

## Results of Directional Survey

|             |                     |           |                                   |
|-------------|---------------------|-----------|-----------------------------------|
| API number: | <b>30-025-40090</b> |           |                                   |
| OGRID:      |                     | Operator: | <i>COG RESOURCES</i>              |
|             |                     | Property: | <b>DOS XX 27 FEDERAL COM</b> # 1H |

|         |        |          |           |                |                |
|---------|--------|----------|-----------|----------------|----------------|
| surface | ULSTR: | <b>A</b> | <b>27</b> | <b>T 24S</b>   | <b>R 32E</b>   |
|         |        |          |           | <b>440 FNL</b> | <b>440 FEL</b> |

|              |           |               |            |                 |                |
|--------------|-----------|---------------|------------|-----------------|----------------|
| BH Loc       | ULSTR:    | <b>P</b>      | <b>27</b>  | <b>T 24S</b>    | <b>R 32E</b>   |
| <b>13684</b> | <b>MD</b> | <b>9595.0</b> | <b>TVD</b> | <b>350 FSL</b>  | <b>365 FEL</b> |
|              |           |               |            | <b>4930 FNL</b> |                |

|             |           |               |            |                 |                |
|-------------|-----------|---------------|------------|-----------------|----------------|
| Top Perf/OH | ULSTR:    | <b>A</b>      | <b>27</b>  | <b>T 24S</b>    | <b>R 32E</b>   |
| <b>9837</b> | <b>MD</b> | <b>9592.6</b> | <b>TVD</b> | <b>1087 FNL</b> | <b>398 FEL</b> |

|              |           |               |            |                 |                |
|--------------|-----------|---------------|------------|-----------------|----------------|
| Bot Perf/OH  | ULSTR:    | <b>P</b>      | <b>27</b>  | <b>T 24S</b>    | <b>R 32E</b>   |
| <b>13589</b> | <b>MD</b> | <b>9591.5</b> | <b>TVD</b> | <b>444 FSL</b>  | <b>370 FEL</b> |
|              |           |               |            | <b>4836 FNL</b> |                |

|              |              |          |       |         |
|--------------|--------------|----------|-------|---------|
|              | MD           | N/S      | E/W   | VD      |
|              | 9933         | -743.10  | 37.60 | 9597.2  |
| TOP PERFS/OH | <b>9837</b>  | -647.25  | 41.95 | 9592.55 |
|              | 9997         | -807.00  | 34.70 | 9600.30 |
|              | 13579        | -4385.60 | 69.60 | 9591.10 |
| BOT PERFS/OH | <b>13589</b> | -4395.58 | 70.06 | 9591.46 |
|              | 13629        | -4435.50 | 71.90 | 9592.90 |

|              |              |          |       |         |
|--------------|--------------|----------|-------|---------|
| NEXT TO LAST | 13629        | -4435.50 | 71.90 | 9592.90 |
| LAST READING | 13679        | -4485.40 | 74.30 | 9594.80 |
| TD           | <b>13684</b> | -4490.39 | 74.54 | 9594.99 |

|                  |      |    |     |    |
|------------------|------|----|-----|----|
| Surface Location | 440  | FN | 440 | FE |
| Projected BHL    | 4930 | FN | 365 | FE |
| Location of      |      |    |     |    |
| Top Perfs/OH     | 1087 | FN | 398 | FE |
| Bottom Perfs/OH  | 4836 | FN | 370 | FE |

### SUMMARY of Subsurface Locations

|                  |              |      |    |     |    |             |
|------------------|--------------|------|----|-----|----|-------------|
| Surface Location | A-27-24S-32E | 440  | FN | 440 | FE | Vert. Depth |
|                  |              |      |    |     |    |             |
| Top Perfs/OH     | A-27-24S-32E | 1087 | FN | 398 | FE | 9592.55     |
| Bottom Perfs/OH  | P-27-24S-32E | 4836 | FN | 370 | FE | 9591.46     |
|                  |              |      |    |     |    |             |
| Projected TD     | P-27-24S-32E | 4930 | FN | 365 | FE | 9594.99     |

MAY 02 2013



HOBBS OCD

APR 19 2013

RECEIVED

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

January 31, 2013

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

SUR: A-27-24s-32e, 440/N & 440/E  
BHL: P-27-24s-32e, 4930/N & 365/E  
API # 30-025-40090

RE: Dos XX 27 Fed Com #1H  
440' FNL & 440' FEL  
Sec. 27, T24S, R32E  
Lea County, New Mexico

Dear Sir,

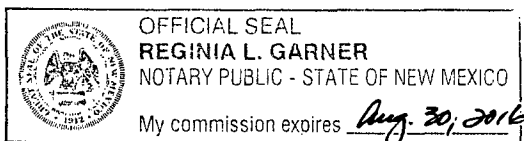
The attached is the Deviation Survey for the above captioned well.

Very truly yours,

Eddie LaRue  
Operations Manager

State of New Mexico }  
County of Eddy }

*The foregoing was acknowledged before me this 31<sup>st</sup> day of January, 2013.*

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

| Date      | Depth | Deviation | Direction | TVD     | Horiz Disp |
|-----------|-------|-----------|-----------|---------|------------|
| 1/6/2013  | 353   | 1.00      |           |         |            |
| 1/6/2013  | 597   | 1.40      |           |         |            |
| 1/7/2013  | 883   | 2.10      |           | 959.00  |            |
| 1/7/2013  | 1053  | 1.40      |           | 1129.00 |            |
| 1/9/2013  | 1164  | 1.80      | 176.90    | 1163.81 | 18.28      |
| 1/9/2013  | 1260  | 2.20      | 177.10    | 1259.75 | 21.63      |
| 1/9/2013  | 1355  | 1.70      | 200.80    | 1354.72 | 23.99      |
| 1/9/2013  | 1450  | 0.70      | 275.10    | 1449.71 | 24.46      |
| 1/9/2013  | 1546  | 1.40      | 300.60    | 1545.70 | 23.81      |
| 1/9/2013  | 1641  | 1.80      | 306.30    | 1640.66 | 22.33      |
| 1/9/2013  | 1832  | 2.00      | 329.80    | 1831.51 | 17.13      |
| 1/9/2013  | 2023  | 2.50      | 347.50    | 2022.38 | 10.18      |
| 1/10/2013 | 2215  | 1.90      | 11.60     | 2214.26 | 3.56       |
| 1/10/2013 | 2405  | 2.10      | 30.50     | 2404.10 | 3.70       |
| 1/10/2013 | 2501  | 2.10      | 44.80     | 2500.04 | 6.40       |
| 1/10/2013 | 2596  | 2.80      | 57.30     | 2594.95 | 8.69       |
| 1/10/2013 | 2691  | 2.50      | 67.80     | 2689.85 | 10.71      |
| 1/10/2013 | 2787  | 2.20      | 100.20    | 2785.77 | 11.19      |
| 1/10/2013 | 2882  | 2.50      | 116.60    | 2880.70 | 9.70       |
| 1/10/2013 | 2977  | 2.20      | 133.10    | 2975.62 | 7.44       |
| 1/10/2013 | 3167  | 2.90      | 152.90    | 3165.46 | 1.53       |
| 1/10/2013 | 3263  | 2.80      | 165.20    | 3261.34 | 3.41       |
| 1/11/2013 | 3359  | 1.50      | 203.30    | 3357.28 | 6.83       |
| 1/11/2013 | 3454  | 1.80      | 240.50    | 3452.25 | 8.54       |
| 1/11/2013 | 3549  | 2.90      | 240.30    | 3547.17 | 10.25      |
| 1/11/2013 | 3644  | 2.90      | 235.90    | 3642.05 | 12.60      |
| 1/11/2013 | 3739  | 1.20      | 212.90    | 3736.99 | 14.77      |
| 1/11/2013 | 3835  | 0.90      | 195.00    | 3832.97 | 16.32      |
| 1/11/2013 | 3930  | 0.90      | 195.10    | 3927.26 | 17.74      |
| 1/12/2013 | 4026  | 0.90      | 201.01    | 4023.95 | 19.16      |
| 1/12/2013 | 4216  | 0.70      | 154.60    | 4212.94 | 21.28      |
| 1/12/2013 | 4312  | 1.50      | 153.50    | 4309.92 | 22.97      |
| 1/12/2013 | 4503  | 1.80      | 151.90    | 4500.86 | 27.32      |
| 1/12/2013 | 4630  | 2.60      | 155.70    | 4627.76 | 31.71      |
| 1/14/2013 | 4821  | 1.90      | 0.00      | 0.00    | 0.00       |
| 1/14/2013 | 5067  | 1.30      | 0.00      | 0.00    | 0.00       |
| 1/14/2013 | 5567  | 0.40      | 0.00      | 0.00    | 0.00       |
| 1/15/2013 | 6051  | 0.40      | 0.00      | 0.00    | 0.00       |
| 1/15/2013 | 6529  | 0.20      | 0.00      | 0.00    | 0.00       |
| 1/15/2013 | 7003  | 0.10      | 0.00      | 0.00    | 0.00       |
| 1/15/2013 | 7483  | 0.60      | 0.00      | 0.00    | 0.00       |
| 1/15/2013 | 7983  | 0.80      | 0.00      | 0.00    | 0.00       |
| 1/16/2013 | 8469  | 1.10      | 0.00      | 8509.00 | 0.00       |
| 1/16/2013 | 8882  | 0.80      | 0.00      | 0.00    | 0.00       |
| 1/18/2013 | 8915  | 1.10      | 133.10    | 0.00    | 0.00       |
| 1/18/2013 | 8946  | 4.70      | 158.80    | 0.00    | 0.00       |

