

## Results of Directional Survey

|             |                     |           |                                           |
|-------------|---------------------|-----------|-------------------------------------------|
| API number: | <b>30-025-40156</b> |           |                                           |
| OGRID:      |                     | Operator: | <b>MEWBORNE OIL CO</b>                    |
|             |                     | Property: | <b>RED HILLS WEST 21 FEDERAL COM # 1H</b> |

|         |        |          |           |                |                |
|---------|--------|----------|-----------|----------------|----------------|
| surface | ULSTR: | <b>A</b> | <b>21</b> | <b>T 26S</b>   | <b>R 32E</b>   |
|         |        |          |           | <b>330 FNL</b> | <b>950 FEL</b> |

|              |           |               |            |                 |                |
|--------------|-----------|---------------|------------|-----------------|----------------|
| BH Loc       | ULSTR:    | <b>P</b>      | <b>21</b>  | <b>T 26S</b>    | <b>R 32E</b>   |
| <b>13758</b> | <b>MD</b> | <b>9364.7</b> | <b>TVD</b> | <b>4989 FNL</b> | <b>890 FEL</b> |
|              |           |               |            | <b>291 FSL</b>  |                |

|             |           |               |            |                |                 |
|-------------|-----------|---------------|------------|----------------|-----------------|
| Top Perf/OH | ULSTR:    | <b>A</b>      | <b>21</b>  | <b>T 26S</b>   | <b>R 32E</b>    |
| <b>9705</b> | <b>MD</b> | <b>9351.0</b> | <b>TVD</b> | <b>941 FNL</b> | <b>1017 FEL</b> |

|              |           |               |            |                 |                |
|--------------|-----------|---------------|------------|-----------------|----------------|
| Bot Perf/OH  | ULSTR:    | <b>P</b>      | <b>21</b>  | <b>T 26S</b>    | <b>R 32E</b>   |
| <b>13690</b> | <b>MD</b> | <b>9366.4</b> | <b>TVD</b> | <b>4921 FNL</b> | <b>894 FEL</b> |
|              |           |               |            | <b>359 FSL</b>  |                |

|              |              |          |        |         |
|--------------|--------------|----------|--------|---------|
|              | MD           | N/S      | E/W    | VD      |
|              | 9673         | -579.10  | -67.30 | 9350.16 |
| TOP PERFS/OH | <b>9705</b>  | -611.08  | -66.63 | 9350.95 |
|              | 9705         | -611.08  | -66.63 | 9350.95 |
|              | 13689        | -4589.73 | 55.48  | 9366.44 |
| BOT PERFS/OH | <b>13690</b> | -4590.73 | 55.54  | 9366.42 |
|              | 13720        | -4620.66 | 57.45  | 9365.68 |

|              |              |          |       |         |
|--------------|--------------|----------|-------|---------|
| NEXT TO LAST | 13689        | -4589.73 | 55.48 | 9366.44 |
| LAST READING | 13720        | -4620.66 | 57.45 | 9365.68 |
| TD           | <b>13758</b> | -4658.57 | 59.86 | 9364.75 |

|                  |      |    |      |    |
|------------------|------|----|------|----|
| Surface Location | 330  | FN | 950  | FE |
| Projected BHL    | 4989 | FN | 890  | FE |
| Location of      |      |    |      |    |
| Top Perfs/OH     | 941  | FN | 1017 | FE |
| Bottom Perfs/OH  | 4921 | FN | 894  | FE |

### SUMMARY of Subsurface Locations

|                  |              |      |    |      |    |             |
|------------------|--------------|------|----|------|----|-------------|
| Surface Location | A-21-26S-32E | 330  | FN | 950  | FE | Vert. Depth |
|                  |              |      |    |      |    |             |
| Top Perfs/OH     | A-21-26S-32E | 941  | FN | 1017 | FE | 9350.95     |
| Bottom Perfs/OH  | P-21-26S-32E | 4921 | FN | 894  | FE | 9366.42     |
|                  |              |      |    |      |    |             |
| Projected TD     | P-21-26S-32E | 4989 | FN | 890  | FE | 9364.75     |

OPERATOR MEWBOURNE OIL COMPANY  
WELL/LEASE RED HILLS WEST 21 FED COM #1H  
COUNTY LEA

STATE OF NEW MEXICO  
DEVIATION REPORT

|       |      |
|-------|------|
| 238   | 0.66 |
| 487   | 1.76 |
| 623   | 1.35 |
| 900   | 0.64 |
| 1,206 | 0.33 |
| 1,515 | 0.68 |
| 1,832 | 0.54 |
| 2,139 | 1.06 |
| 2,421 | 0.52 |
| 2,732 | 0.76 |
| 3,080 | 1.35 |
| 3,398 | 1.84 |
| 3,684 | 1.39 |
| 3,840 | 1.65 |
| 4,119 | 2.09 |
| 4,360 | 1.84 |
| 4,682 | 2.01 |
| 4,808 | 1.52 |
| 5,028 | 0.24 |
| 5,217 | 0.50 |
| 5,623 | 0.40 |
| 6,034 | 0.23 |
| 6,506 | 0.20 |
| 6,947 | 0.78 |
| 7,389 | 0.95 |
| 7,850 | 1.00 |

HOBBS OCD

OCT 03 2011

RECEIVED

SUR: A-21-26s-32e, 330/N & 950/E  
BHL: P-21-26s-32e, 4989/N & 890/E  
API # 30-025-40156

STATE OF TEXAS

COUNTY OF MIDLAND

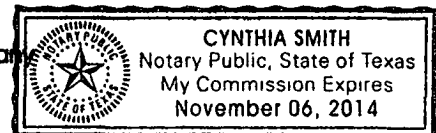
BY: Steve Moore

The foregoing instrument was acknowledged before Received 9/12/11, by Steve Moore on behalf of Patterson-UTI Drilling Company LLC.

Cynthia Smith  
Notary Public for Midland County, Texas  
My Commission Expires:

AUG 15 2011

Mewbourne Oil Company  
Hobbs





Company: MEWBOURNE  
Lease/Well: RED HILLS 21 FED COM /1H

Rig Name: PATTERSON 45  
State/County: NEW MEXICO /LEA

Latitude: 32.03  
GRID North is 0.35 Degrees East of True North.  
VS-Azi: 0.00 Degrees



SUR: A-21-26s-32e, 330/N & 950/E  
BHL: P-21-26s-32e, 4989/N & 890/E  
API # 30-025-40156

Depth Reference : RKB 17 FEET

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: red hills 21 fed com 1h\_ed.ut

