



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

COG OPERATING, LL  
RECEIVED

NOV 05 2012

ARTESIA WEST

October 29, 2012

COG, LLC  
One Concho Center  
600 W. Illinois Ave.  
Midland, TX 79701

30-015-40735

RE: Baby Buddah 13 Federal #1H  
2310' FSL & 190' FWL  
Sec. 13, T26S, R28E  
Eddy County, New Mexico

Dear Sir,

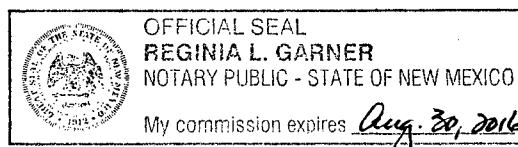
The attached is the Deviation Survey for the above captioned well.

Very truly yours,

Eddie LaRue  
Operations Manager

State of New Mexico }  
County of Eddy }

The foregoing was acknowledged before me this 29<sup>th</sup> day of October, 2012.

  
Notary Public

## # Pason DataHub Deviation Survey

# Well Dossier 1349391499 - BABY BUDDHA 13 FEDERAL 1H

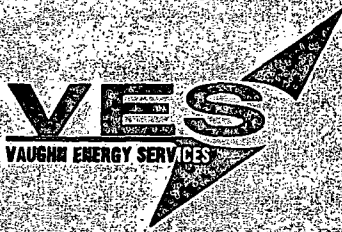
#

| # Date     | Depth | Deviation | Direction | TVD     | Horiz |
|------------|-------|-----------|-----------|---------|-------|
| 10/5/2012  | 176   | 0.30      | 0.00      | 0.00    | 0.00  |
| 10/7/2012  | 514   | 0.50      | 219.60    | 513.00  | 0.00  |
| 10/7/2012  | 603   | 0.60      | 199.30    | 602.00  | 0.00  |
| 10/7/2012  | 699   | 0.60      | 198.90    | 698.00  | 0.00  |
| 10/7/2012  | 794   | 0.50      | 176.30    | 793.00  | 0.00  |
| 10/7/2012  | 889   | 0.60      | 183.50    | 888.00  | 0.00  |
| 10/7/2012  | 985   | 0.60      | 208.50    | 984.00  | 0.00  |
| 10/7/2012  | 1081  | 0.70      | 219.60    | 1080.00 | 2.89  |
| 10/7/2012  | 1272  | 1.10      | 236.50    | 1271.94 | 5.01  |
| 10/7/2012  | 1367  | 1.50      | 256.60    | 1366.92 | 6.96  |
| 10/8/2012  | 1462  | 1.80      | 267.10    | 1461.88 | 9.65  |
| 10/8/2012  | 1557  | 2.00      | 273.50    | 1556.83 | 12.79 |
| 10/8/2012  | 1653  | 2.10      | 269.00    | 1652.77 | 16.22 |
| 10/8/2012  | 1844  | 1.30      | 282.90    | 1843.00 | 0.00  |
| 10/8/2012  | 2035  | 0.90      | 64.80     | 203.40  | 0.00  |
| 10/8/2012  | 2131  | 1.00      | 79.00     | 2130.00 | 0.00  |
| 10/8/2012  | 2226  | 1.80      | 87.20     | 2225.00 | 19.55 |
| 10/8/2012  | 2418  | 3.00      | 89.10     | 2417.00 | 11.19 |
| 10/8/2012  | 2513  | 2.30      | 57.00     | 2512.34 | 7.13  |
| 10/10/2012 | 2999  | 0.90      | 0.00      | 0.00    | 0.00  |
| 10/10/2012 | 3475  | 1.00      | 0.00      | 0.00    | 0.00  |
| 10/10/2012 | 3951  | 0.90      | 0.00      | 0.00    | 0.00  |
| 10/11/2012 | 4431  | 0.80      | 0.00      | 0.00    | 0.00  |
| 10/11/2012 | 4906  | 0.40      | 0.00      | 0.00    | 0.00  |
| 10/11/2012 | 5383  | 1.30      | 0.00      | 0.00    | 0.00  |
| 10/11/2012 | 5861  | 1.70      | 0.00      | 0.00    | 0.00  |
| 10/12/2012 | 5960  | 1.90      | 0.00      | 0.00    | 0.00  |
| 10/12/2012 | 6056  | 2.10      | 0.00      | 0.00    | 0.00  |
| 10/12/2012 | 6151  | 1.50      | 0.00      | 0.00    | 0.00  |
| 10/12/2012 | 6243  | 1.50      | 0.00      | 0.00    | 0.00  |
| 10/12/2012 | 6724  | 1.30      | 0.00      | 0.00    | 0.00  |
| 10/13/2012 | 7202  | 1.90      | 0.00      | 0.00    | 0.00  |
| 10/13/2012 | 7390  | 1.70      | 0.00      | 0.00    | 0.00  |
| 10/13/2012 | 7485  | 1.00      | 0.00      | 0.00    | 0.00  |
| 10/14/2012 | 7961  | 1.50      | 0.00      | 0.00    | 0.00  |
| 10/14/2012 | 8451  | 0.40      | 0.00      | 0.00    | 0.00  |
| 10/18/2012 | 7664  | 1.00      | 219.80    | 7762.00 | 70.65 |
| 10/18/2012 | 7696  | 1.20      | 157.10    | 7694.00 | 70.58 |
| 10/18/2012 | 7728  | 5.90      | 137.90    | 7726.00 | 79.31 |
| 10/18/2012 | 7760  | 9.60      | 141.30    | 7757.00 | 66.43 |
| 10/18/2012 | 7792  | 8.90      | 118.10    | 7789.41 | 62.50 |

| # Date     | Depth | Deviation | Direction | TVD     | Horiz   |
|------------|-------|-----------|-----------|---------|---------|
| 10/18/2012 | 7887  | 17.80     | 106.80    | 7881.00 | 41.68   |
| 10/19/2012 | 7919  | 21.30     | 100.10    | 7911.00 | 32.38   |
| 10/19/2012 | 7951  | 24.50     | 94.00     | 7941.00 | 20.00   |
| 10/19/2012 | 7983  | 26.60     | 95.90     | 7970.00 | 6.22    |
| 10/19/2012 | 8014  | 29.10     | 95.00     | 7997.00 | 9.40    |
| 10/19/2012 | 8046  | 32.40     | 94.90     | 8025.00 | 25.73   |
| 10/20/2012 | 8078  | 36.10     | 98.90     | 8051.70 | 43.65   |
| 10/20/2012 | 8237  | 53.00     | 82.70     | 8166.00 | 152.26  |
| 10/20/2012 | 8301  | 60.80     | 85.50     | 8201.00 | 205.52  |
| 10/20/2012 | 8333  | 63.60     | 87.70     | 8216.00 | 233.76  |
| 10/21/2012 | 8346  | 67.10     | 91.00     | 8229.00 | 261.90  |
| 10/21/2012 | 8428  | 77.80     | 89.90     | 8248.00 | 322.70  |
| 10/21/2012 | 8459  | 83.00     | 89.30     | 8254.00 | 353.24  |
| 10/21/2012 | 8587  | 88.20     | 90.70     | 8261.00 | 480.93  |
| 10/21/2012 | 8874  | 90.80     | 91.50     | 8261.00 | 767.87  |
| 10/22/2012 | 8968  | 90.40     | 92.30     | 8260.00 | 861.86  |
| 10/22/2012 | 9348  | 91.70     | 92.40     | 8256.00 | 1241.80 |
| 10/22/2012 | 9443  | 92.10     | 92.20     | 8252.00 | 1336.74 |
| 10/22/2012 | 9634  | 89.90     | 90.80     | 8249.00 | 0.00    |
| 10/22/2012 | 9730  | 86.90     | 90.10     | 8256.00 | 0.00    |
| 10/22/2012 | 9920  | 88.10     | 90.50     | 8260.00 | 0.00    |
| 10/22/2012 | 10016 | 87.30     | 89.90     | 8264.00 | 1909.28 |
| 10/22/2012 | 10207 | 86.50     | 90.80     | 8273.00 | 2100.01 |
| 10/22/2012 | 10303 | 87.00     | 91.20     | 8279.00 | 2195.00 |
| 10/23/2012 | 10398 | 89.30     | 91.80     | 8282.00 | 2290.18 |
| 10/23/2012 | 10493 | 90.00     | 90.90     | 8282.00 | 2385.17 |
| 10/23/2012 | 10589 | 90.20     | 90.70     | 8282.00 | 2481.78 |
| 10/23/2012 | 10685 | 90.70     | 90.60     | 8281.00 | 2672.73 |
| 10/23/2012 | 10876 | 90.40     | 89.90     | 8279.00 | 2768.69 |
| 10/23/2012 | 10876 | 90.40     | 89.90     | 8279.00 | 2863.65 |
| 10/24/2012 | 11161 | 89.00     | 90.10     | 8281.00 | 3053.57 |
| 10/24/2012 | 11257 | 88.60     | 90.10     | 8283.00 | 3149.51 |
| 10/24/2012 | 11352 | 87.40     | 91.10     | 8286.00 | 3244.44 |
| 10/24/2012 | 11447 | 88.00     | 91.00     | 8292.00 | 3371.33 |
| 10/24/2012 | 11638 | 87.50     | 92.10     | 8299.00 | 3530.00 |
| 10/25/2012 | 11733 | 88.50     | 92.00     | 8302.00 | 3625.00 |
| 10/25/2012 | 11829 | 88.40     | 91.80     | 8302.00 | 3625.09 |
| 10/25/2012 | 12019 | 87.20     | 93.10     | 8309.00 | 3910.99 |
| 10/25/2012 | 12115 | 87.80     | 93.50     | 8314.00 | 4006.00 |
| 10/25/2012 | 12210 | 89.10     | 93.40     | 8316.00 | 4101.00 |
| 10/25/2012 | 12306 | 89.10     | 92.60     | 8318.00 | 4197.72 |
| 10/25/2012 | 12401 | 89.20     | 92.30     | 8319.00 | 4992.70 |
| 10/26/2012 | 12496 | 86.70     | 92.30     | 8323.00 | 4387.62 |
| 10/26/2012 | 12592 | 87.00     | 91.70     | 8328.00 | 4483.47 |
| 10/26/2012 | 12782 | 89.50     | 90.60     | 8333.00 | 4673.39 |

