

# Mewbourne Oil Co

Eddy, New Mexico

Sec 9-20S-25E

Gunsmoke 9 NM #1H

Wellbore #1

30-015-38111

Survey: Gunsmoke 9 NM #1H

## DDC Survey Report

16 February, 2011



# DDC Survey Report



|                  |                   |                                     |                                        |
|------------------|-------------------|-------------------------------------|----------------------------------------|
| <b>Company:</b>  | Mewbourne Oil Co  | <b>Local Co-ordinate Reference:</b> | Well Gunsmoke 9 NM #1H                 |
| <b>Project:</b>  | Eddy, New Mexico  | <b>TVD Reference:</b>               | WELL @ 3471.0usft (Patterson UTI #101) |
| <b>Site:</b>     | Sec 9-20S-25E     | <b>MD Reference:</b>                | WELL @ 3471.0usft (Patterson UTI #101) |
| <b>Well:</b>     | Gunsmoke 9 NM #1H | <b>North Reference:</b>             | Grid                                   |
| <b>Wellbore:</b> | Wellbore #1       | <b>Survey Calculation Method:</b>   | Minimum Curvature                      |
| <b>Design:</b>   | Wellbore #1       | <b>Database:</b>                    | EDM 5000.1 Single User Db              |

|                    |                                      |                      |                |
|--------------------|--------------------------------------|----------------------|----------------|
| <b>Project</b>     | Eddy, New Mexico                     |                      |                |
| <b>Map System:</b> | US State Plane 1927 (Exact solution) | <b>System Datum:</b> | Mean Sea Level |
| <b>Geo Datum:</b>  | NAD 1927 (NADCON CONUS)              |                      |                |
| <b>Map Zone:</b>   | New Mexico East 3001                 |                      |                |

|                              |               |                          |                   |
|------------------------------|---------------|--------------------------|-------------------|
| <b>Site</b>                  | Sec 9-20S-25E |                          |                   |
| <b>Site Position:</b>        |               | <b>Northing:</b>         | 579,246.53 usft   |
| <b>From:</b>                 | Map           | <b>Easting:</b>          | 452,285.51 usft   |
| <b>Position Uncertainty:</b> | 0.0 usft      | <b>Slot Radius:</b>      | 13-3/16 "         |
|                              |               | <b>Latitude:</b>         | 32° 35' 32.491 N  |
|                              |               | <b>Longitude:</b>        | 104° 29' 17.728 W |
|                              |               | <b>Grid Convergence:</b> | -0.08 °           |

|                             |                   |                            |                                  |
|-----------------------------|-------------------|----------------------------|----------------------------------|
| <b>Well</b>                 | Gunsmoke 9 NM #1H |                            |                                  |
| <b>Well Position</b>        | <b>+N/-S</b>      | 0.0 usft                   | <b>Northing:</b> 575,332.30 usft |
|                             | <b>+E/-W</b>      | 0.0 usft                   | <b>Easting:</b> 452,267.89 usft  |
| <b>Position Uncertainty</b> | 0.0 usft          | <b>Wellhead Elevation:</b> | usft                             |
|                             |                   | <b>Latitude:</b>           | 32° 34' 53.757 N                 |
|                             |                   | <b>Longitude:</b>          | 104° 29' 17.868 W                |
|                             |                   | <b>Ground Level:</b>       | 3,452.0 usft                     |

|                  |                   |                    |                            |
|------------------|-------------------|--------------------|----------------------------|
| <b>Wellbore</b>  | Wellbore #1       |                    |                            |
| <b>Magnetics</b> | <b>Model Name</b> | <b>Sample Date</b> | <b>Declination (°)</b>     |
|                  | IGRF200510        | 11/30/2010         | 8.08                       |
|                  |                   |                    | <b>Dip Angle (°)</b>       |
|                  |                   |                    | 60.39                      |
|                  |                   |                    | <b>Field Strength (nT)</b> |
|                  |                   |                    | 48,817                     |

