

**STATE OF NEW MEXICO  
DEPARTMENT OF ENERGY, MINERALS AND NATURAL RESOURCES  
OIL CONSERVATION DIVISION**

**APPLICATION OF EOG RESOURCES, INC.  
FOR A NON-STANDARD SPACING AND PRORATION  
UNIT AND COMPULSORY POOLING,  
EDDY COUNTY, NEW MEXICO.**

**CASE NO. 14574**

**AFFIDAVIT OF DARYL JAY SIEBENS JR**

STATE OF TEXAS            )  
                                  ) ss.  
COUNTY OF MIDLAND    )

I, Daryl Jay Siebens Jr, being first duly sworn on oath, states as follows:

1. My name is Daryl Jay Siebens Jr. I reside in Midland, Texas. I am the petroleum geophysicist/geologist employed by EOG Resources, Inc. ("EOG") who is familiar with the geology in the S/2 N/2 of Section 1, Township 18 South, Range 29 East, NMPM, Eddy County, New Mexico.
2. Attachment A is a Net Porosity Isochore Map (color filled contours) of the lower sand member, of the Second Bone Spring Sand formation, overlain by its Structure Map (contours only). This map shows the Sand Tank 1 Fed Com #4H, which is to be drilled east to west, will drill through a net porosity 'thick' in a structurally up-dip position. Also, shown is the location of cross-section A-A'.
3. Attachment B is a cross-section, A-A', between the Cerritos 'APT' Fed #1 and the Sand Tank 1 Fed #1, just north of the Sand Tank 1 Fed Com #4H horizontal path. This cross-section shows the lower sand member, of the Second Bone Spring Sand formation, as our target. Also, shown is the diagrammatic projection of the planned horizontal.
4. Attachment C is the horizontal drilling plan for the subject well. A horizontal wellbore will test a greater reservoir length, increasing the chances for an economic completion.
5. All four quarter-quarter sections in the well unit are prospective in the Bone Spring formation.
6. EOG Resources anticipates producing reserves from each quarter-quarter section.

FURTHER AFFIANT SAYETH NOT.

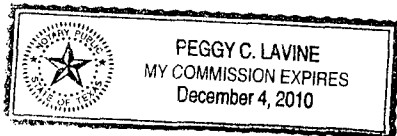
*[Signature]*

SUBSCRIBED AND SWORN before me on this 29<sup>th</sup> day of Nov 2010.

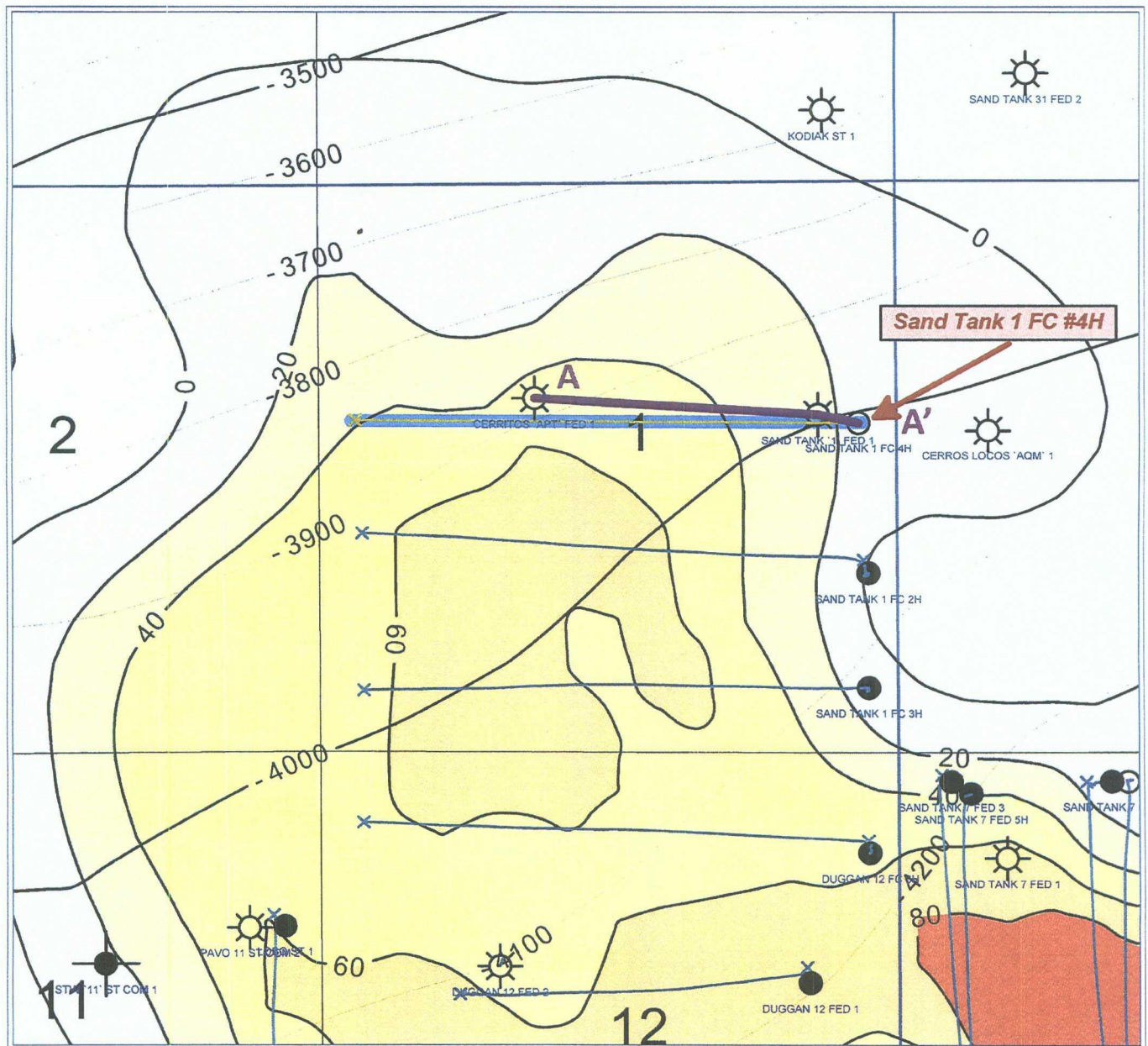
*Peggy C. Lavine*  
Notary Public

My Commission Expires:

12-4-10



Attachment "A"  
Sand Tank 1 Fed Com #4H  
Second Bone Spring Sand formation  
Net Porosity Isochore Map (color filled contours)  
Structure Map (contours only)



**Geological Log Data:**

| Depth (ft)  | GR (API) | DPHZ  | Formation            |
|-------------|----------|-------|----------------------|
| 6500 - 6700 | ~120     | ~0.05 | 2nd Bone Spring Carb |
| 6700 - 7000 | ~100     | ~0.05 | 2nd Bone Spring Sand |
| 7000 - 7300 | ~120     | ~0.05 | Lower Sand Member    |
| 7300 - 7700 | ~100     | ~0.05 | 3rd Bone Spring Carb |

**Log Labels:**

- 2nd Bone Spring Carb**
- 2nd Bone Spring Sand**
- Lower Sand Member**
- 3rd Bone Spring Carb**

