

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENTFORM APPROVED  
OMB NO. 1004-0135  
Expires: July 31, 2010**SUNDRY NOTICES AND REPORTS ON WELLS**  
**Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.****SUBMIT IN TRIPLICATE - Other instructions on reverse side.**

|                                                                                                                                                    |                                                       |                                                   |
|----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|---------------------------------------------------|
| 1. Type of Well<br><input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other                   |                                                       | 5. Lease Serial No.<br>NMNM0554252                |
| 2. Name of Operator<br>COG OPERATING LLC                                                                                                           |                                                       | 6. If Indian, Allottee or Tribe Name              |
| Contact: MAYTE X REYES<br>E-Mail: mreyes1@concho.com                                                                                               |                                                       | 7. If Unit or CA/Agreement, Name and/or No.       |
| 3a. Address<br>ONE CONCHO CENTER 600 W ILLINOIS AVENUE<br>MIDLAND, TX 79701-4287                                                                   | 3b. Phone No. (include area code)<br>Ph: 575-748-6945 | 8. Well Name and No.<br>PICASSO FEDERAL 2H        |
| 4. Location of Well (Footage, Sec., T., R., M., or Survey Description)<br>Sec 9 T24S R34E SWSE 190FSL 1330FEL<br>32.225207 N Lat, 103.470202 W Lon |                                                       | 9. API Well No.<br>30-025-41905-00-X1             |
|                                                                                                                                                    |                                                       | 10. Field and Pool, or Exploratory<br>RED HILLS   |
|                                                                                                                                                    |                                                       | 11. County or Parish, and State<br>LEA COUNTY, NM |

## 12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

| TYPE OF SUBMISSION                                    | TYPE OF ACTION                                                           |
|-------------------------------------------------------|--------------------------------------------------------------------------|
| <input type="checkbox"/> Notice of Intent             | <input type="checkbox"/> Acidize                                         |
| <input checked="" type="checkbox"/> Subsequent Report | <input type="checkbox"/> Deepen                                          |
| <input type="checkbox"/> Final Abandonment Notice     | <input type="checkbox"/> Alter Casing                                    |
|                                                       | <input type="checkbox"/> Fracture Treat                                  |
|                                                       | <input type="checkbox"/> Casing Repair                                   |
|                                                       | <input type="checkbox"/> New Construction                                |
|                                                       | <input type="checkbox"/> Change Plans                                    |
|                                                       | <input type="checkbox"/> Plug and Abandon                                |
|                                                       | <input type="checkbox"/> Convert to Injection                            |
|                                                       | <input type="checkbox"/> Plug Back                                       |
|                                                       | <input type="checkbox"/> Production (Start/Resume)                       |
|                                                       | <input type="checkbox"/> Reclamation                                     |
|                                                       | <input type="checkbox"/> Recomplete                                      |
|                                                       | <input type="checkbox"/> Temporarily Abandon                             |
|                                                       | <input type="checkbox"/> Water Shut-Off                                  |
|                                                       | <input type="checkbox"/> Well Integrity                                  |
|                                                       | <input checked="" type="checkbox"/> Other<br>Change to Original A.<br>PD |

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

COG Operating LLC, respectfully requests approval for the following changes to the original approved APD.

Operator has changed the target formation to the Avalon Shale  
EOC TVD: 9400' EOL TVD: 9150'

Attached is updated well plan.

Operator will pump the following plugs, due to the space in between operator will spot plug mud which will be a minimum of 25 sx gel/ 100 bbls water in between the cmt plugs:

PHTD Plug

1000? from 11,200? ? 12,200?

450 sx Class H

17.2 ppg ? 0.98 cf/sk ? 3.6 gal/sk

**SEE ATTACHED FOR  
CONDITIONS OF APPROVAL**

*original COAs still stand with the following exception  
Production cement must tie back 500', not  
to surface as proposed in the original APD.*

14. I hereby certify that the foregoing is true and correct.

Electronic Submission #283821 verified by the BLM Well Information System

For COG OPERATING LLC, sent to the Hobbs

Committed to AFMSS for processing by JENNIFER MASON on 12/04/2014 (15LJ0366SE)

Name (Printed/Typed) MAYTE X REYES

Title REGULATORY ANALYST

Signature (Electronic Submission)

Date 12/02/2014

**APPROVED****THIS SPACE FOR FEDERAL OR STATE OFFICE USE**

Approved By

Title

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office

DEC 4 2014  
BUREAU OF LAND MANAGEMENT  
CARLSBAD FIELD OFFICE

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

**\*\* BLM REVISED \*\* BLM REVISED \*\* BLM REVISED \*\* BLM REVISED \*\* BLM REVISED \*\***

**DEC 10 2014**

**Additional data for EC transaction #283821 that would not fit on the form**

**32. Additional remarks, continued**

KO Plug

980? from 8,680? ?9,660?

450 sx Class H

17.2 ppg ? 0.98 cf/sk ? 3.6 gal/sk

Operator will adjust lead cement volume for the shallower TVD target.

Operator will tie back a minimum of 500? into the 9-5/8? casing shoe.



COG Operating LLC  
Project: Lea County, NM  
Site: Picasso Federal Com  
Well: #2H  
Wellbore: OH  
Plan: Plan #6 (#2H/OH)

### Section Details

| Sec | MD      | Inc   | Azi    | TVD    | +N/-S  | +E/-W  | Dleg  | TFace | VSect  |                   |
|-----|---------|-------|--------|--------|--------|--------|-------|-------|--------|-------------------|
| 1   | 8900.0  | 1.57  | 288.80 | 8898.5 | 58.9   | 3.1    | 0.00  | 0.00  | 57.0   |                   |
| 2   | 8936.3  | 1.57  | 288.80 | 8934.8 | 59.2   | 2.2    | 0.00  | 0.00  | 57.5   |                   |
| 3   | 9701.5  | 93.19 | 318.00 | 9400.0 | 429.2  | -339.9 | 12.00 | 29.17 | 488.9  |                   |
| 4   | 9801.5  | 93.19 | 318.00 | 9394.5 | 503.4  | -406.7 | 0.00  | 0.00  | 575.1  |                   |
| 5   | 10762.3 | 93.19 | 356.50 | 9338.9 | 1371.5 | -770.7 | 4.00  | 88.89 | 1498.6 |                   |
| 6   | 14156.5 | 93.19 | 356.50 | 9150.0 | 4754.1 | -977.9 | 0.00  | 0.00  | 4853.6 | PBHL (PFC #2H/OH) |