Minimum Curvature Method

Report Date/Time: 8/16/2011 / 08:31

Vaughn Energy Services  
Woodward, OK  
580-254-5000  
Juan Parra

| Measured<br>Depth<br>FT | Incl<br>Angle<br>Deg | Drift<br>Direction<br>Deg | TVD<br>FT | +N/-S<br>FT | +E/-W<br>FT | Vertical<br>Section<br>FT | Closure<br>Distance<br>FT | Closure<br>Direction<br>Deg | Dogleg<br>Severity<br>Deg/100 |
|-------------------------|----------------------|---------------------------|-----------|-------------|-------------|---------------------------|---------------------------|-----------------------------|-------------------------------|
| 0.00                    | 0.00                 | 0.00                      | 0.00      | 0.00        | 0.00        | 0.00                      | 0.00                      | 0.00                        | ****                          |
| 100.00                  | 0.42                 | 28.51                     | 100.00    | 0.32        | 0.17        | 0.32                      | 0.36                      | 28.51                       | 0.42                          |
| 200.00                  | 0.48                 | 22.24                     | 200.00    | 1.03        | 0.51        | 1.03                      | 1.15                      | 26.21                       | 0.08                          |
| 300.00                  | 0.80                 | 38.03                     | 299.99    | 1.97        | 1.10        | 1.97                      | 2.25                      | 29.08                       | 0.35                          |
| 400.00                  | 1.31                 | 41.90                     | 399.97    | 3.36        | 2.28        | 3.36                      | 4.07                      | 34.17                       | 0.51                          |
| 500.00                  | 1.58                 | 56.61                     | 499.94    | 4.97        | 4.19        | 4.97                      | 6.50                      | 40.16                       | 0.46                          |
| 600.00                  | 1.36                 | 59.52                     | 599.91    | 6.33        | 6.37        | 6.33                      | 8.98                      | 45.17                       | 0.23                          |
| 700.00                  | 0.88                 | 69.94                     | 699.89    | 7.19        | 8.11        | 7.19                      | 10.84                     | 48.42                       | 0.52                          |
| 800.00                  | 0.77                 | 68.24                     | 799.88    | 7.71        | 9.46        | 7.71                      | 12.20                     | 50.82                       | 0.11                          |
| 900.00                  | 0.62                 | 58.97                     | 899.87    | 8.24        | 10.55       | 8.24                      | 13.38                     | 52.01                       | 0.19                          |
| 1000.00                 | 0.45                 | 50.48                     | 999.87    | 8.76        | 11.31       | 8.76                      | 14.31                     | 52.24                       | 0.19                          |
| 1100.00                 | 0.25                 | 45.58                     | 1099.86   | 9.17        | 11.77       | 9.17                      | 14.92                     | 52.09                       | 0.20                          |
| 1200.00                 | 0.16                 | 327.37                    | 1199.86   | 9.44        | 11.85       | 9.44                      | 15.15                     | 51.47                       | 0.27                          |
| 1300.00                 | 0.06                 | 225.10                    | 1299.86   | 9.52        | 11.74       | 9.52                      | 15.11                     | 50.96                       | 0.18                          |
| 1400.00                 | 0.24                 | 209.65                    | 1399.86   | 9.29        | 11.59       | 9.29                      | 14.86                     | 51.28                       | 0.18                          |
| 1500.00                 | 0.32                 | 196.50                    | 1499.86   | 8.84        | 11.41       | 8.84                      | 14.43                     | 52.23                       | 0.10                          |
| 1600.00                 | 0.42                 | 200.99                    | 1599.86   | 8.23        | 11.20       | 8.23                      | 13.90                     | 53.69                       | 0.10                          |
| 1700.00                 | 0.32                 | 212.12                    | 1699.86   | 7.65        | 10.92       | 7.65                      | 13.33                     | 54.98                       | 0.13                          |
| 1800.00                 | 0.44                 | 220.24                    | 1799.86   | 7.12        | 10.52       | 7.12                      | 12.71                     | 55.90                       | 0.14                          |
| 1900.00                 | 0.58                 | 210.59                    | 1899.85   | 6.39        | 10.02       | 6.39                      | 11.88                     | 57.46                       | 0.17                          |
| 2000.00                 | 0.77                 | 218.25                    | 1999.85   | 5.43        | 9.34        | 5.43                      | 10.80                     | 59.85                       | 0.20                          |
| 2100.00                 | 0.82                 | 212.14                    | 2099.84   | 4.29        | 8.54        | 4.29                      | 9.56                      | 63.33                       | 0.10                          |
| 2200.00                 | 0.83                 | 224.93                    | 2199.83   | 3.17        | 7.65        | 3.17                      | 8.28                      | 67.51                       | 0.18                          |
| 2300.00                 | 0.95                 | 228.15                    | 2299.81   | 2.10        | 6.52        | 2.10                      | 6.85                      | 72.14                       | 0.12                          |
| 2400.00                 | 0.96                 | 233.43                    | 2399.80   | 1.05        | 5.23        | 1.05                      | 5.33                      | 78.66                       | 0.09                          |
| 2500.00                 | 1.05                 | 226.59                    | 2499.78   | -0.08       | 3.89        | -0.08                     | 3.89                      | 91.23                       | 0.15                          |
| 2600.00                 | 0.89                 | 220.33                    | 2599.77   | -1.31       | 2.72        | -1.31                     | 3.01                      | 115.66                      | 0.19                          |
| 2700.00                 | 0.83                 | 222.48                    | 2699.76   | -2.43       | 1.72        | -2.43                     | 2.98                      | 144.66                      | 0.06                          |
| 2800.00                 | 1.04                 | 200.88                    | 2799.75   | -3.82       | 0.91        | -3.82                     | 3.92                      | 166.60                      | 0.41                          |
| 2900.00                 | 1.11                 | 196.43                    | 2899.73   | -5.60       | 0.31        | -5.60                     | 5.61                      | 176.82                      | 0.11                          |
| 3000.00                 | 0.83                 | 172.16                    | 2999.71   | -7.25       | 0.14        | -7.25                     | 7.25                      | 178.92                      | 0.49                          |
| 3100.00                 | 1.23                 | 116.96                    | 3099.70   | -8.45       | 1.19        | -8.45                     | 8.54                      | 171.97                      | 1.02                          |
| 3200.00                 | 1.53                 | 93.77                     | 3199.67   | -9.03       | 3.48        | -9.03                     | 9.67                      | 158.91                      | 0.63                          |
| 3300.00                 | 1.80                 | 65.17                     | 3299.63   | -8.46       | 6.24        | -8.46                     | 10.51                     | 143.59                      | 0.86                          |
| 3400.00                 | 1.82                 | 70.46                     | 3399.58   | -7.26       | 9.16        | -7.26                     | 11.69                     | 128.43                      | 0.17                          |