**Log Headers:**

- Left Header:** CERRITOS 'APT' FED 1, T105 R29E S1, 3.554
- Right Header:** SAND TANK 1 FC #4H, T105 R29E S1, 3.541

**Log Scale:**

- GR (API):** 0 to 150
- DPHZ:** 0.3 to -0.1



**EOG Resources, Inc.**

**Eddy County**

**Sand Tank 1 Fed Com**

**#4H**

**OH**

**Plan: Plan #1**

## **Pathfinder X & Y Planning Report**

**29 June, 2009**

# **PATHFINDER**



**Pathfinder Energy Services**  
Pathfinder X & Y Planning Report



**Company:** EOG Resources, Inc.  
**Project:** Eddy County  
**Site:** Sand Tank 1 Fed Com  
**Well:** #4H  
**Wellbore:** OH  
**Design:** Plan #1

**Local Co-ordinate Reference:**  
**TVD Reference:** WELL @ 3557.80ft (19' KB Correction)  
**MD Reference:** WELL @ 3557.80ft (19' KB Correction)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Database:** Midland Database

**Well #4H**  
**WELL @ 3557.80ft (19' KB Correction)**  
**Grid**  
**Minimum Curvature**  
**Midland Database**

|                    |                                      |                      |                |
|--------------------|--------------------------------------|----------------------|----------------|
| <b>Project</b>     | Eddy County                          | <b>System Datum:</b> | Mean Sea Level |
| <b>Map System:</b> | US State Plane 1927 (Exact solution) |                      |                |
| <b>Geo Datum:</b>  | NAD 1927 (NADCON CONUS)              |                      |                |
| <b>Map Zone:</b>   | New Mexico East 3001                 |                      |                |

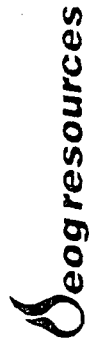
|                              |                     |                                 |                                    |
|------------------------------|---------------------|---------------------------------|------------------------------------|
| <b>Site</b>                  | Sand Tank 1 Fed Com |                                 |                                    |
| <b>Site Position:</b>        |                     | <b>Northing:</b> 645,298.300 ft | <b>Latitude:</b> 32° 46' 25.050 N  |
| <b>From:</b>                 | Map                 | <b>Easting:</b> 596,324.000 ft  | <b>Longitude:</b> 104° 1' 11.807 W |
| <b>Position Uncertainty:</b> | 0.00 ft             | <b>Slot Radius:</b>             | <b>Grid Convergence:</b> 0.17 °    |

|                             |               |                                 |                                    |
|-----------------------------|---------------|---------------------------------|------------------------------------|
| <b>Well</b>                 | #4H           |                                 |                                    |
| <b>Well Position</b>        | +N/-S 0.00 ft | <b>Northing:</b> 646,702.900 ft | <b>Latitude:</b> 32° 46' 38.951 N  |
|                             | +E/-W 0.00 ft | <b>Easting:</b> 596,234.300 ft  | <b>Longitude:</b> 104° 1' 12.809 W |
| <b>Position Uncertainty</b> | 0.00 ft       | <b>Wellhead Elevation:</b>      | <b>Ground Level:</b> 3,538.80 ft   |

|                  |                   |                    |                                   |
|------------------|-------------------|--------------------|-----------------------------------|
| <b>Wellbore</b>  | OH                |                    |                                   |
| <b>Magnetics</b> | <b>Model Name</b> | <b>Sample Date</b> | <b>Dip Angle (°)</b>              |
|                  | IGRF200510        | 06/29/2009         | 8.06                              |
|                  |                   |                    | <b>Field Strength (nT)</b> 49,123 |

|                          |                              |                      |                             |
|--------------------------|------------------------------|----------------------|-----------------------------|
| <b>Design</b>            | Plan #1                      |                      |                             |
| <b>Audit Notes:</b>      |                              |                      |                             |
| <b>Version:</b>          | <b>Phase:</b>                | <b>Tie On Depth:</b> |                             |
|                          | PLAN                         |                      | 0.00                        |
| <b>Vertical Section:</b> | <b>Depth From (TVD) (ft)</b> | <b>+N/-S (ft)</b>    | <b>+E/-W (ft)</b>           |
|                          | 0.00                         | 0.00                 | 0.00                        |
|                          |                              |                      | <b>Direction (°)</b> 270.31 |

|                            |                |                          |                    |
|----------------------------|----------------|--------------------------|--------------------|
| <b>Survey Tool Program</b> | <b>Date</b>    | 06/29/2009               |                    |
| <b>From (ft)</b>           | <b>To (ft)</b> | <b>Survey (Wellbore)</b> | <b>Description</b> |
| 0.00                       | 11,974.63      | Plan #1 (OH)             | MWD - Standard     |
|                            |                |                          | MWD                |



Pathfinder Energy Services  
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Company:

EOG Resources, Inc.  
Eddy County  
Sand Tank 1 Fed Com  
Well: #4H  
Wellbore: OH  
Design: Plan #1

Local Co-ordinate Reference:

TVD Reference:  
MD Reference:  
North Reference:  
Survey Calculation Method:  
Database:

Well #4H

WELL @ 3557.80ft (19' KB Correction)  
WELL @ 3557.80ft (19' KB Correction)  
Grid  
Minimum Curvature  
Midland Database