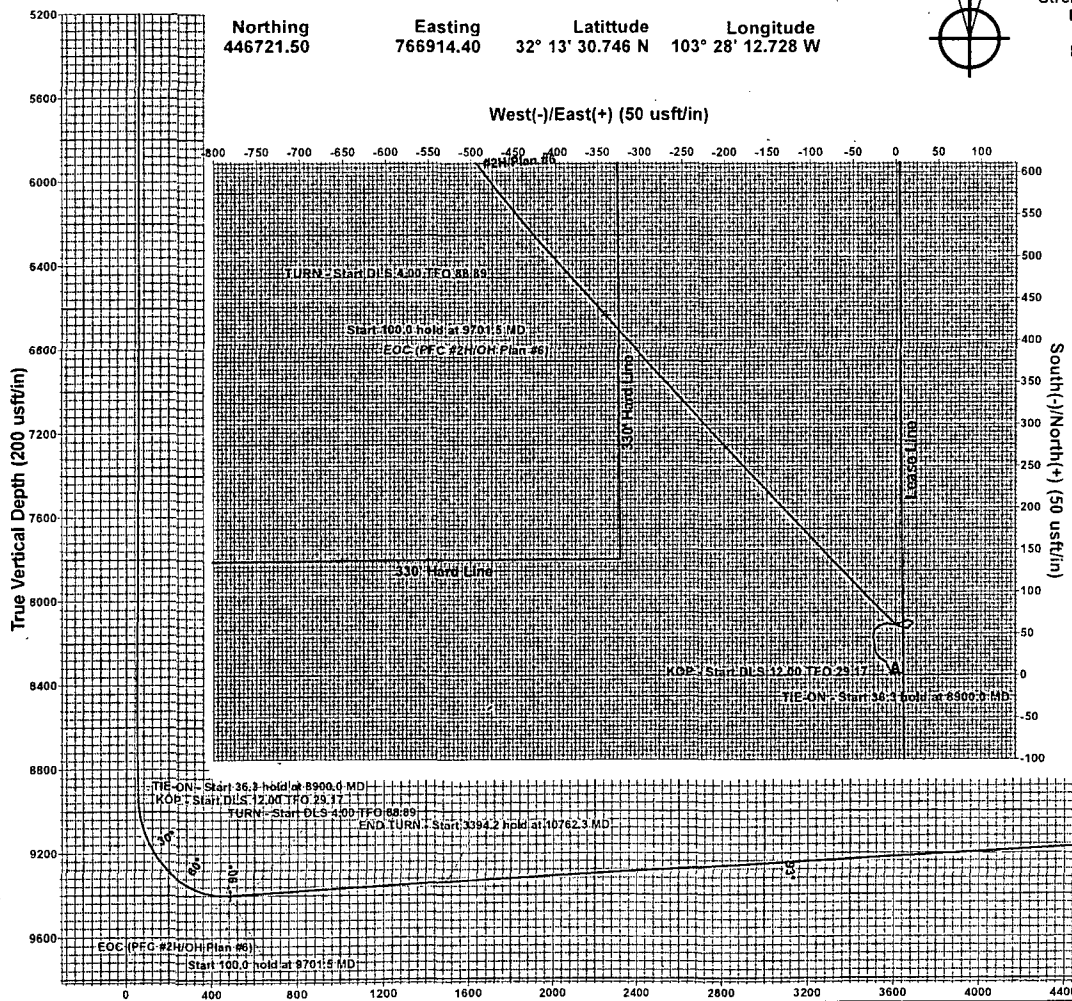
WELL DETAILS: #2H

Ground Elevation: 3530.8  
RKB Elevation: KB @ 3552.8usft  
Rig Name:



Azimuths to Grid North  
True North: -0.46°  
Magnetic North: 6.66°

Magnetic Field  
Strength: 48287.2snT  
Dip Angle: 60.12°  
Date: 11/6/2014  
Model: IGRF2010



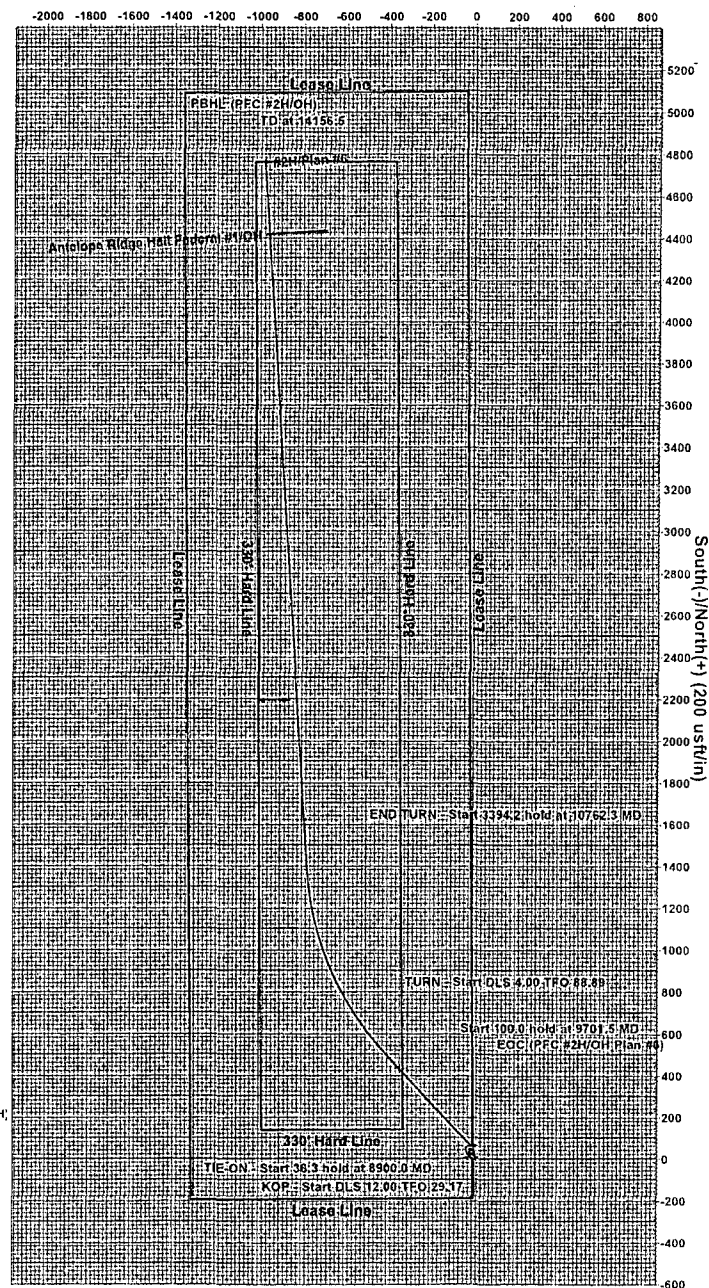
Vertical Section at 348.38° (200 usft/in)



Plan: Plan #6 (#2H/OH)  
Created By: Well Planner Date: 14:01, December 02 2014

Terra Directional Services  
322 Spring Hill Drive, Suite A100, Spring, Texas 77386  
432.425.7532