|                          |                                |                      |                      |
|--------------------------|--------------------------------|----------------------|----------------------|
| <b>Design</b>            | Wellbore #1                    |                      |                      |
| <b>Audit Notes:</b>      |                                |                      |                      |
| <b>Version:</b>          | 1.0                            | <b>Phase:</b>        | ACTUAL               |
|                          |                                | <b>Tie On Depth:</b> | 0.0                  |
| <b>Vertical Section:</b> | <b>Depth From (TVD) (usft)</b> | <b>+N/-S (usft)</b>  | <b>+E/-W (usft)</b>  |
|                          | 0.0                            | 0.0                  | 0.0                  |
|                          |                                |                      | <b>Direction (°)</b> |
|                          |                                |                      | 270.91               |

|                       |                  |                                              |                    |
|-----------------------|------------------|----------------------------------------------|--------------------|
| <b>Survey Program</b> | Date 2/16/2011   |                                              |                    |
| <b>From (usft)</b>    | <b>To (usft)</b> | <b>Survey (Wellbore)</b>                     | <b>Tool Name</b>   |
| 0.0                   | 1,753.0          | Scientific Drilling - Gyro Surveys (Wellbore | MWD default        |
| 1,862.0               | 4,860.0          | Gunsmoke 9 NM #1H (Wellbore #1)              | MWD default        |
|                       |                  |                                              | <b>Description</b> |
|                       |                  |                                              | MWD - Standard     |
|                       |                  |                                              | MWD - Standard     |

|                              |                        |                    |                              |                     |                     |                                |                                |                               |                              |
|------------------------------|------------------------|--------------------|------------------------------|---------------------|---------------------|--------------------------------|--------------------------------|-------------------------------|------------------------------|
| <b>Survey</b>                |                        |                    |                              |                     |                     |                                |                                |                               |                              |
| <b>Measured Depth (usft)</b> | <b>Inclination (°)</b> | <b>Azimuth (°)</b> | <b>Vertical Depth (usft)</b> | <b>+N/-S (usft)</b> | <b>+E/-W (usft)</b> | <b>Vertical Section (usft)</b> | <b>Dogleg Rate (°/100usft)</b> | <b>Build Rate (°/100usft)</b> | <b>Turn Rate (°/100usft)</b> |
| <b>Tie-in to Gyro</b>        |                        |                    |                              |                     |                     |                                |                                |                               |                              |
| 1,753.0                      | 0.25                   | 75.59              | 1,752.8                      | 16.4                | 3.8                 | -3.5                           | 0.00                           | 0.00                          | 0.00                         |
| 1,862.0                      | 0.20                   | 149.10             | 1,861.8                      | 16.3                | 4.1                 | -3.8                           | 0.25                           | -0.05                         | 67.44                        |
| 1,893.0                      | 0.20                   | 277.40             | 1,892.8                      | 16.3                | 4.1                 | -3.8                           | 1.16                           | 0.00                          | 413.87                       |
| 1,924.0                      | 2.20                   | 284.70             | 1,923.8                      | 16.4                | 3.4                 | -3.2                           | 6.46                           | 6.45                          | 23.55                        |
| 1,956.0                      | 4.90                   | 287.00             | 1,955.7                      | 17.0                | 1.5                 | -1.3                           | 8.45                           | 8.44                          | 7.19                         |
| 1,987.0                      | 7.60                   | 287.10             | 1,986.5                      | 18.0                | -1.7                | 2.0                            | 8.71                           | 8.71                          | 0.32                         |
| 2,019.0                      | 10.00                  | 285.40             | 2,018.2                      | 19.3                | -6.4                | 6.7                            | 7.54                           | 7.50                          | -5.31                        |
| 2,050.0                      | 12.70                  | 278.80             | 2,048.6                      | 20.6                | -12.4               | 12.7                           | 9.65                           | 8.71                          | -21.29                       |
| 2,082.0                      | 15.50                  | 272.30             | 2,079.6                      | 21.3                | -20.1               | 20.4                           | 10.04                          | 8.75                          | -20.31                       |