Planned Survey

| MD<br>(ft) | Inc<br>(") | Adj<br>(") | TVD<br>(ft) | TVDSS<br>(ft) | N/S<br>(ft) | E/W<br>(ft) | V. Sec<br>(ft) | D Leg<br>(°/100ft) | Northing<br>(ft) | Easting<br>(ft) |
|------------|------------|------------|-------------|---------------|-------------|-------------|----------------|--------------------|------------------|-----------------|
| 0.00       | 0.00       | 0.00       | 0.00        | -3,557.80     | 0.00        | 0.00        | 0.00           | 0.00               | 646,702.90       | 596,234.30      |
| 100.00     | 0.00       | 0.00       | 100.00      | -3,457.80     | 0.00        | 0.00        | 0.00           | 0.00               | 646,702.90       | 596,234.30      |
| 200.00     | 0.00       | 0.00       | 200.00      | -3,357.80     | 0.00        | 0.00        | 0.00           | 0.00               | 646,702.90       | 596,234.30      |
| 300.00     | 0.00       | 0.00       | 300.00      | -3,257.80     | 0.00        | 0.00        | 0.00           | 0.00               | 646,702.90       | 596,234.30      |
| 400.00     | 0.00       | 0.00       | 400.00      | -3,157.80     | 0.00        | 0.00        | 0.00           | 0.00               | 646,702.90       | 596,234.30      |
| 500.00     | 0.00       | 0.00       | 500.00      | -3,057.80     | 0.00        | 0.00        | 0.00           | 0.00               | 646,702.90       | 596,234.30      |
| 600.00     | 0.00       | 0.00       | 600.00      | -2,957.80     | 0.00        | 0.00        | 0.00           | 0.00               | 646,702.90       | 596,234.30      |
| 700.00     | 0.00       | 0.00       | 700.00      | -2,857.80     | 0.00        | 0.00        | 0.00           | 0.00               | 646,702.90       | 596,234.30      |
| 800.00     | 0.00       | 0.00       | 800.00      | -2,757.80     | 0.00        | 0.00        | 0.00           | 0.00               | 646,702.90       | 596,234.30      |
| 900.00     | 0.00       | 0.00       | 900.00      | -2,657.80     | 0.00        | 0.00        | 0.00           | 0.00               | 646,702.90       | 596,234.30      |
| 1,000.00   | 0.00       | 0.00       | 1,000.00    | -2,557.80     | 0.00        | 0.00        | 0.00           | 0.00               | 646,702.90       | 596,234.30      |
| 1,100.00   | 0.00       | 0.00       | 1,100.00    | -2,457.80     | 0.00        | 0.00        | 0.00           | 0.00               | 646,702.90       | 596,234.30      |
| 1,200.00   | 0.00       | 0.00       | 1,200.00    | -2,357.80     | 0.00        | 0.00        | 0.00           | 0.00               | 646,702.90       | 596,234.30      |
| 1,300.00   | 0.00       | 0.00       | 1,300.00    | -2,257.80     | 0.00        | 0.00        | 0.00           | 0.00               | 646,702.90       | 596,234.30      |
| 1,400.00   | 0.00       | 0.00       | 1,400.00    | -2,157.80     | 0.00        | 0.00        | 0.00           | 0.00               | 646,702.90       | 596,234.30      |
| 1,500.00   | 0.00       | 0.00       | 1,500.00    | -2,057.80     | 0.00        | 0.00        | 0.00           | 0.00               | 646,702.90       | 596,234.30      |
| 1,600.00   | 0.00       | 0.00       | 1,600.00    | -1,957.80     | 0.00        | 0.00        | 0.00           | 0.00               | 646,702.90       | 596,234.30      |
| 1,700.00   | 0.00       | 0.00       | 1,700.00    | -1,857.80     | 0.00        | 0.00        | 0.00           | 0.00               | 646,702.90       | 596,234.30      |
| 1,800.00   | 0.00       | 0.00       | 1,800.00    | -1,757.80     | 0.00        | 0.00        | 0.00           | 0.00               | 646,702.90       | 596,234.30      |
| 1,900.00   | 0.00       | 0.00       | 1,900.00    | -1,657.80     | 0.00        | 0.00        | 0.00           | 0.00               | 646,702.90       | 596,234.30      |
| 2,000.00   | 0.00       | 0.00       | 2,000.00    | -1,557.80     | 0.00        | 0.00        | 0.00           | 0.00               | 646,702.90       | 596,234.30      |
| 2,100.00   | 0.00       | 0.00       | 2,100.00    | -1,457.80     | 0.00        | 0.00        | 0.00           | 0.00               | 646,702.90       | 596,234.30      |
| 2,200.00   | 0.00       | 0.00       | 2,200.00    | -1,357.80     | 0.00        | 0.00        | 0.00           | 0.00               | 646,702.90       | 596,234.30      |
| 2,300.00   | 0.00       | 0.00       | 2,300.00    | -1,257.80     | 0.00        | 0.00        | 0.00           | 0.00               | 646,702.90       | 596,234.30      |
| 2,400.00   | 0.00       | 0.00       | 2,400.00    | -1,157.80     | 0.00        | 0.00        | 0.00           | 0.00               | 646,702.90       | 596,234.30      |
| 2,500.00   | 0.00       | 0.00       | 2,500.00    | -1,057.80     | 0.00        | 0.00        | 0.00           | 0.00               | 646,702.90       | 596,234.30      |
| 2,600.00   | 0.00       | 0.00       | 2,600.00    | -957.80       | 0.00        | 0.00        | 0.00           | 0.00               | 646,702.90       | 596,234.30      |



Pathfinder Energy Services  
Pathfinder X & Y Planning Report



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Site: Sand Tank 1 Fed Com  
Well: #4H  
Wellbore: OH  
Design: Plan #1

Local Co-ordinate Reference:  
TVD Reference:  
MD Reference:  
North Reference:  
Survey Calculation Method:  
Database:

Well #4H  
WELL @ 3557 80ft (19' KB Correction)  
WELL @ 3557 80ft (19' KB Correction)  
Grid  
Minimum Curvature  
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Planned Survey

| MD<br>(ft) | Inc<br>(°) | Azi<br>(°) | TVD<br>(ft) | TVDSS<br>(ft) | N/S<br>(ft) | E/W<br>(ft) | V. Sec<br>(ft) | DLog<br>("/100ft) | Northing<br>(ft) | Easting<br>(ft) |
|------------|------------|------------|-------------|---------------|-------------|-------------|----------------|-------------------|------------------|-----------------|
| 2,700.00   | 0.00       | 0.00       | 2,700.00    | -857.80       | 0.00        | 0.00        | 0.00           | 0.00              | 646,702.90       | 596,234.30      |
| 2,800.00   | 0.00       | 0.00       | 2,800.00    | -757.80       | 0.00        | 0.00        | 0.00           | 0.00              | 646,702.90       | 596,234.30      |
| 2,900.00   | 0.00       | 0.00       | 2,900.00    | -657.80       | 0.00        | 0.00        | 0.00           | 0.00              | 646,702.90       | 596,234.30      |
| 3,000.00   | 0.00       | 0.00       | 3,000.00    | -557.80       | 0.00        | 0.00        | 0.00           | 0.00              | 646,702.90       | 596,234.30      |
| 3,100.00   | 0.00       | 0.00       | 3,100.00    | -457.80       | 0.00        | 0.00        | 0.00           | 0.00              | 646,702.90       | 596,234.30      |
| 3,200.00   | 0.00       | 0.00       | 3,200.00    | -357.80       | 0.00        | 0.00        | 0.00           | 0.00              | 646,702.90       | 596,234.30      |
| 3,300.00   | 0.00       | 0.00       | 3,300.00    | -257.80       | 0.00        | 0.00        | 0.00           | 0.00              | 646,702.90       | 596,234.30      |
| 3,400.00   | 0.00       | 0.00       | 3,400.00    | -157.80       | 0.00        | 0.00        | 0.00           | 0.00              | 646,702.90       | 596,234.30      |
| 3,500.00   | 0.00       | 0.00       | 3,500.00    | -57.80        | 0.00        | 0.00        | 0.00           | 0.00              | 646,702.90       | 596,234.30      |
| 3,600.00   | 0.00       | 0.00       | 3,600.00    | 42.20         | 0.00        | 0.00        | 0.00           | 0.00              | 646,702.90       | 596,234.30      |
| 3,700.00   | 0.00       | 0.00       | 3,700.00    | 142.20        | 0.00        | 0.00        | 0.00           | 0.00              | 646,702.90       | 596,234.30      |
| 3,800.00   | 0.00       | 0.00       | 3,800.00    | 242.20        | 0.00        | 0.00        | 0.00           | 0.00              | 646,702.90       | 596,234.30      |
| 3,900.00   | 0.00       | 0.00       | 3,900.00    | 342.20        | 0.00        | 0.00        | 0.00           | 0.00              | 646,702.90       | 596,234.30      |
| 4,000.00   | 0.00       | 0.00       | 4,000.00    | 442.20        | 0.00        | 0.00        | 0.00           | 0.00              | 646,702.90       | 596,234.30      |
| 4,100.00   | 0.00       | 0.00       | 4,100.00    | 542.20        | 0.00        | 0.00        | 0.00           | 0.00              | 646,702.90       | 596,234.30      |
| 4,200.00   | 0.00       | 0.00       | 4,200.00    | 642.20        | 0.00        | 0.00        | 0.00           | 0.00              | 646,702.90       | 596,234.30      |
| 4,300.00   | 0.00       | 0.00       | 4,300.00    | 742.20        | 0.00        | 0.00        | 0.00           | 0.00              | 646,702.90       | 596,234.30      |
| 4,400.00   | 0.00       | 0.00       | 4,400.00    | 842.20        | 0.00        | 0.00        | 0.00           | 0.00              | 646,702.90       | 596,234.30      |
| 4,500.00   | 0.00       | 0.00       | 4,500.00    | 942.20        | 0.00        | 0.00        | 0.00           | 0.00              | 646,702.90       | 596,234.30      |
| 4,600.00   | 0.00       | 0.00       | 4,600.00    | 1,042.20      | 0.00        | 0.00        | 0.00           | 0.00              | 646,702.90       | 596,234.30      |
| 4,700.00   | 0.00       | 0.00       | 4,700.00    | 1,142.20      | 0.00        | 0.00        | 0.00           | 0.00              | 646,702.90       | 596,234.30      |
| 4,800.00   | 0.00       | 0.00       | 4,800.00    | 1,242.20      | 0.00        | 0.00        | 0.00           | 0.00              | 646,702.90       | 596,234.30      |
| 4,900.00   | 0.00       | 0.00       | 4,900.00    | 1,342.20      | 0.00        | 0.00        | 0.00           | 0.00              | 646,702.90       | 596,234.30      |
| 5,000.00   | 0.00       | 0.00       | 5,000.00    | 1,442.20      | 0.00        | 0.00        | 0.00           | 0.00              | 646,702.90       | 596,234.30      |
| 5,100.00   | 0.00       | 0.00       | 5,100.00    | 1,542.20      | 0.00        | 0.00        | 0.00           | 0.00              | 646,702.90       | 596,234.30      |
| 5,200.00   | 0.00       | 0.00       | 5,200.00    | 1,642.20      | 0.00        | 0.00        | 0.00           | 0.00              | 646,702.90       | 596,234.30      |
| 5,300.00   | 0.00       | 0.00       | 5,300.00    | 1,742.20      | 0.00        | 0.00        | 0.00           | 0.00              | 646,702.90       | 596,234.30      |



