>Design:</b>   | Mansur 33-4-D ST1  |                                     |                             |

| Planned 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) |
| 0.00                             | 0.00            | 0.00        | 0.00                  | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 521.00                           | 0.90            | 201.40      | 520.98                | -3.81        | -1.49        | 0.05                    | 0.17                    | 0.17                   | 0.00                  |
| 551.00                           | 1.10            | 220.10      | 550.97                | -4.25        | -1.76        | 0.15                    | 1.27                    | 0.67                   | 62.33                 |
| 641.00                           | 1.30            | 223.10      | 640.95                | -5.66        | -3.02        | 0.83                    | 0.23                    | 0.22                   | 3.33                  |
| 731.00                           | 2.06            | 238.17      | 730.92                | -7.25        | -5.09        | 2.20                    | 0.97                    | 0.84                   | 16.74                 |
| 821.00                           | 2.02            | 229.56      | 820.86                | -9.14        | -7.67        | 3.95                    | 0.34                    | -0.04                  | -9.57                 |
| 911.00                           | 0.61            | 352.08      | 910.84                | -9.69        | -8.95        | 4.95                    | 2.67                    | -1.57                  | 136.13                |
| 1,000.00                         | 1.04            | 285.71      | 999.83                | -9.00        | -9.79        | 5.98                    | 1.09                    | 0.48                   | -74.57                |
| Start DLS 3.00 TFO 6.10          |                 |             |                       |              |              |                         |                         |                        |                       |
| 1,100.00                         | 4.04            | 290.24      | 1,099.72              | -7.54        | -13.97       | 10.41                   | 3.00                    | 3.00                   | 4.53                  |
| 1,200.00                         | 7.04            | 290.91      | 1,199.25              | -4.13        | -22.99       | 20.05                   | 3.00                    | 3.00                   | 0.67                  |
| 1,300.00                         | 10.04           | 291.18      | 1,298.13              | 1.20         | -36.84       | 34.89                   | 3.00                    | 3.00                   | 0.27                  |
| 1,400.00                         | 13.04           | 291.33      | 1,396.10              | 8.46         | -55.47       | 54.89                   | 3.00                    | 3.00                   | 0.15                  |
| 1,500.00                         | 16.04           | 291.42      | 1,492.88              | 17.60        | -78.84       | 79.98                   | 3.00                    | 3.00                   | 0.09                  |
| 1,600.00                         | 19.04           | 291.49      | 1,588.23              | 28.63        | -106.88      | 110.10                  | 3.00                    | 3.00                   | 0.06                  |
| 1,689.82                         | 21.73           | 291.53      | 1,672.41              | 40.10        | -135.98      | 141.38                  | 3.00                    | 3.00                   | 0.05                  |
| Start 1890.38 hold at 1689.82 MD |                 |             |                       |              |              |                         |                         |                        |                       |
| 1,700.00                         | 21.73           | 291.53      | 1,681.87              | 41.48        | -139.49      | 145.15                  | 0.00                    | 0.00                   | 0.00                  |
| 1,800.00                         | 21.73           | 291.53      | 1,774.77              | 55.07        | -173.93      | 182.17                  | 0.00                    | 0.00                   | 0.00                  |
| 1,900.00                         | 21.73           | 291.53      | 1,867.66              | 68.66        | -208.37      | 219.19                  | 0.00                    | 0.00                   | 0.00                  |
| 2,000.00                         | 21.73           | 291.53      | 1,960.55              | 82.24        | -242.81      | 256.21                  | 0.00                    | 0.00                   | 0.00                  |
| 2,100.00                         | 21.73           | 291.53      | 2,053.45              | 95.83        | -277.25      | 293.23                  | 0.00                    | 0.00                   | 0.00                  |
| 2,200.00                         | 21.73           | 291.53      | 2,146.34              | 109.42       | -311.69      | 330.25                  | 0.00                    | 0.00                   | 0.00                  |
| 2,300.00                         | 21.73           | 291.53      | 2,239.23              | 123.01       | -346.13      | 367.27                  | 0.00                    | 0.00                   | 0.00                  |
| 2,400.00                         | 21.73           | 291.53      | 2,332.13              | 136.60       | -380.57      | 404.28                  | 0.00                    | 0.00                   | 0.00                  |
| 2,500.00                         | 21.73           | 291.53      | 2,425.02              | 150.19       | -415.00      | 441.30                  | 0.00                    | 0.00                   | 0.00                  |
| 2,600.00                         | 21.73           | 291.53      | 2,517.92              | 163.77       | -449.44      | 478.32                  | 0.00                    | 0.00                   | 0.00                  |
| 2,700.00                         | 21.73           | 291.53      | 2,610.81              | 177.36       | -483.88      | 515.34                  | 0.00                    | 0.00                   | 0.00                  |
| 2,800.00                         | 21.73           | 291.53      | 2,703.70              | 190.95       | -518.32      | 552.36                  | 0.00                    | 0.00                   | 0.00                  |
| 2,900.00                         | 21.73           | 291.53      | 2,796.60              | 204.54       | -552.76      | 589.38                  | 0.00                    | 0.00                   | 0.00                  |
| 3,000.00                         | 21.73           | 291.53      | 2,889.49              | 218.13       | -587.20      | 626.40                  | 0.00                    | 0.00                   | 0.00                  |
| 3,100.00                         | 21.73           | 291.53      | 2,982.39              | 231.71       | -621.64      | 663.42                  | 0.00                    | 0.00                   | 0.00                  |
| 3,200.00                         | 21.73           | 291.53      | 3,075.28              | 245.30       | -656.08      | 700.44                  | 0.00                    | 0.00                   | 0.00                  |
| 3,300.00                         | 21.73           | 291.53      | 3,168.17              | 258.89       | -690.52      | 737.46                  | 0.00                    | 0.00                   | 0.00                  |
| 3,400.00                         | 21.73           | 291.53      | 3,261.07              | 272.48       | -724.96      | 774.48                  | 0.00                    | 0.00                   | 0.00                  |
| 3,489.47                         | 21.73           | 291.53      | 3,344.18              | 284.64       | -755.78      | 807.60                  | 0.00                    | 0.00                   | 0.00                  |
| Mansur 33-4-D                    |                 |             |                       |              |              |                         |                         |                        |                       |
| 3,500.00                         | 21.73           | 291.53      | 3,353.96              | 286.07       | -759.40      | 811.50                  | 0.00                    | 0.00                   | 0.00                  |
| 3,580.01                         | 21.73           | 291.53      | 3,428.29              | 296.94       | -786.96      | 841.12                  | 0.00                    | 0.00                   | 0.00                  |
| Mansur 33-4-D Secondary          |                 |             |                       |              |              |                         |                         |                        |                       |
| 3,580.20                         | 21.73           | 291.53      | 3,428.47              | 296.96       | -787.02      | 841.19                  | 0.00                    | 0.00                   | 0.00                  |
| TD at 3580.20                    |                 |             |                       |              |              |                         |                         |                        |                       |