| Date      | Depth | Deviation | Direction | TVD     | Horiz Disp |
|-----------|-------|-----------|-----------|---------|------------|
| 1/18/2013 | 8978  | 9.10      | 163.00    | 8975.00 | 0.00       |
| 1/18/2013 | 9106  | 22.40     | 173.40    | 9097.00 | 0.00       |
| 1/18/2013 | 9201  | 29.60     | 179.20    | 9182.00 | 0.00       |
| 1/18/2013 | 9233  | 33.40     | 182.00    | 9209.90 | 0.00       |
| 1/18/2013 | 9392  | 43.70     | 177.80    | 9329.60 | 0.00       |
| 1/18/2013 | 9488  | 47.90     | 179.20    | 9397.29 | 0.00       |
| 1/18/2013 | 9520  | 47.30     | 179.20    | 9418.87 | 0.00       |
| 1/19/2013 | 9551  | 48.30     | 179.50    | 9439.69 | 0.00       |
| 1/19/2013 | 9678  | 58.50     | 181.40    | 9516.41 | 0.00       |
| 1/19/2013 | 9742  | 65.70     | 181.30    | 9546.87 | 0.00       |
| 1/19/2013 | 9837  | 74.30     | 181.60    | 9579.00 | 0.00       |
| 1/19/2013 | 9901  | 80.80     | 183.60    | 9593.00 | 0.00       |
| 1/19/2013 | 9997  | 89.50     | 182.00    | 9600.00 | 0.00       |
| 1/20/2013 | 10058 | 90.30     | 182.70    | 9600.47 | 0.00       |
| 1/20/2013 | 10153 | 89.30     | 182.10    | 9600.80 | 0.00       |
| 1/20/2013 | 10248 | 88.40     | 181.80    | 9602.71 | 0.00       |
| 1/20/2013 | 10344 | 87.80     | 183.40    | 9605.00 | 0.00       |
| 1/20/2013 | 10440 | 91.70     | 183.00    | 9606.00 | 0.00       |
| 1/20/2013 | 10535 | 92.20     | 182.70    | 9603.00 | 0.00       |
| 1/20/2013 | 10630 | 91.60     | 182.50    | 9599.93 | 0.00       |
| 1/20/2013 | 10726 | 91.90     | 182.30    | 9596.99 | 0.00       |
| 1/20/2013 | 10821 | 90.00     | 182.10    | 9595.42 | 0.00       |
| 1/21/2013 | 10916 | 88.40     | 181.30    | 9596.75 | 0.00       |
| 1/24/2013 | 11011 | 89.70     | 180.60    | 9598.32 | 0.00       |
| 1/24/2013 | 11202 | 89.70     | 180.00    | 9599.80 | 0.00       |
| 1/24/2013 | 11294 | 89.40     | 180.00    | 9600.23 | 0.00       |
| 1/24/2013 | 11393 | 89.30     | 178.80    | 9601.00 | 0.00       |
| 1/24/2013 | 11584 | 88.00     | 178.50    | 9605.00 | 0.00       |
| 1/24/2013 | 11680 | 89.60     | 177.40    | 9607.00 | 0.00       |
| 1/24/2013 | 11776 | 90.50     | 178.30    | 9607.67 | 0.00       |
| 1/24/2013 | 11872 | 90.80     | 177.90    | 9606.58 | 0.00       |
| 1/24/2013 | 11967 | 86.60     | 176.30    | 9608.74 | 0.00       |
| 1/25/2013 | 12062 | 89.30     | 178.10    | 9612.14 | 0.00       |
| 1/25/2013 | 12157 | 91.10     | 178.60    | 9611.81 | 0.00       |
| 1/25/2013 | 12252 | 91.60     | 178.60    | 9609.27 | 0.00       |
| 1/26/2013 | 12348 | 93.60     | 179.00    | 4605.21 | 0.00       |
| 1/26/2013 | 12539 | 92.10     | 177.10    | 9594.97 | 0.00       |
| 1/26/2013 | 12634 | 89.30     | 177.80    | 9593.81 | 0.00       |
| 1/26/2013 | 12856 | 88.60     | 176.90    | 9597.55 | 0.00       |
| 1/26/2013 | 12920 | 89.30     | 177.80    | 9598.72 | 0.00       |
| 1/27/2013 | 13109 | 89.50     | 177.60    | 9599.71 | 0.00       |
| 1/27/2013 | 13202 | 92.20     | 177.80    | 9598.33 | 0.00       |
| 1/27/2013 | 13295 | 92.60     | 178.50    | 9594.44 | 0.00       |
| 1/27/2013 | 13389 | 90.00     | 179.20    | 9592.30 | 0.00       |
| 1/28/2013 | 13579 | 88.20     | 177.60    | 9593.98 | 0.00       |
| 1/28/2013 | 13629 | 87.80     | 177.20    | 9595.72 | 0.00       |



A GYRO TECHNOLOGIES INC. COMPANY

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

HOBBS OCD

APR 19 2013

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January 21, 2013

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

SUR: A-27-24s-32e, 440/N & 440/E  
BHL: P-27-24s-32e, 4930/N & 365/E  
API # 30-025-40090

Attn: Kanicia Castillo

Re: Dos XX 27 Federal Com No 001H

Please find enclosed a copy of the survey from 0' to 8,830' ran on the above referenced well.

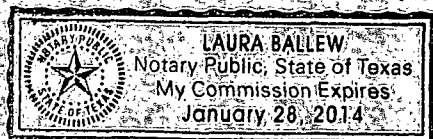
If I can be of any further service, please do not hesitate to call me at 800-606-4976.

Sincerely,

  
Keith Havelka  
Operations

STATE OF TEXAS §  
§  
COUNTY OF NUECES §

This instrument was acknowledged before me on the 21<sup>st</sup> day of January, A.D., 2013, by Keith Havelka.