Pathfinder Energy Services  
Pathfinder X & Y Planning Report



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Wellbore: OH  
Design: Plan #1

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Well #4H  
WELL @ 3557.80ft (19' KB Correction)  
WELL @ 3557.80ft (19' KB Correction)  
Grid  
Minimum Curvature  
Midland Database

Planned Survey

| MD<br>(ft)                                   | Inc<br>(°) | Azi<br>(°) | TVD<br>(ft) | TVDSS<br>(ft) | NS<br>(ft) | EW<br>(ft) | V. Sec<br>(ft) | DLog<br>(°/100ft) | Northing<br>(ft) | Easting<br>(ft) |
|----------------------------------------------|------------|------------|-------------|---------------|------------|------------|----------------|-------------------|------------------|-----------------|
| 5,400.00                                     | 0.00       | 0.00       | 5,400.00    | 1,842.20      | 0.00       | 0.00       | 0.00           | 0.00              | 646,702.90       | 596,234.30      |
| 5,500.00                                     | 0.00       | 0.00       | 5,500.00    | 1,942.20      | 0.00       | 0.00       | 0.00           | 0.00              | 646,702.90       | 596,234.30      |
| 5,600.00                                     | 0.00       | 0.00       | 5,600.00    | 2,042.20      | 0.00       | 0.00       | 0.00           | 0.00              | 646,702.90       | 596,234.30      |
| 5,700.00                                     | 0.00       | 0.00       | 5,700.00    | 2,142.20      | 0.00       | 0.00       | 0.00           | 0.00              | 646,702.90       | 596,234.30      |
| 5,800.00                                     | 0.00       | 0.00       | 5,800.00    | 2,242.20      | 0.00       | 0.00       | 0.00           | 0.00              | 646,702.90       | 596,234.30      |
| 5,900.00                                     | 0.00       | 0.00       | 5,900.00    | 2,342.20      | 0.00       | 0.00       | 0.00           | 0.00              | 646,702.90       | 596,234.30      |
| 6,000.00                                     | 0.00       | 0.00       | 6,000.00    | 2,442.20      | 0.00       | 0.00       | 0.00           | 0.00              | 646,702.90       | 596,234.30      |
| 6,100.00                                     | 0.00       | 0.00       | 6,100.00    | 2,542.20      | 0.00       | 0.00       | 0.00           | 0.00              | 646,702.90       | 596,234.30      |
| 6,200.00                                     | 0.00       | 0.00       | 6,200.00    | 2,642.20      | 0.00       | 0.00       | 0.00           | 0.00              | 646,702.90       | 596,234.30      |
| 6,300.00                                     | 0.00       | 0.00       | 6,300.00    | 2,742.20      | 0.00       | 0.00       | 0.00           | 0.00              | 646,702.90       | 596,234.30      |
| 6,400.00                                     | 0.00       | 0.00       | 6,400.00    | 2,842.20      | 0.00       | 0.00       | 0.00           | 0.00              | 646,702.90       | 596,234.30      |
| 6,500.00                                     | 0.00       | 0.00       | 6,500.00    | 2,942.20      | 0.00       | 0.00       | 0.00           | 0.00              | 646,702.90       | 596,234.30      |
| 6,600.00                                     | 0.00       | 0.00       | 6,600.00    | 3,042.20      | 0.00       | 0.00       | 0.00           | 0.00              | 646,702.90       | 596,234.30      |
| 6,700.00                                     | 0.00       | 0.00       | 6,700.00    | 3,142.20      | 0.00       | 0.00       | 0.00           | 0.00              | 646,702.90       | 596,234.30      |
| 6,800.00                                     | 0.00       | 0.00       | 6,800.00    | 3,242.20      | 0.00       | 0.00       | 0.00           | 0.00              | 646,702.90       | 596,234.30      |
| 6,900.00                                     | 0.00       | 0.00       | 6,900.00    | 3,342.20      | 0.00       | 0.00       | 0.00           | 0.00              | 646,702.90       | 596,234.30      |
| 7,000.00                                     | 0.00       | 0.00       | 7,000.00    | 3,442.20      | 0.00       | 0.00       | 0.00           | 0.00              | 646,702.90       | 596,234.30      |
| 7,100.00                                     | 0.00       | 0.00       | 7,100.00    | 3,542.20      | 0.00       | 0.00       | 0.00           | 0.00              | 646,702.90       | 596,234.30      |
| 7,133.00                                     | 0.00       | 0.00       | 7,133.00    | 3,575.20      | 0.00       | 0.00       | 0.00           | 0.00              | 646,702.90       | 596,234.30      |
| KOP-7133.00MD,0.00°INC,270.30°AZI,7133.00TVD |            |            |             |               |            |            |                |                   |                  |                 |
| 7,150.00                                     | 2.04       | 270.31     | 7,150.00    | 3,592.20      | 0.00       | -0.30      | 0.30           | 12.00             | 646,702.90       | 596,234.00      |
| 7,175.00                                     | 5.04       | 270.31     | 7,175.00    | 3,617.15      | 0.01       | -1.85      | 1.85           | 12.00             | 646,702.91       | 596,232.45      |
| 7,200.00                                     | 8.04       | 270.31     | 7,199.78    | 3,641.98      | 0.03       | -4.69      | 4.69           | 12.00             | 646,702.93       | 596,229.61      |
| 7,225.00                                     | 11.04      | 270.31     | 7,224.43    | 3,666.63      | 0.05       | -8.84      | 8.84           | 12.00             | 646,702.95       | 596,225.46      |
| 7,250.00                                     | 14.04      | 270.31     | 7,248.83    | 3,691.03      | 0.08       | -14.26     | 14.26          | 12.00             | 646,702.98       | 596,220.04      |
| 7,275.00                                     | 17.04      | 270.31     | 7,272.92    | 3,715.12      | 0.11       | -20.96     | 20.96          | 12.00             | 646,703.01       | 596,213.34      |
| 7,300.00                                     | 20.04      | 270.31     | 7,296.62    | 3,738.82      | 0.16       | -28.91     | 28.91          | 12.00             | 646,703.06       | 596,205.39      |



