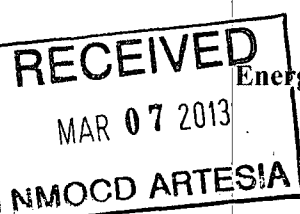


**District I**  
1625 N. French Dr., Hobbs, NM 88240  
Phone: (575) 393-6161 Fax: (575) 393-0720  
**District II**  
811 S. First St., Artesia, NM 88210  
Phone: (575) 748-1283 Fax: (575) 748-9720  
**District III**  
1000 Rio Brazos Road, Aztec, NM 87410  
Phone: (505) 334-6178 Fax: (505) 334-6170  
**District IV**  
1220 S. St. Francis Dr., Santa Fe, NM 87505  
Phone: (505) 476-3460 Fax: (505) 476-3462



State of New Mexico  
Energy Minerals and Natural Resources  
Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-101  
Revised November 14, 2012

☐ AMENDED REPORT

**APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE**

|                                                                                                   |  |                                                        |
|---------------------------------------------------------------------------------------------------|--|--------------------------------------------------------|
| <sup>1</sup> Operator Name and Address<br>Chevron USA, Inc.<br>15 Smith Road<br>Midland, TX 79705 |  | <sup>2</sup> OGRID Number<br>4323                      |
| <sup>3</sup> Property Code<br>39762                                                               |  | <sup>4</sup> Property Name<br>BIG SINKS 16 24 31 STATE |
| <sup>5</sup> API Number<br>30-015-41183                                                           |  | <sup>6</sup> Well No.<br>1H                            |

| 7. Surface Location |         |          |       |         |           |          |           |          |        |
|---------------------|---------|----------|-------|---------|-----------|----------|-----------|----------|--------|
| UL - Lot            | Section | Township | Range | Lot Idn | Feet from | N/S Line | Feet From | E/W Line | County |
| M                   | 16      | 24 S     | 31E   |         | 150'      | South    | 400'      | West     | Eddy   |

| 8. Proposed Bottom Hole Location |         |          |       |         |           |          |           |          |        |
|----------------------------------|---------|----------|-------|---------|-----------|----------|-----------|----------|--------|
| UL - Lot                         | Section | Township | Range | Lot Idn | Feet from | N/S Line | Feet From | E/W Line | County |
| D                                | 16      | 24 S     | 31 E  |         | 200'      | North    | 400'      | West     | Eddy   |

| 9. Pool Information      |                         |
|--------------------------|-------------------------|
| COTTON DRAW; BONE SPRING | Pool Name               |
|                          | Pool Code<br>9654613267 |

| Additional Well Information         |                                         |                                                     |                                 |                                                |  |
|-------------------------------------|-----------------------------------------|-----------------------------------------------------|---------------------------------|------------------------------------------------|--|
| <sup>11</sup> Work Type<br>N        | <sup>12</sup> Well Type<br>O            | <sup>13</sup> Cable/Rotary<br>R                     | <sup>14</sup> Lease Type<br>S   | <sup>15</sup> Ground Level Elevation<br>3508"  |  |
| <sup>16</sup> Multiple<br>No        | <sup>17</sup> Proposed Depth<br>14,248' | <sup>18</sup> Formation<br>Bone Spring              | <sup>19</sup> Contractor<br>TBD | <sup>20</sup> Spud Date                        |  |
| Depth to Ground water<br>Up to 350' |                                         | Distance from nearest fresh water well<br>1.5 Miles |                                 | Distance to nearest surface water<br>>10 Miles |  |

| 21. Proposed Casing and Cement Program |           |             |                  |               |                 |               |
|----------------------------------------|-----------|-------------|------------------|---------------|-----------------|---------------|
| Type                                   | Hole Size | Casing Size | Casing Weight/ft | Setting Depth | Sacks of Cement | Estimated TOC |
| SURFACE                                | 17 1/2"   | 13 3/8"     | 48#              | 750'          | 1068            | 0'            |
| INTER                                  | 11"       | 8 5/8"      | 32#              | 4300'         | 1879            | 0'            |
| PROD                                   | 7 7/8"    | 5 1/2"      | 17#              | 14,248'       | 1939            | 3800'         |

| Casing/Cement Program: Additional Comments |  |
|--------------------------------------------|--|
| Detailed well information is attached.     |  |

| 22. Proposed Blowout Prevention Program |                  |               |              |
|-----------------------------------------|------------------|---------------|--------------|
| Type                                    | Working Pressure | Test Pressure | Manufacturer |
| Double Ram                              | 5000             | 5000          |              |