| Measured<br>Depth<br>FT | Incl<br>Angle<br>Deg | Drift<br>Direction<br>Deg | TVD<br>FT | +N/-S<br>FT | +E/-W<br>FT | Vertical<br>Section<br>FT | Closure<br>Distance<br>FT | Closure<br>Direction<br>Deg | Logleg<br>Severity<br>Deg/100 |
|-------------------------|----------------------|---------------------------|-----------|-------------|-------------|---------------------------|---------------------------|-----------------------------|-------------------------------|
| 3500.00                 | 1.57                 | 51.92                     | 3499.54   | -5.89       | 11.73       | -5.89                     | 13.13                     | 116.66                      | 0.60                          |
| 3600.00                 | 1.42                 | 45.38                     | 3599.50   | -4.17       | 13.69       | -4.17                     | 14.31                     | 106.96                      | 0.22                          |
| 3700.00                 | 1.37                 | 51.70                     | 3699.47   | -2.56       | 15.51       | -2.56                     | 15.72                     | 99.38                       | 0.16                          |
| 3800.00                 | 1.53                 | 74.76                     | 3799.44   | -1.47       | 17.73       | -1.47                     | 17.80                     | 94.75                       | 0.60                          |
| 3900.00                 | 1.41                 | 81.91                     | 3899.41   | -0.95       | 20.24       | -0.95                     | 20.26                     | 92.69                       | 0.22                          |
| 4000.00                 | 1.39                 | 101.61                    | 3999.38   | -1.02       | 22.64       | -1.02                     | 22.66                     | 92.58                       | 0.48                          |
| 4100.00                 | 2.01                 | 106.23                    | 4099.34   | -1.75       | 25.51       | -1.75                     | 25.57                     | 93.93                       | 0.64                          |
| 4200.00                 | 2.22                 | 117.56                    | 4199.27   | -3.14       | 28.91       | -3.14                     | 29.08                     | 96.20                       | 0.46                          |
| 4300.00                 | 1.89                 | 123.42                    | 4299.20   | -4.94       | 32.00       | -4.94                     | 32.38                     | 98.78                       | 0.39                          |
| 4400.00                 | 1.76                 | 128.20                    | 4399.15   | -6.80       | 34.58       | -6.80                     | 35.24                     | 101.12                      | 0.20                          |
| 4500.00                 | 1.56                 | 135.00                    | 4499.11   | -8.71       | 36.75       | -8.71                     | 37.77                     | 103.33                      | 0.28                          |
| 4600.00                 | 1.64                 | 146.87                    | 4599.07   | -10.87      | 38.49       | -10.87                    | 40.00                     | 105.77                      | 0.34                          |
| 4700.00                 | 1.56                 | 153.95                    | 4699.03   | -13.29      | 39.87       | -13.29                    | 42.03                     | 108.43                      | 0.22                          |
| 4800.00                 | 1.25                 | 159.08                    | 4799.00   | -15.53      | 40.86       | -15.53                    | 43.71                     | 110.81                      | 0.33                          |
| 4900.00                 | 1.07                 | 169.56                    | 4898.98   | -17.46      | 41.42       | -17.46                    | 44.95                     | 112.86                      | 0.27                          |
| 5000.00                 | 0.87                 | 179.97                    | 4998.97   | -19.15      | 41.59       | -19.15                    | 45.78                     | 114.72                      | 0.27                          |
| 5100.00                 | 0.83                 | 160.77                    | 5098.96   | -20.60      | 41.83       | -20.60                    | 46.62                     | 116.22                      | 0.29                          |
| 5200.00                 | 0.67                 | 173.08                    | 5198.95   | -21.87      | 42.14       | -21.87                    | 47.47                     | 117.43                      | 0.23                          |
| 5300.00                 | 0.44                 | 179.16                    | 5298.95   | -22.83      | 42.21       | -22.83                    | 47.99                     | 118.41                      | 0.23                          |
| 5400.00                 | 0.51                 | 171.18                    | 5398.94   | -23.66      | 42.29       | -23.66                    | 48.45                     | 119.22                      | 0.09                          |
| 5500.00                 | 0.38                 | 168.46                    | 5498.94   | -24.42      | 42.42       | -24.42                    | 48.95                     | 119.92                      | 0.13                          |
| 5600.00                 | 0.28                 | 152.36                    | 5598.94   | -24.96      | 42.60       | -24.96                    | 49.37                     | 120.36                      | 0.13                          |
| 5700.00                 | 0.25                 | 174.10                    | 5698.94   | -25.39      | 42.74       | -25.39                    | 49.71                     | 120.72                      | 0.10                          |
| 5800.00                 | 0.31                 | 131.17                    | 5798.94   | -25.79      | 42.97       | -25.79                    | 50.11                     | 120.98                      | 0.22                          |
| 5900.00                 | 0.25                 | 186.53                    | 5898.93   | -26.19      | 43.15       | -26.19                    | 50.47                     | 121.26                      | 0.27                          |
| 6000.00                 | 0.21                 | 210.67                    | 5998.93   | -26.57      | 43.03       | -26.57                    | 50.57                     | 121.69                      | 0.10                          |
| 6100.00                 | 0.13                 | 248.55                    | 6098.93   | -26.77      | 42.83       | -26.77                    | 50.51                     | 122.01                      | 0.14                          |
| 6200.00                 | 0.01                 | 229.83                    | 6198.93   | -26.81      | 42.72       | -26.81                    | 50.44                     | 122.12                      | 0.12                          |
| 6300.00                 | 0.12                 | 251.15                    | 6298.93   | -26.85      | 42.61       | -26.85                    | 50.37                     | 122.22                      | 0.12                          |
| 6400.00                 | 0.27                 | 228.11                    | 6398.93   | -27.04      | 42.33       | -27.04                    | 50.24                     | 122.57                      | 0.16                          |
| 6500.00                 | 0.34                 | 242.44                    | 6498.93   | -27.34      | 41.89       | -27.34                    | 50.03                     | 123.13                      | 0.11                          |
| 6600.00                 | 0.38                 | 223.67                    | 6598.93   | -27.72      | 41.40       | -27.72                    | 49.82                     | 123.81                      | 0.13                          |
| 6700.00                 | 0.42                 | 234.80                    | 6698.93   | -28.18      | 40.86       | -28.18                    | 49.64                     | 124.59                      | 0.09                          |
| 6800.00                 | 0.43                 | 228.63                    | 6798.92   | -28.64      | 40.28       | -28.64                    | 49.42                     | 125.41                      | 0.05                          |
| 6900.00                 | 0.61                 | 227.25                    | 6898.92   | -29.25      | 39.61       | -29.25                    | 49.24                     | 126.44                      | 0.18                          |
| 7000.00                 | 0.55                 | 234.88                    | 6998.91   | -29.89      | 38.82       | -29.89                    | 48.99                     | 127.59                      | 0.10                          |
| 7100.00                 | 0.57                 | 215.57                    | 7098.91   | -30.57      | 38.14       | -30.57                    | 48.88                     | 128.71                      | 0.19                          |
| 7200.00                 | 0.67                 | 229.05                    | 7198.90   | -31.35      | 37.41       | -31.35                    | 48.81                     | 129.97                      | 0.17                          |
| 7300.00                 | 0.75                 | 248.12                    | 7298.90   | -31.98      | 36.36       | -31.98                    | 48.42                     | 131.33                      | 0.25                          |
| 7400.00                 | 0.85                 | 231.18                    | 7398.89   | -32.69      | 35.18       | -32.69                    | 48.02                     | 132.90                      | 0.26                          |
| 7500.00                 | 0.87                 | 243.01                    | 7498.88   | -33.50      | 33.92       | -33.50                    | 47.67                     | 134.65                      | 0.18                          |
| 7600.00                 | 0.72                 | 222.09                    | 7598.87   | -34.31      | 32.82       | -34.31                    | 47.48                     | 136.27                      | 0.33                          |
| 7700.00                 | 0.59                 | 233.06                    | 7698.86   | -35.09      | 31.99       | -35.09                    | 47.48                     | 137.65                      | 0.18                          |
| 7800.00                 | 0.59                 | 234.85                    | 7798.85   | -35.69      | 31.16       | -35.69                    | 47.38                     | 138.88                      | 0.02                          |
| 7900.00                 | 0.72                 | 227.39                    | 7898.85   | -36.41      | 30.27       | -36.41                    | 47.36                     | 140.26                      | 0.16                          |
| 8000.00                 | 0.85                 | 223.32                    | 7998.84   | -37.38      | 29.30       | -37.38                    | 47.50                     | 141.91                      | 0.14                          |
| 8100.00                 | 0.95                 | 228.99                    | 8098.83   | -38.47      | 28.16       | -38.47                    | 47.67                     | 143.79                      | 0.13                          |
| 8200.00                 | 0.99                 | 253.11                    | 8198.81   | -39.26      | 26.72       | -39.26                    | 47.49                     | 145.77                      | 0.41                          |
| 8300.00                 | 1.04                 | 222.68                    | 8298.80   | -40.18      | 25.28       | -40.18                    | 47.47                     | 147.82                      | 0.53                          |
| 8400.00                 | 0.97                 | 259.32                    | 8398.78   | -41.00      | 23.83       | -41.00                    | 47.42                     | 149.83                      | 0.64                          |
| 8500.00                 | 0.94                 | 231.30                    | 8498.77   | -41.67      | 22.35       | -41.67                    | 47.29                     | 151.79                      | 0.46                          |
| 8600.00                 | 1.34                 | 272.44                    | 8598.75   | -42.13      | 20.55       | -42.13                    | 46.88                     | 154.00                      | 0.88                          |
| 8670.00                 | 0.91                 | 254.23                    | 8668.74   | -42.25      | 19.20       | -42.25                    | 46.41                     | 155.57                      | 0.79                          |