  
Laura Ballew  
Notary Public, State of Texas

Company: COG Operating LLC; (Concho)  
Lease/Well: Dos XX 27 Federal Com/No 001H



Rig Name: Silver Oak #7  
State/County: New Mexico/Eddy  
Latitude: -32.19, Longitude: -103.66  
GRID North is 0.36 Degrees West of True North  
VS-Azi: 0.00 Degrees



Depth Reference : RKB=19 Feet

DRILLOG.HA GYRO SURVEY CALCULATIONS

Filename: dos xx 27 fed com #1h.ut

Minimum Curvature Method

Report Date/Time: 1/21/2013 / 12:38

Vaughn Energy Services

Midland, Texas

432-563-5444

Surveyor: Logan Henry

Dos XX 27 Federal Com No 001H / API 30-025-40090

| Measured<br>Depth<br>FT | Incl<br>Angle<br>Deg | Drift<br>Direction<br>Deg | TVD<br>FT | +N/-S<br>FT | +E/-W<br>FT | Vertical<br>Section<br>FT | Closure<br>Distance<br>FT | Closure<br>Direction<br>Deg | Dogleg<br>Severity<br>Deg/100 |
|-------------------------|----------------------|---------------------------|-----------|-------------|-------------|---------------------------|---------------------------|-----------------------------|-------------------------------|
| 0.00                    | 0.00                 | 0.00                      | 0.00      | 0.00        | 0.00        | 0.00                      | 0.00                      | 0.00                        | ****                          |
| 100.00                  | 0.43                 | 190.31                    | 100.00    | -0.37       | -0.07       | -0.37                     | 0.37                      | 190.31                      | 0.43                          |
| 200.00                  | 0.74                 | 153.99                    | 199.99    | -1.32       | 0.15        | -1.32                     | 1.32                      | 173.49                      | 0.47                          |
| 300.00                  | 0.94                 | 154.63                    | 299.98    | -2.64       | 0.79        | -2.64                     | 2.75                      | 163.42                      | 0.20                          |
| 400.00                  | 1.14                 | 153.28                    | 399.97    | -4.27       | 1.59        | -4.27                     | 4.56                      | 159.64                      | 0.20                          |
| 500.00                  | 1.23                 | 155.86                    | 499.95    | -6.14       | 2.47        | -6.14                     | 6.62                      | 158.07                      | 0.11                          |
| 600.00                  | 1.33                 | 156.43                    | 599.92    | -8.19       | 3.38        | -8.19                     | 8.86                      | 157.59                      | 0.09                          |
| 700.00                  | 1.58                 | 158.05                    | 699.89    | -10.53      | 4.35        | -10.53                    | 11.39                     | 157.52                      | 0.25                          |
| 800.00                  | 1.83                 | 159.68                    | 799.84    | -13.30      | 5.42        | -13.30                    | 14.36                     | 157.81                      | 0.25                          |
| 900.00                  | 1.66                 | 157.16                    | 899.80    | -16.13      | 6.54        | -16.13                    | 17.40                     | 157.93                      | 0.18                          |
| 1000.00                 | 1.50                 | 156.64                    | 999.76    | -18.67      | 7.62        | -18.67                    | 20.17                     | 157.79                      | 0.16                          |
| 1100.00                 | 1.66                 | 168.01                    | 1099.72   | -21.29      | 8.44        | -21.29                    | 22.91                     | 158.37                      | 0.35                          |
| 1200.00                 | 1.82                 | 179.38                    | 1199.68   | -24.30      | 8.76        | -24.30                    | 25.83                     | 160.17                      | 0.38                          |
| 1300.00                 | 1.15                 | 198.93                    | 1299.64   | -26.85      | 8.45        | -26.85                    | 28.14                     | 162.52                      | 0.83                          |
| 1400.00                 | 0.48                 | 218.49                    | 1399.63   | -28.13      | 7.86        | -28.13                    | 29.21                     | 164.38                      | 0.72                          |
| 1500.00                 | 1.09                 | 260.16                    | 1499.62   | -28.62      | 6.66        | -28.62                    | 29.39                     | 166.90                      | 0.80                          |
| 1600.00                 | 1.70                 | 280.84                    | 1599.59   | -28.51      | 4.27        | -28.51                    | 28.82                     | 171.49                      | 0.78                          |
| 1700.00                 | 2.07                 | 307.72                    | 1699.54   | -27.12      | 1.38        | -27.12                    | 27.16                     | 177.09                      | 0.95                          |
| 1800.00                 | 2.44                 | 313.59                    | 1799.46   | -24.55      | -1.59       | -24.55                    | 24.60                     | 183.72                      | 0.44                          |

