



PO Box 1370  
Artesia, NM 88211-1370  
(575) 748-1288

30-015-42350

September 10, 2014

Mack Energy Corporation  
PO Box 960  
Artesia, NM 88211-0960

RE: Hepler Fee #1  
1175' FNL & 2056' FWL  
Sec. 34, T22S, R27E  
Eddy County, New Mexico

NM OIL CONSERVATION  
ARTESIA DISTRICT  
NOV 07 2014  
RECEIVED

Dear Sir,

The attached is the Deviation Survey for the above captioned well.

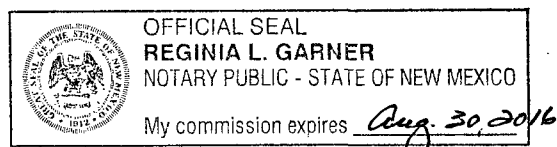
Very truly yours,

Chris Graham  
Drilling Superintendent

State of New Mexico }  
County of Eddy }

The foregoing was acknowledged before me this 10<sup>th</sup> day of September, 2014.

\_\_\_\_\_  
Notary Public



## HEPLER FEE#1

| Date      | Depth | Deviation | Direction | TVD     |
|-----------|-------|-----------|-----------|---------|
| 8/27/2014 | 190   | 0.90      | 0.00      | 0.00    |
| 8/27/2014 | 339   | 0.60      | 0.00      | 0.00    |
| 8/27/2014 | 390   | 0.50      | 0.00      | 0.00    |
| 8/29/2014 | 427   | 0.90      | 150.50    | 0.00    |
| 8/29/2014 | 612   | 1.60      | 144.30    | 0.00    |
| 8/29/2014 | 672   | 1.70      | 137.80    | 0.00    |
| 8/29/2014 | 862   | 1.80      | 176.40    | 0.00    |
| 8/29/2014 | 1050  | 2.10      | 191.40    | 0.00    |
| 8/29/2014 | 1238  | 0.70      | 131.70    | 0.00    |
| 8/30/2014 | 1427  | 1.40      | 131.30    | 0.00    |
| 8/30/2014 | 1616  | 2.40      | 117.40    | 0.00    |
| 8/30/2014 | 1766  | 2.40      | 162.60    | 0.00    |
| 8/31/2014 | 1895  | 2.80      | 159.50    | 0.00    |
| 8/31/2014 | 2082  | 3.10      | 244.80    | 0.00    |
| 8/31/2014 | 2270  | 8.40      | 250.50    | 0.00    |
| 8/31/2014 | 2458  | 16.40     | 247.30    | 0.00    |
| 8/31/2014 | 2646  | 16.50     | 231.30    | 0.00    |
| 8/31/2014 | 2835  | 16.50     | 214.10    | 0.00    |
| 9/1/2014  | 3023  | 15.40     | 214.40    | 0.00    |
| 9/1/2014  | 3212  | 17.30     | 216.10    | 0.00    |
| 9/1/2014  | 3400  | 16.00     | 216.40    | 0.00    |
| 9/1/2014  | 3588  | 15.20     | 218.85    | 0.00    |
| 9/1/2014  | 3775  | 18.70     | 221.60    | 3715.00 |
| 9/1/2014  | 3962  | 17.10     | 214.30    | 3859.00 |
| 9/1/2014  | 4149  | 14.50     | 216.60    | 4073.00 |
| 9/1/2014  | 4337  | 12.30     | 219.60    | 0.00    |
| 9/1/2014  | 4524  | 6.90      | 202.80    | 4440.00 |
| 9/1/2014  | 4712  | 3.40      | 201.60    | 4627.00 |
| 9/1/2014  | 5087  | 1.00      | 209.60    | 0.00    |
| 9/2/2014  | 5275  | 0.80      | 219.80    | 0.00    |
| 9/2/2014  | 5464  | 1.00      | 229.00    | 0.00    |
| 9/2/2014  | 5651  | 0.70      | 254.80    | 0.00    |
| 9/2/2014  | 5838  | 1.50      | 355.40    | 5753.00 |
| 9/2/2014  | 6025  | 0.90      | 1.70      | 5940.00 |
| 9/2/2014  | 6214  | 0.70      | 142.90    | 6129.00 |
| 9/3/2014  | 6402  | 2.10      | 159.20    | 0.00    |
| 9/3/2014  | 6590  | 1.10      | 172.10    | 0.00    |
| 9/3/2014  | 6780  | 1.30      | 223.70    | 669.50  |
| 9/3/2014  | 6967  | 1.80      | 201.50    | 0.00    |
| 9/4/2014  | 7155  | 0.50      | 163.10    | 0.00    |
| 9/4/2014  | 7343  | 0.80      | 139.10    | 0.00    |
| 9/5/2014  | 7721  | 1.20      | 332.40    | 0.00    |
| 9/5/2014  | 7910  | 0.70      | 251.80    | 0.00    |

