

Submit 1 Copy To Appropriate District Office  
District I - (575) 393-6161  
1625 N. French Dr., Hobbs, NM 88240  
District II - (575) 748-1283  
811 S. First St., Artesia, NM 88210  
District III - (505) 334-6178  
1000 Rio Brazos Rd., Aztec, NM 87410  
District IV - (505) 476-3460  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy, Minerals and Natural Resources

Form C-103  
Revised July 18, 2013

OIL CONSERVATION DIVISION  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

|                                                                                                     |
|-----------------------------------------------------------------------------------------------------|
| WELL API NO.<br>30-015-39859                                                                        |
| 5. Indicate Type of Lease<br>STATE <input checked="" type="checkbox"/> FEE <input type="checkbox"/> |
| 6. State Oil & Gas Lease No.<br>V-3459                                                              |
| 7. Lease Name or Unit Agreement Name<br>Southland Royalty APM State                                 |
| 8. Well Number-4H                                                                                   |
| 9. OGRID Number 025575                                                                              |
| 10. Pool name or Wildcat<br>2 <sup>nd</sup> Bone Springs Sand                                       |

SUNDRY NOTICES AND REPORTS ON WELLS  
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

1. Type of Well: Oil Well ☒ Gas Well ☐ Other ☐

2. Name of Operator  
Yates Petroleum Corporation

3. Address of Operator  
105 S. 4<sup>th</sup> St. Artesia, NM 88210

4. Well Location  
Unit Letter N : 200 feet from the South line and 2080 feet from the West line  
Section 24 Township 19S Range 29E NMPM Eddy County

11. Elevation (Show whether DR, RKB, RT, GR, etc.)  
3352'

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

| NOTICE OF INTENTION TO:                        |                                                  | SUBSEQUENT REPORT OF:                            |                                          |
|------------------------------------------------|--------------------------------------------------|--------------------------------------------------|------------------------------------------|
| PERFORM REMEDIAL WORK <input type="checkbox"/> | PLUG AND ABANDON <input type="checkbox"/>        | REMEDIAL WORK <input type="checkbox"/>           | ALTERING CASING <input type="checkbox"/> |
| TEMPORARILY ABANDON <input type="checkbox"/>   | CHANGE PLANS <input checked="" type="checkbox"/> | COMMENCE DRILLING OPNS. <input type="checkbox"/> | P AND A <input type="checkbox"/>         |
| PULL OR ALTER CASING <input type="checkbox"/>  | MULTIPLE COMPL <input type="checkbox"/>          | CASING/CEMENT JOB <input type="checkbox"/>       |                                          |
| DOWNHOLE COMMINGLE <input type="checkbox"/>    |                                                  |                                                  |                                          |
| CLOSED-LOOP SYSTEM <input type="checkbox"/>    |                                                  |                                                  |                                          |
| OTHER: <input type="checkbox"/>                |                                                  | OTHER: <input type="checkbox"/>                  |                                          |

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

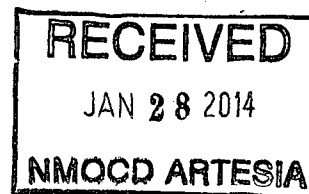
Yates Petroleum Corporation respectfully requests to make the following changes to our originally approved APD as per the attached paperwork.

Thank you,

Spud Date:  Rig Release Date:

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Naomi Saiz TITLE Well Planning Tech DATE 1/28/14  
Type or print name Naomi Saiz E-mail address: nsaiz@yatespetroleum.com PHONE: 575-748-4211  
For State Use Only  
APPROVED BY: T.C. Shepherd TITLE "Geologist" DATE 1-28-2014  
Conditions of Approval (if any):



## Southland Royalty APM State #4H

### Conductor:

Hole will be drilled with a 26" bit to a depth of approx. 150'. Hole size will then be reduced to 24" and drilled to approx. 200' where 20" casing (casing weight and grade will remain the same) will be set and cemented to surface with ready-mix. TOC=0'.

### Intermediate:

Hole will be drilled with a 12 1/4" bit to a depth of approx. 3700' where 9 5/8" casing (cement grade and weight will remain the same) will be set and cemented to surface in 2 stages with a DV/Packer Stage tool at approx. 1600'-1900' (cement volumes will be adjusted according to tool placement).

1<sup>st</sup> stage-Cemented with approx. 675sx cement, TOC= approx. 1800'

2<sup>nd</sup> stage-Cemented with approx. 635sx cement, TOC=0'

### Production:

Well will be drilled vertically to 7732'. Well will then be kicked off at approx. 7732' and directionally drilled at 12 degrees per 100' with a 8 3/4" hole to 8502' MD (8209' TVD). Hole size will then be reduced to 8 1/2" and drilled to 12758' MD (8115' TVD). Production string will be cemented to surface in 3 stages with DV/packer stage tool at approx. 7400'-7700' and 3800'-4100' (cement volumes will be adjusted per tool placement). Penetration point of the producing zone will be encountered at 697' FSL & 2069' FWL, 24-19S-29E. Deepest TVD is 8209' in the lateral.

Production casing will be 5 1/2" 17# P-110 and cemented to surface with approx. 2325sx cement (35% excess)

### Contingency change:

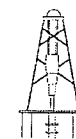
Yates Petroleum Corporation respectfully requests the option of the previously approved contingency plan if hole conditions warrant but to remove the packers and ports assembly after the setting of the 4 1/2" casing and cement approx. 200' into previous casing. Cement volumes will be adjusted accordingly. After stimulation 4 1/2" casing will be cut and pulled at approx. 8500'



Azimuths to Grid North  
True North: -0.16°  
Magnetic North: 7.47°  
Magnetic Field  
Strength: 48535.6nT  
Dip Angle: 60.42°  
Date: 1/15/2014  
Model: BGGM2013

To convert Magnetic North to Grid, Add 7.47°  
To convert True North to Grid, Subtract 0.16°

Southland Royalty APM State #4H  
Eddy County, NM (NAD83 NME)  
Northing: (Y) 596445.192  
Easting: (X) 634651.308  
Plan #2



KB = 18.5 @ 3370.50usft (McVay 8)  
Ground Level: 3352.00

| WELL DETAILS:         |       |            |            |                  |                  |
|-----------------------|-------|------------|------------|------------------|------------------|
| Ground Level: 3352.00 |       |            |            |                  |                  |
| +N/-S                 | +E/-W | Northing   | Easting    | Latitude         | Longitude        |
| 0.00                  | 0.00  | 596445.192 | 634651.308 | 32° 38' 21.518 N | 104° 1' 48.676 W |