HORIZONTAL DISPLACEMENT IS  
46.41 FEET AT 155.57 DEGREES



Company: **Mewbourne Oil Company**  
 Field: **(RED HILLS) SEC 21, T26S, R:**  
 County: **Lea**  
 Well Name: **Red Hills 21 Fed Com 1H**  
 Rig: **PATTERSON 45**

Job Number: **3979015**  
 Magnetic Decl: **7.66**  
 Grid Corr: **-0.35**  
 Total Survey Corr: **7.31**  
 Date Printed: **31-Aug-11**

Proposed Azimuth: **179.55**  
 Target Inclination: **89.79**  
 TVD: **9349.00**  
 BRN From Survey: **-10.07**

INTEQ

| Offset |           |                   | 38'      | Must Enter** |           |                 |          |         |             |          |           |         |              |                   |                   |  |
|--------|-----------|-------------------|----------|--------------|-----------|-----------------|----------|---------|-------------|----------|-----------|---------|--------------|-------------------|-------------------|--|
| No.    | Tool Type | Survey Depth (ft) | Incl (°) | Azimuth (°)  | Quadrant  | Course Lgth(ft) | TVD (ft) | VS (ft) | Coordinates |          | Closure   |         | DLS (°/100') | Bld Rate (°/100') | Wlk Rate (°/100') |  |
|        |           |                   |          |              |           |                 |          |         | N/S (ft)    | E/W (ft) | Dist (ft) | Ang (°) |              |                   |                   |  |
| 0      | Tie       | 8670              | 0.91     | 254.23       |           |                 | 8668.74  | 42.38   | 42.23 S     | 19.23 E  |           |         |              |                   |                   |  |
| 1      | MWD       | 8731              | 1.20     | 254.90       | S 74.90 W | 61              | 8729.73  | 42.67   | 42.53 S     | 18.15 E  | 46.24     | 156.89  | 0.48         | 0.48              | 1.10              |  |
| 2      | MWD       | 8763              | 1.30     | 208.30       | S 28.30 W | 32              | 8761.72  | 43.07   | 42.93 S     | 17.65 E  | 46.42     | 157.65  | 3.10         | 0.31              | -145.63           |  |
| 3      | MWD       | 8794              | 2.60     | 205.80       | S 25.80 W | 31              | 8792.70  | 44.01   | 43.88 S     | 17.18 E  | 47.12     | 158.62  | 4.20         | 4.19              | -8.06             |  |
| 4      | MWD       | 8825              | 4.40     | 193.00       | S 13.00 W | 31              | 8823.65  | 45.80   | 45.67 S     | 16.61 E  | 48.59     | 160.02  | 6.29         | 5.81              | -41.29            |  |
| 5      | MWD       | 8855              | 6.10     | 192.60       | S 12.60 W | 30              | 8853.52  | 48.47   | 48.35 S     | 16.00 E  | 50.92     | 161.69  | 5.67         | 5.67              | -1.33             |  |
| 6      | MWD       | 8887              | 9.40     | 188.70       | S 8.70 W  | 32              | 8885.22  | 52.71   | 52.59 S     | 15.23 E  | 54.75     | 163.85  | 10.44        | 10.31             | -12.19            |  |
| 7      | MWD       | 8919              | 12.90    | 187.60       | S 7.60 W  | 32              | 8916.61  | 58.83   | 58.72 S     | 14.36 E  | 60.45     | 166.25  | 10.96        | 10.94             | -3.44             |  |
| 8      | MWD       | 8950              | 14.60    | 194.30       | S 14.30 W | 31              | 8946.73  | 66.03   | 65.93 S     | 12.94 E  | 67.19     | 168.90  | 7.51         | 5.48              | 21.61             |  |
| 9      | MWD       | 8982              | 16.70    | 199.20       | S 19.20 W | 32              | 8977.54  | 74.26   | 74.18 S     | 10.43 E  | 74.91     | 171.99  | 7.75         | 6.56              | 15.31             |  |
| 10     | MWD       | 9014              | 19.40    | 201.20       | S 21.20 W | 32              | 9007.96  | 83.54   | 83.48 S     | 7.00 E   | 83.78     | 175.21  | 8.66         | 8.44              | 6.25              |  |
| 11     | MWD       | 9045              | 22.40    | 200.30       | S 20.30 W | 31              | 9036.92  | 93.85   | 93.83 S     | 3.09 E   | 93.88     | 178.12  | 9.73         | 9.68              | -2.90             |  |
| 12     | MWD       | 9077              | 25.50    | 199.70       | S 19.70 W | 32              | 9066.16  | 106.02  | 106.03 S    | 1.35 W   | 106.04    | 180.73  | 9.72         | 9.69              | -1.88             |  |
| 13     | MWD       | 9108              | 28.00    | 196.70       | S 16.70 W | 31              | 9093.84  | 119.24  | 119.29 S    | 5.69 W   | 119.42    | 182.73  | 9.16         | 8.06              | -9.68             |  |
| 14     | MWD       | 9140              | 31.10    | 197.20       | S 17.20 W | 32              | 9121.68  | 134.30  | 134.38 S    | 10.30 W  | 134.77    | 184.38  | 9.72         | 9.69              | 1.56              |  |
| 15     | MWD       | 9170              | 34.20    | 197.10       | S 17.10 W | 30              | 9146.93  | 149.72  | 149.84 S    | 15.07 W  | 150.60    | 185.74  | 10.33        | 10.33             | -0.33             |  |
| 16     | MWD       | 9202              | 37.90    | 196.50       | S 16.50 W | 32              | 9172.80  | 167.70  | 167.87 S    | 20.51 W  | 169.12    | 186.96  | 11.61        | 11.56             | -1.87             |  |
| 17     | MWD       | 9234              | 41.30    | 195.40       | S 15.40 W | 32              | 9197.45  | 187.27  | 187.48 S    | 26.10 W  | 189.29    | 187.93  | 10.85        | 10.63             | -3.44             |  |
| 18     | MWD       | 9264              | 45.40    | 195.40       | S 15.40 W | 30              | 9219.26  | 207.08  | 207.33 S    | 31.57 W  | 209.72    | 188.66  | 13.67        | 13.67             | 0.00              |  |
| 19     | MWD       | 9294              | 49.10    | 194.30       | S 14.30 W | 30              | 9239.62  | 228.32  | 228.62 S    | 37.21 W  | 231.63    | 189.24  | 12.62        | 12.33             | -3.67             |  |
| 20     | MWD       | 9325              | 52.90    | 192.30       | S 12.30 W | 31              | 9259.13  | 251.72  | 252.06 S    | 42.74 W  | 255.66    | 189.62  | 13.24        | 12.26             | -6.45             |  |
| 21     | MWD       | 9357              | 57.00    | 191.40       | S 11.40 W | 32              | 9277.50  | 277.31  | 277.70 S    | 48.11 W  | 281.83    | 189.83  | 13.02        | 12.81             | -2.81             |  |
| 22     | MWD       | 9388              | 61.00    | 189.70       | S 9.70 W  | 31              | 9293.47  | 303.39  | 303.81 S    | 52.97 W  | 308.40    | 189.89  | 13.73        | 12.90             | -5.48             |  |
| 23     | MWD       | 9419              | 65.40    | 188.90       | S 8.90 W  | 31              | 9307.44  | 330.65  | 331.11 S    | 57.44 W  | 336.06    | 189.84  | 14.38        | 14.19             | -2.58             |  |
| 24     | MWD       | 9448              | 69.70    | 187.50       | S 7.50 W  | 29              | 9318.51  | 357.14  | 357.64 S    | 61.25 W  | 362.84    | 189.72  | 15.48        | 14.83             | -4.83             |  |
| 25     | MWD       | 9479              | 74.40    | 185.30       | S 5.30 W  | 31              | 9328.07  | 386.42  | 386.93 S    | 64.53 W  | 392.28    | 189.47  | 16.60        | 15.16             | -7.10             |  |
| 26     | MWD       | 9511              | 79.10    | 183.10       | S 3.10 W  | 32              | 9335.40  | 417.45  | 417.99 S    | 66.81 W  | 423.29    | 189.08  | 16.14        | 14.69             | -6.88             |  |
| 27     | MWD       | 9542              | 82.20    | 181.10       | S 1.10 W  | 31              | 9340.44  | 448.00  | 448.55 S    | 67.92 W  | 453.66    | 188.61  | 11.85        | 10.00             | -6.45             |  |