# DDC Survey Report



|                  |                   |                                     |                                        |
|------------------|-------------------|-------------------------------------|----------------------------------------|
| <b>Company:</b>  | Mewbourne Oil Co  | <b>Local Co-ordinate Reference:</b> | Well Gunsmoke 9 NM #1H                 |
| <b>Project:</b>  | Eddy, New Mexico  | <b>TVD Reference:</b>               | WELL @ 3471.0usft (Patterson UTI #101) |
| <b>Site:</b>     | Sec 9-20S-25E     | <b>MD Reference:</b>                | WELL @ 3471 0usft (Patterson UTI #101) |
| <b>Well:</b>     | Gunsmoke 9 NM #1H | <b>North Reference:</b>             | Grid                                   |
| <b>Wellbore:</b> | Wellbore #1       | <b>Survey Calculation Method:</b>   | Minimum Curvature                      |
| <b>Design:</b>   | Wellbore #1       | <b>Database:</b>                    | EDM 5000.1 Single User Db              |

| Survey                      |                    |                |                             |                 |                 |                               |                               |                              |                             |  |
|-----------------------------|--------------------|----------------|-----------------------------|-----------------|-----------------|-------------------------------|-------------------------------|------------------------------|-----------------------------|--|
| Measured<br>Depth<br>(usft) | Inclination<br>(°) | Azimuth<br>(°) | Vertical<br>Depth<br>(usft) | +N/-S<br>(usft) | +E/-W<br>(usft) | Vertical<br>Section<br>(usft) | Dogleg<br>Rate<br>(°/100usft) | Build<br>Rate<br>(°/100usft) | Turn<br>Rate<br>(°/100usft) |  |
| 2,114.0                     | 18.50              | 268.00         | 2,110.2                     | 21.3            | -29.5           | 29.8                          | 10.16                         | 9.38                         | -13.44                      |  |
| 2,145.0                     | 21.50              | 266.40         | 2,139.3                     | 20.7            | -40.0           | 40.4                          | 9.84                          | 9.68                         | -5.16                       |  |
| 2,177.0                     | 24.80              | 268.00         | 2,168.7                     | 20.1            | -52.6           | 52.9                          | 10.50                         | 10.31                        | 5.00                        |  |
| 2,209.0                     | 28.20              | 270.50         | 2,197.4                     | 20.0            | -66.9           | 67.2                          | 11.18                         | 10.63                        | 7.81                        |  |
| 2,239.0                     | 31.90              | 271.20         | 2,223.3                     | 20.2            | -81.9           | 82.2                          | 12.39                         | 12.33                        | 2.33                        |  |
| 2,271.0                     | 36.00              | 271.10         | 2,249.9                     | 20.6            | -99.8           | 100.1                         | 12.81                         | 12.81                        | -0.31                       |  |
| 2,302.0                     | 39.60              | 270.90         | 2,274.4                     | 20.9            | -118.7          | 119.1                         | 11.62                         | 11.61                        | -0.65                       |  |
| 2,334.0                     | 42.20              | 270.30         | 2,298.6                     | 21.1            | -139.7          | 140.0                         | 8.22                          | 8.13                         | -1.88                       |  |
| 2,364.0                     | 45.10              | 269.90         | 2,320.3                     | 21.1            | -160.4          | 160.7                         | 9.71                          | 9.67                         | -1.33                       |  |
| 2,396.0                     | 48.30              | 270.00         | 2,342.2                     | 21.1            | -183.7          | 184.0                         | 10.00                         | 10.00                        | 0.31                        |  |
| 2,428.0                     | 51.20              | 270.20         | 2,362.9                     | 21.2            | -208.1          | 208.4                         | 9.08                          | 9.06                         | 0.63                        |  |
| 2,459.0                     | 53.70              | 270.30         | 2,381.8                     | 21.3            | -232.7          | 233.0                         | 8.07                          | 8.06                         | 0.32                        |  |
| 2,490.0                     | 56.70              | 270.80         | 2,399.5                     | 21.5            | -258.1          | 258.4                         | 9.77                          | 9.68                         | 1.61                        |  |
| 2,522.0                     | 60.00              | 271.40         | 2,416.2                     | 22.0            | -285.4          | 285.7                         | 10.44                         | 10.31                        | 1.88                        |  |
| 2,553.0                     | 62.60              | 271.60         | 2,431.1                     | 22.8            | -312.5          | 312.9                         | 8.41                          | 8.39                         | 0.65                        |  |
| 2,585.0                     | 65.00              | 271.60         | 2,445.3                     | 23.6            | -341.2          | 341.6                         | 7.50                          | 7.50                         | 0.00                        |  |
| 2,616.0                     | 67.80              | 271.20         | 2,457.7                     | 24.3            | -369.6          | 370.0                         | 9.11                          | 9.03                         | -1.29                       |  |
| 2,648.0                     | 70.60              | 270.60         | 2,469.0                     | 24.7            | -399.6          | 399.9                         | 8.92                          | 8.75                         | -1.88                       |  |