| Date     | Depth | Deviation | Direction | TVD     |
|----------|-------|-----------|-----------|---------|
| 9/5/2014 | 8098  | 0.70      | 323.80    | 8013.00 |
| 9/5/2014 | 8287  | 1.00      | 329.30    | 0.00    |
| 9/5/2014 | 8475  | 0.70      | 2.70      | 0.00    |
| 9/5/2014 | 8664  | 1.00      | 321.50    | 0.00    |
| 9/6/2014 | 8853  | 1.10      | 25.90     | 8767.00 |
| 9/6/2014 | 9042  | 0.80      | 346.70    | 8957.00 |
| 9/6/2014 | 9230  | 1.60      | 313.70    | 9144.00 |
| 9/6/2014 | 9335  | 1.30      | 288.90    | 9249.00 |



**Job Number:** 14-0079  
**Company:** Mack Energy  
**Lease/Well:** Hepler Fee # 1  
**Location:** Carlsbad  
**Rig Name:** Silver Oak 6  
**State/County:** New Mexico/ Eddy  
**Country:** USA  
**API Number:** 30-015-42350

**Elevation GL:** 3111.61 ft    **RKB:** 18.00 ft  
**Projection System:** US State Plane 1983  
**Projection Group:** New Mexico Eastern Zone  
**Projection Datum:** GRS80  
**Mag. Declination:** 7.48° (C:\HawkEye\IGRF2005.MIF)  
**Grid Convergence:** 0.08244 E  
**Date:** Saturday, September 06, 2014

Calculated by HawkEye Software  
 Minimum Curvature Method  
 Vertical Section Plane 218.52°

Northing (US ft): 492201.35    Easting (US ft): 588909.14  
 Latitude: 32°21'10.9374" N    Longitude: -104°10'45.3986" W

Well Location: 1071.99 FNL, 2210.31 FWL, Section 34, T22S, R27E, New Mexico Principal Meridian, Eddy County, NM  
 Direction Reference: Grid North