| 28     | MWD       | 9573              | 83.50    | 180.10       | S 0.10 W  | 31              | 9344.29  | 478.76  | 479.31 S    | 68.25 W  | 484.14    | 188.10  | 5.28         | 4.19              | -3.23             |  |
| 29     | MWD       | 9605              | 86.30    | 179.70       | S 0.30 E  | 32              | 9347.14  | 510.63  | 511.18 S    | 68.19 W  | 515.70    | 187.60  | 8.84         | 8.75              | -1.25             |  |
| 30     | MWD       | 9673              | 88.60    | 178.80       | S 1.20 E  | 68              | 9350.16  | 578.55  | 579.10 S    | 67.30 W  | 583.00    | 186.63  | 3.63         | 3.38              | -1.32             |  |
| 31     | MWD       | 9705              | 88.60    | 178.80       | S 1.20 E  | 32              | 9350.95  | 610.54  | 611.08 S    | 66.63 W  | 614.70    | 186.22  | 0.00         | 0.00              | 0.00              |  |
| 32     | MWD       | 9736              | 90.30    | 178.40       | S 1.60 E  | 31              | 9351.24  | 641.53  | 642.07 S    | 65.87 W  | 645.44    | 185.86  | 5.63         | 5.48              | -1.29             |  |
| 33     | MWD       | 9768              | 90.80    | 178.60       | S 1.40 E  | 32              | 9350.94  | 673.53  | 674.06 S    | 65.04 W  | 677.19    | 185.51  | 1.68         | 1.56              | 0.62              |  |
| 34     | MWD       | 9800              | 91.10    | 178.50       | S 1.50 E  | 32              | 9350.41  | 705.52  | 706.04 S    | 64.23 W  | 708.96    | 185.20  | 0.99         | 0.94              | -0.31             |  |
| 35     | MWD       | 9831              | 89.60    | 178.00       | S 2.00 E  | 31              | 9350.22  | 736.51  | 737.03 S    | 63.28 W  | 739.74    | 184.91  | 5.10         | -4.84             | -1.61             |  |
| 36     | MWD       | 9863              | 89.40    | 178.30       | S 1.70 E  | 32              | 9350.50  | 768.50  | 769.01 S    | 62.25 W  | 771.52    | 184.63  | 1.13         | -0.62             | 0.94              |  |
| 37     | MWD       | 9895              | 89.70    | 178.00       | S 2.00 E  | 32              | 9350.75  | 800.49  | 800.99 S    | 61.21 W  | 803.33    | 184.37  | 1.33         | 0.94              | -0.94             |  |
| 38     | MWD       | 9927              | 89.50    | 177.90       | S 2.10 E  | 32              | 9350.97  | 832.47  | 832.97 S    | 60.07 W  | 835.13    | 184.12  | 0.70         | -0.63             | -0.31             |  |
| 39     | MWD       | 9959              | 89.30    | 178.00       | S 2.00 E  | 32              | 9351.31  | 864.46  | 864.95 S    | 58.92 W  | 866.95    | 183.90  | 0.70         | -0.63             | 0.31              |  |
| 40     | MWD       | 9990              | 89.90    | 178.00       | S 2.00 E  | 31              | 9351.52  | 895.45  | 895.93 S    | 57.84 W  | 897.79    | 183.69  | 1.94         | 1.94              | 0.00              |  |
| 41     | MWD       | 10022             | 89.90    | 178.50       | S 1.50 E  | 32              | 9351.58  | 927.44  | 927.91 S    | 56.86 W  | 929.65    | 183.51  | 1.56         | 0.00              | 1.56              |  |
| 42     | MWD       | 10053             | 89.70    | 178.50       | S 1.50 E  | 31              | 9351.69  | 958.43  | 958.90 S    | 56.05 W  | 960.54    | 183.35  | 0.65         | -0.65             | 0.00              |  |
| 43     | MWD       | 10117             | 89.40    | 178.00       | S 2.00 E  | 64              | 9352.19  | 1022.41 | 1022.87 S   | 54.10 W  | 1024.30   | 183.03  | 0.91         | -0.47             | -0.78             |  |
| 44     | MWD       | 10180             | 89.00    | 177.90       | S 2.10 E  | 63              | 9353.07  | 1085.38 | 1085.82 S   | 51.85 W  | 1087.06   | 182.73  | 0.65         | -0.63             | -0.16             |  |
| 45     | MWD       | 10243             | 89.00    | 178.00       | S 2.00 E  | 63              | 9354.17  | 1148.35 | 1148.77 S   | 49.59 W  | 1149.84   | 182.47  | 0.16         | 0.00              | 0.16              |  |
| 46     | MWD       | 10307             | 89.80    | 177.90       | S 2.10 E  | 64              | 9354.84  | 1212.32 | 1212.73 S   | 47.30 W  | 1213.65   | 182.23  | 1.26         | 1.25              | -0.16             |  |
| 47     | MWD       | 10370             | 90.20    | 177.60       | S 2.40 E  | 63              | 9354.84  | 1275.29 | 1275.68 S   | 44.83 W  | 1276.47   | 182.01  | 0.79         | 0.63              | -0.48             |  |
| 48     | MWD       | 10434             | 90.90    | 178.20       | S 1.80 E  | 64              | 9354.22  | 1339.26 | 1339.63 S   | 42.48 W  | 1340.31   | 181.82  | 1.44         | 1.09              | 0.94              |  |
| 49     | MWD       | 10497             | 90.00    | 178.00       | S 2.00 E  | 63              | 9353.73  | 1402.23 | 1402.60 S   | 40.40 W  | 1403.18   | 181.65  | 1.46         | -1.43             | -0.32             |  |
| 50     | MWD       | 10561             | 88.90    | 177.90       | S 2.10 E  | 64              | 9354.34  | 1466.21 | 1466.55 S   | 38.11 W  | 1467.05   | 181.49  | 1.73         | -1.72             | -0.16             |  |
| 51     | MWD       | 10623             | 91.20    | 177.60       | S 2.40 E  | 62              | 9354.29  | 1528.17 | 1528.50 S   | 35.67 W  | 1528.91   | 181.34  | 3.74         | 3.71              | -0.48             |  |
| 52     | MWD       | 10687             | 92.40    | 177.80       | S 2.20 E  | 64              | 9352.28  | 1592.11 | 1592.41 S   | 33.11 W  | 1592.76   | 181.19  | 1.90         | 1.88              | 0.31              |  |
| 53     | MWD       | 10719             | 91.50    | 178.30       | S 1.70 E  | 32              | 9351.19  | 1624.08 | 1624.38 S   | 32.02 W  | 1624.69   | 181.13  | 3.22         | -2.81             | 1.56              |  |
| 54     | MWD       | 10750             | 90.30    | 179.00       | S 1.00 E  | 31              | 9350.70  | 1655.07 | 1655.36 S   | 31.29 W  | 1655.66   | 181.08  | 4.48         | -3.87             | 2.26              |  |
| 55     | MWD       | 10782             | 89.70    | 179.00       | S 1.00 E  | 32              | 9350.70  | 1687.07 | 1687.36 S   | 30.73 W  | 1687.64   | 181.04  | 1.87         | -1.87             | 0.00              |  |
| 56     | MWD       | 10813             | 88.00    | 179.80       | S 0.20 E  | 31              | 9351.33  | 1718.06 | 1718.35 S   | 30.40 W  | 1718.62   | 181.01  | 6.06         | -5.48             | 2.58              |  |
| 57     | MWD       | 10845             | 87.30    | 179.30       | S 0.70 E  | 32              | 9352.64  | 1750.03 | 1750.32 S   | 30.15 W  | 1750.58   | 180.99  | 2.69         | -2.19             | -1.56             |  |
| 58     | MWD       | 10877             | 87.90    | 179.70       | S 0.30 E  | 32              | 9353.98  | 1782.00 | 1782.29 S   | 29.87 W  | 1782.54   | 180.96  | 2.25         | 1.88              | 1.25              |  |
| 59     | MWD       | 10909             | 88.20    | 179.60       | S 0.40 E  | 32              | 9355.07  | 1813.98 | 1814.27 S   | 29.68 W  | 1814.51   | 180.94  | 0.99         | 0.94              | -0.31             |  |
| 60     | MWD       | 10940             | 88.00    | 179.60       | S 0.40 E  | 31              | 9356.09  | 1844.97 | 1845.25 S   | 29.46 W  | 1845.49   | 180.91  | 0.65         | -0.65             | 0.00              |  |
| 61     | MWD       | 10972             | 87.90    | 179.60       | S 0.40 E  | 32              | 9357.24  | 1876.95 | 1877.23 S   | 29.24 W  | 1877.46   | 180.89  | 0.31         | -0.31             | 0.00              |  |