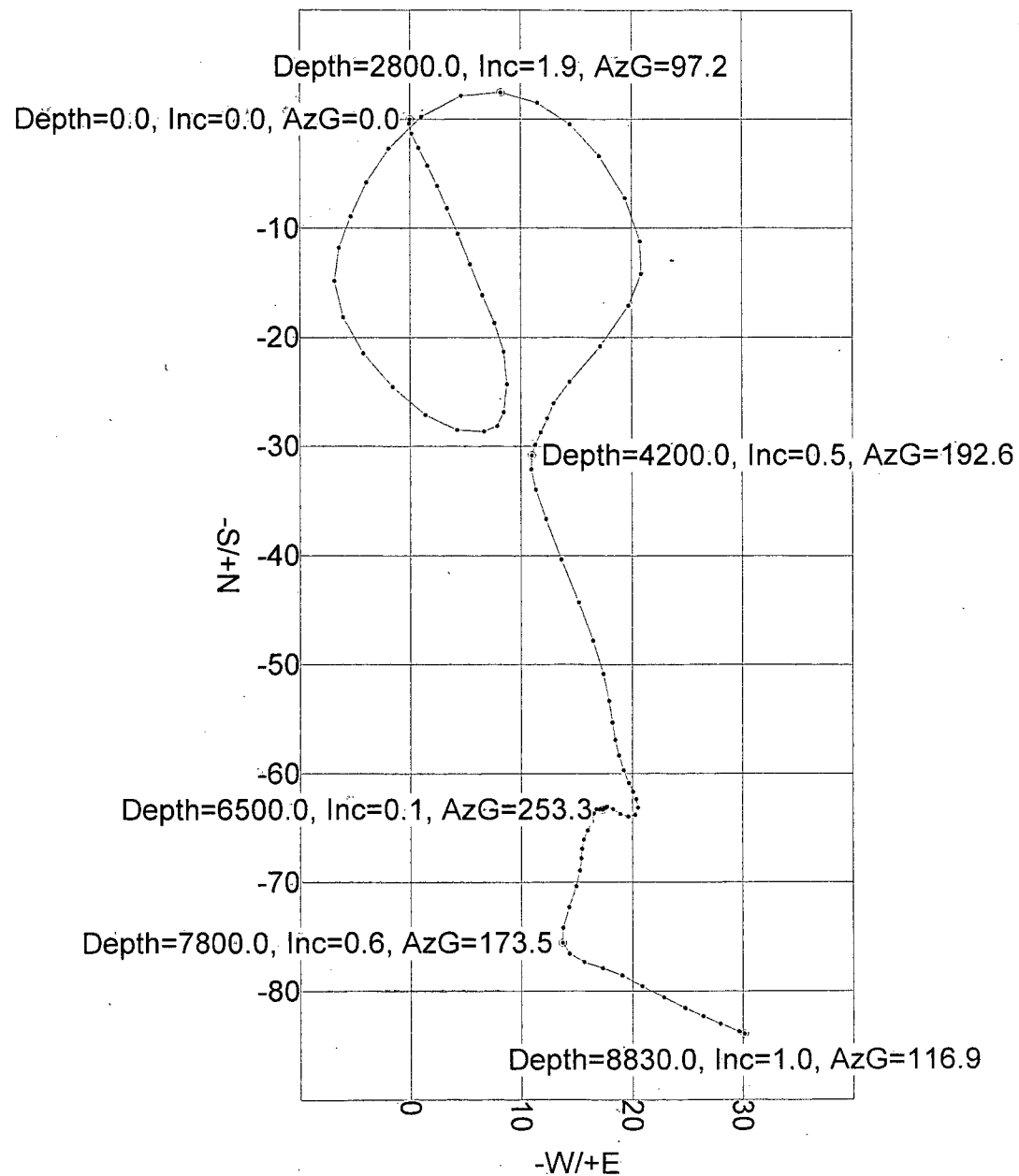
| Measured<br>Depth<br>FT | Incl<br>Angle<br>Deg | Drift<br>Direction<br>Deg | TVD<br>FT | +N/-S<br>FT | +E/-W<br>FT | Vertical<br>Section<br>FT | Closure<br>Distance<br>FT | Closure<br>Direction<br>Deg | Dogleg<br>Severity<br>Deg/100 |
|-------------------------|----------------------|---------------------------|-----------|-------------|-------------|---------------------------|---------------------------|-----------------------------|-------------------------------|
| 1900.00                 | 2.27                 | 325.41                    | 1899.38   | -21.45      | -4.26       | -21.45                    | 21.87                     | 191.24                      | 0.52                          |
| 2000.00                 | 2.09                 | 337.23                    | 1999.31   | -18.14      | -6.09       | -18.14                    | 19.13                     | 198.55                      | 0.48                          |
| 2100.00                 | 1.88                 | 357.76                    | 2099.25   | -14.82      | -6.86       | -14.82                    | 16.33                     | 204.84                      | 0.74                          |
| 2200.00                 | 1.68                 | 18.29                     | 2199.20   | -11.78      | -6.46       | -11.78                    | 13.44                     | 208.75                      | 0.67                          |
| 2300.00                 | 1.85                 | 22.41                     | 2299.15   | -8.90       | -5.39       | -8.90                     | 10.40                     | 211.19                      | 0.21                          |
| 2400.00                 | 2.02                 | 26.53                     | 2399.10   | -5.83       | -3.98       | -5.83                     | 7.06                      | 214.36                      | 0.22                          |
| 2500.00                 | 2.28                 | 38.95                     | 2499.03   | -2.70       | -1.94       | -2.70                     | 3.33                      | 215.77                      | 0.53                          |
| 2600.00                 | 2.54                 | 51.37                     | 2598.94   | 0.23        | 1.04        | 0.23                      | 1.06                      | 77.42                       | 0.58                          |
| 2700.00                 | 2.24                 | 74.30                     | 2698.85   | 2.14        | 4.65        | 2.14                      | 5.12                      | 65.26                       | 0.99                          |
| 2800.00                 | 1.95                 | 97.23                     | 2798.79   | 2.46        | 8.22        | 2.46                      | 8.58                      | 73.35                       | 0.88                          |
| 2900.00                 | 2.03                 | 114.72                    | 2898.73   | 1.51        | 11.51       | 1.51                      | 11.61                     | 82.55                       | 0.61                          |
| 3000.00                 | 2.10                 | 132.21                    | 2998.66   | -0.47       | 14.47       | -0.47                     | 14.48                     | 91.85                       | 0.63                          |
| 3100.00                 | 2.43                 | 143.26                    | 3098.59   | -3.40       | 17.10       | -3.40                     | 17.43                     | 101.24                      | 0.54                          |
| 3200.00                 | 2.75                 | 154.31                    | 3198.49   | -7.26       | 19.41       | -7.26                     | 20.72                     | 110.50                      | 0.59                          |
| 3300.00                 | 2.08                 | 170.14                    | 3298.40   | -11.20      | 20.76       | -11.20                    | 23.59                     | 118.36                      | 0.94                          |
| 3400.00                 | 1.41                 | 190.98                    | 3398.35   | -14.19      | 20.83       | -14.19                    | 25.21                     | 124.27                      | 0.91                          |
| 3500.00                 | 2.19                 | 207.52                    | 3498.30   | -17.09      | 19.72       | -17.09                    | 26.10                     | 130.93                      | 0.93                          |
| 3600.00                 | 2.98                 | 219.06                    | 3598.20   | -20.81      | 17.20       | -20.81                    | 26.99                     | 140.43                      | 0.94                          |
| 3700.00                 | 1.94                 | 221.91                    | 3698.11   | -24.08      | 14.43       | -24.08                    | 28.07                     | 149.07                      | 1.05                          |
| 3800.00                 | 0.90                 | 204.76                    | 3798.08   | -26.05      | 12.97       | -26.05                    | 29.10                     | 153.53                      | 1.11                          |
| 3900.00                 | 0.84                 | 201.27                    | 3898.06   | -27.44      | 12.38       | -27.44                    | 30.10                     | 155.71                      | 0.08                          |
| 4000.00                 | 0.77                 | 207.78                    | 3998.05   | -28.72      | 11.80       | -28.72                    | 31.05                     | 157.66                      | 0.11                          |
| 4100.00                 | 0.65                 | 200.20                    | 4098.05   | -29.85      | 11.29       | -29.85                    | 31.92                     | 159.28                      | 0.15                          |
| 4200.00                 | 0.54                 | 192.62                    | 4198.04   | -30.84      | 10.99       | -30.84                    | 32.74                     | 160.39                      | 0.14                          |
| 4300.00                 | 0.92                 | 177.01                    | 4298.03   | -32.10      | 10.93       | -32.10                    | 33.91                     | 161.20                      | 0.43                          |
| 4400.00                 | 1.30                 | 161.40                    | 4398.01   | -33.98      | 11.33       | -33.98                    | 35.82                     | 161.55                      | 0.48                          |
| 4500.00                 | 1.94                 | 160.73                    | 4497.97   | -36.65      | 12.26       | -36.65                    | 38.65                     | 161.51                      | 0.64                          |
| 4600.00                 | 2.58                 | 158.06                    | 4597.90   | -40.33      | 13.65       | -40.33                    | 42.58                     | 161.30                      | 0.65                          |
| 4700.00                 | 2.29                 | 159.34                    | 4697.80   | -44.29      | 15.20       | -44.29                    | 46.83                     | 161.06                      | 0.29                          |
| 4800.00                 | 2.01                 | 160.62                    | 4797.73   | -47.82      | 16.49       | -47.82                    | 50.58                     | 160.97                      | 0.29                          |
| 4900.00                 | 1.63                 | 166.02                    | 4897.68   | -50.85      | 17.41       | -50.85                    | 53.75                     | 161.10                      | 0.42                          |
| 5000.00                 | 1.25                 | 171.43                    | 4997.65   | -53.31      | 17.92       | -53.31                    | 56.25                     | 161.42                      | 0.40                          |
| 5100.00                 | 1.04                 | 172.76                    | 5097.63   | -55.29      | 18.20       | -55.29                    | 58.21                     | 161.78                      | 0.21                          |
| 5200.00                 | 0.83                 | 168.09                    | 5197.62   | -56.91      | 18.46       | -56.91                    | 59.83                     | 162.02                      | 0.22                          |
| 5300.00                 | 0.83                 | 166.22                    | 5297.61   | -58.32      | 18.79       | -58.32                    | 61.27                     | 162.15                      | 0.03                          |
| 5400.00                 | 0.83                 | 160.35                    | 5397.60   | -59.71      | 19.20       | -59.71                    | 62.72                     | 162.17                      | 0.09                          |
| 5500.00                 | 0.62                 | 155.97                    | 5497.59   | -60.89      | 19.67       | -60.89                    | 63.98                     | 162.10                      | 0.22                          |
| 5600.00                 | 0.41                 | 151.59                    | 5597.59   | -61.70      | 20.06       | -61.70                    | 64.87                     | 161.99                      | 0.21                          |
| 5700.00                 | 0.44                 | 163.37                    | 5697.58   | -62.38      | 20.34       | -62.38                    | 65.61                     | 161.94                      | 0.09                          |