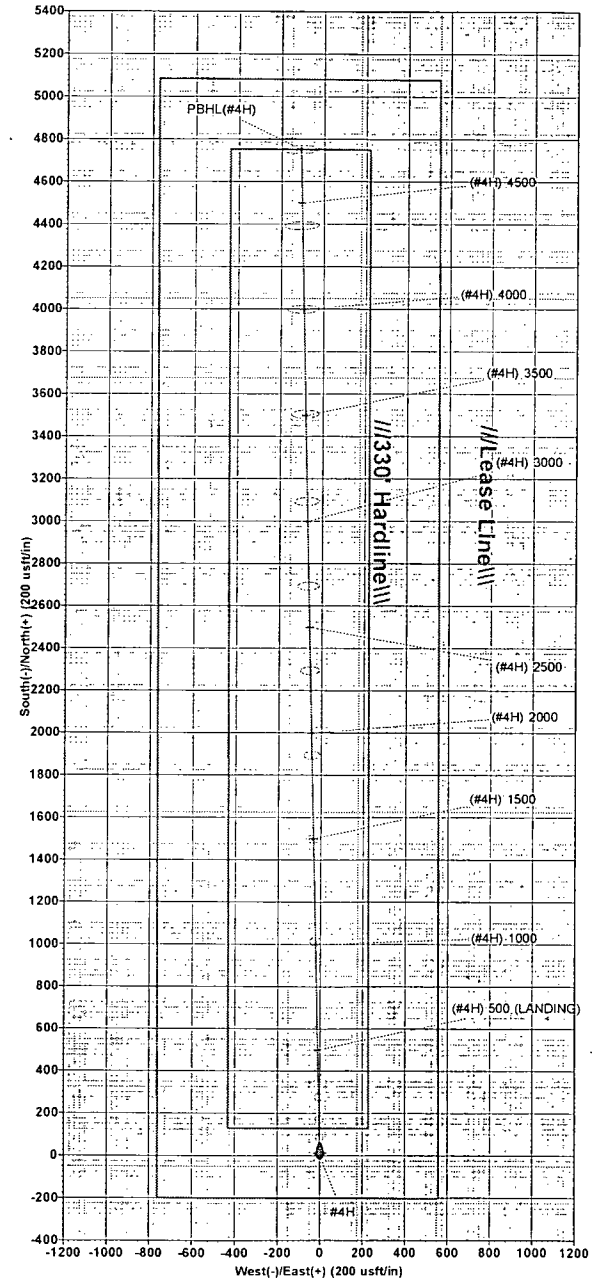
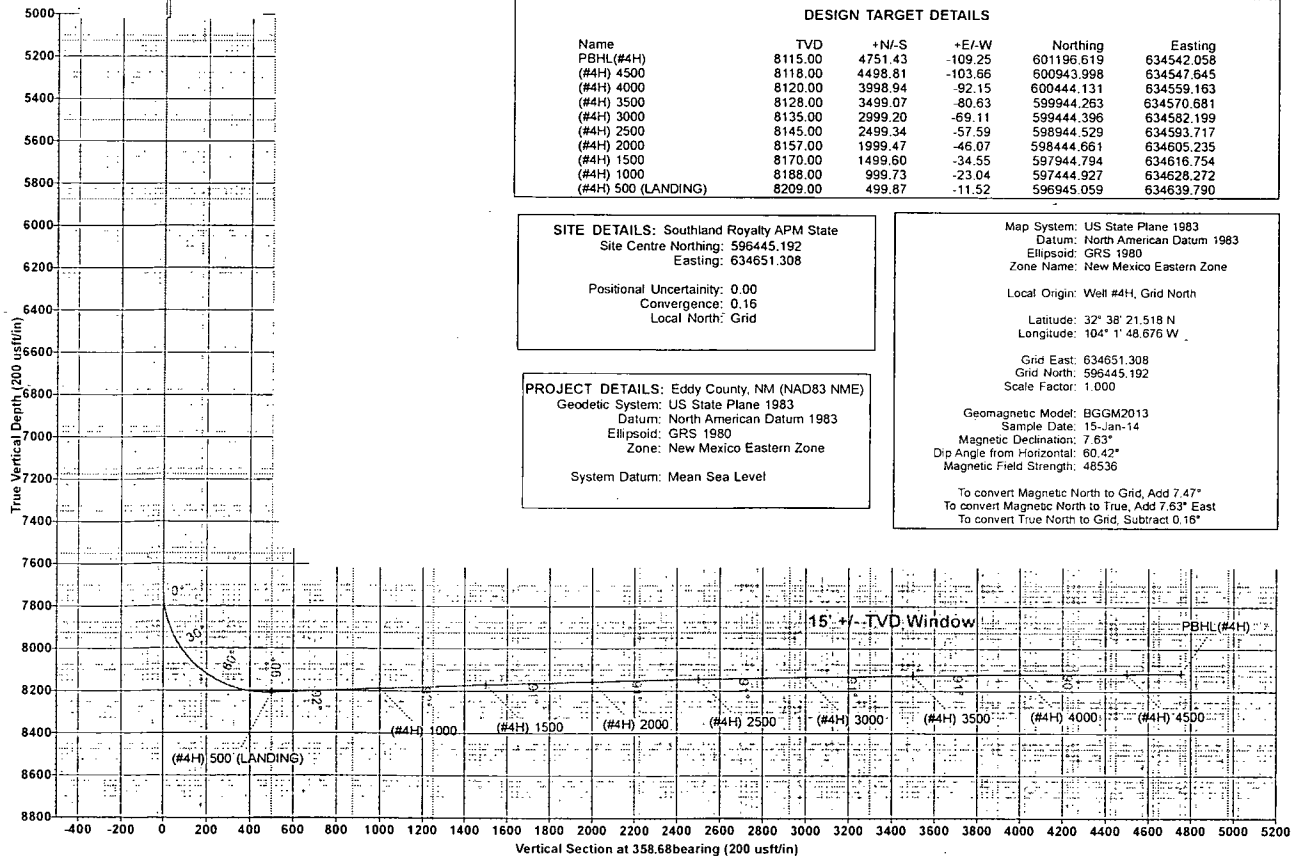
| SECTION DETAILS |       |        |         |         |         |       |         |         |            |
|-----------------|-------|--------|---------|---------|---------|-------|---------|---------|------------|
| MD              | Inc   | Azi.   | TVD     | +N/-S   | +E/-W   | Dleg. | TFace   | V Sect  | Target     |
| 0.00            | 0.00  | 0.00   | 0.00    | 0.00    | 0.00    | 0.00  | 0.00    | 0.00    |            |
| 7731.95         | 0.00  | 0.00   | 7731.95 | 0.00    | 0.00    | 0.00  | 0.00    | 0.00    |            |
| 8501.89         | 92.39 | 358.68 | 8209.00 | 497.26  | -11.46  | 12.00 | 358.68  | 497.40  |            |
| 9004.93         | 92.39 | 358.68 | 8188.00 | 999.73  | -23.04  | 0.00  | 0.00    | 1000.00 | (#4H) 1000 |
| 9021.74         | 92.06 | 358.68 | 8187.35 | 1016.53 | -23.42  | 2.00  | -180.00 | 1016.80 |            |
| 9505.25         | 92.06 | 358.68 | 8170.00 | 1499.60 | -34.55  | 0.00  | 0.00    | 1500.00 | (#4H) 1500 |
| 9534.44         | 91.47 | 358.68 | 8169.10 | 1528.77 | -35.23  | 2.00  | 180.00  | 1529.18 |            |
| 10005.42        | 91.47 | 358.68 | 8157.00 | 1999.47 | -46.07  | 0.00  | 0.00    | 2000.00 | (#4H) 2000 |
| 10010.32        | 91.37 | 358.68 | 8156.88 | 2004.36 | -46.19  | 2.00  | 180.00  | 2004.90 |            |
| 10505.57        | 91.37 | 358.68 | 8145.00 | 2499.34 | -57.59  | 0.00  | 0.00    | 2500.00 | (#4H) 2500 |
| 10517.13        | 91.14 | 358.68 | 8144.75 | 2510.89 | -57.86  | 2.00  | 180.00  | 2511.56 |            |
| 11005.67        | 91.14 | 358.68 | 8135.00 | 2999.20 | -69.11  | 0.00  | 0.00    | 3000.00 | (#4H) 3000 |
| 11023.02        | 90.80 | 358.68 | 8134.71 | 3016.55 | -69.51  | 2.00  | -180.00 | 3017.35 |            |
| 11505.72        | 90.80 | 358.68 | 8128.00 | 3499.07 | -80.63  | 0.00  | 0.00    | 3500.00 | (#4H) 3500 |
| 11511.78        | 90.92 | 358.68 | 8127.91 | 3505.14 | -80.77  | 2.00  | 0.00    | 3506.07 |            |
| 12005.78        | 90.92 | 358.68 | 8120.00 | 3998.94 | -92.15  | 0.00  | 0.00    | 4000.00 | (#4H) 4000 |
| 12041.46        | 90.20 | 358.68 | 8119.65 | 4034.61 | -92.97  | 2.00  | 180.00  | 4035.68 |            |
| 12505.78        | 90.20 | 358.68 | 8118.00 | 4498.81 | -103.66 | 0.00  | 0.00    | 4500.00 | (#4H) 4500 |
| 12531.02        | 90.71 | 358.74 | 8117.80 | 4524.03 | -104.23 | 2.00  | 6.36    | 4525.23 |            |
| 12758.49        | 90.71 | 358.74 | 8115.00 | 4751.43 | -109.25 | 0.00  | 0.00    | 4752.68 | PBHL(#4H)  |