Pathfinder Energy Services  
Pathfinder X & Y Planning Report



Company: EOG Resources, Inc.  
Project: Eddy County  
Site: Sand Tank 1 Fed Com  
Well: #4H  
Wellbore: OH  
Design: Plan #1

Local Co-ordinate Reference:  
TVD Reference:  
MD Reference:  
North Reference:  
Survey Calculation Method:  
Database:

Well #4H  
WELL @ 3557.80ft (19' KB Correction)  
WELL @ 3557.80ft (19' KB Correction)  
Grid  
Minimum Curvature  
Midland Database

Planned Survey

| MD<br>(ft)                                                         | Inc<br>(°) | Azi<br>(°) | TVD<br>(ft) | TVDSS<br>(ft) | N/S<br>(ft) | EW<br>(ft) | V. Sec<br>(ft) | DLog<br>(°/100ft) | Northing<br>(ft) | Easting<br>(ft) |
|--------------------------------------------------------------------|------------|------------|-------------|---------------|-------------|------------|----------------|-------------------|------------------|-----------------|
| 7,325.00                                                           | 23.04      | 270.31     | 7,319.87    | 3,762.07      | 0.21        | -38.08     | 38.09          | 12.00             | 646,703.11       | 596,196.22      |
| 7,350.00                                                           | 26.04      | 270.31     | 7,342.61    | 3,784.81      | 0.26        | -48.47     | 48.47          | 12.00             | 646,703.16       | 596,185.83      |
| 7,375.00                                                           | 29.04      | 270.31     | 7,364.77    | 3,806.97      | 0.32        | -60.02     | 60.02          | 12.00             | 646,703.22       | 596,174.28      |
| 7,400.00                                                           | 32.04      | 270.31     | 7,386.30    | 3,828.50      | 0.39        | -72.73     | 72.73          | 12.00             | 646,703.29       | 596,161.57      |
| 7,425.00                                                           | 35.04      | 270.31     | 7,407.14    | 3,849.34      | 0.47        | -86.54     | 86.54          | 12.00             | 646,703.37       | 596,147.76      |
| 7,450.00                                                           | 38.04      | 270.31     | 7,427.22    | 3,869.42      | 0.55        | -101.42    | 101.42         | 12.00             | 646,703.45       | 596,132.88      |
| 7,475.00                                                           | 41.04      | 270.31     | 7,446.50    | 3,888.70      | 0.63        | -117.33    | 117.33         | 12.00             | 646,703.53       | 596,116.97      |
| 7,500.00                                                           | 44.04      | 270.31     | 7,464.92    | 3,907.12      | 0.73        | -134.23    | 134.23         | 12.00             | 646,703.63       | 596,100.07      |
| 7,525.00                                                           | 47.04      | 270.31     | 7,482.43    | 3,924.63      | 0.82        | -152.07    | 152.07         | 12.00             | 646,703.72       | 596,082.23      |
| 7,550.00                                                           | 50.04      | 270.31     | 7,498.98    | 3,941.18      | 0.92        | -170.80    | 170.81         | 12.00             | 646,703.82       | 596,063.50      |
| 7,575.00                                                           | 53.04      | 270.31     | 7,514.52    | 3,956.72      | 1.03        | -190.38    | 190.38         | 12.00             | 646,703.93       | 596,043.92      |
| 7,600.00                                                           | 56.04      | 270.31     | 7,529.03    | 3,971.23      | 1.14        | -210.74    | 210.74         | 12.00             | 646,704.04       | 596,023.56      |
| 7,625.00                                                           | 59.04      | 270.31     | 7,542.44    | 3,984.64      | 1.25        | -231.83    | 231.83         | 12.00             | 646,704.15       | 596,002.47      |
| 7,650.00                                                           | 62.04      | 270.31     | 7,554.74    | 3,996.94      | 1.37        | -253.59    | 253.60         | 12.00             | 646,704.27       | 595,980.71      |
| 7,661.48                                                           | 63.42      | 270.31     | 7,560.00    | 4,002.20      | 1.43        | -263.80    | 263.80         | 12.00             | 646,704.33       | 595,970.50      |
| Top of F Sand - 7661.48' MD, 63.42' INC, 270.31' AZI, 7560.00' TVD |            |            |             |               |             |            |                |                   |                  |                 |
| 7,675.00                                                           | 65.04      | 270.31     | 7,565.88    | 4,008.08      | 1.49        | -275.97    | 275.97         | 12.00             | 646,704.39       | 595,958.33      |
| 7,700.00                                                           | 68.04      | 270.31     | 7,575.83    | 4,018.03      | 1.62        | -299.90    | 298.91         | 12.00             | 646,704.52       | 595,935.40      |
| 7,725.00                                                           | 71.04      | 270.31     | 7,584.57    | 4,026.77      | 1.74        | -322.32    | 322.33         | 12.00             | 646,704.64       | 595,911.98      |
| 7,750.00                                                           | 74.04      | 270.31     | 7,592.07    | 4,034.27      | 1.87        | -346.17    | 346.17         | 12.00             | 646,704.77       | 595,888.13      |
| 7,775.00                                                           | 77.04      | 270.31     | 7,598.31    | 4,040.51      | 2.00        | -370.37    | 370.38         | 12.00             | 646,704.90       | 595,863.93      |
| 7,800.00                                                           | 80.04      | 270.31     | 7,603.28    | 4,045.48      | 2.14        | -394.87    | 394.87         | 12.00             | 646,705.04       | 595,839.43      |
| 7,825.00                                                           | 83.04      | 270.31     | 7,606.96    | 4,049.16      | 2.27        | -419.59    | 419.60         | 12.00             | 646,705.17       | 595,814.71      |
| 7,850.00                                                           | 86.04      | 270.31     | 7,609.34    | 4,051.54      | 2.40        | -444.48    | 444.48         | 12.00             | 646,705.30       | 595,789.82      |
| 7,875.00                                                           | 89.04      | 270.31     | 7,610.41    | 4,052.61      | 2.54        | -469.45    | 469.46         | 12.00             | 646,705.44       | 595,764.85      |
| 7,900.00                                                           | 92.04      | 270.31     | 7,610.18    | 4,052.38      | 2.68        | -494.45    | 494.45         | 12.00             | 646,705.58       | 595,739.85      |