| Measured<br>Depth<br>FT | Incl<br>Angle<br>Deg | Drift<br>Direction<br>Deg | TVD<br>FT | +N/-S<br>FT | +E/-W<br>FT | Vertical<br>Section<br>FT | Closure<br>Distance<br>FT | Closure<br>Direction<br>Deg | Dogleg<br>Severity<br>Deg/100 |
|-------------------------|----------------------|---------------------------|-----------|-------------|-------------|---------------------------|---------------------------|-----------------------------|-------------------------------|
| 5800.00                 | 0.47                 | 173.14                    | 5797.58   | -63.15      | 20.50       | -63.15                    | 66.40                     | 162.02                      | 0.08                          |
| 5900.00                 | 0.44                 | 227.92                    | 5897.58   | -63.82      | 20.26       | -63.82                    | 66.96                     | 162.39                      | 0.42                          |
| 6000.00                 | 0.42                 | 282.69                    | 5997.57   | -64.00      | 19.62       | -64.00                    | 66.94                     | 162.96                      | 0.40                          |
| 6100.00                 | 0.45                 | 297.19                    | 6097.57   | -63.74      | 18.91       | -63.74                    | 66.49                     | 163.47                      | 0.11                          |
| 6200.00                 | 0.48                 | 311.68                    | 6197.57   | -63.28      | 18.26       | -63.28                    | 65.86                     | 163.91                      | 0.12                          |
| 6300.00                 | 0.29                 | 254.24                    | 6297.57   | -63.07      | 17.70       | -63.07                    | 65.51                     | 164.32                      | 0.40                          |
| 6400.00                 | 0.10                 | 196.81                    | 6397.57   | -63.22      | 17.44       | -63.22                    | 65.58                     | 164.58                      | 0.25                          |
| 6500.00                 | 0.13                 | 253.32                    | 6497.57   | -63.33      | 17.31       | -63.33                    | 65.66                     | 164.72                      | 0.11                          |
| 6600.00                 | 0.16                 | 309.83                    | 6597.57   | -63.28      | 17.09       | -63.28                    | 65.54                     | 164.88                      | 0.14                          |
| 6700.00                 | 0.26                 | 247.20                    | 6697.56   | -63.28      | 16.77       | -63.28                    | 65.46                     | 165.15                      | 0.24                          |
| 6800.00                 | 0.37                 | 184.57                    | 6797.56   | -63.69      | 16.54       | -63.69                    | 65.80                     | 165.44                      | 0.34                          |
| 6900.00                 | 0.47                 | 197.66                    | 6897.56   | -64.40      | 16.38       | -64.40                    | 66.45                     | 165.73                      | 0.14                          |
| 7000.00                 | 0.58                 | 210.76                    | 6997.56   | -65.23      | 16.00       | -65.23                    | 67.16                     | 166.22                      | 0.16                          |
| 7100.00                 | 0.52                 | 196.46                    | 7097.55   | -66.10      | 15.61       | -66.10                    | 67.91                     | 166.71                      | 0.15                          |
| 7200.00                 | 0.46                 | 182.16                    | 7197.55   | -66.93      | 15.47       | -66.93                    | 68.69                     | 166.98                      | 0.14                          |
| 7300.00                 | 0.58                 | 186.10                    | 7297.54   | -67.83      | 15.40       | -67.83                    | 69.55                     | 167.21                      | 0.13                          |
| 7400.00                 | 0.70                 | 188.03                    | 7397.54   | -68.93      | 15.26       | -68.93                    | 70.60                     | 167.51                      | 0.12                          |
| 7500.00                 | 1.00                 | 195.07                    | 7497.53   | -70.38      | 14.95       | -70.38                    | 71.95                     | 168.01                      | 0.32                          |
| 7600.00                 | 1.30                 | 202.11                    | 7597.51   | -72.27      | 14.30       | -72.27                    | 73.67                     | 168.81                      | 0.33                          |
| 7700.00                 | 0.97                 | 187.79                    | 7697.49   | -74.16      | 13.76       | -74.16                    | 75.43                     | 169.49                      | 0.43                          |
| 7800.00                 | 0.64                 | 173.47                    | 7797.48   | -75.55      | 13.70       | -75.55                    | 76.79                     | 169.72                      | 0.39                          |
| 7900.00                 | 0.81                 | 128.57                    | 7897.47   | -76.55      | 14.32       | -76.55                    | 77.87                     | 169.40                      | 0.57                          |
| 8000.00                 | 0.98                 | 113.67                    | 7997.46   | -77.33      | 15.65       | -77.33                    | 78.90                     | 168.56                      | 0.29                          |
| 8100.00                 | 1.05                 | 101.87                    | 8097.44   | -77.86      | 17.32       | -77.86                    | 79.76                     | 167.46                      | 0.22                          |
| 8200.00                 | 1.11                 | 120.08                    | 8197.43   | -78.53      | 19.06       | -78.53                    | 80.81                     | 166.36                      | 0.35                          |
| 8300.00                 | 1.23                 | 118.77                    | 8297.40   | -79.53      | 20.84       | -79.53                    | 82.22                     | 165.32                      | 0.11                          |
| 8400.00                 | 1.34                 | 117.46                    | 8397.38   | -80.59      | 22.81       | -80.59                    | 83.75                     | 164.20                      | 0.11                          |
| 8500.00                 | 1.14                 | 115.09                    | 8497.36   | -81.54      | 24.74       | -81.54                    | 85.21                     | 163.12                      | 0.21                          |
| 8600.00                 | 0.94                 | 114.72                    | 8597.34   | -82.31      | 26.38       | -82.31                    | 86.43                     | 162.23                      | 0.20                          |
| 8700.00                 | 1.02                 | 113.26                    | 8697.32   | -83.00      | 27.94       | -83.00                    | 87.57                     | 161.40                      | 0.08                          |
| 8800.00                 | 1.10                 | 111.80                    | 8797.31   | -83.70      | 29.64       | -83.70                    | 88.80                     | 160.50                      | 0.09                          |
| 8830.00                 | 0.95                 | 116.94                    | 8827.30   | -83.92      | 30.13       | -83.92                    | 89.17                     | 160.25                      | 0.57                          |



Vaughn Energy Services  
Midland, Texas  
432-563-5444

Surveyor: Logan Henry  
Dos XX 27 Federal Com No 001H / API 30-025-40090



VES Survey Date: 01/16/2013

COG Production, L.L.C.

FEB 18 2013

ARTESIA, NM



February 11, 2013

New Mexico Energy, Minerals and Natural Resources Department  
Attn: Oil Conservation Division  
1220 South St. Francis Drive  
Santa Fe, NM 87505

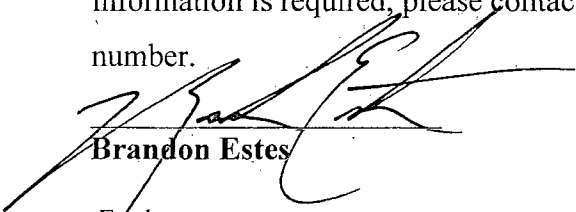
Attn: Jackie Lathan

Re: COG Production, L.L.C.  
DOS XX 27 Federal Com #001H  
Bone Spring  
Lea County, New Mexico  
API# 30-025-40090

Enclosed please find the original and one (1) copy of the survey performed on the reference well by STRYKER ENERGY DIRECTIONAL SERVICES, L.L.C. Other information required by your office is as follows:

| <u>Name &amp; Title</u> | <u>Drainhole No.</u> | <u>Survey Depths</u>    | <u>Dates Performed</u> | <u>Type Survey</u> |
|-------------------------|----------------------|-------------------------|------------------------|--------------------|
| Noah Townsend           | Original Hole        | 8,915 ft. to 13,629 ft. | 01-17-13 to 01-28-13   | MWD Survey         |

A certified plat on which the bottom-hole location is oriented to both surface location and to the lease lines (or unit lines in case of pooling) is attached to the survey report. If any other information is required, please contact the undersigned at the letterhead address and phone number.

  
Brandon Estes

Enclosures

CC:

COG Production, L.L.C.  
Attn: Tim Smith  
2208 W. Main St  
Artesia, NM 88210

COG Production, L.L.C.  
Attn: Stormi Davis  
2208 W. Main St  
Artesia, NM 88210

NMEMaNRD\COG Production, L.L.C.\DOS XX 27 Federal Com #001H\C131012

STRYKER ENERGY DIRECTIONAL SERVICES, L.L.C.  
P.O. Box 1250  
Montgomery, TX 77356  
Office (936) 582-7296 \* Fax (936)-582-7297

**COPY**



# **CONCHO OIL AND GAS OPERATING, L.L.C.**

**LEA COUNTY**

**SECTION 27**

**DOS XX "27" FEDERAL COM #1H**

**Wellbore #1**

**Survey: As Drilled Survey**

SUR: A-27-24s-32e, 440/N & 440/E  
BHL: P-27-24s-32e, 4930/N & 365/E  
API # 30-025-40090