| DESIGN TARGET DETAILS |         |         |         |            |            |
|-----------------------|---------|---------|---------|------------|------------|
| Name                  | TVD     | +N/-S   | +E/-W   | Northing   | Easting    |
| PBHL(#4H)             | 8115.00 | 4751.43 | -109.25 | 601196.619 | 634542.058 |
| (#4H) 4500            | 8118.00 | 4498.81 | -103.66 | 600943.998 | 634547.845 |
| (#4H) 4000            | 8120.00 | 3998.94 | -92.15  | 600444.131 | 634559.163 |
| (#4H) 3500            | 8128.00 | 3499.07 | -80.63  | 599944.263 | 634570.681 |
| (#4H) 3000            | 8135.00 | 2999.20 | -69.11  | 599444.396 | 634582.199 |
| (#4H) 2500            | 8145.00 | 2499.34 | -57.59  | 598944.529 | 634593.717 |
| (#4H) 2000            | 8157.00 | 1999.47 | -46.07  | 598444.661 | 634605.235 |
| (#4H) 1500            | 8170.00 | 1499.60 | -34.55  | 597944.794 | 634616.754 |
| (#4H) 1000            | 8188.00 | 999.73  | -23.04  | 597444.927 | 634628.272 |
| (#4H) 500 (LANDING)   | 8209.00 | 499.87  | -11.52  | 596945.059 | 634639.790 |

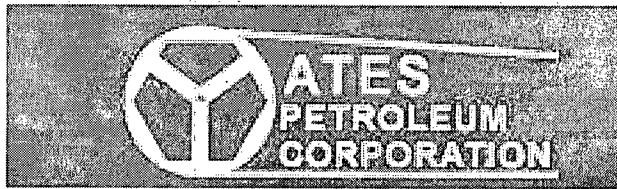
**SITE DETAILS:** Southland Royalty APM State  
Site Centre Northing: 596445.192  
Easting: 634651.308  
Positional Uncertainty: 0.00  
Convergence: 0.16  
Local North: Grid

**PROJECT DETAILS:** Eddy County, NM (NAD83 NME)  
Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: New Mexico Eastern Zone  
System Datum: Mean Sea Level

Map System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone Name: New Mexico Eastern Zone  
Local Origin: Well #4H, Grid North  
Latitude: 32° 38' 21.518 N  
Longitude: 104° 1' 48.676 W  
Grid East: 634651.308  
Grid North: 596445.192  
Scale Factor: 1.000  
Geomagnetic Model: BGGM2013  
Sample Date: 15-Jan-14  
Magnetic Declination: 7.63°  
Dip Angle from Horizontal: 60.42°  
Magnetic Field Strength: 48536  
To convert Magnetic North to Grid, Add 7.47°  
To convert Magnetic North to True, Add 7.63° East  
To convert True North to Grid, Subtract 0.16°



Sam Balle  
959, January 24, 2014  
Scientific Drilling  
2034 Trade Drive  
Midland, TX 79703

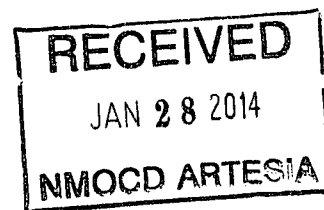


## Yates Petroleum Corp.

Eddy County, NM (NAD83 NME)  
Southland Royalty APM State  
#4H

OH

Plan: Plan #2



## Standard Planning Report

24 January, 2014



Scientific Drilling

[www.scientificdrilling.com](http://www.scientificdrilling.com)



# Scientific Drilling Planning Report



|           |                             |                              |                                   |
|-----------|-----------------------------|------------------------------|-----------------------------------|
| Database: | Midland District            | Local Co-ordinate Reference: | Well #4H                          |
| Company:  | Yates Petroleum Corp.       | TVD Reference:               | KB = 18.5 @ 3370.50usft (McVay 8) |
| Project:  | Eddy County, NM (NAD83 NME) | MD Reference:                | KB = 18.5 @ 3370.50usft (McVay 8) |
| Site:     | Southland Royalty APM State | North Reference:             | Grid                              |
| Well:     | #4H                         | Survey Calculation Method:   | Minimum Curvature                 |
| Wellbore: | OH                          |                              |                                   |
| Design:   | Plan #2                     |                              |                                   |

|             |                             |               |                |
|-------------|-----------------------------|---------------|----------------|
| Project:    | Eddy County, NM (NAD83 NME) |               |                |
| Map System: | US State Plane 1983         | System Datum: | Mean Sea Level |
| Geo Datum:  | North American Datum 1983   |               |                |
| Map Zone:   | New Mexico Eastern Zone     |               |                |

|                                   |           |              |                  |                   |                  |
|-----------------------------------|-----------|--------------|------------------|-------------------|------------------|
| Site: Southland Royalty APM State |           |              |                  |                   |                  |
| Site Position:                    |           | Northing:    | 596,445.192 usft | Latitude:         | 32° 38' 21.518 N |
| From:                             | Map       | Easting:     | 634,651.308 usft | Longitude:        | 104° 1' 48.676 W |
| Position Uncertainty:             | 0.00 usft | Slot Radius: | 13-3/16 "        | Grid Convergence: | 0.16 °           |