INTEQ

Company: **Mewbourne Oil Company**  
Field: **(RED HILLS) SEC 21, T26S, R:**  
County: **Lea**  
Well Name: **Red Hills 21 Fed Com 1H**  
Rig: **PATTERSON 45**

Job Number: **3979015**  
Magnetic Decl: **7.66**  
Grid Corr: **-0.35**  
Total Survey Corr: **7.31**  
Date Printed: **02-Sep-11**

Proposed Azimuth: **179.55**  
Target Inclination: **89.79**  
TVD: **9349.00**  
BRN From Survey: **-0.92**

| Offset |           | 38'               | Must Enter** |             |          |                 |          |         |             |          |           |         |              |                   |                   |
|--------|-----------|-------------------|--------------|-------------|----------|-----------------|----------|---------|-------------|----------|-----------|---------|--------------|-------------------|-------------------|
| No     | Tool Type | Survey Depth (ft) | Incl (°)     | Azimuth (°) | Quadrant | Course Lgth(ft) | TVD (ft) | VS (ft) | Coordinates |          | Closure   |         | DLS (°/100') | Bld Rate (°/100') | Wlk Rate (°/100') |
|        |           |                   |              |             |          |                 |          |         | N/S (ft)    | E/W (ft) | Dist (ft) | Ang (°) |              |                   |                   |
| 62     | MWD       | 11003             | 87.80        | 179.30      | S 0.70 E | 31              | 9358.40  | 1907.92 | 1908.21 S   | 28.94 W  | 1908.43   | 180.87  | 1.02         | -0.32             | -0.97             |
| 63     | MWD       | 11035             | 88.70        | 178.20      | S 1.80 E | 32              | 9359.38  | 1939.90 | 1940.19 S   | 28.24 W  | 1940.39   | 180.83  | 4.44         | 2.81              | -3.44             |
| 64     | MWD       | 11066             | 89.70        | 178.70      | S 1.30 E | 31              | 9359.81  | 1970.90 | 1971.17 S   | 27.41 W  | 1971.36   | 180.80  | 3.61         | 3.23              | 1.61              |
| 65     | MWD       | 11097             | 89.70        | 178.30      | S 1.70 E | 31              | 9359.97  | 2001.89 | 2002.16 S   | 26.59 W  | 2002.34   | 180.76  | 1.29         | 0.00              | -1.29             |
| 66     | MWD       | 11129             | 89.70        | 178.00      | S 2.00 E | 32              | 9360.14  | 2033.88 | 2034.14 S   | 25.56 W  | 2034.30   | 180.72  | 0.94         | 0.00              | -0.94             |
| 67     | MWD       | 11159             | 89.50        | 178.20      | S 1.80 E | 30              | 9360.35  | 2063.87 | 2064.13 S   | 24.57 W  | 2064.27   | 180.68  | 0.94         | -0.67             | 0.67              |
| 68     | MWD       | 11191             | 89.40        | 178.00      | S 2.00 E | 32              | 9360.66  | 2095.86 | 2096.11 S   | 23.51 W  | 2096.24   | 180.64  | 0.70         | -0.31             | -0.62             |
| 69     | MWD       | 11223             | 90.60        | 178.20      | S 1.80 E | 32              | 9360.66  | 2127.85 | 2128.09 S   | 22.44 W  | 2128.21   | 180.60  | 3.80         | 3.75              | 0.62              |
| 70     | MWD       | 11254             | 90.40        | 177.80      | S 2.20 E | 31              | 9360.39  | 2158.83 | 2159.07 S   | 21.36 W  | 2159.17   | 180.57  | 1.44         | -0.65             | -1.29             |
| 71     | MWD       | 11286             | 90.30        | 177.20      | S 2.80 E | 32              | 9360.19  | 2190.81 | 2191.04 S   | 19.97 W  | 2191.13   | 180.52  | 1.90         | -0.31             | -1.88             |
| 72     | MWD       | 11318             | 90.20        | 177.00      | S 3.00 E | 32              | 9360.05  | 2222.78 | 2223.00 S   | 18.35 W  | 2223.07   | 180.47  | 0.70         | -0.31             | -0.62             |
| 73     | MWD       | 11350             | 91.90        | 177.00      | S 3.00 E | 32              | 9359.47  | 2254.75 | 2254.95 S   | 16.67 W  | 2255.01   | 180.42  | 5.31         | 5.31              | 0.00              |
| 74     | MWD       | 11381             | 92.30        | 177.10      | S 2.90 E | 31              | 9358.33  | 2285.69 | 2285.88 S   | 15.08 W  | 2285.93   | 180.38  | 1.33         | 1.29              | 0.32              |
| 75     | MWD       | 11413             | 92.90        | 177.10      | S 2.90 E | 32              | 9356.88  | 2317.63 | 2317.81 S   | 13.46 W  | 2317.85   | 180.33  | 1.87         | 1.88              | 0.00              |
| 76     | MWD       | 11475             | 93.90        | 178.50      | S 1.50 E | 62              | 9353.20  | 2379.49 | 2379.65 S   | 11.09 W  | 2379.68   | 180.27  | 2.77         | 1.61              | 2.26              |
| 77     | MWD       | 11538             | 94.90        | 180.30      | S 0.30 W | 63              | 9348.37  | 2442.30 | 2442.46 S   | 10.43 W  | 2442.48   | 180.24  | 3.26         | 1.59              | 2.86              |
| 78     | MWD       | 11569             | 91.30        | 181.10      | S 1.10 W | 31              | 9346.69  | 2473.25 | 2473.41 S   | 10.81 W  | 2473.43   | 180.25  | 11.90        | -11.61            | 2.58              |
| 79     | MWD       | 11600             | 88.30        | 181.90      | S 1.90 W | 31              | 9346.80  | 2504.22 | 2504.39 S   | 11.62 W  | 2504.42   | 180.27  | 10.02        | -9.68             | 2.58              |