| 2,680.0                     | 73.30              | 270.10         | 2,478.9                     | 24.9            | -430.0          | 430.3                         | 8.57                          | 8.44                         | -1.56                       |  |
| 2,711.0                     | 76.50              | 269.80         | 2,487.0                     | 24.9            | -459.9          | 460.2                         | 10.36                         | 10.32                        | -0.97                       |  |
| 2,743.0                     | 78.90              | 269.80         | 2,493.8                     | 24.8            | -491.2          | 491.5                         | 7.50                          | 7.50                         | 0.00                        |  |
| 2,774.0                     | 81.40              | 269.80         | 2,499.1                     | 24.7            | -521.7          | 522.0                         | 8.06                          | 8.06                         | 0.00                        |  |
| 2,805.0                     | 84.70              | 270.50         | 2,502.9                     | 24.7            | -552.5          | 552.8                         | 10.88                         | 10.65                        | 2.26                        |  |
| 2,836.0                     | 86.80              | 271.40         | 2,505.2                     | 25.3            | -583.4          | 583.7                         | 7.37                          | 6.77                         | 2.90                        |  |
| Crossed Hardline @ 2893' MD |                    |                |                             |                 |                 |                               |                               |                              |                             |  |
| 2,892.9                     | 88.67              | 273.12         | 2,507.4                     | 27.5            | -640.2          | 640.5                         | 4.46                          | 3.29                         | 3.01                        |  |
| 2,909.0                     | 89.20              | 273.60         | 2,507.7                     | 28.4            | -656.3          | 656.6                         | 4.46                          | 3.29                         | 3.01                        |  |
| 2,941.0                     | 89.40              | 273.10         | 2,508.1                     | 30.3            | -688.2          | 688.6                         | 1.68                          | 0.63                         | -1.56                       |  |
| 3,004.0                     | 90.10              | 272.70         | 2,508.4                     | 33.5            | -751.1          | 751.6                         | 1.28                          | 1.11                         | -0.63                       |  |
| 3,067.0                     | 90.70              | 272.30         | 2,508.0                     | 36.2            | -814.1          | 814.5                         | 1.14                          | 0.95                         | -0.63                       |  |
| 3,128.0                     | 91.00              | 271.60         | 2,507.1                     | 38.3            | -875.0          | 875.5                         | 1.25                          | 0.49                         | -1.15                       |  |
| 3,189.0                     | 90.80              | 270.90         | 2,506.1                     | 39.7            | -936.0          | 936.5                         | 1.19                          | -0.33                        | -1.15                       |  |
| 3,251.0                     | 91.10              | 271.10         | 2,505.1                     | 40.7            | -998.0          | 998.5                         | 0.58                          | 0.48                         | 0.32                        |  |
| 3,312.0                     | 91.20              | 271.40         | 2,503.8                     | 42.1            | -1,058.9        | 1,059.5                       | 0.52                          | 0.16                         | 0.49                        |  |
| 3,375.0                     | 91.30              | 270.70         | 2,502.5                     | 43.2            | -1,121.9        | 1,122.5                       | 1.12                          | 0.16                         | -1.11                       |  |
| 3,434.0                     | 91.20              | 270.30         | 2,501.2                     | 43.7            | -1,180.9        | 1,181.4                       | 0.70                          | -0.17                        | -0.68                       |  |
| 3,496.0                     | 91.10              | 270.20         | 2,499.9                     | 44.0            | -1,242.9        | 1,243.4                       | 0.23                          | -0.16                        | -0.16                       |  |
| 3,559.0                     | 90.90              | 269.90         | 2,498.8                     | 44.1            | -1,305.9        | 1,306.4                       | 0.57                          | -0.32                        | -0.48                       |  |
| 3,623.0                     | 91.00              | 269.90         | 2,497.8                     | 43.9            | -1,369.9        | 1,370.4                       | 0.16                          | 0.16                         | 0.00                        |  |
| 3,688.0                     | 90.80              | 269.10         | 2,496.8                     | 43.4            | -1,434.9        | 1,435.4                       | 1.27                          | -0.31                        | -1.23                       |  |
| 3,752.0                     | 91.40              | 269.40         | 2,495.5                     | 42.5            | -1,498.8        | 1,499.3                       | 1.05                          | 0.94                         | 0.47                        |  |
| 3,816.0                     | 92.30              | 269.80         | 2,493.5                     | 42.1            | -1,562.8        | 1,563.3                       | 1.54                          | 1.41                         | 0.63                        |  |
| 3,880.0                     | 91.70              | 270.50         | 2,491.2                     | 42.3            | -1,626.8        | 1,627.2                       | 1.44                          | -0.94                        | 1.09                        |  |