|                      |       |           |                     |                  |               |                  |
|----------------------|-------|-----------|---------------------|------------------|---------------|------------------|
| Well                 | #4H   |           |                     |                  |               |                  |
| Well Position        | +N/-S | 0.00 usft | Northing:           | 596,445.192 usft | Latitude:     | 32° 38' 21.518 N |
|                      | +E/-W | 0.00 usft | Easting:            | 634,651.308 usft | Longitude:    | 104° 1' 48.676 W |
| Position Uncertainty |       | 0.00 usft | Wellhead Elevation: | 0.00 usft        | Ground Level: | 3,352.00 usft    |

|           |            |             |                    |                  |                        |
|-----------|------------|-------------|--------------------|------------------|------------------------|
| Wellbore  | OH         |             |                    |                  |                        |
| Magnetics | Model Name | Sample Date | Declination<br>(°) | Dip Angle<br>(°) | Field Strength<br>(nT) |
|           | BGGM2013   | 1/15/2014   | 7.63               | 60.42            | 48,536                 |

|                   |                            |                 |                 |                        |
|-------------------|----------------------------|-----------------|-----------------|------------------------|
| Design:           | Plan #2                    |                 |                 |                        |
| Audit Notes:      |                            |                 |                 |                        |
| Version:          |                            | Phase:          | PLAN            | Tie On Depth: 0.00     |
| Vertical Section: | Depth From (TVD)<br>(usft) | +N/-S<br>(usft) | +E/-W<br>(usft) | Direction<br>(bearing) |
|                   | 0.00                       | 0.00            | 0.00            | 358.68                 |



# Scientific Drilling Planning Report



|           |                             |                              |                                   |
|-----------|-----------------------------|------------------------------|-----------------------------------|
| Database: | Midland District            | Local Co-ordinate Reference: | Well #4H                          |
| Company:  | Yates Petroleum Corp.       | TVD Reference:               | KB = 18.5 @ 3370.50usft (McVay 8) |
| Project:  | Eddy County, NM (NAD83 NME) | MD Reference:                | KB = 18.5 @ 3370.50usft (McVay 8) |
| Site:     | Southland Royalty APM State | North Reference:             | Grid                              |
| Well:     | #4H                         | Survey Calculation Method:   | Minimum Curvature                 |
| Wellbore: | OH                          |                              |                                   |
| Design:   | Plan #2                     |                              |                                   |

| Plan Sections         |                 |                   |                       |              |              |                         |                        |                       |                 |        |
|-----------------------|-----------------|-------------------|-----------------------|--------------|--------------|-------------------------|------------------------|-----------------------|-----------------|--------|
| Measured Depth (usft) | Inclination (°) | Azimuth (bearing) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) | TFO (°)         | Target |
| 0.00                  | 0.00            | 0.00              | 0.00                  | 0.00         | 0.00         | 0.00                    | 0.00                   | 0.00                  | 0.00            |        |
| 7,731.95              | 0.00            | 0.00              | 7,731.95              | 0.00         | 0.00         | 0.00                    | 0.00                   | 0.00                  | 0.00            |        |
| 8,501.89              | 92.39           | 358.68            | 8,209.00              | 497.26       | -11.46       | 12.00                   | 12.00                  | -0.17                 | 358.68          |        |
| 9,004.93              | 92.39           | 358.68            | 8,188.00              | 999.73       | -23.04       | 0.00                    | 0.00                   | 0.00                  | 0.00 (#4H) 1000 |        |
| 9,021.74              | 92.06           | 358.68            | 8,187.35              | 1,016.53     | -23.42       | 2.00                    | -2.00                  | 0.00                  | -180.00         |        |
| 9,505.25              | 92.06           | 358.68            | 8,170.00              | 1,499.60     | -34.55       | 0.00                    | 0.00                   | 0.00                  | 0.00 (#4H) 1500 |        |
| 9,534.44              | 91.47           | 358.68            | 8,169.10              | 1,528.77     | -35.23       | 2.00                    | -2.00                  | 0.00                  | 180.00          |        |
| 10,005.42             | 91.47           | 358.68            | 8,157.00              | 1,999.47     | -46.07       | 0.00                    | 0.00                   | 0.00                  | 0.00 (#4H) 2000 |        |
| 10,010.32             | 91.37           | 358.68            | 8,156.88              | 2,004.36     | -46.19       | 2.00                    | -2.00                  | 0.00                  | 180.00          |        |
| 10,505.57             | 91.37           | 358.68            | 8,145.00              | 2,499.34     | -57.59       | 0.00                    | 0.00                   | 0.00                  | 0.00 (#4H) 2500 |        |
| 10,517.13             | 91.14           | 358.68            | 8,144.75              | 2,510.89     | -57.86       | 2.00                    | -2.00                  | 0.00                  | 180.00          |        |
| 11,005.67             | 91.14           | 358.68            | 8,135.00              | 2,999.20     | -69.11       | 0.00                    | 0.00                   | 0.00                  | 0.00 (#4H) 3000 |        |
| 11,023.02             | 90.80           | 358.68            | 8,134.71              | 3,016.55     | -69.51       | 2.00                    | -2.00                  | 0.00                  | -180.00         |        |
| 11,505.72             | 90.80           | 358.68            | 8,128.00              | 3,499.07     | -80.63       | 0.00                    | 0.00                   | 0.00                  | 0.00 (#4H) 3500 |        |
| 11,511.78             | 90.92           | 358.68            | 8,127.91              | 3,505.14     | -80.77       | 2.00                    | 2.00                   | 0.00                  | 0.00            |        |
| 12,005.78             | 90.92           | 358.68            | 8,120.00              | 3,998.94     | -92.15       | 0.00                    | 0.00                   | 0.00                  | 0.00 (#4H) 4000 |        |
| 12,041.46             | 90.20           | 358.68            | 8,119.65              | 4,034.61     | -92.97       | 2.00                    | -2.00                  | 0.00                  | 180.00          |        |
| 12,505.79             | 90.20           | 358.68            | 8,118.00              | 4,498.81     | -103.66      | 0.00                    | 0.00                   | 0.00                  | 0.00 (#4H) 4500 |        |
| 12,531.02             | 90.71           | 358.74            | 8,117.80              | 4,524.03     | -104.23      | 2.00                    | 1.99                   | 0.22                  | 6.36            |        |
| 12,758.49             | 90.71           | 358.74            | 8,115.00              | 4,751.43     | -109.25      | 0.00                    | 0.00                   | 0.00                  | 0.00 PBHL(#4H)  |        |