Pathfinder Energy Services  
Pathfinder X & Y Planning Report



Company: EOG Resources, Inc.  
Project: Eddy County  
Site: Sand Tank 1 Fed Com  
Well: #4H  
Wellbore: OH  
Design: Plan #1

Local Co-ordinate Reference:  
TVD Reference:  
MD Reference:  
North Reference:  
Survey Calculation Method:  
Database:

Well #4H  
WELL @ 3557.80ft (19' KB Correction)  
WELL @ 3557.80ft (19' KB Correction)  
Grid  
Minimum Curvature  
Midland Database

Planned Survey

| MD<br>(ft)                                                                          | Inc<br>(°) | Azi<br>(°) | TVD<br>(ft) | TVDSS<br>(ft) | N/S<br>(ft) | EW<br>(ft) | V. Sec<br>(ft) | D Leg<br>(*100ft) | Northing<br>(ft) | Easting<br>(ft) |
|-------------------------------------------------------------------------------------|------------|------------|-------------|---------------|-------------|------------|----------------|-------------------|------------------|-----------------|
| 7,904.44                                                                            | 92.57      | 270.31     | 7,610.00    | 4,052.20      | 2.70        | -498.88    | 498.89         | 12.00             | 646,705.60       | 595,735.42      |
| EOG-7904.44MD, 92.57INC, 270.31AZI, 7610.00TVD, 12.00TDL, 498.89VS, 2.70N, -498.88E |            |            |             |               |             |            |                |                   |                  |                 |
| 8,000.00                                                                            | 92.57      | 270.31     | 7,605.72    | 4,047.92      | 3.22        | -594.34    | 594.35         | 0.00              | 646,706.12       | 595,639.96      |
| 8,100.00                                                                            | 92.57      | 270.31     | 7,601.23    | 4,043.43      | 3.76        | -694.24    | 694.25         | 0.00              | 646,706.66       | 595,540.06      |
| 8,200.00                                                                            | 92.57      | 270.31     | 7,596.75    | 4,038.95      | 4.30        | -794.14    | 794.15         | 0.00              | 646,707.20       | 595,440.16      |
| 8,300.00                                                                            | 92.57      | 270.31     | 7,592.26    | 4,034.46      | 4.84        | -894.04    | 894.05         | 0.00              | 646,707.74       | 595,340.26      |
| 8,400.00                                                                            | 92.57      | 270.31     | 7,587.78    | 4,029.98      | 5.38        | -993.94    | 993.95         | 0.00              | 646,708.28       | 595,240.36      |
| 8,500.00                                                                            | 92.57      | 270.31     | 7,583.30    | 4,025.50      | 5.92        | -1,093.83  | 1,093.85       | 0.00              | 646,708.82       | 595,140.47      |
| 8,600.00                                                                            | 92.57      | 270.31     | 7,578.81    | 4,021.01      | 6.46        | -1,193.73  | 1,193.75       | 0.00              | 646,709.36       | 595,040.57      |
| 8,700.00                                                                            | 92.57      | 270.31     | 7,574.33    | 4,016.53      | 7.00        | -1,293.63  | 1,293.65       | 0.00              | 646,709.90       | 594,940.67      |
| 8,800.00                                                                            | 92.57      | 270.31     | 7,569.84    | 4,012.04      | 7.54        | -1,393.53  | 1,393.55       | 0.00              | 646,710.44       | 594,840.77      |
| 8,900.00                                                                            | 92.57      | 270.31     | 7,565.36    | 4,007.56      | 8.08        | -1,493.43  | 1,493.45       | 0.00              | 646,710.98       | 594,740.87      |
| 9,000.00                                                                            | 92.57      | 270.31     | 7,560.88    | 4,003.08      | 8.62        | -1,593.32  | 1,593.35       | 0.00              | 646,711.52       | 594,640.98      |
| 9,100.00                                                                            | 92.57      | 270.31     | 7,556.39    | 3,998.59      | 9.16        | -1,693.22  | 1,693.25       | 0.00              | 646,712.06       | 594,541.08      |
| 9,200.00                                                                            | 92.57      | 270.31     | 7,551.91    | 3,994.11      | 9.70        | -1,793.12  | 1,793.15       | 0.00              | 646,712.60       | 594,441.18      |
| 9,300.00                                                                            | 92.57      | 270.31     | 7,547.42    | 3,989.62      | 10.24       | -1,893.02  | 1,893.05       | 0.00              | 646,713.14       | 594,341.28      |
| 9,400.00                                                                            | 92.57      | 270.31     | 7,542.94    | 3,985.14      | 10.78       | -1,992.92  | 1,992.94       | 0.00              | 646,713.68       | 594,241.38      |
| 9,500.00                                                                            | 92.57      | 270.31     | 7,538.46    | 3,980.66      | 11.32       | -2,092.81  | 2,092.84       | 0.00              | 646,714.22       | 594,141.49      |
| 9,600.00                                                                            | 92.57      | 270.31     | 7,533.97    | 3,976.17      | 11.86       | -2,192.71  | 2,192.74       | 0.00              | 646,714.76       | 594,041.59      |
| 9,700.00                                                                            | 92.57      | 270.31     | 7,529.49    | 3,971.69      | 12.40       | -2,292.61  | 2,292.64       | 0.00              | 646,715.30       | 593,941.69      |
| 9,800.00                                                                            | 92.57      | 270.31     | 7,525.00    | 3,967.20      | 12.94       | -2,392.51  | 2,392.54       | 0.00              | 646,715.84       | 593,841.79      |
| 9,900.00                                                                            | 92.57      | 270.31     | 7,520.52    | 3,962.72      | 13.49       | -2,492.41  | 2,492.44       | 0.00              | 646,716.39       | 593,741.89      |
| 10,000.00                                                                           | 92.57      | 270.31     | 7,516.04    | 3,958.24      | 14.03       | -2,592.30  | 2,592.34       | 0.00              | 646,716.93       | 593,642.00      |
| 10,100.00                                                                           | 92.57      | 270.31     | 7,511.55    | 3,953.75      | 14.57       | -2,692.20  | 2,692.24       | 0.00              | 646,717.47       | 593,542.10      |
| 10,200.00                                                                           | 92.57      | 270.31     | 7,507.07    | 3,949.27      | 15.11       | -2,792.10  | 2,792.14       | 0.00              | 646,718.01       | 593,442.20      |
| 10,300.00                                                                           | 92.57      | 270.31     | 7,502.58    | 3,944.78      | 15.65       | -2,892.00  | 2,892.04       | 0.00              | 646,718.55       | 593,342.30      |
| 10,400.00                                                                           | 92.57      | 270.31     | 7,498.10    | 3,940.30      | 16.19       | -2,991.89  | 2,991.94       | 0.00              | 646,719.09       | 593,242.41      |



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Pathfinder X & Y Planning Report