| 80     | MWD       | 11632             | 88.30        | 182.10      | S 2.10 W | 32              | 9347.75  | 2536.18 | 2536.36 S   | 12.73 W  | 2536.39   | 180.29  | 0.62         | 0.00              | 0.62              |
| 81     | MWD       | 11664             | 88.00        | 181.80      | S 1.80 W | 32              | 9348.78  | 2568.14 | 2568.32 S   | 13.82 W  | 2568.36   | 180.31  | 1.33         | -0.94             | -0.94             |
| 82     | MWD       | 11727             | 88.50        | 182.20      | S 2.20 W | 63              | 9350.71  | 2631.05 | 2631.26 S   | 16.02 W  | 2631.30   | 180.35  | 1.02         | 0.79              | 0.63              |
| 83     | MWD       | 11791             | 87.80        | 182.70      | S 2.70 W | 64              | 9352.77  | 2694.93 | 2695.16 S   | 18.75 W  | 2695.23   | 180.40  | 1.34         | -1.09             | 0.78              |
| 84     | MWD       | 11854             | 87.00        | 182.40      | S 2.40 W | 63              | 9355.63  | 2757.78 | 2758.04 S   | 21.55 W  | 2758.12   | 180.45  | 1.36         | -1.27             | -0.48             |
| 85     | MWD       | 11917             | 87.10        | 181.80      | S 1.80 W | 63              | 9358.87  | 2820.63 | 2820.91 S   | 23.86 W  | 2821.01   | 180.48  | 0.96         | 0.16              | -0.95             |
| 86     | MWD       | 11981             | 87.20        | 180.40      | S 0.40 W | 64              | 9362.05  | 2884.53 | 2884.82 S   | 25.09 W  | 2884.93   | 180.50  | 2.19         | 0.16              | -2.19             |
| 87     | MWD       | 12012             | 87.40        | 180.70      | S 0.70 W | 31              | 9363.52  | 2915.49 | 2915.78 S   | 25.38 W  | 2915.89   | 180.50  | 1.16         | 0.65              | 0.97              |
| 88     | MWD       | 12044             | 89.30        | 180.30      | S 0.30 W | 32              | 9364.44  | 2947.47 | 2947.76 S   | 25.66 W  | 2947.88   | 180.50  | 6.07         | 5.94              | -1.25             |
| 89     | MWD       | 12076             | 90.10        | 180.80      | S 0.80 W | 32              | 9364.60  | 2979.47 | 2979.76 S   | 25.97 W  | 2979.88   | 180.50  | 2.95         | 2.50              | 1.56              |
| 90     | MWD       | 12107             | 90.70        | 180.40      | S 0.40 W | 31              | 9364.39  | 3010.46 | 3010.76 S   | 26.29 W  | 3010.87   | 180.50  | 2.33         | 1.94              | -1.29             |
| 91     | MWD       | 12139             | 90.50        | 180.20      | S 0.20 W | 32              | 9364.05  | 3042.46 | 3042.76 S   | 26.46 W  | 3042.87   | 180.50  | 0.88         | -0.63             | -0.63             |
| 92     | MWD       | 12170             | 89.90        | 179.70      | S 0.30 E | 31              | 9363.94  | 3073.45 | 3073.76 S   | 26.43 W  | 3073.87   | 180.49  | 2.52         | -1.94             | -1.61             |
| 93     | MWD       | 12202             | 90.20        | 180.00      | S 0.00 W | 32              | 9363.92  | 3105.45 | 3105.76 S   | 26.35 W  | 3105.87   | 180.49  | 1.33         | 0.94              | 0.94              |
| 94     | MWD       | 12234             | 91.10        | 179.30      | S 0.70 E | 32              | 9363.55  | 3137.45 | 3137.75 S   | 26.16 W  | 3137.86   | 180.48  | 3.56         | 2.81              | -2.19             |
| 95     | MWD       | 12266             | 89.50        | 178.70      | S 1.30 E | 32              | 9363.39  | 3169.45 | 3169.75 S   | 25.60 W  | 3169.85   | 180.46  | 5.34         | -5.00             | -1.88             |
| 96     | MWD       | 12297             | 89.10        | 178.80      | S 1.20 E | 31              | 9363.76  | 3200.44 | 3200.74 S   | 24.92 W  | 3200.83   | 180.45  | 1.33         | -1.29             | 0.32              |
| 97     | MWD       | 12329             | 89.90        | 178.00      | S 2.00 E | 32              | 9364.04  | 3232.43 | 3232.72 S   | 24.03 W  | 3232.81   | 180.43  | 3.54         | 2.50              | -2.50             |
| 98     | MWD       | 12360             | 91.50        | 178.00      | S 2.00 E | 31              | 9363.67  | 3263.42 | 3263.70 S   | 22.95 W  | 3263.78   | 180.40  | 5.16         | 5.16              | 0.00              |
| 99     | MWD       | 12392             | 90.50        | 178.20      | S 1.80 E | 32              | 9363.11  | 3295.40 | 3295.68 S   | 21.88 W  | 3295.75   | 180.38  | 3.19         | -3.13             | 0.62              |
| 100    | MWD       | 12424             | 89.40        | 177.80      | S 2.20 E | 32              | 9363.13  | 3327.39 | 3327.66 S   | 20.77 W  | 3327.72   | 180.36  | 3.66         | -3.44             | -1.25             |
| 101    | MWD       | 12455             | 89.50        | 177.70      | S 2.30 E | 31              | 9363.43  | 3358.38 | 3358.63 S   | 19.55 W  | 3358.69   | 180.33  | 0.46         | 0.32              | -0.32             |
| 102    | MWD       | 12487             | 89.60        | 176.80      | S 3.20 E | 32              | 9363.68  | 3390.35 | 3390.59 S   | 18.02 W  | 3390.64   | 180.30  | 2.83         | 0.31              | -2.81             |
| 103    | MWD       | 12519             | 89.10        | 177.00      | S 3.00 E | 32              | 9364.05  | 3422.31 | 3422.55 S   | 16.29 W  | 3422.58   | 180.27  | 1.68         | -1.56             | 0.62              |