# Scientific Drilling Planning Report



|           |                             |                              |                                   |
|-----------|-----------------------------|------------------------------|-----------------------------------|
| Database: | Midland District            | Local Co-ordinate Reference: | Well #4H                          |
| Company:  | Yates Petroleum Corp.       | TVD Reference:               | KB = 18.5 @ 3370.50usft (McVay 8) |
| Project:  | Eddy County, NM (NAD83 NME) | MD Reference:                | KB = 18.5 @ 3370.50usft (McVay 8) |
| Site:     | Southland Royalty APM State | North Reference:             | Grid                              |
| Well:     | #4H                         | Survey Calculation Method:   | Minimum Curvature                 |
| Wellbore: | OH                          |                              |                                   |
| Design:   | Plan #2                     |                              |                                   |

| Planned Survey              |                    |                      |                             |                 |                 |                               |                               |                              |                             |
|-----------------------------|--------------------|----------------------|-----------------------------|-----------------|-----------------|-------------------------------|-------------------------------|------------------------------|-----------------------------|
| Measured<br>Depth<br>(usft) | Inclination<br>(°) | Azimuth<br>(bearing) | 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) |
| 0.00                        | 0.00               | 0.00                 | 0.00                        | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 100.00                      | 0.00               | 0.00                 | 100.00                      | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 200.00                      | 0.00               | 0.00                 | 200.00                      | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 300.00                      | 0.00               | 0.00                 | 300.00                      | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 400.00                      | 0.00               | 0.00                 | 400.00                      | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 500.00                      | 0.00               | 0.00                 | 500.00                      | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 600.00                      | 0.00               | 0.00                 | 600.00                      | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 700.00                      | 0.00               | 0.00                 | 700.00                      | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 800.00                      | 0.00               | 0.00                 | 800.00                      | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 900.00                      | 0.00               | 0.00                 | 900.00                      | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 1,000.00                    | 0.00               | 0.00                 | 1,000.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 1,100.00                    | 0.00               | 0.00                 | 1,100.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 1,200.00                    | 0.00               | 0.00                 | 1,200.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 1,300.00                    | 0.00               | 0.00                 | 1,300.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 1,400.00                    | 0.00               | 0.00                 | 1,400.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 1,500.00                    | 0.00               | 0.00                 | 1,500.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 1,600.00                    | 0.00               | 0.00                 | 1,600.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 1,700.00                    | 0.00               | 0.00                 | 1,700.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 1,800.00                    | 0.00               | 0.00                 | 1,800.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 1,900.00                    | 0.00               | 0.00                 | 1,900.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 2,000.00                    | 0.00               | 0.00                 | 2,000.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 2,100.00                    | 0.00               | 0.00                 | 2,100.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 2,200.00                    | 0.00               | 0.00                 | 2,200.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 2,300.00                    | 0.00               | 0.00                 | 2,300.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 2,400.00                    | 0.00               | 0.00                 | 2,400.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 2,500.00                    | 0.00               | 0.00                 | 2,500.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 2,600.00                    | 0.00               | 0.00                 | 2,600.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 2,700.00                    | 0.00               | 0.00                 | 2,700.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 2,800.00                    | 0.00               | 0.00                 | 2,800.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 2,900.00                    | 0.00               | 0.00                 | 2,900.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 3,000.00                    | 0.00               | 0.00                 | 3,000.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 3,100.00                    | 0.00               | 0.00                 | 3,100.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 3,200.00                    | 0.00               | 0.00                 | 3,200.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 3,300.00                    | 0.00               | 0.00                 | 3,300.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 3,400.00                    | 0.00               | 0.00                 | 3,400.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 3,500.00                    | 0.00               | 0.00                 | 3,500.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 3,600.00                    | 0.00               | 0.00                 | 3,600.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 3,700.00                    | 0.00               | 0.00                 | 3,700.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 3,800.00                    | 0.00               | 0.00                 | 3,800.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 3,900.00                    | 0.00               | 0.00                 | 3,900.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 4,000.00                    | 0.00               | 0.00                 | 4,000.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 4,100.00                    | 0.00               | 0.00                 | 4,100.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 4,200.00                    | 0.00               | 0.00                 | 4,200.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 4,300.00                    | 0.00               | 0.00                 | 4,300.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 4,400.00                    | 0.00               | 0.00                 | 4,400.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 4,500.00                    | 0.00               | 0.00                 | 4,500.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 4,600.00                    | 0.00               | 0.00                 | 4,600.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 4,700.00                    | 0.00               | 0.00                 | 4,700.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 4,800.00                    | 0.00               | 0.00                 | 4,800.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 4,900.00                    | 0.00               | 0.00                 | 4,900.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 5,000.00                    | 0.00               | 0.00                 | 5,000.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 5,100.00                    | 0.00               | 0.00                 | 5,100.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 5,200.00                    | 0.00               | 0.00                 | 5,200.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 5,300.00                    | 0.00               | 0.00                 | 5,300.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |



# Scientific Drilling Planning Report



Database: Midland District  
Company: Yates Petroleum Corp.  
Project: Eddy County, NM (NAD83 NME)  
Site: Southland Royalty APM State  
Well: #4H  
Wellbore: OH  
Design: Plan #2

Local Co-ordinate Reference: Well #4H  
TVD Reference: KB = 18.5 @ 3370.50usft (McVay 8)  
MD Reference: KB = 18.5 @ 3370.50usft (McVay 8)  
North Reference: Grid  
Survey Calculation Method: Minimum Curvature