| Measured Depth (Ft) | INC Deg | AZM Deg | TVD (Ft) | NS (Ft) | EW (Ft) | VS (Ft) | DLS °/100 Ft | LR/EW From-Plan (Ft) | UD/NS From-Plan (Ft) | Comment | CL (Ft) |
|---------------------|---------|---------|----------|---------|---------|---------|--------------|----------------------|----------------------|---------|---------|
| 0.00                | 0.00    | 0.00    | 0.00     | 0.00    | 0.00    | 0.00    | 0.00         | 0.00 (E)             | 0.00 (N)             |         | 0.00    |
| 190.00              | 0.90    | 0.00    | 189.99   | 1.49    | 0.00    | -1.17   | 0.47         | 0.00 (E)             | 1.49 (N)             |         | 190.00  |
| 339.00              | 0.60    | 0.00    | 338.98   | 3.44    | 0.00    | -2.69   | 0.20         | 0.00 (E)             | 3.44 (N)             |         | 149.00  |
| 390.00              | 0.50    | 0.00    | 389.98   | 3.93    | 0.00    | -3.08   | 0.20         | 0.00 (E)             | 3.93 (N)             |         | 51.00   |
| 427.00              | 0.90    | 150.50  | 426.98   | 3.84    | 0.14    | -3.09   | 3.67         | 0.14 (E)             | 3.84 (N)             |         | 37.00   |
| 612.00              | 1.60    | 144.30  | 611.93   | 0.48    | 2.37    | -1.85   | 0.38         | 2.37 (E)             | 0.48 (N)             |         | 185.00  |
| 672.00              | 1.70    | 137.80  | 671.91   | -0.86   | 3.45    | -1.48   | 0.35         | 3.45 (E)             | -0.86 (S)            |         | 60.00   |
| 862.00              | 1.80    | 176.40  | 861.83   | -5.93   | 5.53    | 1.19    | 0.61         | 5.53 (E)             | -5.93 (S)            |         | 190.00  |
| 1050.00             | 2.10    | 191.40  | 1049.72  | -12.25  | 5.04    | 6.45    | 0.31         | 5.04 (E)             | -12.25 (S)           |         | 188.00  |
| 1238.00             | 0.70    | 131.70  | 1237.66  | -16.39  | 5.21    | 9.58    | 0.98         | 5.21 (E)             | -16.39 (S)           |         | 188.00  |
| 1427.00             | 1.40    | 131.30  | 1426.63  | -18.68  | 7.81    | 9.75    | 0.37         | 7.81 (E)             | -18.68 (S)           |         | 189.00  |
| 1616.00             | 2.40    | 117.40  | 1615.53  | -22.03  | 13.06   | 9.10    | 0.58         | 13.06 (E)            | -22.03 (S)           |         | 189.00  |
| 1766.00             | 2.40    | 162.60  | 1765.41  | -26.47  | 16.79   | 10.26   | 1.23         | 16.79 (E)            | -26.47 (S)           |         | 150.00  |
| 1895.00             | 2.80    | 159.50  | 1894.27  | -32.00  | 18.70   | 13.39   | 0.33         | 18.70 (E)            | -32.00 (S)           |         | 129.00  |
| 2082.00             | 3.10    | 244.80  | 2081.10  | -38.43  | 15.72   | 20.28   | 2.14         | 15.72 (E)            | -38.43 (S)           |         | 187.00  |
| 2270.00             | 8.40    | 250.50  | 2268.09  | -45.19  | -1.84   | 36.50   | 2.83         | -36.28 (L)           | 7.76 (U)             |         | 188.00  |
| 2458.00             | 16.40   | 246.90  | 2451.56  | -60.21  | -39.25  | 71.55   | 4.27         | -18.06 (L)           | 19.98 (U)            |         | 188.00  |
| 2646.00             | 16.50   | 231.30  | 2631.95  | -87.33  | -84.52  | 120.96  | 2.34         | 7.19 (R)             | 22.30 (U)            |         | 188.00  |
| 2835.00             | 16.50   | 214.10  | 2813.28  | -126.36 | -120.54 | 173.93  | 2.58         | 16.59 (R)            | 12.48 (U)            |         | 189.00  |
| 3023.00             | 15.40   | 214.40  | 2994.03  | -169.06 | -149.61 | 225.45  | 0.59         | 12.15 (R)            | 5.03 (U)             |         | 188.00  |
| 3212.00             | 17.30   | 216.10  | 3175.38  | -212.48 | -180.35 | 278.56  | 1.04         | 8.74 (R)             | -1.00 (D)            |         | 189.00  |
| 3400.00             | 16.00   | 216.40  | 3355.50  | -255.92 | -212.19 | 332.38  | 0.69         | 6.42 (R)             | -6.31 (D)            |         | 188.00  |
| 3588.00             | 15.20   | 218.50  | 3536.57  | -296.06 | -242.91 | 382.92  | 0.52         | 5.67 (R)             | -14.95 (D)           |         | 188.00  |
| 3775.00             | 18.70   | 221.60  | 3715.43  | -337.68 | -278.09 | 437.39  | 1.93         | 8.25 (R)             | -18.95 (D)           |         | 187.00  |
| 3962.00             | 17.10   | 214.30  | 3893.39  | -382.82 | -313.49 | 494.75  | 1.47         | 5.39 (R)             | -21.17 (D)           |         | 187.00  |
| 4149.00             | 14.50   | 216.60  | 4073.31  | -424.33 | -342.95 | 545.58  | 1.43         | 3.12 (R)             | -28.77 (D)           |         | 187.00  |
| 4337.00             | 12.30   | 219.60  | 4256.18  | -458.66 | -369.75 | 589.13  | 1.23         | 4.19 (R)             | -29.48 (D)           |         | 188.00  |
| 4524.00             | 6.90    | 202.80  | 4440.53  | -484.39 | -386.81 | 619.88  | 3.22         | 11.04 (E)            | 15.43 (N)            |         | 187.00  |
| 4712.00             | 3.40    | 201.60  | 4627.74  | -499.98 | -393.24 | 636.09  | 1.86         | 5.89 (E)             | 1.44 (N)             |         | 188.00  |
| 4899.00             | 1.70    | 203.00  | 4814.55  | -507.69 | -396.37 | 644.07  | 0.91         | 2.76 (E)             | -6.27 (S)            |         | 187.00  |
| 5087.00             | 1.00    | 209.60  | 5002.50  | -511.69 | -398.27 | 648.38  | 0.38         | 0.86 (E)             | -10.27 (S)           |         | 188.00  |
| 5275.00             | 0.80    | 219.80  | 5190.47  | -514.12 | -399.92 | 651.31  | 0.14         | -0.79 (W)            | -12.70 (S)           |         | 188.00  |
| 5464.00             | 1.00    | 229.00  | 5379.45  | -516.22 | -402.01 | 654.25  | 0.13         | -2.88 (W)            | -14.80 (S)           |         | 189.00  |
| 5651.00             | 0.70    | 254.80  | 5566.43  | -517.59 | -404.34 | 656.78  | 0.26         | -5.21 (W)            | -16.17 (S)           |         | 187.00  |
| 5838.00             | 1.50    | 355.40  | 5753.41  | -515.45 | -405.64 | 655.91  | 0.95         | -6.51 (W)            | -14.03 (S)           |         | 187.00  |
| 6025.00             | 0.90    | 1.70    | 5940.37  | -511.54 | -405.79 | 652.95  | 0.33         | -6.66 (W)            | -10.12 (S)           |         | 187.00  |
| 6214.00             | 0.70    | 142.90  | 6129.36  | -510.98 | -405.05 | 652.05  | 0.80         | -5.92 (W)            | -9.56 (S)            |         | 189.00  |
| 6402.00             | 2.10    | 159.20  | 6317.30  | -515.11 | -403.14 | 654.09  | 0.77         | -4.01 (W)            | -13.69 (S)           |         | 188.00  |
| 6590.00             | 1.10    | 172.10  | 6505.22  | -520.12 | -401.67 | 657.09  | 0.56         | -2.53 (W)            | -18.70 (S)           |         | 188.00  |
| 6780.00             | 1.30    | 223.70  | 6695.19  | -523.49 | -402.90 | 660.49  | 0.56         | -3.77 (W)            | -22.06 (S)           |         | 190.00  |
| 6967.00             | 1.80    | 201.50  | 6882.12  | -527.75 | -405.45 | 665.41  | 0.41         | -6.32 (W)            | -26.33 (S)           |         | 187.00  |
| 7155.00             | 0.50    | 163.10  | 7070.08  | -531.28 | -406.29 | 668.70  | 0.77         | -7.16 (W)            | -29.86 (S)           |         | 188.00  |
| 7343.00             | 0.80    | 139.10  | 7258.07  | -533.06 | -405.19 | 669.41  | 0.21         | -6.06 (W)            | -31.64 (S)           |         | 188.00  |