## **Survey Report - Geographic**

**08 February, 2013**





# Stryker Directional

## Survey Report - Geographic



|           |                                      |                              |                                        |
|-----------|--------------------------------------|------------------------------|----------------------------------------|
| Company:  | CONCHO OIL AND GAS OPERATING, L.L.C. | Local Co-ordinate Reference: | Well DOS XX "27" FEDERAL COM #1H       |
| Project:  | LEA COUNTY                           | TVD Reference:               | WELL @ 3600.0usft (Original Well Elev) |
| Site:     | SECTION 27                           | MD Reference:                | WELL @ 3600.0usft (Original Well Elev) |
| Well:     | DOS XX "27" FEDERAL COM #1H          | North Reference:             | Grid                                   |
| Wellbore: | Wellbore #1                          | Survey Calculation Method:   | Minimum Curvature                      |
| Design:   | As-Drilled Survey                    | Database:                    | EDM 5000.1 Single User Db              |

|             |                                      |               |                |
|-------------|--------------------------------------|---------------|----------------|
| Project:    | LEA COUNTY, NM-EAST                  |               |                |
| Map System: | US State Plane 1927 (Exact solution) | System Datum: | Mean Sea Level |
| Geo Datum:  | NAD 1927 (NADCON CONUS)              |               |                |
| Map Zone:   | New Mexico East 3001                 |               |                |

|                       |            |              |                 |                   |                   |
|-----------------------|------------|--------------|-----------------|-------------------|-------------------|
| Site:                 | SECTION 27 |              |                 |                   |                   |
| Site Position:        |            | Northing:    | 435,137.40 usft | Latitude:         | 32° 11' 40.164 N  |
| From:                 | Map        | Easting:     | 709,860.93 usft | Longitude:        | 103° 39' 17.719 W |
| Position Uncertainty: | 0.0 usft   | Slot Radius: | 13-3/16 "       | Grid Convergence: | 0.36 °            |

|                      |                             |          |                     |                 |               |                   |
|----------------------|-----------------------------|----------|---------------------|-----------------|---------------|-------------------|
| Well:                | DOS XX "27" FEDERAL COM #1H |          |                     |                 |               |                   |
| Well Position        | +N/-S                       | 0.0 usft | Northing:           | 435,137.40 usft | Latitude:     | 32° 11' 40.164 N  |
|                      | +E/-W                       | 0.0 usft | Easting:            | 709,860.93 usft | Longitude:    | 103° 39' 17.719 W |
| Position Uncertainty |                             | 0.0 usft | Wellhead Elevation: | usft            | Ground Level: | 3,582.0 usft      |

|           |             |             |                    |                  |                        |
|-----------|-------------|-------------|--------------------|------------------|------------------------|
| Wellbore: | Wellbore #1 |             |                    |                  |                        |
| Magnetics | Model Name  | Sample Date | Declination<br>(°) | Dip Angle<br>(°) | Field Strength<br>(nT) |
|           | IGRF2010    | 1/15/2013   | 7.43               | 60.11            | 48,430                 |

|                   |                            |                 |                 |                  |     |
|-------------------|----------------------------|-----------------|-----------------|------------------|-----|
| Design:           | As-Drilled Survey          |                 |                 |                  |     |
| Audit Notes:      |                            |                 |                 |                  |     |
| Version:          | 1.0                        | Phase:          | ACTUAL          | Tie On Depth:    | 0.0 |
| Vertical Section: | Depth From (TVD)<br>(usft) | +N/-S<br>(usft) | +E/-W<br>(usft) | Direction<br>(°) |     |
|                   | 0.0                        | 0.0             | 0.0             | 160.24           |     |

|                |                 |                                 |           |             |  |
|----------------|-----------------|---------------------------------|-----------|-------------|--|
| Survey Program | Date: 1/28/2013 |                                 |           |             |  |
| From<br>(usft) | To<br>(usft)    | Survey (Wellbore)               | Tool Name | Description |  |
| 100.0          | 8,830.0         | Gyro Survey (Wellbore #1)       |           |             |  |
| 8,915.0        | 13,679.0        | As Drilled Survey (Wellbore #1) |           |             |  |

|                             |                    |                |                             |                 |                 |                           |                          |                  |                   |  |
|-----------------------------|--------------------|----------------|-----------------------------|-----------------|-----------------|---------------------------|--------------------------|------------------|-------------------|--|
| Survey:                     |                    |                |                             |                 |                 |                           |                          |                  |                   |  |
| Measured<br>Depth<br>(usft) | Inclination<br>(°) | Azimuth<br>(°) | Vertical<br>Depth<br>(usft) | +N/-S<br>(usft) | +E/-W<br>(usft) | Map<br>Northing<br>(usft) | Map<br>Easting<br>(usft) | Latitude         | Longitude         |  |
| 8,830.0                     | 0.95               | 116.94         | 8,827.3                     | -84.0           | 30.2            | 435,053.44                | 709,891.09               | 32° 11' 39.331 N | 103° 39' 17.374 W |  |
| TI @ 8830 MD                |                    |                |                             |                 |                 |                           |                          |                  |                   |  |
| 8,915.0                     | 1.10               | 133.10         | 8,912.3                     | -84.8           | 31.4            | 435,052.56                | 709,892.31               | 32° 11' 39.323 N | 103° 39' 17.360 W |  |
| 8,946.0                     | 4.70               | 158.80         | 8,943.2                     | -86.2           | 32.1            | 435,051.18                | 709,892.99               | 32° 11' 39.309 N | 103° 39' 17.352 W |  |
| 8,978.0                     | 9.10               | 163.00         | 8,975.0                     | -89.9           | 33.3            | 435,047.53                | 709,894.20               | 32° 11' 39.273 N | 103° 39' 17.338 W |  |
| 9,026.0                     | 15.70              | 167.00         | 9,021.9                     | -99.8           | 35.8            | 435,037.56                | 709,896.78               | 32° 11' 39.174 N | 103° 39' 17.309 W |  |
| 9,042.0                     | 18.10              | 169.30         | 9,037.2                     | -104.4          | 36.8            | 435,033.01                | 709,897.73               | 32° 11' 39.129 N | 103° 39' 17.299 W |  |
| 9,074.0                     | 18.70              | 171.60         | 9,067.5                     | -114.3          | 38.5            | 435,023.05                | 709,899.40               | 32° 11' 39.030 N | 103° 39' 17.280 W |  |
| 9,106.0                     | 22.40              | 173.40         | 9,097.5                     | -125.5          | 39.9            | 435,011.92                | 709,900.85               | 32° 11' 38.920 N | 103° 39' 17.264 W |  |
| 9,138.0                     | 25.20              | 176.20         | 9,126.8                     | -138.3          | 41.1            | 434,999.06                | 709,902.00               | 32° 11' 38.792 N | 103° 39' 17.251 W |  |
| 9,170.0                     | 27.50              | 177.20         | 9,155.4                     | -152.5          | 41.9            | 434,984.88                | 709,902.81               | 32° 11' 38.652 N | 103° 39' 17.243 W |  |



# Stryker Directional

## Survey Report - Geographic



|           |                                      |                              |                                        |
|-----------|--------------------------------------|------------------------------|----------------------------------------|
| Company:  | CONCHO OIL AND GAS OPERATING, L.L.C. | Local Co-ordinate Reference: | Well DOS XX "27" FEDERAL COM #1H       |
| Project:  | LEA COUNTY                           | TVD Reference:               | WELL @ 3600.0usft (Original Well Elev) |
| Site:     | SECTION 27                           | MD Reference:                | WELL @ 3600.0usft (Original Well Elev) |
| Well:     | DOS XX "27" FEDERAL COM #1H          | North Reference:             | Grid                                   |
| Wellbore: | Wellbore #1                          | Survey Calculation Method:   | Minimum Curvature                      |
| Design:   | A5-Drilled Survey                    | Database:                    | EDM 5000.1 Single User Db              |