### West(-)/East(+) (200 usft/in)



PROJECT DETAILS: Lea County, NM  
Geodetic System: US State Plane 1927 (Exact solution)  
Datum: NAD 1927 (NADCON CONUS)  
Ellipsoid: Clarke 1866  
Zone: New Mexico East 3001  
System Datum: Mean Sea Level  
Local North: Grid



## **COG Operating LLC**

**Lea County, NM**

**Picasso Federal Com**

**#2H**

**OH**

**Plan: Plan #6**

## **Standard Planning Report**

**02 December, 2014**





TDS  
Planning Report



|           |                           |                              |                   |
|-----------|---------------------------|------------------------------|-------------------|
| Database: | EDM 5000.1 Single User Db | Local Co-ordinate Reference: | Well #2H          |
| Company:  | COG Operating LLC         | TVD Reference:               | KB @ 3552.8usft   |
| Project:  | Lea County, NM            | MD Reference:                | KB @ 3552.8usft   |
| Site:     | Picasso Federal Com       | North Reference:             | Grid              |
| Well:     | #2H                       | Survey Calculation Method:   | Minimum Curvature |
| Wellbore: | OH                        |                              |                   |
| Design:   | Plan #6                   |                              |                   |

|             |                                      |               |                |
|-------------|--------------------------------------|---------------|----------------|
| Project:    | Lea County, NM                       |               |                |
| 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: Picasso Federal Com |          |              |                 |                   |                   |
| Site Position:            |          | Northing:    | 446,721.50 usft | Latitude:         | 32° 13' 30.746 N  |
| From:                     | Map      | Easting:     | 766,914.40 usft | Longitude:        | 103° 28' 12.728 W |
| Position Uncertainty:     | 0.0 usft | Slot Radius: | 13-3/16 "       | Grid Convergence: | 0.46              |

|                      |      |          |                     |                 |               |                   |
|----------------------|------|----------|---------------------|-----------------|---------------|-------------------|
| Well                 | #2H  |          |                     |                 |               |                   |
| Well Position        | +N-S | 0.0 usft | Northing:           | 446,721.50 usft | Latitude:     | 32° 13' 30.746 N  |
|                      | +E-W | 0.0 usft | Easting:            | 766,914.40 usft | Longitude:    | 103° 28' 12.728 W |
| Position Uncertainty |      | 0.0 usft | Wellhead Elevation: | 0.0 usft        | Ground Level: | 3,530.8 usft      |

|           |            |             |                    |                  |                        |
|-----------|------------|-------------|--------------------|------------------|------------------------|
| Wellbore  | OH         |             |                    |                  |                        |
| Magnetics | Model Name | Sample Date | Declination<br>(°) | Dip Angle<br>(°) | Field Strength<br>(nT) |
|           | IGRF2010   | 11/6/2014   | 7.12               | 60.12            | 48,287                 |

|                   |                  |        |               |           |
|-------------------|------------------|--------|---------------|-----------|
| Design:           | Plan #6          |        |               |           |
| Audit Notes:      |                  |        |               |           |
| Version:          | Phase:           | PLAN   | Tie On Depth: | 8,900.0   |
| Vertical Section: | Depth From (TVD) | +N-S   | +E-W          | Direction |
|                   | (usft)           | (usft) | (usft)        | (°)       |
|                   | 0.0              | 0.0    | 0.0           | 348.38    |

| Plan Sections         |                 |             |                       |             |             |                         |                        |                       |         |                   |
|-----------------------|-----------------|-------------|-----------------------|-------------|-------------|-------------------------|------------------------|-----------------------|---------|-------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N-S (usft) | +E-W (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) | TFO (°) | Target            |
| 8,900.0               | 1.57            | 288.80      | 8,898.5               | 58.9        | 3.1         | 0.00                    | 0.00                   | 0.00                  | 0.00    |                   |
| 8,936.3               | 1.57            | 288.80      | 8,934.8               | 59.2        | 2.2         | 0.00                    | 0.00                   | 0.00                  | 0.00    |                   |
| 9,701.5               | 93.19           | 318.00      | 9,400.0               | 429.2       | -339.9      | 12.00                   | 11.97                  | 3.82                  | 29.17   |                   |
| 9,801.5               | 93.19           | 318.00      | 9,394.5               | 503.4       | -406.7      | 0.00                    | 0.00                   | 0.00                  | 0.00    |                   |
| 10,762.3              | 93.19           | 356.50      | 9,338.9               | 1,371.5     | -770.7      | 4.00                    | 0.00                   | 4.01                  | 88.89   |                   |
| 14,156.5              | 93.19           | 356.50      | 9,150.0               | 4,754.1     | -977.9      | 0.00                    | 0.00                   | 0.00                  | 0.00    | PBHL (PFC #2H/OH) |



TDS  
Planning Report



|           |                           |                              |                   |
|-----------|---------------------------|------------------------------|-------------------|
| Database: | EDM 5000.1 Single User Db | Local Co-ordinate Reference: | Well #2H          |
| Company:  | COG Operating LLC         | TVD Reference:               | KB @ 3552.8usft   |
| Project:  | Lea County, NM            | MD Reference:                | KB @ 3552.8usft   |
| Site:     | Picasso Federal Com       | North Reference:             | Grid              |
| Well:     | #2H                       | Survey Calculation Method:   | Minimum Curvature |
| Wellbore: | OH                        |                              |                   |
| Design:   | Plan #6                   |                              |                   |