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Project: Eddy County  
Site: Sand Tank 1 Fed Com  
Well: #4H  
Wellbore: OH  
Design: Plan #1

Local Co-ordinate Reference:  
TVD Reference:  
MD Reference:  
North Reference:  
Survey Calculation Method:  
Database:

Well #4H  
WELL @ 3557.80ft (19' KB Correction)  
WELL @ 3557.80ft (19' KB Correction)  
Grid  
Minimum Curvature  
Midland Database

Planned Survey

| MD<br>(ft)                                                                                | Inc<br>(°) | Azi<br>(°) | TVD<br>(ft) | TVDSS<br>(ft) | NS<br>(ft) | EW<br>(ft) | V. Sec<br>(ft) | D Lag<br>("/100ft) | Northing<br>(ft) | Easting<br>(ft) |
|-------------------------------------------------------------------------------------------|------------|------------|-------------|---------------|------------|------------|----------------|--------------------|------------------|-----------------|
| 10,500.00                                                                                 | 92.57      | 270.31     | 7,493.62    | 3,935.82      | 16.73      | -3,091.79  | 3,091.84       | 0.00               | 646,719.63       | 593,142.51      |
| 10,600.00                                                                                 | 92.57      | 270.31     | 7,489.13    | 3,931.33      | 17.27      | -3,191.69  | 3,191.74       | 0.00               | 646,720.17       | 593,042.61      |
| 10,700.00                                                                                 | 92.57      | 270.31     | 7,484.65    | 3,926.85      | 17.81      | -3,291.59  | 3,291.64       | 0.00               | 646,720.71       | 592,942.71      |
| 10,800.00                                                                                 | 92.57      | 270.31     | 7,480.16    | 3,922.36      | 18.35      | -3,391.49  | 3,391.54       | 0.00               | 646,721.25       | 592,842.81      |
| 10,900.00                                                                                 | 92.57      | 270.31     | 7,475.68    | 3,917.88      | 18.89      | -3,491.38  | 3,491.44       | 0.00               | 646,721.79       | 592,742.92      |
| 11,000.00                                                                                 | 92.57      | 270.31     | 7,471.20    | 3,913.40      | 19.43      | -3,591.28  | 3,591.34       | 0.00               | 646,722.33       | 592,643.02      |
| 11,100.00                                                                                 | 92.57      | 270.31     | 7,466.71    | 3,908.91      | 19.97      | -3,691.18  | 3,691.23       | 0.00               | 646,722.87       | 592,543.12      |
| 11,200.00                                                                                 | 92.57      | 270.31     | 7,462.23    | 3,904.43      | 20.51      | -3,791.08  | 3,791.13       | 0.00               | 646,723.41       | 592,443.22      |
| 11,300.00                                                                                 | 92.57      | 270.31     | 7,457.74    | 3,899.94      | 21.05      | -3,890.98  | 3,891.03       | 0.00               | 646,723.95       | 592,343.32      |
| 11,400.00                                                                                 | 92.57      | 270.31     | 7,453.26    | 3,895.46      | 21.59      | -3,990.87  | 3,990.93       | 0.00               | 646,724.49       | 592,243.43      |
| 11,500.00                                                                                 | 92.57      | 270.31     | 7,448.78    | 3,890.98      | 22.13      | -4,090.77  | 4,090.83       | 0.00               | 646,725.03       | 592,143.53      |
| 11,600.00                                                                                 | 92.57      | 270.31     | 7,444.29    | 3,886.49      | 22.67      | -4,190.67  | 4,190.73       | 0.00               | 646,725.57       | 592,043.63      |
| 11,700.00                                                                                 | 92.57      | 270.31     | 7,439.81    | 3,882.01      | 23.21      | -4,290.57  | 4,290.63       | 0.00               | 646,726.11       | 591,943.73      |
| 11,800.00                                                                                 | 92.57      | 270.31     | 7,435.32    | 3,877.52      | 23.75      | -4,390.47  | 4,390.53       | 0.00               | 646,726.65       | 591,843.83      |
| 11,900.00                                                                                 | 92.57      | 270.31     | 7,430.84    | 3,873.04      | 24.30      | -4,490.36  | 4,490.43       | 0.00               | 646,727.20       | 591,743.94      |
| 11,974.84                                                                                 | 92.57      | 270.31     | 7,427.48    | 3,869.68      | 24.70      | -4,565.13  | 4,565.19       | 0.00               | 646,727.60       | 591,669.17      |
| BHL-11974.85 MD, 92.57° INC, 270.31° AZI, 7427.48 TVD, 4565.20° VS, 24.70° N, -4565.14° E |            |            |             |               |            |            |                |                    |                  |                 |
| 12,000.00                                                                                 | 92.57      | 270.31     | 7,426.36    | 3,866.56      | 24.84      | -4,590.26  | 4,590.33       | 0.00               | 646,727.74       | 591,644.04      |
| 12,023.36                                                                                 | 92.57      | 270.31     | 7,425.31    | 3,867.51      | 24.96      | -4,613.60  | 4,613.67       | 0.00               | 646,727.86       | 591,620.70      |
| PBHL(#4HST1)                                                                              |            |            |             |               |            |            |                |                    |                  |                 |



Pathfinder Energy Services  
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Company: EOG Resources, Inc.  
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Well: #4H  
Wellbore: OH  
Design: Plan #1

Local Co-ordinate Reference:  
TVD Reference:  
MD Reference:  
North Reference:  
Survey Calculation Method:  
Database:

Well #4H  
WELL @ 3557.80R (19' KB Correction)  
WELL @ 3557.80R (19' KB Correction)  
Grid  
Minimum Curvature  
Midland Database

Targets

Target Name  
- hit/mis target  
- Shape  
PBHL(#4HST1)  
- plan hits target  
- Point

| Target Name  | Dip Angle<br>(°) | Dip Dir.<br>(°) | TVD<br>(ft) | +N/S<br>(ft) | +E/W<br>(ft) | Northing<br>(ft) | Easting<br>(ft) | Latitude         | Longitude       |
|--------------|------------------|-----------------|-------------|--------------|--------------|------------------|-----------------|------------------|-----------------|
| PBHL(#4HST1) | 0.00             | 0.00            | 7,425.00    | 24.70        | -4,613.60    | 646,727.600      | 591,620.700     | 32° 46' 39.328 N | 104° 2' 6.846 W |

Plan Annotations

| Measured<br>Depth<br>(ft) | Vertical<br>Depth<br>(ft) | Local Coordinates<br>+N/S<br>(ft) | +E/W<br>(ft) | Comment                                                                   |
|---------------------------|---------------------------|-----------------------------------|--------------|---------------------------------------------------------------------------|
| 7,133.00                  | 7,133.00                  | 0.00                              | 0.00         | KOP-7133.00'MD,0.00'INC,270.30°AZI,7133.00'TVD                            |
| 7,661.48                  | 7,560.00                  | 1.43                              | -263.80      | Top of F Sand - 7661.48'MD,63.42'INC,270.31°AZI,7560.00'TVD               |
| 7,904.44                  | 7,610.00                  | 2.70                              | -498.88      | EOC-7904.44'MD,92.57'INC,270.31°AZI,7610.00'TVD,12.00'DLS, 498.89'VS, ;   |
| 11,974.84                 | 7,427.48                  | 24.70                             | -4,565.13    | BHL-11974.85'MD,92.57'INC,270.31°AZI, 7427.48'TVD, 4565.20'VS, 24.70'N, . |