| Survey                |                 |             |                       |              |              |                     |                    |                  |                   |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|---------------------|--------------------|------------------|-------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Map Northing (usft) | Map Easting (usft) | Latitude         | Longitude         |
| 9,201.0               | 29.60           | 179.20      | 9,182.7               | -167.3       | 42.3         | 434,970.07          | 709,903.27         | 32° 11' 38.506 N | 103° 39' 17.239 W |
| 9,233.0               | 33.40           | 182.00      | 9,210.0               | -184.0       | 42.1         | 434,953.36          | 709,903.07         | 32° 11' 38.340 N | 103° 39' 17.242 W |
| 9,265.0               | 37.40           | 181.10      | 9,236.0               | -202.6       | 41.7         | 434,934.84          | 709,902.58         | 32° 11' 38.157 N | 103° 39' 17.249 W |
| 9,297.0               | 41.30           | 178.10      | 9,260.8               | -222.8       | 41.8         | 434,914.56          | 709,902.74         | 32° 11' 37.956 N | 103° 39' 17.249 W |
| 9,329.0               | 43.70           | 177.20      | 9,284.4               | -244.4       | 42.7         | 434,892.96          | 709,903.63         | 32° 11' 37.742 N | 103° 39' 17.240 W |
| 9,360.0               | 44.40           | 178.10      | 9,306.6               | -266.0       | 43.6         | 434,871.42          | 709,904.52         | 32° 11' 37.529 N | 103° 39' 17.231 W |
| 9,392.0               | 43.70           | 177.80      | 9,329.6               | -288.2       | 44.4         | 434,849.19          | 709,905.31         | 32° 11' 37.309 N | 103° 39' 17.224 W |
| 9,440.0               | 43.70           | 177.80      | 9,364.3               | -321.3       | 45.7         | 434,816.05          | 709,906.58         | 32° 11' 36.981 N | 103° 39' 17.211 W |
| 9,456.0               | 46.60           | 178.60      | 9,375.6               | -332.7       | 46.0         | 434,804.71          | 709,906.94         | 32° 11' 36.869 N | 103° 39' 17.208 W |
| 9,488.0               | 47.90           | 179.20      | 9,397.4               | -356.2       | 46.5         | 434,781.22          | 709,907.39         | 32° 11' 36.636 N | 103° 39' 17.205 W |
| 9,520.0               | 47.30           | 179.20      | 9,418.9               | -379.8       | 46.8         | 434,757.59          | 709,907.72         | 32° 11' 36.403 N | 103° 39' 17.203 W |
| 9,551.0               | 48.30           | 179.50      | 9,439.8               | -402.8       | 47.1         | 434,734.63          | 709,907.98         | 32° 11' 36.175 N | 103° 39' 17.201 W |
| 9,583.0               | 49.60           | 179.50      | 9,460.8               | -426.9       | 47.3         | 434,710.50          | 709,908.19         | 32° 11' 35.937 N | 103° 39' 17.200 W |
| 9,614.0               | 51.80           | 181.10      | 9,480.4               | -450.9       | 47.1         | 434,686.51          | 709,908.06         | 32° 11' 35.699 N | 103° 39' 17.204 W |
| 9,646.0               | 56.20           | 181.40      | 9,499.2               | -476.8       | 46.6         | 434,660.64          | 709,907.49         | 32° 11' 35.443 N | 103° 39' 17.212 W |
| 9,678.0               | 58.50           | 181.40      | 9,516.5               | -503.7       | 45.9         | 434,633.70          | 709,906.83         | 32° 11' 35.177 N | 103° 39' 17.222 W |
| 9,709.0               | 60.90           | 181.40      | 9,532.1               | -530.4       | 45.3         | 434,606.95          | 709,906.18         | 32° 11' 34.912 N | 103° 39' 17.231 W |
| 9,742.0               | 65.70           | 181.30      | 9,546.9               | -559.9       | 44.6         | 434,577.48          | 709,905.49         | 32° 11' 34.620 N | 103° 39' 17.242 W |
| 9,773.0               | 68.20           | 181.40      | 9,559.1               | -588.4       | 43.9         | 434,548.97          | 709,904.81         | 32° 11' 34.338 N | 103° 39' 17.252 W |
| 9,821.0               | 73.10           | 181.40      | 9,575.0               | -633.7       | 42.8         | 434,503.71          | 709,903.71         | 32° 11' 33.890 N | 103° 39' 17.268 W |
| 9,837.0               | 74.30           | 181.60      | 9,579.5               | -649.0       | 42.4         | 434,488.36          | 709,903.31         | 32° 11' 33.739 N | 103° 39' 17.274 W |
| 9,869.0               | 77.60           | 182.70      | 9,587.2               | -680.1       | 41.2         | 434,457.34          | 709,902.14         | 32° 11' 33.432 N | 103° 39' 17.289 W |
| 9,901.0               | 80.80           | 183.60      | 9,593.2               | -711.4       | 39.5         | 434,425.96          | 709,900.41         | 32° 11' 33.121 N | 103° 39' 17.312 W |
| 9,933.0               | 84.90           | 183.20      | 9,597.2               | -743.1       | 37.6         | 434,394.27          | 709,898.53         | 32° 11' 32.808 N | 103° 39' 17.336 W |
| 9,997.0               | 89.50           | 182.00      | 9,600.3               | -807.0       | 34.7         | 434,330.43          | 709,895.63         | 32° 11' 32.176 N | 103° 39' 17.375 W |
| 10,058.0              | 90.30           | 182.70      | 9,600.4               | -867.9       | 32.2         | 434,269.48          | 709,893.13         | 32° 11' 31.573 N | 103° 39' 17.408 W |
| 10,153.0              | 89.30           | 182.10      | 9,600.8               | -962.8       | 28.2         | 434,174.57          | 709,889.15         | 32° 11' 30.634 N | 103° 39' 17.461 W |
| 10,248.0              | 88.40           | 181.60      | 9,602.7               | -1,057.8     | 25.2         | 434,079.64          | 709,886.09         | 32° 11' 29.695 N | 103° 39' 17.504 W |
| 10,297.0              | 90.50           | 182.00      | 9,603.1               | -1,106.7     | 23.6         | 434,030.67          | 709,884.55         | 32° 11' 29.211 N | 103° 39' 17.526 W |
| 10,344.0              | 87.80           | 183.40      | 9,603.8               | -1,153.7     | 21.4         | 433,983.73          | 709,882.33         | 32° 11' 28.746 N | 103° 39' 17.555 W |
| 10,440.0              | 91.70           | 183.00      | 9,604.3               | -1,249.5     | 16.0         | 433,887.90          | 709,876.98         | 32° 11' 27.798 N | 103° 39' 17.624 W |
| 10,535.0              | 92.20           | 182.70      | 9,601.0               | -1,344.3     | 11.3         | 433,793.07          | 709,872.25         | 32° 11' 26.860 N | 103° 39' 17.686 W |
| 10,630.0              | 91.60           | 182.50      | 9,597.9               | -1,439.2     | 7.0          | 433,698.22          | 709,867.95         | 32° 11' 25.922 N | 103° 39' 17.743 W |
| 10,726.0              | 91.90           | 182.30      | 9,594.9               | -1,535.0     | 3.0          | 433,602.35          | 709,863.93         | 32° 11' 24.973 N | 103° 39' 17.797 W |
| 10,821.0              | 90.00           | 182.10      | 9,593.4               | -1,630.0     | -0.6         | 433,507.44          | 709,860.28         | 32° 11' 24.034 N | 103° 39' 17.846 W |
| 10,916.0              | 88.40           | 181.30      | 9,594.7               | -1,724.9     | -3.5         | 433,412.49          | 709,857.47         | 32° 11' 23.095 N | 103° 39' 17.886 W |
| 11,028.0              | 89.30           | 181.10      | 9,596.9               | -1,836.9     | -5.8         | 433,300.54          | 709,855.12         | 32° 11' 21.987 N | 103° 39' 17.922 W |
| 11,106.0              | 89.60           | 180.00      | 9,597.7               | -1,914.8     | -6.6         | 433,222.55          | 709,854.37         | 32° 11' 21.216 N | 103° 39' 17.936 W |
| 11,202.0              | 89.70           | 180.00      | 9,598.3               | -2,010.8     | -6.6         | 433,126.55          | 709,854.37         | 32° 11' 20.266 N | 103° 39' 17.943 W |
| 11,297.0              | 89.40           | 180.00      | 9,599.0               | -2,105.8     | -6.6         | 433,031.56          | 709,854.37         | 32° 11' 19.326 N | 103° 39' 17.950 W |
| 11,393.0              | 89.30           | 178.80      | 9,600.1               | -2,201.8     | -5.6         | 432,935.57          | 709,855.38         | 32° 11' 18.376 N | 103° 39' 17.945 W |
| 11,488.0              | 88.70           | 178.30      | 9,601.8               | -2,296.8     | -3.1         | 432,840.61          | 709,857.78         | 32° 11' 17.436 N | 103° 39' 17.924 W |
| 11,584.0              | 88.00           | 178.50      | 9,604.5               | -2,392.7     | -0.5         | 432,744.69          | 709,860.46         | 32° 11' 16.486 N | 103° 39' 17.900 W |
| 11,680.0              | 89.60           | 177.40      | 9,606.5               | -2,488.6     | 3.0          | 432,648.78          | 709,863.89         | 32° 11' 15.537 N | 103° 39' 17.867 W |
| 11,776.0              | 90.50           | 178.30      | 9,606.5               | -2,584.5     | 6.6          | 432,552.85          | 709,867.49         | 32° 11' 14.588 N | 103° 39' 17.832 W |
| 11,872.0              | 90.80           | 177.90      | 9,605.4               | -2,680.5     | 9.7          | 432,456.91          | 709,870.68         | 32° 11' 13.638 N | 103° 39' 17.802 W |
| 11,967.0              | 86.60           | 176.30      | 9,607.5               | -2,775.3     | 14.6         | 432,362.08          | 709,875.48         | 32° 11' 12.699 N | 103° 39' 17.754 W |
| 12,062.0              | 90.20           | 178.00      | 9,610.2               | -2,870.1     | 19.3         | 432,267.25          | 709,880.20         | 32° 11' 11.761 N | 103° 39' 17.706 W |
| 12,111.0              | 91.00           | 178.50      | 9,609.7               | -2,919.1     | 20.8         | 432,218.28          | 709,881.70         | 32° 11' 11.276 N | 103° 39' 17.692 W |
| 12,157.0              | 91.10           | 178.60      | 9,608.8               | -2,965.1     | 21.9         | 432,172.30          | 709,882.86         | 32° 11' 10.821 N | 103° 39' 17.682 W |
| 12,252.0              | 91.60           | 178.60      | 9,606.6               | -3,060.0     | 24.3         | 432,077.36          | 709,885.18         | 32° 11' 9.881 N  | 103° 39' 17.662 W |
| 12,348.0              | 93.60           | 179.00      | 9,602.2               | -3,155.9     | 26.3         | 431,981.48          | 709,887.19         | 32° 11' 8.932 N  | 103° 39' 17.645 W |
| 12,443.0              | 93.30           | 178.80      | 9,596.5               | -3,250.7     | 28.1         | 431,886.67          | 709,889.01         | 32° 11' 7.994 N  | 103° 39' 17.631 W |
| 12,539.0              | 92.10           | 177.10      | 9,592.0               | -3,346.6     | 31.5         | 431,790.84          | 709,892.44         | 32° 11' 7.045 N  | 103° 39' 17.598 W |
| 12,588.0              | 90.50           | 178.00      | 9,590.9               | -3,395.5     | 33.6         | 431,741.90          | 709,894.53         | 32° 11' 6.561 N  | 103° 39' 17.577 W |