| # | Date | Depth | Deviation | Direction | TVD | Horiz |
|---|------|-------|-----------|-----------|-----|-------|
|---|------|-------|-----------|-----------|-----|-------|

|   |     |  |  |  |  |  |
|---|-----|--|--|--|--|--|
| # | EOF |  |  |  |  |  |
|---|-----|--|--|--|--|--|



A GYRO TECHNOLOGIES INC. COMPANY

P.O. Box 261021  
Corpus Christi, Texas 78426  
(361) 767-0602 • (800) 606-GYRO • Fax (361) 767-0612

October 23, 2012

COG Operating LLC (Concho)  
One Concho Center  
600 W. Illinois Avenue  
Midland, TX 79701

Attn: Kanicia Castillo

Re: **Baby Buddah 13 Federal No. 001H**

Please find enclosed a copy of the survey from 0' to 8,948' ran on the above referenced well.

If I can be of any further service, please do not hesitate to call me at 800-606-4976.

Sincerely,

Keith Havelka  
Operations

Company: COG Operating, LLC (Concho)  
Lease/Well: Baby Buddah 13 Federal/No. 001H



Rig Name: Silver Oak #7  
State/County: New Mexico/Eddy  
Latitude: 32.04, Longitude: -104.05  
GRID North is 0.15 Degrees East of True North  
VS-Azi: 0.00 Degrees



Depth Reference : RKB= 17 Feet

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: gyro survey.ut  
Minimum Curvature Method  
Report Date/Time: 10/23/2012 / 08:54

Vaughn Energy Services  
(432) 563-5444  
Gardendale, TX  
Surveyor: Colby Ware  
Baby Buddah 13 Federal No. 001H / API 30-015-40735

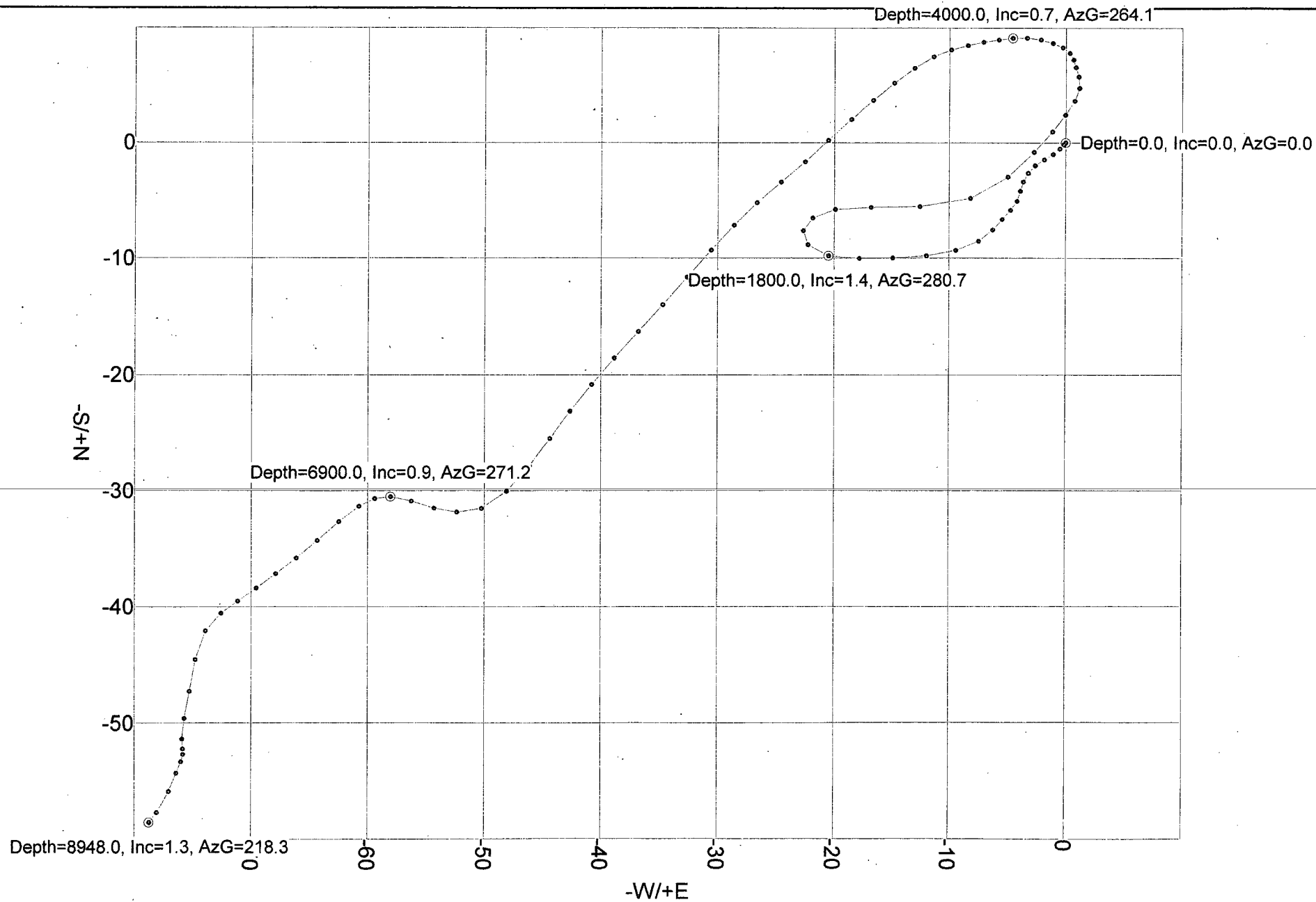
| Measured<br>Depth<br>FT | Incl<br>Angle<br>Deg | Drift<br>Direction<br>Deg | TVD<br>FT | +N/-S<br>FT | +E/-W<br>FT | Closure<br>Distance<br>FT | Closure<br>Direction<br>Deg | Dogleg<br>Severity<br>Deg/100 |
|-------------------------|----------------------|---------------------------|-----------|-------------|-------------|---------------------------|-----------------------------|-------------------------------|
| 0.00                    | 0.00                 | 0.00                      | 0.00      | 0.00        | 0.00        | 0.00                      | 0.00                        | ****                          |
| 100.00                  | 0.22                 | 222.39                    | 100.00    | -0.14       | -0.13       | 0.19                      | 222.39                      | 0.22                          |
| 200.00                  | 0.39                 | 224.79                    | 200.00    | -0.52       | -0.49       | 0.72                      | 223.53                      | 0.18                          |
| 300.00                  | 0.47                 | 233.76                    | 300.00    | -1.01       | -1.07       | 1.47                      | 226.67                      | 0.10                          |
| 400.00                  | 0.55                 | 242.73                    | 399.99    | -1.47       | -1.82       | 2.34                      | 231.16                      | 0.11                          |
| 500.00                  | 0.52                 | 228.89                    | 499.99    | -1.99       | -2.59       | 3.27                      | 232.53                      | 0.13                          |
| 600.00                  | 0.51                 | 215.05                    | 599.98    | -2.65       | -3.19       | 4.15                      | 230.28                      | 0.12                          |
| 700.00                  | 0.47                 | 202.98                    | 699.98    | -3.39       | -3.61       | 4.95                      | 226.76                      | 0.11                          |
| 800.00                  | 0.52                 | 190.92                    | 799.98    | -4.21       | -3.85       | 5.71                      | 222.44                      | 0.12                          |
| 900.00                  | 0.54                 | 206.98                    | 899.97    | -5.08       | -4.15       | 6.56                      | 219.26                      | 0.15                          |
| 1000.00                 | 0.57                 | 223.04                    | 999.97    | -5.86       | -4.70       | 7.52                      | 218.74                      | 0.16                          |
| 1100.00                 | 0.67                 | 222.01                    | 1099.96   | -6.66       | -5.43       | 8.59                      | 219.21                      | 0.11                          |
| 1200.00                 | 0.73                 | 220.98                    | 1199.95   | -7.58       | -6.24       | 9.82                      | 219.49                      | 0.07                          |
| 1300.00                 | 1.06                 | 238.49                    | 1299.94   | -8.54       | -7.45       | 11.34                     | 221.10                      | 0.42                          |
| 1400.00                 | 1.39                 | 256.00                    | 1399.92   | -9.32       | -9.42       | 13.25                     | 225.30                      | 0.49                          |
| 1500.00                 | 1.58                 | 262.50                    | 1499.89   | -9.80       | -11.96      | 15.46                     | 230.69                      | 0.26                          |
| 1600.00                 | 1.77                 | 269.00                    | 1599.84   | -10.00      | -14.88      | 17.93                     | 236.09                      | 0.27                          |
| 1700.00                 | 1.61                 | 269.87                    | 1699.80   | -10.03      | -17.83      | 20.46                     | 240.64                      | 0.16                          |
| 1800.00                 | 1.45                 | 280.73                    | 1799.76   | -9.80       | -20.48      | 22.70                     | 244.42                      | 0.33                          |