## Planned Survey

| Measured<br>Depth<br>(usft) | Inclination<br>(°) | Azimuth<br>(bearing) | 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) |
|-----------------------------|--------------------|----------------------|-----------------------------|-----------------|-----------------|-------------------------------|-------------------------------|------------------------------|-----------------------------|
| 5,400.00                    | 0.00               | 0.00                 | 5,400.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 5,500.00                    | 0.00               | 0.00                 | 5,500.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 5,600.00                    | 0.00               | 0.00                 | 5,600.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 5,700.00                    | 0.00               | 0.00                 | 5,700.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 5,800.00                    | 0.00               | 0.00                 | 5,800.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 5,900.00                    | 0.00               | 0.00                 | 5,900.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 6,000.00                    | 0.00               | 0.00                 | 6,000.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 6,100.00                    | 0.00               | 0.00                 | 6,100.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 6,200.00                    | 0.00               | 0.00                 | 6,200.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 6,300.00                    | 0.00               | 0.00                 | 6,300.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 6,400.00                    | 0.00               | 0.00                 | 6,400.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 6,500.00                    | 0.00               | 0.00                 | 6,500.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 6,600.00                    | 0.00               | 0.00                 | 6,600.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 6,700.00                    | 0.00               | 0.00                 | 6,700.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 6,800.00                    | 0.00               | 0.00                 | 6,800.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 6,900.00                    | 0.00               | 0.00                 | 6,900.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 7,000.00                    | 0.00               | 0.00                 | 7,000.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 7,100.00                    | 0.00               | 0.00                 | 7,100.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 7,200.00                    | 0.00               | 0.00                 | 7,200.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 7,300.00                    | 0.00               | 0.00                 | 7,300.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 7,400.00                    | 0.00               | 0.00                 | 7,400.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 7,500.00                    | 0.00               | 0.00                 | 7,500.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 7,600.00                    | 0.00               | 0.00                 | 7,600.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 7,700.00                    | 0.00               | 0.00                 | 7,700.00                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 7,731.95                    | 0.00               | 0.00                 | 7,731.95                    | 0.00            | 0.00            | 0.00                          | 0.00                          | 0.00                         | 0.00                        |
| 7,750.00                    | 2.17               | 358.68               | 7,750.00                    | 0.34            | -0.01           | 0.34                          | 12.00                         | 12.00                        | 0.00                        |
| 7,775.00                    | 5.17               | 358.68               | 7,774.94                    | 1.94            | -0.04           | 1.94                          | 12.00                         | 12.00                        | 0.00                        |
| 7,800.00                    | 8.17               | 358.68               | 7,799.77                    | 4.84            | -0.11           | 4.84                          | 12.00                         | 12.00                        | 0.00                        |
| 7,825.00                    | 11.17              | 358.68               | 7,824.41                    | 9.04            | -0.21           | 9.04                          | 12.00                         | 12.00                        | 0.00                        |
| 7,850.00                    | 14.17              | 358.68               | 7,848.80                    | 14.52           | -0.33           | 14.52                         | 12.00                         | 12.00                        | 0.00                        |
| 7,875.00                    | 17.17              | 358.68               | 7,872.87                    | 21.26           | -0.49           | 21.27                         | 12.00                         | 12.00                        | 0.00                        |
| 7,900.00                    | 20.17              | 358.68               | 7,896.55                    | 29.26           | -0.67           | 29.27                         | 12.00                         | 12.00                        | 0.00                        |
| 7,925.00                    | 23.17              | 358.68               | 7,919.78                    | 38.49           | -0.89           | 38.50                         | 12.00                         | 12.00                        | 0.00                        |
| 7,950.00                    | 26.17              | 358.68               | 7,942.50                    | 48.92           | -1.13           | 48.93                         | 12.00                         | 12.00                        | 0.00                        |
| 7,975.00                    | 29.17              | 358.68               | 7,964.64                    | 60.52           | -1.39           | 60.54                         | 12.00                         | 12.00                        | 0.00                        |
| 8,000.00                    | 32.17              | 358.68               | 7,986.14                    | 73.27           | -1.69           | 73.29                         | 12.00                         | 12.00                        | 0.00                        |
| 8,025.00                    | 35.17              | 358.68               | 8,006.94                    | 87.12           | -2.01           | 87.14                         | 12.00                         | 12.00                        | 0.00                        |
| 8,050.00                    | 38.17              | 358.68               | 8,027.00                    | 102.04          | -2.35           | 102.07                        | 12.00                         | 12.00                        | 0.00                        |
| 8,075.00                    | 41.17              | 358.68               | 8,046.24                    | 118.00          | -2.72           | 118.03                        | 12.00                         | 12.00                        | 0.00                        |
| 8,100.00                    | 44.17              | 358.68               | 8,064.62                    | 134.93          | -3.11           | 134.97                        | 12.00                         | 12.00                        | 0.00                        |
| 8,125.00                    | 47.17              | 358.68               | 8,082.09                    | 152.81          | -3.52           | 152.85                        | 12.00                         | 12.00                        | 0.00                        |
| 8,150.00                    | 50.17              | 358.68               | 8,098.60                    | 171.57          | -3.95           | 171.62                        | 12.00                         | 12.00                        | 0.00                        |
| 8,175.00                    | 53.17              | 358.68               | 8,114.10                    | 191.17          | -4.41           | 191.23                        | 12.00                         | 12.00                        | 0.00                        |
| 8,200.00                    | 56.17              | 358.68               | 8,128.56                    | 211.56          | -4.87           | 211.62                        | 12.00                         | 12.00                        | 0.00                        |
| 8,225.00                    | 59.17              | 358.68               | 8,141.93                    | 232.68          | -5.36           | 232.74                        | 12.00                         | 12.00                        | 0.00                        |
| 8,250.00                    | 62.17              | 358.68               | 8,154.17                    | 254.46          | -5.86           | 254.53                        | 12.00                         | 12.00                        | 0.00                        |
| 8,275.00                    | 65.17              | 358.68               | 8,165.26                    | 276.86          | -6.38           | 276.93                        | 12.00                         | 12.00                        | 0.00                        |
| 8,300.00                    | 68.17              | 358.68               | 8,175.16                    | 299.81          | -6.91           | 299.89                        | 12.00                         | 12.00                        | 0.00                        |
| 8,325.00                    | 71.17              | 358.68               | 8,183.85                    | 323.24          | -7.45           | 323.33                        | 12.00                         | 12.00                        | 0.00                        |
| 8,350.00                    | 74.17              | 358.68               | 8,191.30                    | 347.10          | -8.00           | 347.19                        | 12.00                         | 12.00                        | 0.00                        |
| 8,375.00                    | 77.17              | 358.68               | 8,197.49                    | 371.31          | -8.56           | 371.41                        | 12.00                         | 12.00                        | 0.00                        |
| 8,400.00                    | 80.17              | 358.68               | 8,202.40                    | 395.81          | -9.12           | 395.92                        | 12.00                         | 12.00                        | 0.00                        |
| 8,425.00                    | 83.17              | 358.68               | 8,206.02                    | 420.54          | -9.69           | 420.65                        | 12.00                         | 12.00                        | 0.00                        |
| 8,450.00                    | 86.17              | 358.68               | 8,208.35                    | 445.42          | -10.26          | 445.54                        | 12.00                         | 12.00                        | 0.00                        |



# Scientific Drilling Planning Report



Database: Midland District  
Company: Yates Petroleum Corp.  
Project: Eddy County, NM (NAD83 NME)  
Site: Southland Royalty APM State  
Well: #4H  
Wellbore: OH  
Design: Plan #2

Local Co-ordinate Reference: Well #4H  
TVD Reference: KB = 18.5 @ 3370.50usft (McVay 8)  
MD Reference: KB = 18.5 @ 3370.50usft (McVay 8)  
North Reference: Grid  
Survey Calculation Method: Minimum Curvature