# DDC Survey Report



|                  |                   |                                     |                                        |
|------------------|-------------------|-------------------------------------|----------------------------------------|
| <b>Company:</b>  | Mewbourne Oil Co  | <b>Local Co-ordinate Reference:</b> | Well Gunsmoke 9 NM #1H                 |
| <b>Project:</b>  | Eddy, New Mexico  | <b>TVD Reference:</b>               | WELL @ 3471.0usft (Patterson UTI #101) |
| <b>Site:</b>     | Sec 9-20S-25E     | <b>MD Reference:</b>                | WELL @ 3471.0usft (Patterson UTI #101) |
| <b>Well:</b>     | Gunsmoke 9 NM #1H | <b>North Reference:</b>             | Grid                                   |
| <b>Wellbore:</b> | Wellbore #1       | <b>Survey Calculation Method:</b>   | Minimum Curvature                      |
| <b>Design:</b>   | Wellbore #1       | <b>Database:</b>                    | EDM 5000.1 Single User Db              |

## Survey

| Measured Depth (usft)    | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|--------------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| 3,944.0                  | 90 70           | 271.10      | 2,489.9               | 43.2         | -1,690.7     | 1,691.2                 | 1.82                    | -1.56                  | 0.94                  |
| 4,009.0                  | 90 40           | 271.20      | 2,489.3               | 44.5         | -1,755.7     | 1,756.2                 | 0.49                    | -0.46                  | 0.15                  |
| 4,073.0                  | 90.60           | 270.50      | 2,488.7               | 45.4         | -1,819.7     | 1,820.2                 | 1.14                    | 0.31                   | -1.09                 |
| 4,137.0                  | 90 20           | 269.50      | 2,488.3               | 45.4         | -1,883.7     | 1,884.2                 | 1.68                    | -0.63                  | -1.56                 |
| 4,200.0                  | 90 50           | 268.90      | 2,487.9               | 44.5         | -1,946.7     | 1,947.2                 | 1.06                    | 0.48                   | -0.95                 |
| 4,263.0                  | 91.10           | 270.00      | 2,487.0               | 43.9         | -2,009.7     | 2,010.1                 | 1.99                    | 0.95                   | 1.75                  |
| 4,327.0                  | 91 20           | 269.50      | 2,485.7               | 43.6         | -2,073.7     | 2,074.1                 | 0.80                    | 0.16                   | -0.78                 |
| 4,390.0                  | 92.00           | 269.20      | 2,484.0               | 42.9         | -2,136.7     | 2,137.1                 | 1.36                    | 1.27                   | -0.48                 |
| 4,454.0                  | 91.30           | 270.10      | 2,482.1               | 42.5         | -2,200.6     | 2,201.0                 | 1.78                    | -1.09                  | 1.41                  |
| 4,518.0                  | 90.30           | 271.30      | 2,481.2               | 43.3         | -2,264.6     | 2,265.0                 | 2.44                    | -1.56                  | 1.88                  |
| 4,581.0                  | 90.10           | 271.00      | 2,481.0               | 44.6         | -2,327.6     | 2,328.0                 | 0.57                    | -0.32                  | -0.48                 |
| 4,644.0                  | 90 20           | 270.10      | 2,480.8               | 45.2         | -2,390.6     | 2,391.0                 | 1.44                    | 0.16                   | -1.43                 |
| 4,707.0                  | 90 20           | 270.10      | 2,480.6               | 45.3         | -2,453.6     | 2,454.0                 | 0.00                    | 0.00                   | 0.00                  |
| 4,771.0                  | 90 10           | 270.00      | 2,480.4               | 45.4         | -2,517.6     | 2,518.0                 | 0.22                    | -0.16                  | -0.16                 |
| 4,810.0                  | 89 90           | 269.50      | 2,480.4               | 45.2         | -2,556.6     | 2,557.0                 | 1.38                    | -0.51                  | -1.28                 |
| <b>Projection to Bit</b> |                 |             |                       |              |              |                         |                         |                        |                       |
| 4,860.0                  | 89 90           | 269.50      | 2,480.5               | 44.8         | -2,606.6     | 2,607.0                 | 0.00                    | 0.00                   | 0.00                  |