| 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 | Closure<br>Distance<br>FT | Closure<br>Direction<br>Deg | Dogleg<br>Severity<br>Deg/100 |
|-------------------------|----------------------|---------------------------|-----------|-------------|-------------|---------------------------|-----------------------------|-------------------------------|
| 1900.00                 | 1.03                 | 322.66                    | 1899.74   | -8.85       | -22.26      | 23.96                     | 248.31                      | 0.97                          |
| 2000.00                 | 0.60                 | 14.58                     | 1999.73   | -7.63       | -22.67      | 23.92                     | 251.39                      | 0.81                          |
| 2100.00                 | 1.03                 | 49.15                     | 2099.72   | -6.54       | -21.86      | 22.82                     | 253.35                      | 0.64                          |
| 2200.00                 | 1.46                 | 83.72                     | 2199.70   | -5.81       | -19.91      | 20.74                     | 253.74                      | 0.85                          |
| 2300.00                 | 2.11                 | 88.53                     | 2299.65   | -5.62       | -16.80      | 17.71                     | 251.50                      | 0.67                          |
| 2400.00                 | 2.76                 | 89.34                     | 2399.56   | -5.54       | -12.54      | 13.71                     | 246.15                      | 0.65                          |
| 2500.00                 | 2.38                 | 70.69                     | 2499.46   | -4.83       | -8.17       | 9.50                      | 239.42                      | 0.92                          |
| 2600.00                 | 1.99                 | 48.04                     | 2599.39   | -2.98       | -4.93       | 5.76                      | 238.79                      | 0.94                          |
| 2700.00                 | 1.57                 | 43.34                     | 2699.34   | -0.83       | -2.69       | 2.82                      | 252.96                      | 0.44                          |
| 2800.00                 | 1.15                 | 38.64                     | 2799.31   | 0.96        | -1.13       | 1.48                      | 310.32                      | 0.43                          |
| 2900.00                 | 0.94                 | 34.85                     | 2899.30   | 2.42        | -0.03       | 2.42                      | 359.33                      | 0.22                          |
| 3000.00                 | 0.74                 | 31.05                     | 2999.29   | 3.64        | 0.77        | 3.72                      | 12.00                       | 0.21                          |
| 3100.00                 | 0.63                 | 7.19                      | 3099.28   | 4.74        | 1.17        | 4.89                      | 13.91                       | 0.30                          |
| 3200.00                 | 0.53                 | 343.34                    | 3199.27   | 5.74        | 1.11        | 5.84                      | 10.96                       | 0.26                          |
| 3300.00                 | 0.45                 | 343.11                    | 3299.27   | 6.56        | 0.86        | 6.61                      | 7.50                        | 0.08                          |
| 3400.00                 | 0.35                 | 342.89                    | 3399.27   | 7.23        | 0.66        | 7.26                      | 5.21                        | 0.10                          |
| 3500.00                 | 0.42                 | 320.90                    | 3499.27   | 7.80        | 0.34        | 7.81                      | 2.49                        | 0.16                          |
| 3600.00                 | 0.48                 | 298.91                    | 3599.26   | 8.29        | -0.26       | 8.29                      | 358.21                      | 0.18                          |
| 3700.00                 | 0.57                 | 290.90                    | 3699.26   | 8.67        | -1.09       | 8.74                      | 352.82                      | 0.11                          |
| 3800.00                 | 0.66                 | 282.90                    | 3799.25   | 8.97        | -2.12       | 9.22                      | 346.72                      | 0.12                          |
| 3900.00                 | 0.73                 | 273.52                    | 3899.24   | 9.14        | -3.31       | 9.72                      | 340.09                      | 0.13                          |
| 4000.00                 | 0.67                 | 264.14                    | 3999.24   | 9.12        | -4.53       | 10.18                     | 333.60                      | 0.13                          |
| 4100.00                 | 0.75                 | 262.05                    | 4099.23   | 8.97        | -5.76       | 10.66                     | 327.32                      | 0.08                          |
| 4200.00                 | 0.78                 | 259.97                    | 4199.22   | 8.76        | -7.07       | 11.26                     | 321.10                      | 0.04                          |
| 4300.00                 | 0.81                 | 256.58                    | 4299.21   | 8.48        | -8.42       | 11.95                     | 315.19                      | 0.05                          |
| 4400.00                 | 0.87                 | 253.19                    | 4399.20   | 8.10        | -9.84       | 12.74                     | 309.45                      | 0.08                          |
| 4500.00                 | 1.03                 | 243.65                    | 4499.19   | 7.48        | -11.38      | 13.61                     | 303.31                      | 0.22                          |
| 4600.00                 | 1.19                 | 234.11                    | 4599.17   | 6.47        | -13.03      | 14.54                     | 296.40                      | 0.24                          |
| 4700.00                 | 1.31                 | 232.43                    | 4699.14   | 5.16        | -14.77      | 15.65                     | 289.25                      | 0.13                          |
| 4800.00                 | 1.41                 | 230.74                    | 4799.12   | 3.68        | -16.64      | 17.04                     | 282.47                      | 0.11                          |
| 4900.00                 | 1.50                 | 228.23                    | 4899.08   | 2.03        | -18.57      | 18.68                     | 276.23                      | 0.11                          |
| 5000.00                 | 1.56                 | 225.73                    | 4999.05   | 0.20        | -20.52      | 20.52                     | 270.57                      | 0.09                          |
| 5100.00                 | 1.57                 | 228.39                    | 5099.01   | -1.66       | -22.53      | 22.59                     | 265.79                      | 0.07                          |
| 5200.00                 | 1.55                 | 231.05                    | 5198.97   | -3.42       | -24.60      | 24.84                     | 262.08                      | 0.08                          |
| 5300.00                 | 1.59                 | 226.94                    | 5298.94   | -5.22       | -26.67      | 27.17                     | 258.93                      | 0.12                          |
| 5400.00                 | 1.58                 | 222.83                    | 5398.90   | -7.17       | -28.62      | 29.50                     | 255.93                      | 0.11                          |
| 5500.00                 | 1.73                 | 221.84                    | 5498.86   | -9.31       | -30.56      | 31.94                     | 253.06                      | 0.15                          |
| 5600.00                 | 1.84                 | 220.86                    | 5598.81   | -11.64      | -32.61      | 34.63                     | 250.35                      | 0.11                          |
| 5700.00                 | 1.78                 | 221.79                    | 5698.76   | -14.01      | -34.70      | 37.42                     | 248.01                      | 0.07                          |