| Planned Survey        |                 |                   |                       |              |              |                         |                         |                        |                       |
|-----------------------|-----------------|-------------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (bearing) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
| 8,475.00              | 89.17           | 358.68            | 8,209.36              | 470.39       | -10.84       | 470.52                  | 12.00                   | 12.00                  | 0.00                  |
| 8,501.89              | 92.39           | 358.68            | 8,209.00              | 497.26       | -11.46       | 497.40                  | 12.00                   | 12.00                  | 0.00                  |
| 8,504.49              | 92.39           | 358.68            | 8,208.89              | 499.86       | -11.52       | 500.00                  | 0.00                    | 0.00                   | 0.00                  |
| (#4H) 500 (LANDING)   |                 |                   |                       |              |              |                         |                         |                        |                       |
| 8,600.00              | 92.39           | 358.68            | 8,204.90              | 595.27       | -13.72       | 595.42                  | 0.00                    | 0.00                   | 0.00                  |
| 8,700.00              | 92.39           | 358.68            | 8,200.73              | 695.15       | -16.02       | 695.34                  | 0.00                    | 0.00                   | 0.00                  |
| 8,800.00              | 92.39           | 358.68            | 8,196.55              | 795.04       | -18.32       | 795.25                  | 0.00                    | 0.00                   | 0.00                  |
| 8,900.00              | 92.39           | 358.68            | 8,192.38              | 894.92       | -20.62       | 895.16                  | 0.00                    | 0.00                   | 0.00                  |
| 9,004.93              | 92.39           | 358.68            | 8,188.00              | 999.73       | -23.04       | 1,000.00                | 0.00                    | 0.00                   | 0.00                  |
| (#4H) 1000            |                 |                   |                       |              |              |                         |                         |                        |                       |
| 9,021.74              | 92.06           | 358.68            | 8,187.35              | 1,016.53     | -23.42       | 1,016.80                | 2.00                    | -2.00                  | 0.00                  |
| 9,100.00              | 92.06           | 358.68            | 8,184.54              | 1,094.72     | -25.22       | 1,095.01                | 0.00                    | 0.00                   | 0.00                  |
| 9,200.00              | 92.06           | 358.68            | 8,180.95              | 1,194.63     | -27.53       | 1,194.94                | 0.00                    | 0.00                   | 0.00                  |
| 9,300.00              | 92.06           | 358.68            | 8,177.36              | 1,294.54     | -29.83       | 1,294.88                | 0.00                    | 0.00                   | 0.00                  |
| 9,400.00              | 92.06           | 358.68            | 8,173.78              | 1,394.44     | -32.13       | 1,394.81                | 0.00                    | 0.00                   | 0.00                  |
| 9,505.25              | 92.06           | 358.68            | 8,170.00              | 1,499.60     | -34.55       | 1,500.00                | 0.00                    | 0.00                   | 0.00                  |
| (#4H) 1500            |                 |                   |                       |              |              |                         |                         |                        |                       |
| 9,534.44              | 91.47           | 358.68            | 8,169.10              | 1,528.77     | -35.23       | 1,529.18                | 2.00                    | -2.00                  | 0.00                  |
| 9,600.00              | 91.47           | 358.68            | 8,167.42              | 1,594.29     | -36.74       | 1,594.71                | 0.00                    | 0.00                   | 0.00                  |
| 9,700.00              | 91.47           | 358.68            | 8,164.85              | 1,694.23     | -39.04       | 1,694.68                | 0.00                    | 0.00                   | 0.00                  |
| 9,800.00              | 91.47           | 358.68            | 8,162.28              | 1,794.17     | -41.34       | 1,794.64                | 0.00                    | 0.00                   | 0.00                  |
| 9,900.00              | 91.47           | 358.68            | 8,159.71              | 1,894.11     | -43.64       | 1,894.61                | 0.00                    | 0.00                   | 0.00                  |
| 10,005.42             | 91.47           | 358.68            | 8,157.00              | 1,999.47     | -46.07       | 2,000.00                | 0.00                    | 0.00                   | 0.00                  |
| (#4H) 2000            |                 |                   |                       |              |              |                         |                         |                        |                       |
| 10,010.32             | 91.37           | 358.68            | 8,156.88              | 2,004.36     | -46.19       | 2,004.90                | 2.00                    | -2.00                  | 0.00                  |
| 10,100.00             | 91.37           | 358.68            | 8,154.73              | 2,093.99     | -48.25       | 2,094.55                | 0.00                    | 0.00                   | 0.00                  |
| 10,200.00             | 91.37           | 358.68            | 8,152.33              | 2,193.94     | -50.55       | 2,194.52                | 0.00                    | 0.00                   | 0.00                  |
| 10,300.00             | 91.37           | 358.68            | 8,149.93              | 2,293.88     | -52.86       | 2,294.49                | 0.00                    | 0.00                   | 0.00                  |
| 10,400.00             | 91.37           | 358.68            | 8,147.53              | 2,393.83     | -55.16       | 2,394.46                | 0.00                    | 0.00                   | 0.00                  |
| 10,505.57             | 91.37           | 358.68            | 8,145.00              | 2,499.34     | -57.59       | 2,500.00                | 0.00                    | 0.00                   | 0.00                  |
| (#4H) 2500            |                 |                   |                       |              |              |                         |                         |                        |                       |
| 10,517.13             | 91.14           | 358.68            | 8,144.75              | 2,510.89     | -57.86       | 2,511.56                | 2.00                    | -2.00                  | 0.00                  |
| 10,600.00             | 91.14           | 358.68            | 8,143.09              | 2,593.73     | -59.77       | 2,594.41                | 0.00                    | 0.00                   | 0.00                  |
| 10,700.00             | 91.14           | 358.68            | 8,141.10              | 2,693.68     | -62.07       | 2,694.39                | 0.00                    | 0.00                   | 0.00                  |
| 10,800.00             | 91.14           | 358.68            | 8,139.10              | 2,793.63     | -64.37       | 2,794.37                | 0.00                    | 0.00                   | 0.00                  |
| 10,900.00             | 91.14           | 358.68            | 8,137.11              | 2,893.59     | -66.68       | 2,894.35                | 0.00                    | 0.00                   | 0.00                  |
| 11,005.67             | 91.14           | 358.68            | 8,135.00              | 2,999.20     | -69.11       | 3,000.00                | 0.00                    | 0.00                   | 0.00                  |
| (#4H) 3000            |                 |                   |                       |              |              |                         |                         |                        |                       |
| 11,023.02             | 90.80           | 358.68            | 8,134.71              | 3,016.55     | -69.51       | 3,017.35                | 2.00                    | -2.00                  | 0.00                  |
| 11,100.00             | 90.80           | 358.68            | 8,133.64              | 3,093.50     | -71.28       | 3,094.32                | 0.00                    | 0.00                   | 0.00                  |
| 11,200.00             | 90.80           | 358.68            | 8,132.25              | 3,193.47     | -73.59       | 3,194.31                | 0.00                    | 0.00                   | 0.00                  |
| 11,300.00             | 90.80           | 358.68            | 8,130.86              | 3,293.43     | -75.89       | 3,294.30                | 0.00                    | 0.00                   | 0.00                  |
| 11,400.00             | 90.80           | 358.68            | 8,129.47              | 3,393.39     | -78.19       | 3,394.29                | 0.00                    | 0.00                   | 0.00                  |
| 11,505.72             | 90.80           | 358.68            | 8,128.00              | 3,499.07     | -80.63       | 3,500.00                | 0.00                    | 0.00                   | 0.00                  |
| (#4H) 3500            |                 |                   |                       |              |              |                         |                         |                        |                       |
| 11,511.78             | 90.92           | 358.68            | 8,127.91              | 3,505.14     | -80.77       | 3,506.07                | 2.00                    | 2.00                   | 0.00                  |
| 11,600.00             | 90.92           | 358.68            | 8,126.50              | 3,593.32     | -82.80       | 3,594.27                | 0.00                    | 0.00                   | 0.00                  |
| 11,700.00             | 90.92           | 358.68            | 8,124.90              | 3,693.28     | -85.10       | 3,694.26                | 0.00                    | 0.00                   | 0.00                  |
| 11,800.00             | 90.92           | 358.68            | 8,123.29              | 3,793.24     | -87.41       | 3,794.25                | 0.00                    | 0.00                   | 0.00                  |
| 11,900.00             | 90.92           | 358.68            | 8,121.69              | 3,893.20     | -89.71       | 3,894.23                | 0.00                    | 0.00                   | 0.00                  |
| 12,005.78             | 90.92           | 358.68            | 8,120.00              | 3,998.94     | -92.15       | 4,000.00                | 0.00                    | 0.00                   | 0.00                  |
| (#4H) 4000            |                 |                   |                       |              |              |                         |                         |                        |                       |
| 12,041.46             | 90.20           | 358.68            | 8,119.65              | 4,034.61     | -92.97       | 4,035.68                | 2.00                    | -2.00                  | 0.00                  |