Planned 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) |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| 0.0                   | 0.00            | 0.00        | 0.0                   | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 100.0                 | 0.08            | 287.71      | 100.0                 | 0.0          | -0.1         | 0.0                     | 0.08                    | 0.08                   | 0.00                  |
| 200.0                 | 0.07            | 100.14      | 200.0                 | 0.0          | -0.1         | 0.0                     | 0.15                    | -0.01                  | 172.43                |
| 300.0                 | 0.00            | 167.41      | 300.0                 | 0.0          | 0.0          | 0.0                     | 0.07                    | -0.07                  | 0.00                  |
| 400.0                 | 0.03            | 291.41      | 400.0                 | 0.0          | 0.0          | 0.0                     | 0.03                    | 0.03                   | 0.00                  |
| 500.0                 | 0.23            | 206.76      | 500.0                 | -0.1         | -0.2         | -0.1                    | 0.23                    | 0.20                   | -84.65                |
| 600.0                 | 0.06            | 232.08      | 600.0                 | -0.4         | -0.3         | -0.3                    | 0.18                    | -0.17                  | 25.32                 |
| 700.0                 | 0.14            | 137.47      | 700.0                 | -0.5         | -0.2         | -0.4                    | 0.16                    | 0.08                   | -94.61                |
| 800.0                 | 0.03            | 272.07      | 800.0                 | -0.6         | -0.2         | -0.5                    | 0.16                    | -0.11                  | 134.60                |
| 900.0                 | 0.07            | 169.16      | 900.0                 | -0.6         | -0.2         | -0.6                    | 0.08                    | 0.04                   | -102.91               |
| 1,000.0               | 0.10            | 324.95      | 1,000.0               | -0.6         | -0.2         | -0.5                    | 0.17                    | 0.03                   | 155.79                |
| 1,100.0               | 0.23            | 324.23      | 1,100.0               | -0.4         | -0.4         | -0.3                    | 0.13                    | 0.13                   | -0.72                 |
| 1,200.0               | 0.20            | 321.95      | 1,200.0               | -0.1         | -0.6         | 0.1                     | 0.03                    | -0.03                  | -2.28                 |
| 1,300.0               | 0.23            | 271.89      | 1,300.0               | 0.1          | -0.9         | 0.3                     | 0.18                    | 0.03                   | -50.06                |
| 1,400.0               | 0.57            | 330.70      | 1,400.0               | 0.5          | -1.4         | 0.8                     | 0.49                    | 0.34                   | 58.81                 |
| 1,500.0               | 0.91            | 310.52      | 1,500.0               | 1.5          | -2.2         | 1.9                     | 0.42                    | 0.34                   | -20.18                |
| 1,600.0               | 1.05            | 315.42      | 1,600.0               | 2.6          | -3.5         | 3.3                     | 0.16                    | 0.14                   | 4.90                  |
| 1,700.0               | 0.95            | 321.65      | 1,700.0               | 3.9          | -4.6         | 4.8                     | 0.15                    | -0.10                  | 6.23                  |
| 1,800.0               | 1.05            | 324.10      | 1,799.9               | 5.3          | -5.7         | 6.4                     | 0.11                    | 0.10                   | 2.45                  |
| 1,900.0               | 1.03            | 327.70      | 1,899.9               | 6.8          | -6.7         | 8.0                     | 0.07                    | -0.02                  | 3.60                  |
| 2,000.0               | 0.99            | 334.56      | 1,999.9               | 8.4          | -7.6         | 9.7                     | 0.13                    | -0.04                  | 6.86                  |
| 2,100.0               | 1.26            | 317.39      | 2,099.9               | 10.0         | -8.7         | 11.5                    | 0.43                    | 0.27                   | -17.17                |
| 2,200.0               | 1.35            | 347.51      | 2,199.9               | 11.9         | -9.7         | 13.6                    | 0.68                    | 0.09                   | 30.12                 |
| 2,300.0               | 1.34            | 340.79      | 2,299.8               | 14.2         | -10.3        | 16.0                    | 0.16                    | -0.01                  | -6.72                 |
| 2,400.0               | 0.72            | 298.02      | 2,399.8               | 15.6         | -11.2        | 17.5                    | 0.95                    | -0.62                  | -42.77                |
| 2,500.0               | 0.92            | 307.88      | 2,499.8               | 16.4         | -12.4        | 18.5                    | 0.24                    | 0.20                   | 9.86                  |
| 2,600.0               | 1.00            | 303.45      | 2,599.8               | 17.3         | -13.8        | 19.8                    | 0.11                    | 0.08                   | -4.43                 |
| 2,700.0               | 1.12            | 298.70      | 2,699.8               | 18.3         | -15.4        | 21.0                    | 0.15                    | 0.12                   | -4.75                 |
| 2,800.0               | 1.13            | 309.78      | 2,799.8               | 19.4         | -17.0        | 22.4                    | 0.22                    | 0.01                   | 11.08                 |
| 2,900.0               | 1.09            | 324.68      | 2,899.7               | 20.8         | -18.3        | 24.0                    | 0.29                    | -0.04                  | 14.90                 |
| 3,000.0               | 1.41            | 326.53      | 2,999.7               | 22.6         | -19.5        | 26.1                    | 0.32                    | 0.32                   | 1.85                  |
| 3,100.0               | 1.46            | 314.98      | 3,099.7               | 24.5         | -21.1        | 28.3                    | 0.29                    | 0.05                   | -11.55                |
| 3,200.0               | 1.43            | 346.39      | 3,199.7               | 26.6         | -22.3        | 30.6                    | 0.78                    | -0.03                  | 31.41                 |
| 3,300.0               | 1.15            | 340.68      | 3,299.6               | 28.8         | -22.9        | 32.8                    | 0.31                    | -0.28                  | -5.71                 |
| 3,400.0               | 1.29            | 347.23      | 3,399.6               | 30.8         | -23.5        | 34.9                    | 0.20                    | 0.14                   | 6.55                  |
| 3,500.0               | 1.55            | 359.63      | 3,499.6               | 33.3         | -23.8        | 37.4                    | 0.40                    | 0.26                   | 12.40                 |
| 3,600.0               | 1.50            | 354.29      | 3,599.5               | 35.9         | -23.9        | 40.0                    | 0.15                    | -0.05                  | -5.34                 |
| 3,700.0               | 1.57            | 353.35      | 3,699.5               | 38.6         | -24.2        | 42.7                    | 0.07                    | 0.07                   | -0.94                 |
| 3,800.0               | 1.16            | 340.90      | 3,799.5               | 40.9         | -24.7        | 45.1                    | 0.50                    | -0.41                  | -12.45                |
| 3,900.0               | 1.11            | 343.06      | 3,899.5               | 42.8         | -25.3        | 47.0                    | 0.07                    | -0.05                  | 2.16                  |
| 4,000.0               | 1.05            | 358.95      | 3,999.4               | 44.6         | -25.6        | 48.9                    | 0.30                    | -0.06                  | 15.89                 |
| 4,100.0               | 1.24            | 5.43        | 4,099.4               | 46.6         | -25.5        | 50.8                    | 0.23                    | 0.19                   | 6.48                  |
| 4,200.0               | 1.24            | 3.02        | 4,199.4               | 48.8         | -25.4        | 52.9                    | 0.05                    | 0.00                   | -2.41                 |
| 4,300.0               | 1.23            | 11.20       | 4,299.4               | 50.9         | -25.1        | 54.9                    | 0.18                    | -0.01                  | 8.18                  |
| 4,400.0               | 2.24            | 31.28       | 4,399.3               | 53.7         | -23.9        | 57.4                    | 1.16                    | 1.01                   | 20.08                 |
| 4,500.0               | 2.45            | 52.71       | 4,499.2               | 56.6         | -21.2        | 59.7                    | 0.90                    | 0.21                   | 21.43                 |
| 4,600.0               | 2.30            | 66.39       | 4,599.2               | 58.7         | -17.6        | 61.1                    | 0.58                    | -0.15                  | 13.68                 |
| 4,700.0               | 1.54            | 67.61       | 4,699.1               | 60.0         | -14.5        | 61.7                    | 0.76                    | -0.76                  | 1.22                  |
| 4,800.0               | 2.01            | 79.93       | 4,799.1               | 60.8         | -11.6        | 61.9                    | 0.60                    | 0.47                   | 12.32                 |
| 4,900.0               | 2.18            | 96.92       | 4,899.0               | 60.9         | -8.0         | 61.3                    | 0.64                    | 0.17                   | 16.99                 |
| 5,000.0               | 1.35            | 112.14      | 4,998.9               | 60.3         | -5.0         | 60.0                    | 0.95                    | -0.83                  | 15.22                 |
| 5,100.0               | 0.79            | 102.68      | 5,098.9               | 59.7         | -3.2         | 59.1                    | 0.59                    | -0.56                  | -9.46                 |
| 5,200.0               | 0.26            | 86.16       | 5,198.9               | 59.5         | -2.3         | 58.8                    | 0.55                    | -0.53                  | -16.52                |
| 5,300.0               | 0.22            | 97.20       | 5,298.9               | 59.5         | -1.9         | 58.7                    | 0.06                    | -0.04                  | 11.04                 |