| 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 | Closure<br>Distance<br>FT | Closure<br>Direction<br>Deg | Dogleg<br>Severity<br>Deg/100 |
|-------------------------|----------------------|---------------------------|-----------|-------------|-------------|---------------------------|-----------------------------|-------------------------------|
| 5800.00                 | 1.76                 | 222.73                    | 5798.71   | -16.30      | -36.77      | 40.22                     | 246.10                      | 0.03                          |
| 5900.00                 | 1.75                 | 221.42                    | 5898.66   | -18.57      | -38.82      | 43.04                     | 244.44                      | 0.04                          |
| 6000.00                 | 1.69                 | 220.10                    | 5998.62   | -20.84      | -40.78      | 45.80                     | 242.93                      | 0.07                          |
| 6100.00                 | 1.69                 | 217.67                    | 6098.57   | -23.14      | -42.64      | 48.51                     | 241.51                      | 0.07                          |
| 6200.00                 | 1.66                 | 215.25                    | 6198.53   | -25.49      | -44.37      | 51.18                     | 240.12                      | 0.08                          |
| 6300.00                 | 1.71                 | 219.24                    | 6298.49   | -27.83      | -46.15      | 53.89                     | 238.91                      | 0.13                          |
| 6400.00                 | 1.68                 | 223.23                    | 6398.44   | -30.05      | -48.10      | 56.71                     | 238.00                      | 0.12                          |
| 6500.00                 | 1.40                 | 249.68                    | 6498.41   | -31.54      | -50.25      | 59.33                     | 237.88                      | 0.76                          |
| 6600.00                 | 1.12                 | 276.12                    | 6598.39   | -31.86      | -52.36      | 61.29                     | 238.68                      | 0.64                          |
| 6700.00                 | 1.15                 | 283.60                    | 6698.37   | -31.52      | -54.31      | 62.79                     | 239.87                      | 0.15                          |
| 6800.00                 | 1.19                 | 291.08                    | 6798.35   | -30.91      | -56.25      | 64.18                     | 241.21                      | 0.16                          |
| 6900.00                 | 0.93                 | 271.17                    | 6898.33   | -30.53      | -58.02      | 65.56                     | 242.25                      | 0.44                          |
| 7000.00                 | 0.67                 | 251.25                    | 6998.32   | -30.70      | -59.39      | 66.85                     | 242.66                      | 0.37                          |
| 7100.00                 | 1.06                 | 239.50                    | 7098.31   | -31.35      | -60.74      | 68.35                     | 242.70                      | 0.42                          |
| 7200.00                 | 1.44                 | 227.75                    | 7198.28   | -32.67      | -62.46      | 70.49                     | 242.39                      | 0.46                          |
| 7300.00                 | 1.39                 | 229.55                    | 7298.25   | -34.30      | -64.32      | 72.89                     | 241.93                      | 0.06                          |
| 7400.00                 | 1.31                 | 231.36                    | 7398.23   | -35.80      | -66.13      | 75.20                     | 241.57                      | 0.10                          |
| 7500.00                 | 1.23                 | 233.23                    | 7498.20   | -37.16      | -67.89      | 77.39                     | 241.31                      | 0.09                          |
| 7600.00                 | 1.16                 | 235.10                    | 7598.18   | -38.38      | -69.58      | 79.46                     | 241.12                      | 0.08                          |
| 7700.00                 | 1.05                 | 234.26                    | 7698.16   | -39.50      | -71.15      | 81.38                     | 240.97                      | 0.11                          |
| 7800.00                 | 0.99                 | 233.42                    | 7798.15   | -40.55      | -72.59      | 83.15                     | 240.81                      | 0.07                          |
| 7900.00                 | 1.34                 | 211.85                    | 7898.13   | -42.06      | -73.91      | 85.04                     | 240.36                      | 0.56                          |
| 8000.00                 | 1.69                 | 190.29                    | 7998.09   | -44.50      | -74.79      | 87.03                     | 239.24                      | 0.66                          |
| 8100.00                 | 1.47                 | 190.31                    | 8098.05   | -47.22      | -75.28      | 88.86                     | 237.90                      | 0.22                          |
| 8200.00                 | 1.29                 | 190.33                    | 8198.02   | -49.59      | -75.71      | 90.51                     | 236.78                      | 0.18                          |
| 8300.00                 | 0.77                 | 179.02                    | 8298.01   | -51.37      | -75.90      | 91.65                     | 235.91                      | 0.56                          |
| 8400.00                 | 0.24                 | 167.72                    | 8398.00   | -52.24      | -75.85      | 92.10                     | 235.44                      | 0.53                          |
| 8500.00                 | 0.33                 | 185.13                    | 8498.00   | -52.73      | -75.83      | 92.36                     | 235.19                      | 0.13                          |
| 8600.00                 | 0.43                 | 202.54                    | 8598.00   | -53.37      | -76.00      | 92.87                     | 234.92                      | 0.15                          |
| 8700.00                 | 0.80                 | 202.12                    | 8697.99   | -54.36      | -76.41      | 93.77                     | 234.57                      | 0.37                          |
| 8800.00                 | 1.13                 | 201.70                    | 8797.98   | -55.92      | -77.03      | 95.19                     | 234.02                      | 0.33                          |
| 8900.00                 | 1.28                 | 217.04                    | 8897.96   | -57.73      | -78.07      | 97.09                     | 233.52                      | 0.36                          |
| 8948.00                 | 1.30                 | 218.35                    | 8945.95   | -58.58      | -78.73      | 98.13                     | 233.35                      | 0.07                          |



Vaughn Energy Services  
(432) 563-5444  
Gardendale, TX  
Surveyor: Colby Ware  
Baby Buddah 13 Federal No. 001H / API 30-015-40735



VES Survey Date: 10/14/2012



## **COG Operating LLC**

**Eddy County, NM (NAD 83)**

**Baby Buddha 13 Fed**

**#1H**

**OH**

**Design: OH**

## **Standard Survey Report**

**26 October, 2012**



|                  |                          |                                     |                                              |
|------------------|--------------------------|-------------------------------------|----------------------------------------------|
| <b>Company:</b>  | COG Operating LLC        | <b>Local Co-ordinate Reference:</b> | Site Baby Buddha 13 Fed                      |
| <b>Project:</b>  | Eddy County, NM (NAD 83) | <b>TVD Reference:</b>               | WELL @ 2965.5usft (Silver Oak #7 - 17.5' KB) |
| <b>Site:</b>     | Baby Buddha 13 Fed       | <b>MD Reference:</b>                | WELL @ 2965.5usft (Silver Oak #7 - 17.5' KB) |
| <b>Well:</b>     | #1H                      | <b>North Reference:</b>             | Grid                                         |
| <b>Wellbore:</b> | OH                       | <b>Survey Calculation Method:</b>   | Minimum Curvature                            |
| <b>Design:</b>   | OH                       | <b>Database:</b>                    | Houston R5000 Database                       |

|                    |                           |                      |                |
|--------------------|---------------------------|----------------------|----------------|
| <b>Project:</b>    | Eddy County, NM (NAD 83)  | <b>System Datum:</b> | Mean Sea Level |
| <b>Map System:</b> | US State Plane 1983       |                      |                |
| <b>Geo Datum:</b>  | North American Datum 1983 |                      |                |
| <b>Map Zone:</b>   | New Mexico Eastern Zone   |                      |                |

|                              |                    |                          |                  |
|------------------------------|--------------------|--------------------------|------------------|
| <b>Site:</b>                 | Baby Buddha 13 Fed |                          |                  |
| <b>Site Position:</b>        |                    | <b>Northing:</b>         | 379,063.53 usft  |
| <b>From:</b>                 | Map                | <b>Easting:</b>          | 629,518.08 usft  |
| <b>Position Uncertainty:</b> | 0.0 usft           | <b>Slot Radius:</b>      | 13-3/16 "        |
|                              |                    | <b>Latitude:</b>         | 32° 2' 30.502 N  |
|                              |                    | <b>Longitude:</b>        | 104° 2' 55.465 W |
|                              |                    | <b>Grid Convergence:</b> | 0.15 °           |

|                      |       |          |                     |                 |               |                  |
|----------------------|-------|----------|---------------------|-----------------|---------------|------------------|
| Well                 | #1H   |          |                     |                 |               |                  |
| Well Position        | +N/-S | 0.0 usft | Northing:           | 379,063.53 usft | Latitude:     | 32° 2' 30.502 N  |
|                      | +E/-W | 0.0 usft | Easting:            | 629,518.08 usft | Longitude:    | 104° 2' 55.465 W |
| Position Uncertainty |       | 0.0 usft | Wellhead Elevation: | usft            | Ground Level: | 2,948.0 usft     |

|           |            |             |                    |                  |                        |
|-----------|------------|-------------|--------------------|------------------|------------------------|
| Wellbore  | OH         |             |                    |                  |                        |
| Magnetics | Model Name | Sample Date | Declination<br>(°) | Dip Angle<br>(°) | Field Strength<br>(nT) |
|           | IGRF200510 | 7/11/2012   | 7.65               | 59.93            | 48,392                 |

|                   |                  |               |           |
|-------------------|------------------|---------------|-----------|
| Design            |                  | OH            |           |
| Audit Notes:      |                  |               |           |
| Version:          | 1.0              | Phase:        | ACTUAL    |
|                   |                  | Tie On Depth: | 7,600.0   |
| Vertical Section: | Depth From (TVD) | +N/-S         | +E/-W     |
|                   | (usft)           | (usft)        | Direction |
|                   |                  |               | (°)       |
|                   | 0.0              | 0.0           | 0.0       |
|                   |                  |               | 91.63     |

|                       |             |                           |                  |                             |
|-----------------------|-------------|---------------------------|------------------|-----------------------------|
| <b>Survey Program</b> | <b>Date</b> | 10/26/2012                |                  |                             |
| <b>From</b>           | <b>To</b>   | <b>Survey (Wellbore)</b>  | <b>Tool Name</b> | <b>Description</b>          |
| (usft)                | (usft)      |                           |                  |                             |
| 100.0                 | 7,600.0     | Survey #1 - Gyro1 (Pilot) | CB-GYRO-MS       | Camera based gyro multishot |
| 7,632.0               | 12,821.0    | Crescent1 (OH)            | MWD              | MWD - Standard              |
| 12,878.0              | 12,878.0    | PTB (OH)                  | MWD              | MWD - Standard              |

|               |                 |                    |                |                 |              |              |                 |               |              |             |
|---------------|-----------------|--------------------|----------------|-----------------|--------------|--------------|-----------------|---------------|--------------|-------------|
| <b>Survey</b> | <b>Measured</b> | <b>Inclination</b> | <b>Azimuth</b> | <b>Vertical</b> | <b>+N/-S</b> | <b>+E/-W</b> | <b>Vertical</b> | <b>Dogleg</b> | <b>Build</b> | <b>Turn</b> |
|               | <b>Depth</b>    | (°)                | (°)            | <b>Depth</b>    | (usft)       | (usft)       | <b>Section</b>  | <b>Rate</b>   | <b>Rate</b>  | <b>Rate</b> |
|               | (usft)          |                    |                | (usft)          |              |              | (usft)          | (°/100usft)   | (°/100usft)  | (°/100usft) |
|               | 0.0             | 0.00               | 0.00           | 0.0             | 0.0          | 0.0          | 0.0             | 0.00          | 0.00         | 0.00        |
|               | 100.0           | 0.22               | 222.39         | 100.0           | -0.1         | -0.1         | -0.1            | 0.22          | 0.22         | 0.00        |
|               | 200.0           | 0.39               | 224.79         | 200.0           | -0.5         | -0.5         | -0.5            | 0.17          | 0.17         | 2.40        |
|               | 300.0           | 0.47               | 233.76         | 300.0           | -1.0         | -1.1         | -1.0            | 0.10          | 0.08         | 8.97        |
|               | 400.0           | 0.55               | 242.73         | 400.0           | -1.5         | -1.8         | -1.8            | 0.11          | 0.08         | 8.97        |
|               | 500.0           | 0.52               | 228.89         | 500.0           | -2.0         | -2.6         | -2.5            | 0.13          | -0.03        | -13.84      |
|               | 600.0           | 0.51               | 215.05         | 600.0           | -2.7         | -3.2         | -3.1            | 0.12          | -0.01        | -13.84      |
|               | 700.0           | 0.47               | 202.98         | 700.0           | -3.4         | -3.6         | -3.5            | 0.11          | -0.04        | -12.07      |
|               | 800.0           | 0.52               | 190.92         | 800.0           | -4.2         | -3.9         | -3.7            | 0.12          | 0.05         | -12.06      |