# Scientific Drilling Planning Report



|           |                             |                              |                                   |
|-----------|-----------------------------|------------------------------|-----------------------------------|
| Database: | Midland District            | Local Co-ordinate Reference: | Well #4H                          |
| Company:  | Yates Petroleum Corp.       | TVD Reference:               | KB = 18.5 @ 3370.50usft (McVay 8) |
| Project:  | Eddy County, NM (NAD83 NME) | MD Reference:                | KB = 18.5 @ 3370.50usft (McVay 8) |
| Site:     | Southland Royalty APM State | North Reference:             | Grid                              |
| Well:     | #4H                         | Survey Calculation Method:   | Minimum Curvature                 |
| Wellbore: | OH                          |                              |                                   |
| Design:   | Plan #2                     |                              |                                   |

| Planned Survey              |                    |                      |                             |                 |                 |                               |                               |                              |                             |  |
|-----------------------------|--------------------|----------------------|-----------------------------|-----------------|-----------------|-------------------------------|-------------------------------|------------------------------|-----------------------------|--|
| Measured<br>Depth<br>(usft) | Inclination<br>(°) | Azimuth<br>(bearing) | 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) |  |
| 12,100.00                   | 90.20              | 358.68               | 8,119.44                    | 4,093.13        | -94.32          | 4,094.22                      | 0.00                          | 0.00                         | 0.00                        |  |
| 12,200.00                   | 90.20              | 358.68               | 8,119.09                    | 4,193.10        | -96.62          | 4,194.22                      | 0.00                          | 0.00                         | 0.00                        |  |
| 12,300.00                   | 90.20              | 358.68               | 8,118.73                    | 4,293.08        | -98.92          | 4,294.22                      | 0.00                          | 0.00                         | 0.00                        |  |
| 12,400.00                   | 90.20              | 358.68               | 8,118.38                    | 4,393.05        | -101.23         | 4,394.22                      | 0.00                          | 0.00                         | 0.00                        |  |
| 12,505.79                   | 90.20              | 358.68               | 8,118.00                    | 4,498.81        | -103.66         | 4,500.00                      | 0.00                          | 0.00                         | 0.00                        |  |
| (#4H) 4500                  |                    |                      |                             |                 |                 |                               |                               |                              |                             |  |
| 12,531.02                   | 90.71              | 358.74               | 8,117.80                    | 4,524.03        | -104.23         | 4,525.23                      | 2.00                          | 1.99                         | 0.22                        |  |
| 12,600.00                   | 90.71              | 358.74               | 8,116.95                    | 4,592.99        | -105.75         | 4,594.21                      | 0.00                          | 0.00                         | 0.00                        |  |
| 12,700.00                   | 90.71              | 358.74               | 8,115.72                    | 4,692.96        | -107.96         | 4,694.20                      | 0.00                          | 0.00                         | 0.00                        |  |
| 12,758.49                   | 90.71              | 358.74               | 8,115.00                    | 4,751.43        | -109.25         | 4,752.68                      | 0.00                          | 0.00                         | 0.00                        |  |
| PBHL(#4H)                   |                    |                      |                             |                 |                 |                               |                               |                              |                             |  |

| Design Targets      |                                                                                             |               |                    |            |              |              |                 |                |                  |                  |
|---------------------|---------------------------------------------------------------------------------------------|---------------|--------------------|------------|--------------|--------------|-----------------|----------------|------------------|------------------|
| Target Name         | hit/miss target                                                                             | Dip Angle (°) | Dip Dir. (bearing) | TVD (usft) | +N/-S (usft) | +E/-W (usft) | Northing (usft) | Easting (usft) | Latitude         | Longitude        |
| PBHL(#4H)           | - plan hits target center                                                                   | 0.00          | 0.00               | 8,115.00   | 4,751.43     | -109.25      | 601,196.619     | 634,542.058    | 32° 39' 8.537 N  | 104° 1' 49.795 W |
|                     | - Point                                                                                     |               |                    |            |              |              |                 |                |                  |                  |
| (#4H) 4500          | - plan hits target center                                                                   | 0.00          | 0.01               | 8,118.00   | 4,498.81     | -103.66      | 600,943.998     | 634,547.644    | 32° 39' 6.038 N  | 104° 1' 49.738 W |
|                     | - Point                                                                                     |               |                    |            |              |              |                 |                |                  |                  |
| (#4H) 4000          | - plan hits target center                                                                   | 0.00          | 0.01               | 8,120.00   | 3,998.94     | -92.15       | 600,444.131     | 634,559.163    | 32° 39' 1.091 N  | 104° 1' 49.620 W |
|                     | - Point                                                                                     |               |                    |            |              |              |                 |                |                  |                  |
| (#4H) 3500          | - plan hits target center                                                                   | 0.00          | 0.01               | 8,128.00   | 3,499.07     | -80.63       | 599,944.263     | 634,570.681    | 32° 38' 56.144 N | 104° 1' 49.502 W |
|                     | - Point                                                                                     |               |                    |            |              |              |                 |                |                  |                  |
| (#4H) 3000          | - plan hits target center                                                                   | 0.00          | 0.00               | 8,135.00   | 2,999.20     | -69.11       | 599,444.395     | 634,582.199    | 32° 38' 51.198 N | 104° 1' 49.384 W |
|                     | - Point                                                                                     |               |                    |            |              |              |                 |                |                  |                  |
| (#4H) 2500          | - plan hits target center                                                                   | 0.00          | 0.00               | 8,145.00   | 2,499.34     | -57.59       | 598,944.528     | 634,593.717    | 32° 38' 46.251 N | 104° 1' 49.266 W |
|                     | - Point                                                                                     |               |                    |            |              |              |                 |                |                  |                  |
| (#4H) 2000          | - plan hits target center                                                                   | 0.00          | 0.01               | 8,157.00   | 1,999.47     | -46.07       | 598,444.661     | 634,605.235    | 32° 38' 41.304 N | 104° 1' 49.148 W |
|                     | - Point                                                                                     |               |                    |            |              |              |                 |                |                  |                  |
| (#4H) 1500          | - plan hits target center                                                                   | 0.00          | 0.00               | 8,170.00   | 1,499.60     | -34.55       | 597,944.794     | 634,616.753    | 32° 38' 36.358 N | 104° 1' 49.030 W |
|                     | - Point                                                                                     |               |                    |            |              |              |                 |                |                  |                  |
| (#4H) 1000          | - plan hits target center                                                                   | 0.00          | 0.00               | 8,188.00   | 999.73       | -23.04       | 597,444.926     | 634,628.272    | 32° 38' 31.411 N | 104° 1' 48.912 W |
|                     | - Point                                                                                     |               |                    |            |              |              |                 |                |                  |                  |
| (#4H) 500 (LANDING) | - plan misses target center by 0.11usft at 8504.49usft MD (8208.89 TVD, 499.86 N, -11.52 E) | 0.00          | 0.01               | 8,209.00   | 499.87       | -11.52       | 596,945.059     | 634,639.790    | 32° 38' 26.464 N | 104° 1' 48.794 W |
|                     | - Point                                                                                     |               |                    |            |              |              |                 |                |                  |                  |