TDS  
Planning Report



|           |                           |                              |                   |
|-----------|---------------------------|------------------------------|-------------------|
| Database: | EDM 5000.1 Single User Db | Local Co-ordinate Reference: | Well #2H          |
| Company:  | COG Operating LLC         | TVD Reference:               | KB @ 3552.8usft   |
| Project:  | Lea County, NM            | MD Reference:                | KB @ 3552.8usft   |
| Site:     | Picasso Federal Com       | North Reference:             | Grid              |
| Well:     | #2H                       | Survey Calculation Method:   | Minimum Curvature |
| Wellbore: | OH                        |                              |                   |
| Design:   | Plan #6                   |                              |                   |

Planned 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) |
|---------------------------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| 5,400.0                               | 0.37            | 290.87      | 5,398.9               | 59.6         | -2.0         | 58.8                    | 0.59                    | 0.15                   | -166.33               |
| 5,500.0                               | 0.44            | 277.33      | 5,498.9               | 59.8         | -2.7         | 59.1                    | 0.12                    | 0.07                   | -13.54                |
| 5,600.0                               | 0.36            | 276.48      | 5,598.9               | 59.9         | -3.4         | 59.3                    | 0.08                    | -0.08                  | -0.85                 |
| 5,700.0                               | 0.11            | 277.27      | 5,698.9               | 59.9         | -3.8         | 59.4                    | 0.25                    | -0.25                  | 0.79                  |
| 5,800.0                               | 0.04            | 56.15       | 5,798.9               | 59.9         | -3.9         | 59.5                    | 0.14                    | -0.07                  | 138.89                |
| 5,900.0                               | 0.32            | 83.57       | 5,898.9               | 60.0         | -3.5         | 59.5                    | 0.29                    | 0.28                   | 27.41                 |
| 6,000.0                               | 0.58            | 90.21       | 5,998.9               | 60.0         | -2.8         | 59.3                    | 0.26                    | 0.26                   | 6.64                  |
| 6,100.0                               | 0.59            | 98.50       | 6,098.9               | 59.9         | -1.7         | 59.1                    | 0.09                    | 0.01                   | 8.29                  |
| 6,200.0                               | 0.80            | 75.67       | 6,198.9               | 60.0         | -0.6         | 58.9                    | 0.34                    | 0.21                   | -22.83                |
| 6,300.0                               | 0.94            | 75.04       | 6,298.9               | 60.4         | 0.9          | 59.0                    | 0.14                    | 0.14                   | -0.63                 |
| 6,400.0                               | 1.08            | 61.09       | 6,398.9               | 61.1         | 2.5          | 59.3                    | 0.28                    | 0.14                   | -13.95                |
| 6,500.0                               | 1.01            | 99.19       | 6,498.9               | 61.4         | 4.2          | 59.3                    | 0.69                    | -0.07                  | 38.10                 |
| 6,600.0                               | 1.08            | 62.13       | 6,598.8               | 61.7         | 5.9          | 59.2                    | 0.67                    | 0.07                   | -37.06                |
| 6,700.0                               | 1.11            | 74.98       | 6,698.8               | 62.4         | 7.7          | 59.6                    | 0.25                    | 0.03                   | 12.85                 |
| 6,800.0                               | 1.34            | 65.98       | 6,798.8               | 63.1         | 9.7          | 59.9                    | 0.30                    | 0.23                   | -9.00                 |
| 6,900.0                               | 1.11            | 71.26       | 6,898.8               | 63.9         | 11.7         | 60.2                    | 0.26                    | -0.23                  | 5.28                  |
| 7,000.0                               | 0.69            | 58.00       | 6,998.8               | 64.5         | 13.1         | 60.6                    | 0.47                    | -0.42                  | -13.26                |
| 7,100.0                               | 0.60            | 68.82       | 7,098.8               | 65.0         | 14.1         | 60.9                    | 0.15                    | -0.09                  | 10.82                 |
| 7,200.0                               | 0.51            | 108.96      | 7,198.8               | 65.1         | 15.0         | 60.7                    | 0.39                    | -0.09                  | 40.14                 |
| 7,300.0                               | 0.69            | 103.97      | 7,298.7               | 64.8         | 16.0         | 60.2                    | 0.19                    | 0.18                   | -4.99                 |
| 7,400.0                               | 0.84            | 120.25      | 7,398.7               | 64.3         | 17.2         | 59.5                    | 0.26                    | 0.15                   | 16.28                 |
| 7,500.0                               | 0.62            | 112.29      | 7,498.7               | 63.7         | 18.4         | 58.7                    | 0.24                    | -0.22                  | -7.96                 |
| 7,600.0                               | 0.81            | 129.40      | 7,598.7               | 63.1         | 19.4         | 57.8                    | 0.28                    | 0.19                   | 17.11                 |
| 7,700.0                               | 0.77            | 133.41      | 7,698.7               | 62.1         | 20.5         | 56.7                    | 0.07                    | -0.04                  | 4.01                  |
| 7,800.0                               | 0.46            | 166.00      | 7,798.7               | 61.3         | 21.0         | 55.8                    | 0.46                    | -0.31                  | 32.59                 |
| 7,900.0                               | 0.76            | 231.85      | 7,898.7               | 60.5         | 20.6         | 55.1                    | 0.71                    | 0.30                   | 65.85                 |
| 8,000.0                               | 0.73            | 240.68      | 7,998.7               | 59.8         | 19.5         | 54.6                    | 0.12                    | -0.03                  | 8.83                  |
| 8,100.0                               | 0.79            | 224.53      | 8,098.7               | 59.0         | 18.5         | 54.0                    | 0.22                    | 0.06                   | -16.15                |
| 8,200.0                               | 0.82            | 224.99      | 8,198.7               | 58.0         | 17.5         | 53.3                    | 0.03                    | 0.03                   | 0.46                  |
| 8,300.0                               | 0.96            | 241.96      | 8,298.7               | 57.1         | 16.3         | 52.6                    | 0.30                    | 0.14                   | 16.97                 |
| 8,400.0                               | 1.07            | 245.98      | 8,398.6               | 56.3         | 14.7         | 52.2                    | 0.13                    | 0.11                   | 4.02                  |
| 8,500.0                               | 1.22            | 270.97      | 8,498.6               | 55.9         | 12.8         | 52.2                    | 0.52                    | 0.15                   | 24.99                 |
| 8,600.0                               | 1.37            | 282.76      | 8,598.6               | 56.2         | 10.5         | 52.9                    | 0.30                    | 0.15                   | 11.79                 |
| 8,700.0                               | 1.44            | 285.84      | 8,698.6               | 56.8         | 8.1          | 54.0                    | 0.10                    | 0.07                   | 3.08                  |
| 8,800.0                               | 1.61            | 296.46      | 8,798.5               | 57.8         | 5.7          | 55.5                    | 0.33                    | 0.17                   | 10.62                 |
| 8,900.0                               | 1.57            | 288.80      | 8,898.5               | 58.9         | 3.1          | 57.0                    | 0.22                    | -0.04                  | -7.66                 |
| TIE-ON - Start 36.3 hold at 8900.0 MD |                 |             |                       |              |              |                         |                         |                        |                       |
| 8,936.3                               | 1.57            | 288.80      | 8,934.8               | 59.2         | 2.2          | 57.5                    | 0.00                    | 0.00                   | 0.00                  |
| KOP - Start DLS 12.00 TFO 29.17       |                 |             |                       |              |              |                         |                         |                        |                       |
| 8,950.0                               | 3.11            | 303.73      | 8,948.5               | 59.4         | 1.7          | 57.9                    | 12.00                   | 11.24                  | 108.99                |
| 8,975.0                               | 6.06            | 310.74      | 8,973.4               | 60.7         | 0.1          | 59.4                    | 12.00                   | 11.81                  | 28.01                 |
| 9,000.0                               | 9.05            | 313.15      | 8,998.2               | 62.9         | -2.3         | 62.1                    | 12.00                   | 11.94                  | 9.65                  |
| 9,025.0                               | 12.04           | 314.37      | 9,022.7               | 66.1         | -5.6         | 65.8                    | 12.00                   | 11.97                  | 4.88                  |
| 9,050.0                               | 15.03           | 315.11      | 9,047.1               | 70.2         | -9.8         | 70.7                    | 12.00                   | 11.98                  | 2.96                  |
| 9,075.0                               | 18.03           | 315.61      | 9,071.0               | 75.2         | -14.7        | 76.7                    | 12.00                   | 11.99                  | 1.99                  |
| 9,100.0                               | 21.03           | 315.97      | 9,094.6               | 81.2         | -20.6        | 83.7                    | 12.00                   | 11.99                  | 1.44                  |
| 9,125.0                               | 24.03           | 316.24      | 9,117.7               | 88.1         | -27.2        | 91.8                    | 12.00                   | 11.99                  | 1.10                  |
| 9,150.0                               | 27.03           | 316.46      | 9,140.2               | 95.9         | -34.6        | 100.9                   | 12.00                   | 11.99                  | 0.87                  |
| 9,175.0                               | 30.02           | 316.63      | 9,162.2               | 104.6        | -42.9        | 111.1                   | 12.00                   | 12.00                  | 0.70                  |
| 9,200.0                               | 33.02           | 316.78      | 9,183.5               | 114.1        | -51.8        | 122.2                   | 12.00                   | 12.00                  | 0.59                  |
| 9,225.0                               | 36.02           | 316.91      | 9,204.1               | 124.4        | -61.5        | 134.3                   | 12.00                   | 12.00                  | 0.50                  |
| 9,250.0                               | 39.02           | 317.01      | 9,223.9               | 135.6        | -71.9        | 147.3                   | 12.00                   | 12.00                  | 0.43                  |
| 9,275.0                               | 42.02           | 317.11      | 9,242.9               | 147.5        | -83.0        | 161.2                   | 12.00                   | 12.00                  | 0.38                  |