| 104    | MWD       | 12551             | 92.00        | 176.70      | S 3.30 E | 32              | 9363.74  | 3454.27 | 3454.49 S   | 14.53 W  | 3454.52   | 180.24  | 9.11         | 9.06              | -0.94             |
| 105    | MWD       | 12582             | 93.30        | 176.40      | S 3.60 E | 31              | 9362.31  | 3485.20 | 3485.40 S   | 12.66 W  | 3485.43   | 180.21  | 4.30         | 4.19              | -0.97             |
| 106    | MWD       | 12613             | 93.30        | 175.80      | S 4.20 E | 31              | 9360.52  | 3516.09 | 3516.28 S   | 10.56 W  | 3516.30   | 180.17  | 1.93         | 0.00              | -1.94             |
| 107    | MWD       | 12645             | 93.40        | 174.90      | S 5.10 E | 32              | 9358.65  | 3547.95 | 3548.12 S   | 7.97 W   | 3548.13   | 180.13  | 2.83         | 0.31              | -2.81             |
| 108    | MWD       | 12677             | 94.30        | 174.90      | S 5.10 E | 32              | 9356.50  | 3579.77 | 3579.92 S   | 5.13 W   | 3579.92   | 180.08  | 2.81         | 2.81              | 0.00              |
| 109    | MWD       | 12709             | 91.30        | 175.80      | S 4.20 E | 32              | 9354.94  | 3611.64 | 3611.77 S   | 2.54 W   | 3611.77   | 180.04  | 9.79         | -9.38             | 2.81              |
| 110    | MWD       | 12741             | 90.80        | 175.60      | S 4.40 E | 32              | 9354.35  | 3643.56 | 3643.68 S   | 0.14 W   | 3643.68   | 180.00  | 1.68         | -1.56             | -0.63             |
| 111    | MWD       | 12772             | 90.30        | 175.40      | S 4.60 E | 31              | 9354.06  | 3674.48 | 3674.58 S   | 2.29 E   | 3674.58   | 179.96  | 1.74         | -1.61             | -0.65             |
| 112    | MWD       | 12804             | 90.30        | 175.40      | S 4.60 E | 32              | 9353.89  | 3706.40 | 3706.48 S   | 4.86 E   | 3706.48   | 179.92  | 0.00         | 0.00              | 0.00              |
| 113    | MWD       | 12835             | 89.70        | 176.10      | S 3.90 E | 31              | 9353.89  | 3737.33 | 3737.39 S   | 7.15 E   | 3737.40   | 179.89  | 2.97         | -1.94             | 2.26              |
| 114    | MWD       | 12866             | 90.20        | 176.50      | S 3.50 E | 31              | 9353.92  | 3768.28 | 3768.33 S   | 9.15 E   | 3768.34   | 179.86  | 2.07         | 1.61              | 1.29              |
| 115    | MWD       | 12898             | 90.40        | 176.20      | S 3.80 E | 32              | 9353.75  | 3800.23 | 3800.26 S   | 11.19 E  | 3800.28   | 179.83  | 1.13         | 0.63              | -0.94             |
| 116    | MWD       | 12930             | 88.50        | 176.90      | S 3.10 E | 32              | 9354.06  | 3832.18 | 3832.20 S   | 13.12 E  | 3832.22   | 179.80  | 6.33         | -5.94             | 2.19              |
| 117    | MWD       | 12961             | 88.30        | 176.90      | S 3.10 E | 31              | 9354.92  | 3863.14 | 3863.14 S   | 14.79 E  | 3863.17   | 179.78  | 0.65         | -0.65             | 0.00              |
| 118    | MWD       | 12993             | 88.10        | 176.90      | S 3.10 E | 32              | 9355.93  | 3895.09 | 3895.08 S   | 16.52 E  | 3895.11   | 179.76  | 0.62         | -0.63             | 0.00              |
| 119    | MWD       | 13025             | 87.90        | 176.70      | S 3.30 E | 32              | 9357.04  | 3927.03 | 3927.01 S   | 18.31 E  | 3927.05   | 179.73  | 0.88         | -0.62             | -0.63             |
| 120    | MWD       | 13056             | 87.50        | 176.30      | S 3.70 E | 31              | 9358.29  | 3957.96 | 3957.93 S   | 20.20 E  | 3957.98   | 179.71  | 1.82         | -1.29             | -1.29             |
| 121    | MWD       | 13088             | 88.30        | 175.50      | S 4.50 E | 32              | 9359.46  | 3989.88 | 3989.82 S   | 22.49 E  | 3989.89   | 179.68  | 3.53         | 2.50              | -2.50             |
| 122    | MWD       | 13119             | 88.40        | 175.80      | S 4.20 E | 31              | 9360.35  | 4020.79 | 4020.72 S   | 24.84 E  | 4020.80   | 179.65  | 1.02         | 0.32              | 0.97              |
| 123    | MWD       | 13151             | 89.00        | 177.10      | S 2.90 E | 32              | 9361.08  | 4052.74 | 4052.65 S   | 26.82 E  | 4052.74   | 179.62  | 4.47         | 1.87              | 4.06              |
| 124    | MWD       | 13182             | 90.00        | 177.80      | S 2.20 E | 31              | 9361.35  | 4083.71 | 4083.62 S   | 28.20 E  | 4083.72   | 179.60  | 3.94         | 3.23              | 2.26              |
| 125    | MWD       | 13214             | 89.80        | 177.50      | S 2.50 E | 32              | 9361.40  | 4115.70 | 4115.59 S   | 29.51 E  | 4115.70   | 179.59  | 1.13         | -0.63             | -0.94             |



|                    |           |
|--------------------|-----------|
| Job Number:        | 3979015   |
| Magnetic Decl:     | 7.66      |
| Grid Corr:         | -0.35     |
| Total Survey Corr: | 7.31      |
| Date Printed:      | 02-Sep-11 |

|                     |         |
|---------------------|---------|
| Proposed Azimuth:   | 179.55  |
| Target Inclination: | 89.79   |
| TVD:                | 9349.00 |
| BRN From Survey:    | -0.11   |

[illegible]