|                  |                          |                                     |                                              |
|------------------|--------------------------|-------------------------------------|----------------------------------------------|
| <b>Company:</b>  | COG Operating LLC        | <b>Local Co-ordinate Reference:</b> | Site Baby Buddha 13 Fed                      |
| <b>Project:</b>  | Eddy County, NM (NAD 83) | <b>TVD Reference:</b>               | WELL @ 2965.5usft (Silver Oak #7 - 17.5' KB) |
| <b>Site:</b>     | Baby Buddha 13 Fed       | <b>MD Reference:</b>                | WELL @ 2965.5usft (Silver Oak #7 - 17.5' KB) |
| <b>Well:</b>     | #1H                      | <b>North Reference:</b>             | Grid                                         |
| <b>Wellbore:</b> | OH                       | <b>Survey Calculation Method:</b>   | Minimum Curvature                            |
| <b>Design:</b>   | OH                       | <b>Database:</b>                    | Houston R5000 Database                       |

| 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) |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| 900.0                 | 0.54            | 206.98      | 900.0                 | -5.1         | -4.2         | -4.0                    | 0.15                    | 0.02                   | 16.06                 |
| 1,000.0               | 0.57            | 223.04      | 1,000.0               | -5.9         | -4.7         | -4.5                    | 0.16                    | 0.03                   | 16.06                 |
| 1,100.0               | 0.67            | 222.01      | 1,100.0               | -6.7         | -5.4         | -5.2                    | 0.10                    | 0.10                   | -1.03                 |
| 1,200.0               | 0.73            | 220.98      | 1,200.0               | -7.6         | -6.2         | -6.0                    | 0.06                    | 0.06                   | -1.03                 |
| 1,300.0               | 1.06            | 238.49      | 1,299.9               | -8.5         | -7.5         | -7.2                    | 0.42                    | 0.33                   | 17.51                 |
| 1,400.0               | 1.39            | 256.00      | 1,399.9               | -9.3         | -9.4         | -9.2                    | 0.50                    | 0.33                   | 17.51                 |
| 1,500.0               | 1.58            | 262.50      | 1,499.9               | -9.8         | -12.0        | -11.7                   | 0.25                    | 0.19                   | 6.50                  |
| 1,600.0               | 1.77            | 269.00      | 1,599.8               | -10.0        | -14.9        | -14.6                   | 0.27                    | 0.19                   | 6.50                  |
| 1,700.0               | 1.61            | 269.87      | 1,699.8               | -10.0        | -17.8        | -17.5                   | 0.16                    | -0.16                  | 0.87                  |
| 1,800.0               | 1.45            | 280.73      | 1,799.8               | -9.8         | -20.5        | -20.2                   | 0.33                    | -0.16                  | 10.86                 |
| 1,900.0               | 1.03            | 322.66      | 1,899.7               | -8.8         | -22.3        | -22.0                   | 0.97                    | -0.42                  | 41.93                 |
| 2,000.0               | 0.60            | 14.58       | 1,999.7               | -7.6         | -22.7        | -22.4                   | 0.81                    | -0.43                  | 51.92                 |
| 2,100.0               | 1.03            | 49.15       | 2,099.7               | -6.5         | -21.9        | -21.7                   | 0.63                    | 0.43                   | 34.57                 |
| 2,200.0               | 1.46            | 83.72       | 2,199.7               | -5.8         | -19.9        | -19.7                   | 0.85                    | 0.43                   | 34.57                 |
| 2,300.0               | 2.11            | 88.53       | 2,299.7               | -5.6         | -16.8        | -16.6                   | 0.67                    | 0.65                   | 4.81                  |
| 2,400.0               | 2.76            | 89.34       | 2,399.6               | -5.5         | -12.6        | -12.4                   | 0.65                    | 0.65                   | 0.81                  |
| 2,500.0               | 2.38            | 70.69       | 2,499.5               | -4.8         | -8.2         | -8.1                    | 0.91                    | -0.38                  | -18.65                |
| 2,600.0               | 1.99            | 48.04       | 2,599.4               | -3.0         | -4.9         | -4.9                    | 0.94                    | -0.39                  | -22.65                |
| 2,700.0               | 1.57            | 43.34       | 2,699.3               | -0.8         | -2.7         | -2.7                    | 0.44                    | -0.42                  | -4.70                 |
| 2,800.0               | 1.15            | 38.64       | 2,799.3               | 1.0          | -1.1         | -1.2                    | 0.43                    | -0.42                  | -4.70                 |
| 2,900.0               | 0.94            | 34.85       | 2,899.3               | 2.4          | 0.0          | -0.1                    | 0.22                    | -0.21                  | -3.79                 |
| 3,000.0               | 0.74            | 31.05       | 2,999.3               | 3.6          | 0.8          | 0.6                     | 0.21                    | -0.20                  | -3.80                 |
| 3,100.0               | 0.63            | 7.19        | 3,099.3               | 4.7          | 1.2          | 1.0                     | 0.30                    | -0.11                  | -23.86                |
| 3,200.0               | 0.53            | 343.34      | 3,199.3               | 5.7          | 1.1          | 0.9                     | 0.26                    | -0.10                  | -23.85                |
| 3,300.0               | 0.45            | 343.11      | 3,299.3               | 6.5          | 0.8          | 0.7                     | 0.08                    | -0.08                  | -0.23                 |
| 3,400.0               | 0.35            | 342.89      | 3,399.3               | 7.2          | 0.6          | 0.4                     | 0.10                    | -0.10                  | -0.22                 |
| 3,500.0               | 0.42            | 320.90      | 3,499.3               | 7.8          | 0.3          | 0.1                     | 0.16                    | 0.07                   | -21.99                |
| 3,600.0               | 0.48            | 298.91      | 3,599.3               | 8.3          | -0.3         | -0.5                    | 0.18                    | 0.06                   | -21.99                |
| 3,700.0               | 0.57            | 290.90      | 3,699.3               | 8.7          | -1.1         | -1.4                    | 0.12                    | 0.09                   | -8.01                 |
| 3,800.0               | 0.66            | 282.90      | 3,799.3               | 9.0          | -2.1         | -2.4                    | 0.12                    | 0.09                   | -8.00                 |
| 3,900.0               | 0.73            | 273.52      | 3,899.2               | 9.1          | -3.3         | -3.6                    | 0.13                    | 0.07                   | -9.38                 |
| 4,000.0               | 0.67            | 264.14      | 3,999.2               | 9.1          | -4.6         | -4.8                    | 0.13                    | -0.06                  | -9.38                 |
| 4,100.0               | 0.75            | 262.05      | 4,099.2               | 9.0          | -5.8         | -6.0                    | 0.08                    | 0.08                   | -2.09                 |
| 4,200.0               | 0.78            | 259.97      | 4,199.2               | 8.7          | -7.1         | -7.3                    | 0.04                    | 0.03                   | -2.08                 |
| 4,300.0               | 0.81            | 256.58      | 4,299.2               | 8.5          | -8.5         | -8.7                    | 0.06                    | 0.03                   | -3.39                 |
| 4,400.0               | 0.87            | 253.19      | 4,399.2               | 8.1          | -9.9         | -10.1                   | 0.08                    | 0.06                   | -3.39                 |
| 4,500.0               | 1.03            | 243.65      | 4,499.2               | 7.5          | -11.4        | -11.6                   | 0.22                    | 0.16                   | -9.54                 |
| 4,600.0               | 1.19            | 234.11      | 4,599.2               | 6.5          | -13.0        | -13.2                   | 0.24                    | 0.16                   | -9.54                 |
| 4,700.0               | 1.31            | 232.43      | 4,699.1               | 5.2          | -14.8        | -14.9                   | 0.13                    | 0.12                   | -1.68                 |
| 4,800.0               | 1.41            | 230.74      | 4,799.1               | 3.7          | -16.7        | -16.8                   | 0.11                    | 0.10                   | -1.69                 |
| 4,900.0               | 1.50            | 228.23      | 4,899.1               | 2.0          | -18.6        | -18.6                   | 0.11                    | 0.09                   | -2.51                 |
| 5,000.0               | 1.56            | 225.73      | 4,999.0               | 0.2          | -20.5        | -20.5                   | 0.09                    | 0.06                   | -2.50                 |
| 5,100.0               | 1.57            | 228.39      | 5,099.0               | -1.7         | -22.5        | -22.5                   | 0.07                    | 0.01                   | 2.66                  |

|                  |                          |                                     |                                             |
|------------------|--------------------------|-------------------------------------|---------------------------------------------|
| <b>Company:</b>  | COG Operating LLC        | <b>Local Co-ordinate Reference:</b> | Site Baby Buddha-13 Fed                     |
| <b>Project:</b>  | Eddy County, NM (NAD 83) | <b>TVD Reference:</b>               | WELL @ 2965.5usft (Silver Oak #7 -17.5' KB) |
| <b>Site:</b>     | Baby Buddha 13 Fed       | <b>MD Reference:</b>                | WELL @ 2965.5usft (Silver Oak #7 -17.5' KB) |
| <b>Well:</b>     | #1H                      | <b>North Reference:</b>             | Grid                                        |
| <b>Wellbore:</b> | OH                       | <b>Survey Calculation Method:</b>   | Minimum Curvature                           |
| <b>Design:</b>   | OH                       | <b>Database:</b>                    | Houston R5000 Database                      |