TDS  
Planning Report



|           |                           |                              |                   |
|-----------|---------------------------|------------------------------|-------------------|
| Database: | EDM 5000.1 Single User Db | Local Co-ordinate Reference: | Well #2H          |
| Company:  | COG Operating LLC         | TVD Reference:               | KB @ 3552.8usft   |
| Project:  | Lea County, NM            | MD Reference:                | KB @ 3552.8usft   |
| Site:     | Picasso Federal Com       | North Reference:             | Grid              |
| Well:     | #2H                       | Survey Calculation Method:   | Minimum Curvature |
| Wellbore: | OH                        |                              |                   |
| Design:   | Plan #6                   |                              |                   |

| Planned Survey                             |                    |                |                             |                 |                 |                               |                               |                              |                             |  |
|--------------------------------------------|--------------------|----------------|-----------------------------|-----------------|-----------------|-------------------------------|-------------------------------|------------------------------|-----------------------------|--|
| Measured<br>Depth<br>(usft)                | Inclination<br>(°) | Azimuth<br>(°) | Vertical<br>Depth<br>(usft) | +N/-S<br>(usft) | +E/-W<br>(usft) | Vertical<br>Section<br>(usft) | Dogleg<br>Rate<br>(°/100usft) | Build<br>Rate<br>(°/100usft) | Turn<br>Rate<br>(°/100usft) |  |
| 9,300.0                                    | 45.02              | 317.19         | 9,261.0                     | 160.1           | -94.7           | 175.9                         | 12.00                         | 12.00                        | 0.34                        |  |
| 9,325.0                                    | 48.02              | 317.27         | 9,278.2                     | 173.4           | -107.0          | 191.4                         | 12.00                         | 12.00                        | 0.30                        |  |
| 9,350.0                                    | 51.02              | 317.34         | 9,294.5                     | 187.4           | -119.9          | 207.7                         | 12.00                         | 12.00                        | 0.28                        |  |
| 9,375.0                                    | 54.02              | 317.40         | 9,309.7                     | 202.0           | -133.3          | 224.7                         | 12.00                         | 12.00                        | 0.25                        |  |
| 9,400.0                                    | 57.02              | 317.46         | 9,323.8                     | 217.1           | -147.3          | 242.4                         | 12.00                         | 12.00                        | 0.24                        |  |
| 9,425.0                                    | 60.02              | 317.52         | 9,336.9                     | 232.9           | -161.7          | 260.7                         | 12.00                         | 12.00                        | 0.22                        |  |
| 9,450.0                                    | 63.02              | 317.57         | 9,348.8                     | 249.1           | -176.5          | 279.5                         | 12.00                         | 12.00                        | 0.21                        |  |
| 9,475.0                                    | 66.02              | 317.62         | 9,359.6                     | 265.7           | -191.7          | 298.9                         | 12.00                         | 12.00                        | 0.20                        |  |
| 9,500.0                                    | 69.02              | 317.66         | 9,369.1                     | 282.8           | -207.3          | 318.8                         | 12.00                         | 12.00                        | 0.19                        |  |
| 9,525.0                                    | 72.02              | 317.71         | 9,377.5                     | 300.2           | -223.1          | 339.0                         | 12.00                         | 12.00                        | 0.18                        |  |
| 9,550.0                                    | 75.02              | 317.75         | 9,384.6                     | 318.0           | -239.3          | 359.6                         | 12.00                         | 12.00                        | 0.17                        |  |
| 9,575.0                                    | 78.02              | 317.79         | 9,390.4                     | 336.0           | -255.6          | 380.6                         | 12.00                         | 12.00                        | 0.17                        |  |
| 9,600.0                                    | 81.02              | 317.84         | 9,394.9                     | 354.2           | -272.1          | 401.7                         | 12.00                         | 12.00                        | 0.17                        |  |
| 9,625.0                                    | 84.02              | 317.88         | 9,398.2                     | 372.6           | -288.7          | 423.1                         | 12.00                         | 12.00                        | 0.16                        |  |
| 9,650.0                                    | 87.02              | 317.92         | 9,400.1                     | 391.0           | -305.4          | 444.6                         | 12.00                         | 12.00                        | 0.16                        |  |
| 9,675.0                                    | 90.02              | 317.96         | 9,400.8                     | 409.6           | -322.2          | 466.1                         | 12.00                         | 12.00                        | 0.16                        |  |
| 9,701.5                                    | 93.19              | 318.00         | 9,400.0                     | 429.2           | -339.9          | 488.9                         | 12.00                         | 12.00                        | 0.16                        |  |
| EOC - Start 100.0 hold at 9701.5 MD        |                    |                |                             |                 |                 |                               |                               |                              |                             |  |
| 9,801.5                                    | 93.19              | 318.00         | 9,394.5                     | 503.4           | -406.7          | 575.1                         | 0.00                          | 0.00                         | 0.00                        |  |
| TURN - Start DLS 4.00 TFO 88.89            |                    |                |                             |                 |                 |                               |                               |                              |                             |  |
| 9,900.0                                    | 93.26              | 321.95         | 9,388.9                     | 578.8           | -470.0          | 661.6                         | 4.00                          | 0.07                         | 4.01                        |  |
| 10,000.0                                   | 93.31              | 325.95         | 9,383.2                     | 659.5           | -528.7          | 752.5                         | 4.00                          | 0.05                         | 4.01                        |  |
| 10,100.0                                   | 93.35              | 329.96         | 9,377.4                     | 744.1           | -581.6          | 846.0                         | 4.00                          | 0.04                         | 4.01                        |  |