| 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  |               |              |            |              |              |                 |                |           |             |
| Mansur 33-4-D Seconda  | 0.00          | 0.00         | 3,428.26   | 296.96       | -787.02      | 1,424,325.223   | 2,222,151.336  | 38.966270 | -108.236194 |
| - plan misses target center by 0.08usft at 3580.01usft MD (3428.29 TVD, 296.94 N, -786.96 E) |               |              |            |              |              |                 |                |           |             |
| - Point  |               |              |            |              |              |                 |                |           |             |

|                  |                    |                                     |                             |
|------------------|--------------------|-------------------------------------|-----------------------------|
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| <b>Project:</b>  | Whitewater Revival | <b>MD Reference:</b>                | RKB @ 6224.00usft (Craig 7) |
| <b>Site:</b>     | Whitewater Revival | <b>North Reference:</b>             | True                        |
| <b>Well:</b>     | Mansur 33-4-D      | <b>Survey Calculation Method:</b>   | Minimum Curvature           |
| <b>Wellbore:</b> | Mansur 33-4-D      |                                     |                             |
| <b>Design:</b>   | Mansur 33-4-D ST1  |                                     |                             |

| Plan Annotations            |                             |                   |                 |                                  |
|-----------------------------|-----------------------------|-------------------|-----------------|----------------------------------|
| Measured<br>Depth<br>(usft) | Vertical<br>Depth<br>(usft) | Local Coordinates |                 | Comment                          |
|                             |                             | +N/-S<br>(usft)   | +E/-W<br>(usft) |                                  |
| 1,000.00                    | 999.83                      | -9.00             | -9.79           | Start DLS 3.00 TFO 6.10          |
| 1,689.82                    | 1,672.41                    | 40.10             | -135.98         | Start 1890.38 hold at 1689.82 MD |
| 3,580.20                    | 3,428.47                    | 296.96            | -787.02         | TD at 3580.20                    |