| 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) |  |
| 5,200.0                                                          | 1.55            | 231.05      | 5,199.0               | -3.4         | -24.6        | -24.5                   | 0.08                    | -0.02                  | 2.66                  |  |
| 5,300.0                                                          | 1.59            | 226.94      | 5,298.9               | -5.2         | -26.7        | -26.5                   | 0.12                    | 0.04                   | -4.11                 |  |
| 5,400.0                                                          | 1.58            | 222.83      | 5,398.9               | -7.2         | -28.6        | -28.4                   | 0.11                    | -0.01                  | -4.11                 |  |
| 5,500.0                                                          | 1.73            | 221.84      | 5,498.9               | -9.3         | -30.6        | -30.3                   | 0.15                    | 0.15                   | -0.99                 |  |
| 5,600.0                                                          | 1.84            | 220.86      | 5,598.8               | -11.6        | -32.6        | -32.3                   | 0.11                    | 0.11                   | -0.98                 |  |
| 5,700.0                                                          | 1.78            | 221.79      | 5,698.8               | -14.0        | -34.7        | -34.3                   | 0.07                    | -0.06                  | 0.93                  |  |
| 5,800.0                                                          | 1.76            | 222.73      | 5,798.7               | -16.3        | -36.8        | -36.3                   | 0.04                    | -0.02                  | 0.94                  |  |
| 5,900.0                                                          | 1.75            | 221.42      | 5,898.7               | -18.6        | -38.8        | -38.3                   | 0.04                    | -0.01                  | -1.31                 |  |
| 6,000.0                                                          | 1.69            | 220.10      | 5,998.6               | -20.9        | -40.8        | -40.2                   | 0.07                    | -0.06                  | -1.32                 |  |
| 6,100.0                                                          | 1.69            | 217.67      | 6,098.6               | -23.1        | -42.7        | -42.0                   | 0.07                    | 0.00                   | -2.43                 |  |
| 6,200.0                                                          | 1.66            | 215.25      | 6,198.5               | -25.5        | -44.4        | -43.6                   | 0.08                    | -0.03                  | -2.42                 |  |
| 6,300.0                                                          | 1.71            | 219.24      | 6,298.5               | -27.8        | -46.2        | -45.4                   | 0.13                    | 0.05                   | 3.99                  |  |
| 6,400.0                                                          | 1.68            | 223.23      | 6,398.4               | -30.1        | -48.1        | -47.2                   | 0.12                    | -0.03                  | 3.99                  |  |
| 6,500.0                                                          | 1.40            | 249.68      | 6,498.4               | -31.6        | -50.3        | -49.3                   | 0.76                    | -0.28                  | 26.45                 |  |
| 6,600.0                                                          | 1.12            | 276.12      | 6,598.4               | -31.9        | -52.4        | -51.5                   | 0.64                    | -0.28                  | 26.44                 |  |
| 6,700.0                                                          | 1.15            | 283.60      | 6,698.4               | -31.5        | -54.3        | -53.4                   | 0.15                    | 0.03                   | 7.48                  |  |
| 6,800.0                                                          | 1.19            | 291.08      | 6,798.3               | -30.9        | -56.3        | -55.4                   | 0.16                    | 0.04                   | 7.48                  |  |
| 6,900.0                                                          | 0.93            | 271.17      | 6,898.3               | -30.5        | -58.1        | -57.2                   | 0.45                    | -0.26                  | -19.91                |  |
| 7,000.0                                                          | 0.67            | 251.25      | 6,998.3               | -30.7        | -59.4        | -58.5                   | 0.38                    | -0.26                  | -19.92                |  |
| 7,100.0                                                          | 1.06            | 239.50      | 7,098.3               | -31.4        | -60.8        | -59.9                   | 0.43                    | 0.39                   | -11.75                |  |
| 7,200.0                                                          | 1.44            | 227.75      | 7,198.3               | -32.7        | -62.5        | -61.5                   | 0.46                    | 0.38                   | -11.75                |  |
| 7,300.0                                                          | 1.39            | 229.55      | 7,298.3               | -34.3        | -64.4        | -63.4                   | 0.07                    | -0.05                  | 1.80                  |  |
| 7,400.0                                                          | 1.31            | 231.36      | 7,398.2               | -35.8        | -66.2        | -65.1                   | 0.09                    | -0.08                  | 1.81                  |  |
| 7,500.0                                                          | 1.23            | 233.23      | 7,498.2               | -37.2        | -67.9        | -66.8                   | 0.09                    | -0.08                  | 1.87                  |  |
| 7,600.0                                                          | 1.16            | 235.10      | 7,598.2               | -38.4        | -69.6        | -68.5                   | 0.08                    | -0.07                  | 1.87                  |  |
| 7,632.0                                                          | 1.10            | 231.40      | 7,630.2               | -38.8        | -70.1        | -69.0                   | 0.30                    | -0.19                  | -11.56                |  |
| 7,664.0                                                          | 1.00            | 219.80      | 7,662.2               | -39.2        | -70.5        | -69.4                   | 0.73                    | -0.31                  | -36.25                |  |
| 7,696.0                                                          | 1.20            | 157.10      | 7,694.2               | -39.7        | -70.6        | -69.4                   | 3.62                    | 0.63                   | -195.94               |  |
| KOP - 7696.0' MD, 7694.2' TVD, 1.20° INC, 157.10° AZI, -69.4' VS |                 |             |                       |              |              |                         |                         |                        |                       |  |
| 7,728.0                                                          | 5.90            | 137.90      | 7,726.1               | -41.2        | -69.3        | -68.1                   | 14.95                   | 14.69                  | -60.00                |  |
| 7,760.0                                                          | 9.60            | 141.30      | 7,757.8               | -44.5        | -66.6        | -65.3                   | 11.65                   | 11.56                  | 10.63                 |  |
| 7,792.0                                                          | 8.90            | 118.10      | 7,789.4               | -47.8        | -62.7        | -61.3                   | 11.77                   | -2.19                  | -72.50                |  |
| 7,824.0                                                          | 12.00           | 120.50      | 7,820.9               | -50.6        | -57.7        | -56.2                   | 9.78                    | 9.69                   | 7.50                  |  |
| 7,856.0                                                          | 14.20           | 116.30      | 7,852.0               | -54.1        | -51.3        | -49.7                   | 7.49                    | 6.88                   | -13.13                |  |
| 7,887.0                                                          | 17.80           | 106.80      | 7,881.8               | -57.1        | -43.3        | -41.7                   | 14.32                   | 11.61                  | -30.65                |  |
| 7,919.0                                                          | 21.30           | 100.10      | 7,912.0               | -59.5        | -32.9        | -31.2                   | 12.97                   | 10.94                  | -20.94                |  |
| 7,951.0                                                          | 24.50           | 94.00       | 7,941.5               | -61.0        | -20.6        | -18.8                   | 12.44                   | 10.00                  | -19.06                |  |
| 7,983.0                                                          | 26.60           | 95.90       | 7,970.3               | -62.2        | -6.8         | -5.1                    | 7.04                    | 6.56                   | 5.94                  |  |
| 8,014.0                                                          | 29.10           | 95.00       | 7,997.7               | -63.6        | 7.6          | 9.4                     | 8.18                    | 8.06                   | -2.90                 |  |
| 8,046.0                                                          | 32.40           | 94.90       | 8,025.2               | -65.0        | 23.9         | 25.7                    | 10.31                   | 10.31                  | -0.31                 |  |
| 8,078.0                                                          | 36.10           | 98.90       | 8,051.7               | -67.2        | 41.7         | 43.6                    | 13.53                   | 11.56                  | 12.50                 |  |
| 8,110.0                                                          | 39.00           | 94.20       | 8,077.1               | -69.4        | 61.1         | 63.1                    | 12.73                   | 9.06                   | -14.69                |  |
| 8,142.0                                                          | 41.50           | 90.10       | 8,101.5               | -70.2        | 81.8         | 83.7                    | 11.38                   | 7.81                   | -12.81                |  |
| 8,173.0                                                          | 44.10           | 86.10       | 8,124.2               | -69.4        | 102.8        | 104.7                   | 12.13                   | 8.39                   | -12.90                |  |

|                  |                          |                                     |                                              |
|------------------|--------------------------|-------------------------------------|----------------------------------------------|
| <b>Company:</b>  | COG Operating LLC        | <b>Local Co-ordinate Reference:</b> | Site Baby Buddha 13 Fed                      |
| <b>Project:</b>  | Eddy County, NM (NAD 83) | <b>TVD Reference:</b>               | WELL @ 2965.5usft (Silver Oak #7 - 17.5' KB) |
| <b>Site:</b>     | Baby Buddha 13 Fed       | <b>MD Reference:</b>                | WELL @ 2965.5usft (Silver Oak #7 - 17.5' KB) |
| <b>Well:</b>     | #1H                      | <b>North Reference:</b>             | Grid                                         |
| <b>Wellbore:</b> | OH                       | <b>Survey Calculation Method:</b>   | Minimum Curvature                            |
| <b>Design:</b>   | OH                       | <b>Database:</b>                    | Houston R5000 Database                       |