**Stryker Directional**  
Survey Report - Geographic



|           |                                      |                              |                                        |
|-----------|--------------------------------------|------------------------------|----------------------------------------|
| Company:  | CONCHO OIL AND GAS OPERATING, L.L.C. | Local Co-ordinate Reference: | Well DOS XX "27" FEDERAL COM #1H       |
| Project:  | LEA COUNTY                           | TVD Reference:               | WELL @ 3600.0usft (Original Well Elev) |
| Site:     | SECTION 27                           | MD Reference:                | WELL @ 3600.0usft (Original Well Elev) |
| Well:     | DOS XX "27" FEDERAL COM #1H          | North Reference:             | Grid                                   |
| Wellbore: | Wellbore #1                          | Survey Calculation Method:   | Minimum Curvature                      |
| Design:   | As-Drilled Survey                    | Database:                    | EDM 5000.1 Single User Db              |

| Survey                            |                 |             |                       |              |              |                     |                    |                  |                   |
|-----------------------------------|-----------------|-------------|-----------------------|--------------|--------------|---------------------|--------------------|------------------|-------------------|
| Measured Depth (usft)             | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Map Northing (usft) | Map Easting (usft) | Latitude         | Longitude         |
| 12,634.0                          | 89.30           | 177.80      | 9,591.0               | -3,441.5     | 35.3         | 431,695.94          | 709,896.22         | 32° 11' 6.106 N  | 103° 39' 17.561 W |
| 12,697.0                          | 89.40           | 178.10      | 9,591.7               | -3,504.4     | 37.5         | 431,632.98          | 709,898.47         | 32° 11' 5.483 N  | 103° 39' 17.539 W |
| 12,761.0                          | 88.90           | 177.40      | 9,592.6               | -3,568.4     | 40.1         | 431,569.04          | 709,900.98         | 32° 11' 4.850 N  | 103° 39' 17.515 W |
| 12,856.0                          | 88.60           | 176.90      | 9,594.7               | -3,663.2     | 44.8         | 431,474.18          | 709,905.71         | 32° 11' 3.911 N  | 103° 39' 17.467 W |
| 12,920.0                          | 89.30           | 177.80      | 9,595.9               | -3,727.1     | 47.7         | 431,410.26          | 709,908.67         | 32° 11' 3.278 N  | 103° 39' 17.437 W |
| 13,014.0                          | 90.00           | 177.10      | 9,596.4               | -3,821.0     | 51.9         | 431,316.35          | 709,912.85         | 32° 11' 2.349 N  | 103° 39' 17.395 W |
| 13,109.0                          | 89.50           | 177.60      | 9,596.9               | -3,915.9     | 56.3         | 431,221.46          | 709,917.24         | 32° 11' 1.409 N  | 103° 39' 17.351 W |
| 13,202.0                          | 92.20           | 177.80      | 9,595.5               | -4,008.8     | 60.0         | 431,128.55          | 709,920.97         | 32° 11' 0.490 N  | 103° 39' 17.315 W |
| 13,295.0                          | 92.60           | 178.50      | 9,591.6               | -4,101.7     | 63.0         | 431,035.68          | 709,923.97         | 32° 10' 59.571 N | 103° 39' 17.287 W |
| 13,389.0                          | 90.00           | 179.20      | 9,589.5               | -4,195.7     | 64.9         | 430,941.73          | 709,925.86         | 32° 10' 58.641 N | 103° 39' 17.272 W |
| 13,483.0                          | 89.90           | 178.80      | 9,589.5               | -4,289.6     | 66.6         | 430,847.75          | 709,927.50         | 32° 10' 57.711 N | 103° 39' 17.259 W |
| 13,579.0                          | 88.20           | 177.60      | 9,591.1               | -4,385.6     | 69.6         | 430,751.81          | 709,930.51         | 32° 10' 56.761 N | 103° 39' 17.231 W |
| 13,629.0                          | 87.80           | 177.20      | 9,592.9               | -4,435.5     | 71.9         | 430,701.90          | 709,932.78         | 32° 10' 56.267 N | 103° 39' 17.209 W |
| 13,679.0                          | 87.80           | 177.20      | 9,594.8               | -4,485.4     | 74.3         | 430,651.99          | 709,935.22         | 32° 10' 55.773 N | 103° 39' 17.184 W |
| LAST SURVEY @ 13679 MD, 87.8° INC |                 |             |                       |              |              |                     |                    |                  |                   |

| Survey Annotations    |                       |                   |              |                                   |
|-----------------------|-----------------------|-------------------|--------------|-----------------------------------|
| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates |              | Comment                           |
|                       |                       | +N/-S (usft)      | +E/-W (usft) |                                   |
| 8,830.0               | 8,827.3               | -84.0             | 30.2         | TI @ 8830 MD                      |
| 13,679.0              | 9,594.8               | -4,485.4          | 74.3         | LAST SURVEY @ 13679 MD, 87.8° INC |

|                   |                    |             |
|-------------------|--------------------|-------------|
| Checked By: _____ | Approved By: _____ | Date: _____ |
|-------------------|--------------------|-------------|