Checked By: \_\_\_\_\_

Approved By: \_\_\_\_\_

Date: \_\_\_\_\_



eog resources

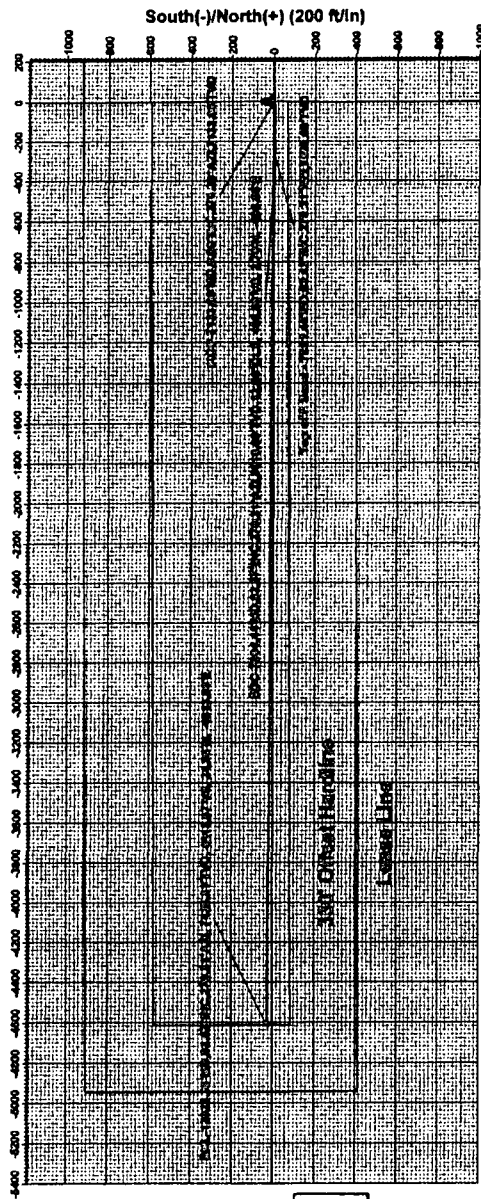
Project: Eddy County  
Site: Sand Tank 1 Fad Com  
Well: #4H  
Wellbore: OH  
Plan: Plan #1 (#4H/OH)



Azimuths to Grid North  
True North: -0.17°  
Magnetic North: 7.89°  
Magnetic Field  
Strength: 48122.8anT  
Dip Angle: 60.88°  
Date: 06/28/2009  
Model: IGRF200510

**PATHFINDER**

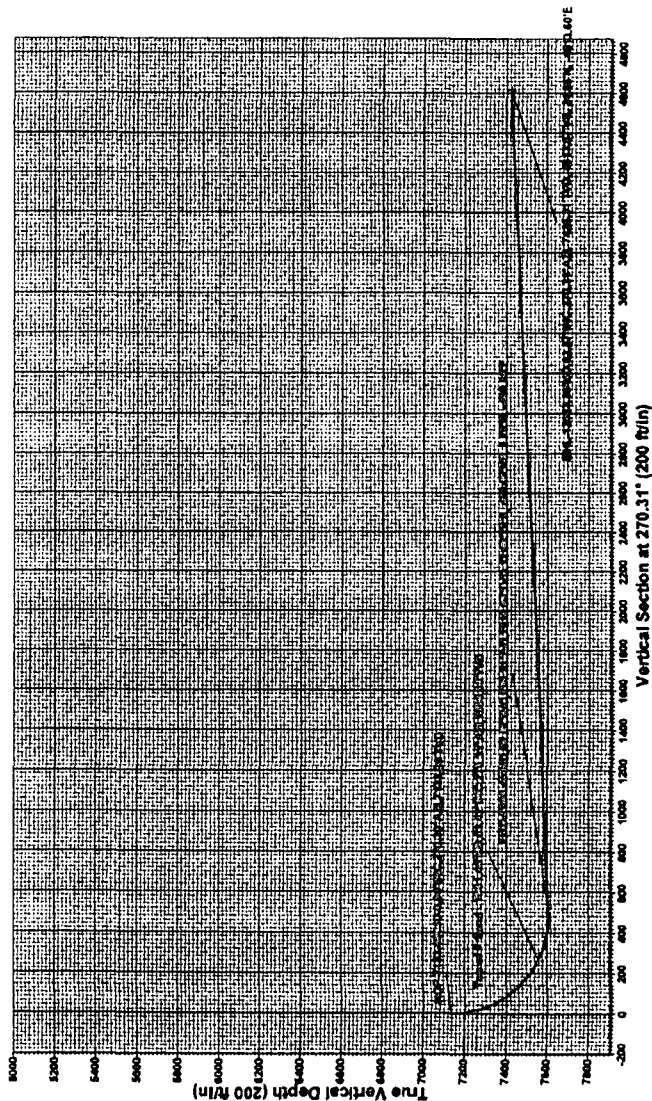
West(-)/East(+) (200 ft/in)



| Sec | MD       | Inc   | Adj    | TVD     | Delta | TF-sec   | VSec  | Target  |
|-----|----------|-------|--------|---------|-------|----------|-------|---------|
| 1   | 7133.08  | 0.00  | 0.00   | 7133.08 | 0.00  | 0.00     | 0.00  | 0.00    |
| 2   | 7984.44  | 92.57 | 270.31 | 7810.00 | 2.78  | -488.88  | 12.00 | 278.31  |
| 3   | 12823.36 | 92.57 | 279.31 | 7438.31 | 24.96 | -4613.80 | 0.00  | 4613.87 |
| 4   |          |       |        |         |       |          |       |         |

| WELLBORE TARGET DETAILS (MAP COORDINATES) |       |          |           |            |
|-------------------------------------------|-------|----------|-----------|------------|
| Name                                      | TVD   | +N/S     | +E/W      | Northing   |
| PGHJ44H8T1                                | 24.70 | -4613.80 | 646772.00 | 681620.700 |

| WELL DETAILS: #4H |                                     |        |                   |           |
|-------------------|-------------------------------------|--------|-------------------|-----------|
| Ground Elevation: | 3338.30                             |        |                   |           |
| RKB Elevation:    | WELL @ 3357.80R (19' KB Correction) |        |                   |           |
| Rig Name:         | 19' KB Correction                   |        |                   |           |
| +N/S              | 0.00                                | +E/W   | 0.00              | Slut      |
| Northing          | 646772.000                          | Eastng | 33' 46' 38.861 N  | Longitude |
|                   |                                     |        | 10.6° 1' 12.801 W |           |



PROJECT DETAILS: Eddy County  
Geodesic System: US State Plane 1927 (Exact solution)  
Datum: NAD 1983 (NADCON CONUS)  
Ellipsoid: Clarke 1866  
Zone: New Mexico East 3001  
System Datum: Mean Sea Level  
Local North: Grid

Plan: Plan #1 (#4H/OH)  
Created By: John Baughman Date: 14-18 July 17 2009  
Checked: \_\_\_\_\_ Date: \_\_\_\_\_