| Measured<br>Depth<br>(Ft) | INC<br>Deg | AZM<br>Deg | TVD<br>(Ft) | NS<br>(Ft) | EW<br>(Ft) | VS<br>(Ft) | DLS<br>*/100 Ft | LR/EW<br>From-Plan<br>(Ft) | UD/NS<br>From-Plan<br>(Ft) | Comment | CL<br>(Ft) |
|---------------------------|------------|------------|-------------|------------|------------|------------|-----------------|----------------------------|----------------------------|---------|------------|
| 7532.00                   | 0.10       | 103.60     | 7447.06     | -534.10    | -404.17    | 669.58     | 0.38            | -5.04 (W)                  | -32.68 (S)                 |         | 189.00     |
| 7721.00                   | 1.20       | 332.40     | 7636.05     | -532.38    | -404.92    | 668.71     | 0.67            | -5.79 (W)                  | -30.96 (S)                 |         | 189.00     |
| 7910.00                   | 0.70       | 251.80     | 7825.03     | -530.99    | -406.94    | 668.88     | 0.68            | -7.81 (W)                  | -29.57 (S)                 |         | 189.00     |
| 8098.00                   | 0.70       | 323.80     | 8013.02     | -530.42    | -408.71    | 669.53     | 0.44            | -9.58 (W)                  | -29.00 (S)                 |         | 188.00     |
| 8287.00                   | 1.10       | 348.40     | 8201.99     | -527.71    | -409.75    | 668.07     | 0.29            | -10.62 (W)                 | -26.29 (S)                 |         | 189.00     |
| 8475.00                   | 0.70       | 2.70       | 8389.97     | -524.80    | -410.06    | 665.98     | 0.24            | -10.93 (W)                 | -23.38 (S)                 |         | 188.00     |
| 8664.00                   | 1.00       | 321.50     | 8578.95     | -522.35    | -411.04    | 664.67     | 0.35            | -11.90 (W)                 | -20.93 (S)                 |         | 189.00     |
| 8853.00                   | 1.10       | 25.90      | 8767.92     | -519.43    | -411.27    | 662.53     | 0.59            | -12.14 (W)                 | -18.01 (S)                 |         | 189.00     |
| 9043.00                   | 0.80       | 346.70     | 8957.90     | -516.50    | -410.78    | 659.93     | 0.37            | -11.65 (W)                 | -15.08 (S)                 |         | 190.00     |
| 9230.00                   | 1.60       | 313.70     | 9144.86     | -513.42    | -412.97    | 658.89     | 0.55            | -13.83 (W)                 | -12.00 (S)                 |         | 187.00     |
| 9335.00                   | 1.30       | 288.90     | 9249.83     | -512.03    | -415.15    | 659.16     | 0.66            | -16.02 (W)                 | -10.60 (S)                 |         | 105.00     |
| 9378.00                   | 1.30       | 288.90     | 9292.82     | -511.71    | -416.08    | 659.48     | 0.00            | -16.94 (W)                 | -10.29 (S)                 | SLPTB   | 43.00      |