| 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) |
| 8,205.0                                                          | 48.70           | 84.10       | 8,146.3               | -67.4        | 125.9        | 127.7                   | 15.07                   | 14.38                  | -6.25                 |
| 8,224.9                                                          | 51.37           | 83.21       | 8,159.1               | -65.8        | 141.0        | 142.8                   | 13.86                   | 13.43                  | -4.48                 |
| PP - 8224.9' MD, 8159.1' TVD, 51.37° INC, 142.8' VS              |                 |             |                       |              |              |                         |                         |                        |                       |
| 8,237.0                                                          | 53.00           | 82.70       | 8,166.5               | -64.6        | 150.5        | 152.3                   | 13.86                   | 13.45                  | -4.21                 |
| 8,269.0                                                          | 57.00           | 86.30       | 8,184.8               | -62.1        | 176.6        | 178.3                   | 15.53                   | 12.50                  | 11.25                 |
| 8,301.0                                                          | 60.80           | 85.50       | 8,201.4               | -60.1        | 203.9        | 205.6                   | 12.07                   | 11.88                  | -2.50                 |
| 8,333.0                                                          | 63.60           | 87.80       | 8,216.3               | -58.5        | 232.2        | 233.7                   | 10.82                   | 8.75                   | 7.19                  |
| 8,364.0                                                          | 67.10           | 91.00       | 8,229.2               | -58.2        | 260.3        | 261.9                   | 14.68                   | 11.29                  | 10.32                 |
| 8,396.0                                                          | 71.80           | 89.90       | 8,240.5               | -58.4        | 290.3        | 291.8                   | 15.04                   | 14.69                  | -3.44                 |
| 8,428.0                                                          | 77.80           | 89.90       | 8,248.8               | -58.4        | 321.2        | 322.7                   | 18.75                   | 18.75                  | 0.00                  |
| 8,459.0                                                          | 83.00           | 89.30       | 8,254.0               | -58.2        | 351.7        | 353.2                   | 16.88                   | 16.77                  | -1.94                 |
| 8,491.0                                                          | 86.50           | 89.40       | 8,256.9               | -57.8        | 383.6        | 385.1                   | 10.94                   | 10.94                  | 0.31                  |
| 8,587.0                                                          | 88.20           | 90.70       | 8,261.4               | -57.9        | 479.5        | 480.9                   | 2.23                    | 1.77                   | 1.35                  |
| 8,625.0                                                          | 88.96           | 90.70       | 8,262.3               | -58.3        | 517.5        | 518.9                   | 2.00                    | 2.00                   | 0.00                  |
| EOC - 8625.0' MD, 8262.3' TVD, 88.96° INC, 90.70° AZI, 518.9' VS |                 |             |                       |              |              |                         |                         |                        |                       |
| 8,682.0                                                          | 90.10           | 90.70       | 8,262.8               | -59.0        | 574.4        | 575.9                   | 2.00                    | 2.00                   | 0.00                  |
| 8,778.0                                                          | 90.50           | 90.40       | 8,262.3               | -60.0        | 670.4        | 671.9                   | 0.52                    | 0.42                   | -0.31                 |
| 8,874.0                                                          | 90.80           | 91.50       | 8,261.2               | -61.6        | 766.4        | 767.9                   | 1.19                    | 0.31                   | 1.15                  |
| 8,968.0                                                          | 90.40           | 92.30       | 8,260.2               | -64.7        | 860.4        | 861.9                   | 0.95                    | -0.43                  | 0.85                  |
| 9,063.0                                                          | 90.30           | 92.10       | 8,259.6               | -68.3        | 955.3        | 956.8                   | 0.24                    | -0.11                  | -0.21                 |
| 9,158.0                                                          | 89.90           | 91.40       | 8,259.5               | -71.2        | 1,050.2      | 1,051.8                 | 0.85                    | -0.42                  | -0.74                 |
| 9,254.0                                                          | 91.30           | 92.80       | 8,258.5               | -74.7        | 1,146.2      | 1,147.8                 | 2.06                    | 1.46                   | 1.46                  |
| 9,348.0                                                          | 91.70           | 92.40       | 8,256.0               | -79.0        | 1,240.0      | 1,241.8                 | 0.60                    | 0.43                   | -0.43                 |
| 9,443.0                                                          | 92.10           | 92.20       | 8,252.8               | -82.8        | 1,334.9      | 1,336.7                 | 0.47                    | 0.42                   | -0.21                 |
| 9,539.0                                                          | 91.20           | 91.70       | 8,250.1               | -86.1        | 1,430.8      | 1,432.7                 | 1.07                    | -0.94                  | -0.52                 |
| 9,634.0                                                          | 89.80           | 90.80       | 8,249.3               | -88.2        | 1,525.8      | 1,527.7                 | 1.75                    | -1.47                  | -0.95                 |
| 9,730.0                                                          | 86.90           | 90.10       | 8,252.0               | -88.9        | 1,621.7      | 1,623.6                 | 3.11                    | -3.02                  | -0.73                 |
| 9,825.0                                                          | 87.50           | 90.50       | 8,256.7               | -89.4        | 1,716.6      | 1,718.5                 | 0.76                    | 0.63                   | 0.42                  |
| 9,920.0                                                          | 88.10           | 90.50       | 8,260.3               | -90.2        | 1,811.5      | 1,813.4                 | 0.63                    | 0.63                   | 0.00                  |
| 10,016.0                                                         | 87.30           | 89.90       | 8,264.2               | -90.6        | 1,907.5      | 1,909.3                 | 1.04                    | -0.83                  | -0.63                 |
| 10,112.0                                                         | 87.40           | 91.20       | 8,268.6               | -91.5        | 2,003.4      | 2,005.1                 | 1.36                    | 0.10                   | 1.35                  |
| 10,207.0                                                         | 86.50           | 90.80       | 8,273.6               | -93.1        | 2,098.2      | 2,100.0                 | 1.04                    | -0.95                  | -0.42                 |
| 10,303.0                                                         | 87.00           | 91.20       | 8,279.1               | -94.8        | 2,194.0      | 2,195.8                 | 0.67                    | 0.52                   | 0.42                  |
| 10,398.0                                                         | 89.30           | 91.80       | 8,282.2               | -97.3        | 2,288.9      | 2,290.8                 | 2.50                    | 2.42                   | 0.63                  |
| 10,493.0                                                         | 90.00           | 90.90       | 8,282.7               | -99.5        | 2,383.9      | 2,385.8                 | 1.20                    | 0.74                   | -0.95                 |
| 10,589.0                                                         | 90.20           | 90.70       | 8,282.6               | -100.9       | 2,479.9      | 2,481.8                 | 0.29                    | 0.21                   | -0.21                 |
| 10,685.0                                                         | 90.70           | 90.60       | 8,281.8               | -102.0       | 2,575.9      | 2,577.8                 | 0.53                    | 0.52                   | -0.10                 |
| 10,780.0                                                         | 90.90           | 90.20       | 8,280.5               | -102.6       | 2,670.9      | 2,672.7                 | 0.47                    | 0.21                   | -0.42                 |
| 10,876.0                                                         | 90.40           | 89.90       | 8,279.4               | -102.7       | 2,766.9      | 2,768.7                 | 0.61                    | -0.52                  | -0.31                 |
| 10,971.0                                                         | 89.30           | 90.10       | 8,279.7               | -102.7       | 2,861.9      | 2,863.6                 | 1.18                    | -1.16                  | 0.21                  |
| 11,066.0                                                         | 89.70           | 90.00       | 8,280.5               | -102.8       | 2,956.9      | 2,958.6                 | 0.43                    | 0.42                   | -0.11                 |
| 11,161.0                                                         | 89.00           | 90.10       | 8,281.6               | -102.9       | 3,051.9      | 3,053.6                 | 0.74                    | -0.74                  | 0.11                  |
| 11,257.0                                                         | 88.60           | 90.10       | 8,283.6               | -103.0       | 3,147.8      | 3,149.5                 | 0.42                    | -0.42                  | 0.00                  |

**Company:** COG Operating LLC  
**Project:** Eddy County, NM (NAD 83)  
**Site:** Baby Buddha 13 Fed  
**Well:** #1H  
**Wellbore:** OH  
**Design:** OH

**Local Co-ordinate Reference:** Site Baby Buddha 13 Fed  
**TVD Reference:** WELL @ 2965.5usft (Silver Oak #7 - 17.5' KB)  
**MD Reference:** WELL @ 2965.5usft (Silver Oak #7 - 17.5' KB)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Database:** Houston R5000 Database