| 10,200.0                                   | 93.37              | 333.97         | 9,371.5                     | 832.2           | -628.6          | 941.7                         | 4.00                          | 0.02                         | 4.01                        |  |
| 10,300.0                                   | 93.38              | 337.97         | 9,365.6                     | 923.3           | -669.2          | 1,039.2                       | 4.00                          | 0.01                         | 4.01                        |  |
| 10,400.0                                   | 93.37              | 341.98         | 9,359.7                     | 1,017.1         | -703.4          | 1,137.9                       | 4.00                          | -0.01                        | 4.01                        |  |
| 10,500.0                                   | 93.34              | 345.99         | 9,353.9                     | 1,113.0         | -730.9          | 1,237.5                       | 4.00                          | -0.03                        | 4.01                        |  |
| 10,600.0                                   | 93.30              | 349.99         | 9,348.1                     | 1,210.7         | -751.7          | 1,337.3                       | 4.00                          | -0.04                        | 4.01                        |  |
| 10,700.0                                   | 93.24              | 354.00         | 9,342.4                     | 1,309.5         | -765.6          | 1,436.9                       | 4.00                          | -0.06                        | 4.01                        |  |
| 10,762.3                                   | 93.19              | 356.50         | 9,338.9                     | 1,371.5         | -770.7          | 1,498.6                       | 4.00                          | -0.07                        | 4.01                        |  |
| END TURN - Start 3394.2 hold at 10762.3 MD |                    |                |                             |                 |                 |                               |                               |                              |                             |  |
| 10,800.0                                   | 93.19              | 356.50         | 9,336.8                     | 1,409.1         | -773.0          | 1,535.9                       | 0.00                          | 0.00                         | 0.00                        |  |
| 10,900.0                                   | 93.19              | 356.50         | 9,331.2                     | 1,508.7         | -779.1          | 1,634.7                       | 0.00                          | 0.00                         | 0.00                        |  |
| 11,000.0                                   | 93.19              | 356.50         | 9,325.7                     | 1,608.4         | -785.2          | 1,733.6                       | 0.00                          | 0.00                         | 0.00                        |  |
| 11,100.0                                   | 93.19              | 356.50         | 9,320.1                     | 1,708.0         | -791.3          | 1,832.4                       | 0.00                          | 0.00                         | 0.00                        |  |
| 11,200.0                                   | 93.19              | 356.50         | 9,314.5                     | 1,807.7         | -797.4          | 1,931.3                       | 0.00                          | 0.00                         | 0.00                        |  |
| 11,300.0                                   | 93.19              | 356.50         | 9,309.0                     | 1,907.3         | -803.5          | 2,030.1                       | 0.00                          | 0.00                         | 0.00                        |  |
| 11,400.0                                   | 93.19              | 356.50         | 9,303.4                     | 2,007.0         | -809.7          | 2,129.0                       | 0.00                          | 0.00                         | 0.00                        |  |
| 11,500.0                                   | 93.19              | 356.50         | 9,297.9                     | 2,106.7         | -815.8          | 2,227.8                       | 0.00                          | 0.00                         | 0.00                        |  |
| 11,600.0                                   | 93.19              | 356.50         | 9,292.3                     | 2,206.3         | -821.9          | 2,326.7                       | 0.00                          | 0.00                         | 0.00                        |  |
| 11,700.0                                   | 93.19              | 356.50         | 9,286.7                     | 2,306.0         | -828.0          | 2,425.5                       | 0.00                          | 0.00                         | 0.00                        |  |
| 11,800.0                                   | 93.19              | 356.50         | 9,281.2                     | 2,405.6         | -834.1          | 2,524.3                       | 0.00                          | 0.00                         | 0.00                        |  |
| 11,900.0                                   | 93.19              | 356.50         | 9,275.6                     | 2,505.3         | -840.2          | 2,623.2                       | 0.00                          | 0.00                         | 0.00                        |  |
| 12,000.0                                   | 93.19              | 356.50         | 9,270.0                     | 2,605.0         | -846.3          | 2,722.0                       | 0.00                          | 0.00                         | 0.00                        |  |
| 12,100.0                                   | 93.19              | 356.50         | 9,264.5                     | 2,704.6         | -852.4          | 2,820.9                       | 0.00                          | 0.00                         | 0.00                        |  |
| 12,200.0                                   | 93.19              | 356.50         | 9,258.9                     | 2,804.3         | -858.5          | 2,919.7                       | 0.00                          | 0.00                         | 0.00                        |  |
| 12,300.0                                   | 93.19              | 356.50         | 9,253.3                     | 2,903.9         | -864.6          | 3,018.6                       | 0.00                          | 0.00                         | 0.00                        |  |
| 12,400.0                                   | 93.19              | 356.50         | 9,247.8                     | 3,003.6         | -870.7          | 3,117.4                       | 0.00                          | 0.00                         | 0.00                        |  |
| 12,500.0                                   | 93.19              | 356.50         | 9,242.2                     | 3,103.2         | -876.8          | 3,216.3                       | 0.00                          | 0.00                         | 0.00                        |  |
| 12,600.0                                   | 93.19              | 356.50         | 9,236.6                     | 3,202.9         | -882.9          | 3,315.1                       | 0.00                          | 0.00                         | 0.00                        |  |
| 12,700.0                                   | 93.19              | 356.50         | 9,231.1                     | 3,302.6         | -889.0          | 3,413.9                       | 0.00                          | 0.00                         | 0.00                        |  |
| 12,800.0                                   | 93.19              | 356.50         | 9,225.5                     | 3,402.2         | -895.1          | 3,512.8                       | 0.00                          | 0.00                         | 0.00                        |  |
| 12,900.0                                   | 93.19              | 356.50         | 9,219.9                     | 3,501.9         | -901.2          | 3,611.6                       | 0.00                          | 0.00                         | 0.00                        |  |