## Survey Annotations

| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates |              | Comment                     |
|-----------------------|-----------------------|-------------------|--------------|-----------------------------|
|                       |                       | +N/-S (usft)      | +E/-W (usft) |                             |
| 1,753.0               | 1,752.8               | 16.4              | 3.8          | Tie-in to Gyro              |
| 2,892.9               | 2,507.4               | 27.5              | -640.2       | Crossed Hardline @ 2893' MD |
| 4,860.0               | 2,480.5               | 44.8              | -2,606.6     | Projection to Bit           |

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

Gunsmoke 9 NM #1H  
Eddy, New Mexico  
Q100827 & WT-11060

Company Name: Mewbourne Oil Co  
Gunsmoke 9 NM #1H  
Eddy, New Mexico  
Rig: Patterson UTI #101  
Created By: Shane Robbins  
Date: 02/16/2011

# Mewbourne Oil Company



Azimuths to Grid North

Total Correction 8.17°

Magnetic Field  
Strength: 48816 5snT  
Dip Angle: 60 39°  
Date: 11/30/2010  
Model: IGRF200510

PROJECT DETAILS: - Eddy, New Mexico

Geodetic System: US State Plane 1927 (Exact solution)  
Datum: NAD 1927 (NADCON CONUS)  
Ellipsoid: Clarke 1866  
Zone: New Mexico East 3001  
System Datum: Mean Sea Level

## WELL DETAILS Gunsmoke 9 NM #1H

| Ground Level |      | 3452 0   | Latitude |           | 32° 34' 53.767 N | Longitude |  | 104° 29' 17.868 W |
|--------------|------|----------|----------|-----------|------------------|-----------|--|-------------------|
| +N-S         | +E-W | Northing | East     | 675332 29 | 452287 89        |           |  |                   |
| 0 0          | 0 0  |          |          |           |                  |           |  |                   |

## ANNOTATIONS

| MD     | Inc   | Ati    | TVD    | +N-S | +E-W    | V-Sect | Departure | Annotation                  |
|--------|-------|--------|--------|------|---------|--------|-----------|-----------------------------|
| 1753 0 | 0 25  | 75 59  | 1752 8 | 16 4 | 3 2     | -3 5   | 24 6      | Tie-in to Gyro              |
| 2892 9 | 88 67 | 273 12 | 2587 8 | 27 5 | -440 2  | 640 5  | 670 1     | Crossed Hardline @ 2893' MD |
| 4860 0 | 89 90 | 269 50 | 2480 5 | 44 8 | -2606 6 | 2507 0 | 2636 9    | Projection to Bit           |

## DESIGN TARGET DETAILS

| Name                                 | TVD    | +N-S | +E-W    | Northing  | East      | Latitude         | Longitude         |
|--------------------------------------|--------|------|---------|-----------|-----------|------------------|-------------------|
| PBHL - Gunsmoke 9 NM #1H - Design #2 | 2481 0 | 41 7 | -2614 4 | 675373 97 | 449653 61 | 32° 34' 54.131 N | 104° 29' 48.424 W |
| - plan hits target center            |        |      |         |           |           |                  |                   |