## 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) |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| 11,352.0              | 87.40           | 91.10       | 8,286.9               | -104.0       | 3,242.8      | 3,244.4                 | 1.64                    | -1.26                  | 1.05                  |
| 11,447.0              | 88.00           | 91.10       | 8,290.7               | -105.9       | 3,337.7      | 3,339.3                 | 0.63                    | 0.63                   | 0.00                  |
| 11,543.0              | 87.10           | 92.10       | 8,294.8               | -108.5       | 3,433.6      | 3,435.3                 | 1.40                    | -0.94                  | 1.04                  |
| 11,638.0              | 87.50           | 92.10       | 8,299.3               | -112.0       | 3,528.4      | 3,530.1                 | 0.42                    | 0.42                   | 0.00                  |
| 11,733.0              | 88.50           | 92.00       | 8,302.6               | -115.4       | 3,623.3      | 3,625.1                 | 1.06                    | 1.05                   | -0.11                 |
| 11,829.0              | 88.40           | 91.80       | 8,305.2               | -118.6       | 3,719.2      | 3,721.0                 | 0.23                    | -0.10                  | -0.21                 |
| 11,924.0              | 89.30           | 91.90       | 8,307.1               | -121.7       | 3,814.1      | 3,816.0                 | 0.95                    | 0.95                   | 0.11                  |
| 12,019.0              | 87.20           | 93.10       | 8,310.0               | -125.8       | 3,909.0      | 3,911.0                 | 2.55                    | -2.21                  | 1.26                  |
| 12,115.0              | 87.80           | 93.50       | 8,314.2               | -131.3       | 4,004.7      | 4,006.8                 | 0.75                    | 0.63                   | 0.42                  |
| 12,210.0              | 89.10           | 93.40       | 8,316.8               | -137.0       | 4,099.5      | 4,101.7                 | 1.37                    | 1.37                   | -0.11                 |
| 12,306.0              | 89.10           | 92.60       | 8,318.3               | -142.1       | 4,195.4      | 4,197.7                 | 0.83                    | 0.00                   | -0.83                 |
| 12,401.0              | 89.20           | 92.30       | 8,319.7               | -146.1       | 4,290.3      | 4,292.7                 | 0.33                    | 0.11                   | -0.32                 |
| 12,496.0              | 86.70           | 92.30       | 8,323.1               | -149.9       | 4,385.1      | 4,387.6                 | 2.63                    | -2.63                  | 0.00                  |
| 12,592.0              | 87.00           | 91.70       | 8,328.3               | -153.3       | 4,480.9      | 4,483.5                 | 0.70                    | 0.31                   | -0.63                 |
| 12,687.0              | 88.80           | 91.60       | 8,331.8               | -156.0       | 4,575.8      | 4,578.4                 | 1.90                    | 1.89                   | -0.11                 |
| 12,782.0              | 89.50           | 90.60       | 8,333.2               | -157.8       | 4,670.8      | 4,673.4                 | 1.28                    | 0.74                   | -1.05                 |
| 12,821.0              | 89.60           | 90.30       | 8,333.5               | -158.1       | 4,709.8      | 4,712.4                 | 0.81                    | 0.26                   | -0.77                 |
| 12,878.0              | 89.60           | 90.30       | 8,333.9               | -158.4       | 4,766.8      | 4,769.4                 | 0.00                    | 0.00                   | 0.00                  |

BHL - 12878.0' MD, 8333.9' TVD, 89.60° INC, 90.30° AZI, -158.4' N, 4766.8' E, 4769.4' VS

## Design Annotations

| Measured<br>Depth<br>(usft) | Vertical<br>Depth<br>(usft) | Local Coordinates |                 | Comment                                                                         |
|-----------------------------|-----------------------------|-------------------|-----------------|---------------------------------------------------------------------------------|
|                             |                             | +N/-S<br>(usft)   | +E/-W<br>(usft) |                                                                                 |
| 7,696.0                     | 7,694.2                     | -39.7             | -70.6           | KOP - 7696.0' MD, 7694.2' TVD, 1.20° INC, 157.10° AZI, -69.4' VS                |
| 8,224.9                     | 8,159.1                     | -65.8             | 141.0           | PP - 8224.9' MD, 8159.1' TVD, 51.37° INC, 142.8' VS                             |
| 8,625.0                     | 8,262.3                     | -58.3             | 517.5           | EOC - 8625.0' MD, 8262.3' TVD, 88.96° INC, 90.70° AZI, 518.9' VS                |
| 12,878.0                    | 8,333.9                     | -158.4            | 4,766.8         | BHL - 12878.0' MD, 8333.9' TVD, 89.60° INC, 90.30° AZI, -158.4' N, 4766.8' E, . |

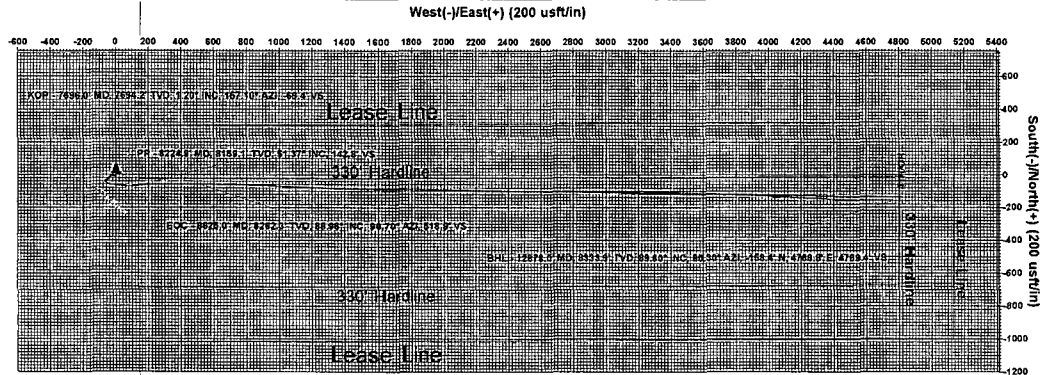
Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_

COG Operating LLC  
 Project: Eddy County, NM (NAD 83)  
 Site: Baby Buddha 13 Fed  
 Well: #1H  
 Wellbore: OH  
 Plan: Plan #4 (#1H/OH)



Azimuths to Grid North  
 True North: -0.15°  
 Magnetic North: 7.50°

Magnetic Field  
 Strength: 48392.0nT  
 Dip Angle: 59.93°  
 Date: 7/11/2012  
 Model: IGRF200510



#### Section Details

| Sec | MD      | Inc   | Azi   | TVD    | +N/-S  | +E/-W  | Oleg | TFace  | VFace  | Target          |
|-----|---------|-------|-------|--------|--------|--------|------|--------|--------|-----------------|
| 1   | 10685.0 | 90.70 | 90.60 | 8281.8 | -102.0 | 2575.9 | 0.00 | 0.00   | 2577.8 |                 |
| 2   | 10805.4 | 88.31 | 90.91 | 8282.9 | -103.6 | 2696.2 | 2.00 | 172.56 | 2698.1 |                 |
| 3   | 12916.2 | 88.31 | 90.91 | 8345.0 | -137.1 | 4805.9 | 0.00 | 0.00   | 4807.9 | PBHL (BB13F#1H) |

#### WELL DETAILS: #1H

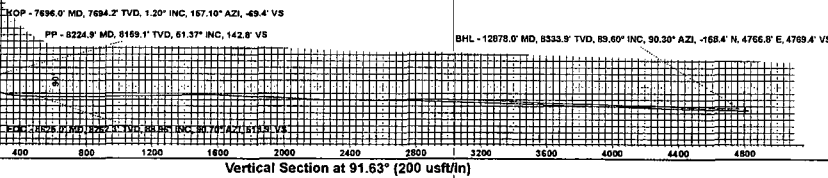
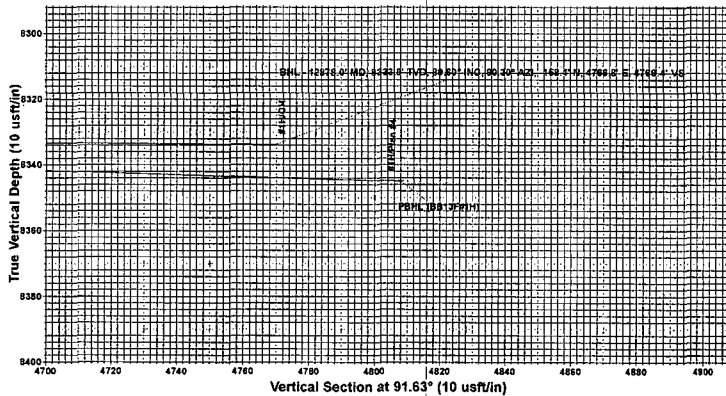
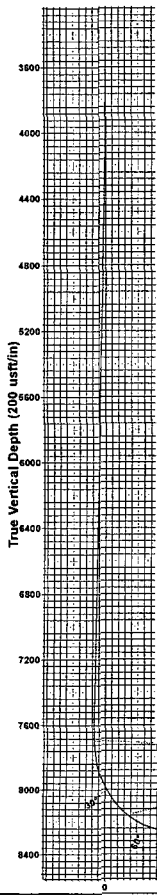
Ground Elevation:: 2948.0  
 RKB Elevation: WELL @ 2965.5usft (Silver Oak #7 - 17.5' KB)  
 Rig Name: Silver Oak #7 - 17.5' KB

| Northing  | Easting   | Latitude        | Longitude        |
|-----------|-----------|-----------------|------------------|
| 379063.53 | 629518.08 | 32° 2' 30.502 N | 104° 2' 55.465 W |

#### DESIGN TARGET DETAILS

| Name            | TVD    | +N/-S  | +E/-W  | Northing  | Easting   |
|-----------------|--------|--------|--------|-----------|-----------|
| PBHL (BB13F#1H) | 8345.0 | -137.1 | 4805.9 | 378926.40 | 634324.01 |

PROJECT DETAILS: Eddy County, NM (NAD 83)  
 Geodetic System: US State Plane 1983  
 Datum: North American Datum 1983  
 Ellipsoid: GRS 1980  
 Zone: New Mexico Eastern Zone  
 System Datum: Mean Sea Level  
 Local North: Grid



Crescent Directional Drilling  
 7715 West Industrial Ave. Midland, Tx 79706  
 Phone: 432-618-1135

Plan: Plan #4 (#1H/OH)  
 Created By: Matt Higgins Date: 11:00, October 26 2012