TDS  
Planning Report



|           |                           |                              |                   |
|-----------|---------------------------|------------------------------|-------------------|
| Database: | EDM 5000.1 Single User Db | Local Co-ordinate Reference: | Well #2H          |
| Company:  | COG Operating LLC         | TVD Reference:               | KB @ 3552.8usft   |
| Project:  | Lea County, NM            | MD Reference:                | KB @ 3552.8usft   |
| Site:     | Picasso Federal Com       | North Reference:             | Grid              |
| Well:     | #2H                       | Survey Calculation Method:   | Minimum Curvature |
| Wellbore: | OH                        |                              |                   |
| Design:   | Plan #6                   |                              |                   |

| Planned 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) |
| 13,000.0              | 93.19           | 356.50      | 9,214.4               | 3,601.5     | -907.3      | 3,710.5                 | 0.00                    | 0.00                   | 0.00                  |
| 13,100.0              | 93.19           | 356.50      | 9,208.8               | 3,701.2     | -913.4      | 3,809.3                 | 0.00                    | 0.00                   | 0.00                  |
| 13,200.0              | 93.19           | 356.50      | 9,203.2               | 3,800.9     | -919.5      | 3,908.2                 | 0.00                    | 0.00                   | 0.00                  |
| 13,300.0              | 93.19           | 356.50      | 9,197.7               | 3,900.5     | -925.6      | 4,007.0                 | 0.00                    | 0.00                   | 0.00                  |
| 13,400.0              | 93.19           | 356.50      | 9,192.1               | 4,000.2     | -931.7      | 4,105.9                 | 0.00                    | 0.00                   | 0.00                  |
| 13,500.0              | 93.19           | 356.50      | 9,186.5               | 4,099.8     | -937.8      | 4,204.7                 | 0.00                    | 0.00                   | 0.00                  |
| 13,600.0              | 93.19           | 356.50      | 9,181.0               | 4,199.5     | -943.9      | 4,303.5                 | 0.00                    | 0.00                   | 0.00                  |
| 13,700.0              | 93.19           | 356.50      | 9,175.4               | 4,299.1     | -950.0      | 4,402.4                 | 0.00                    | 0.00                   | 0.00                  |
| 13,800.0              | 93.19           | 356.50      | 9,169.8               | 4,398.8     | -956.1      | 4,501.2                 | 0.00                    | 0.00                   | 0.00                  |
| 13,900.0              | 93.19           | 356.50      | 9,164.3               | 4,498.5     | -962.2      | 4,600.1                 | 0.00                    | 0.00                   | 0.00                  |
| 14,000.0              | 93.19           | 356.50      | 9,158.7               | 4,598.1     | -968.3      | 4,698.9                 | 0.00                    | 0.00                   | 0.00                  |
| 14,100.0              | 93.19           | 356.50      | 9,153.1               | 4,697.8     | -974.5      | 4,797.8                 | 0.00                    | 0.00                   | 0.00                  |
| 14,156.5              | 93.19           | 356.50      | 9,150.0               | 4,754.1     | -977.9      | 4,853.6                 | 0.00                    | 0.00                   | 0.00                  |
| TD at 14156.5         |                 |             |                       |             |             |                         |                         |                        |                       |

| Design Targets            |               |              |            |             |             |                 |                |                  |                   |
|---------------------------|---------------|--------------|------------|-------------|-------------|-----------------|----------------|------------------|-------------------|
| Target Name               | Dip Angle (°) | Dip Dir. (°) | TVD (usft) | +N-S (usft) | +E-W (usft) | Northing (usft) | Easting (usft) | Latitude         | Longitude         |
| - hit/miss target         |               |              |            |             |             |                 |                |                  |                   |
| - Shape                   |               |              |            |             |             |                 |                |                  |                   |
| PBHL (PFC #2H/OH)         | 0.00          | 0.00         | 9,150.0    | 4,754.1     | -977.9      | 451,475.60      | 765,936.50     | 32° 14' 17.867 N | 103° 28' 23.668 W |
| - plan hits target center |               |              |            |             |             |                 |                |                  |                   |
| - Point                   |               |              |            |             |             |                 |                |                  |                   |
| EOC (PFC #2H/OH Plan      | 0.00          | 0.00         | 9,400.0    | 429.3       | -339.9      | 447,150.77      | 766,574.49     | 32° 13' 35.021 N | 103° 28' 16.645 W |
| - plan hits target center |               |              |            |             |             |                 |                |                  |                   |
| - Point                   |               |              |            |             |             |                 |                |                  |                   |

| Plan Annotations      |                       |                   |             |                                            |
|-----------------------|-----------------------|-------------------|-------------|--------------------------------------------|
| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates |             | Comment                                    |
|                       |                       | +N-S (usft)       | +E-W (usft) |                                            |
| 8,900.0               | 8,898.5               | 58.9              | 3.1         | TIE-ON - Start 36.3 hold at 8900.0 MD      |
| 8,936.3               | 8,934.8               | 59.2              | 2.2         | KOP - Start DLS 12.00 TFO 29.17            |
| 9,701.5               | 9,400.0               | 429.2             | -339.9      | EOC - Start 100.0 hold at 9701.5 MD        |
| 9,801.5               | 9,394.5               | 503.4             | -406.7      | TURN - Start DLS 4.00 TFO 88.89            |
| 10,762.3              | 9,338.9               | 1,371.5           | -770.7      | END TURN - Start 3394.2 hold at 10762.3 MD |
| 14,156.5              | 9,150.0               | 4,754.1           | -977.9      | TD at 14156.5                              |