|                                                                                                                                                                                                                                                                                                                                 |                      |                                                                 |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-----------------------------------------------------------------|--|
| <sup>23</sup> I hereby certify that the information given above is true and complete to the best of my knowledge and belief.<br>I further certify that I have complied with 19.15.14.9 (A) NMAC <input type="checkbox"/> and/or 19.15.14.9 (B) NMAC <input type="checkbox"/> , if applicable.<br>Signature: <i>Bryan Arrant</i> |                      | <b>OIL CONSERVATION DIVISION</b>                                |  |
| Printed name: Bryan Arrant (Agent for Chevron)                                                                                                                                                                                                                                                                                  |                      | Approved By: <i>T. C. Shepard</i>                               |  |
| Title: Regulatory Specialist II                                                                                                                                                                                                                                                                                                 |                      | Title: <i>BOO/OS/ST</i>                                         |  |
| E-mail Address: bryan.arrant@chk.com                                                                                                                                                                                                                                                                                            |                      | Approved Date: <i>3/7/2013</i> Expiration Date: <i>3/7/2015</i> |  |
| Date: 03/05/2013                                                                                                                                                                                                                                                                                                                | Phone: (405)935-3782 | Conditions of Approval Attached                                 |  |

District I  
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State of New Mexico  
Energy, Minerals & Natural Resources Department  
**OIL CONSERVATION DIVISION**  
1220-South St. Francis Dr.  
Santa Fe, NM 87505

Form C-102  
Revised August 1, 2011  
Submit one copy to appropriate  
District Office

☐ AMENDED REPORT

**WELL LOCATION AND ACREAGE DEDICATION PLAT**

|                                     |  |                                                    |  |                                                |  |                               |  |
|-------------------------------------|--|----------------------------------------------------|--|------------------------------------------------|--|-------------------------------|--|
| 1 API Number<br><b>30-015-71183</b> |  | 2 Pool Code<br><b>96546 13367</b>                  |  | 3 Pool Name<br><b>COTTON DRAW; BONE SPRING</b> |  | 4 Well Number<br><b>South</b> |  |
| 5 Property Code<br><b>39762</b>     |  | 6 Property Name<br><b>BIG SINKS 16 24 31 STATE</b> |  |                                                |  | 7 Well Number<br><b>1H</b>    |  |
| 8 OGRID No.<br><b>4323</b>          |  | 9 Operator Name<br><b>CHEVRON U.S.A. INC.</b>      |  |                                                |  | 10 Elevation<br><b>3508'</b>  |  |

| 10 Surface Location |         |          |                   |         |               |                  |               |                |        |
|---------------------|---------|----------|-------------------|---------|---------------|------------------|---------------|----------------|--------|
| UL or lot no.       | Section | Township | Range             | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
| M                   | 16      | 24 SOUTH | 31 EAST, N.M.P.M. |         | 150'          | SOUTH            | 400'          | WEST           | EDDY   |

| 11 Bottom Hole Location If Different From Surface |         |          |                   |         |               |                  |               |                |        |
|---------------------------------------------------|---------|----------|-------------------|---------|---------------|------------------|---------------|----------------|--------|
| UL or lot no.                                     | Section | Township | Range             | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
| D                                                 | 16      | 24 SOUTH | 31 EAST, N.M.P.M. |         | 200'          | NORTH            | 400'          | WEST           | EDDY   |

|                                   |                    |                       |                                 |
|-----------------------------------|--------------------|-----------------------|---------------------------------|
| 12 Dedicated Acres.<br><b>160</b> | 13 Joint or Infill | 14 Consolidation Code | 15 Order No.<br><b>NSL-6741</b> |
|-----------------------------------|--------------------|-----------------------|---------------------------------|

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

|  |                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <b>PROPOSED BOTTOM HOLE LOCATION</b><br>X= 668,168 NAD 27<br>Y= 445,610<br>LAT. 32.223930<br>LONG. 103.789526<br>X= 709,352 NAD83<br>Y= 445,669<br>LAT. 32.224053<br>LONG. 103.790010                                   | <b>OPERATOR CERTIFICATION</b><br>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.<br>Signature: <i>Bryan Arrant</i> Date: <b>01/18/2013</b><br>Printed Name: <b>Bryan Arrant (Agent for Chevron)</b><br>E-mail Address: <b>bryan.arrant@chk.com</b> |
|  | <b>BIG SINKS 16 24 31 STATE NO.1H WELL</b><br>X= 668,195 NAD 27<br>Y= 440,680<br>LAT. 32.210376<br>LONG. 103.789519<br>X= 709,379 NAD83<br>Y= 440,739<br>LAT. 32.210500<br>LONG. 103.790002<br>ELEVATION +3508' NAVD 88 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

**BIG SINKS 16 24 31 STATE 1H**

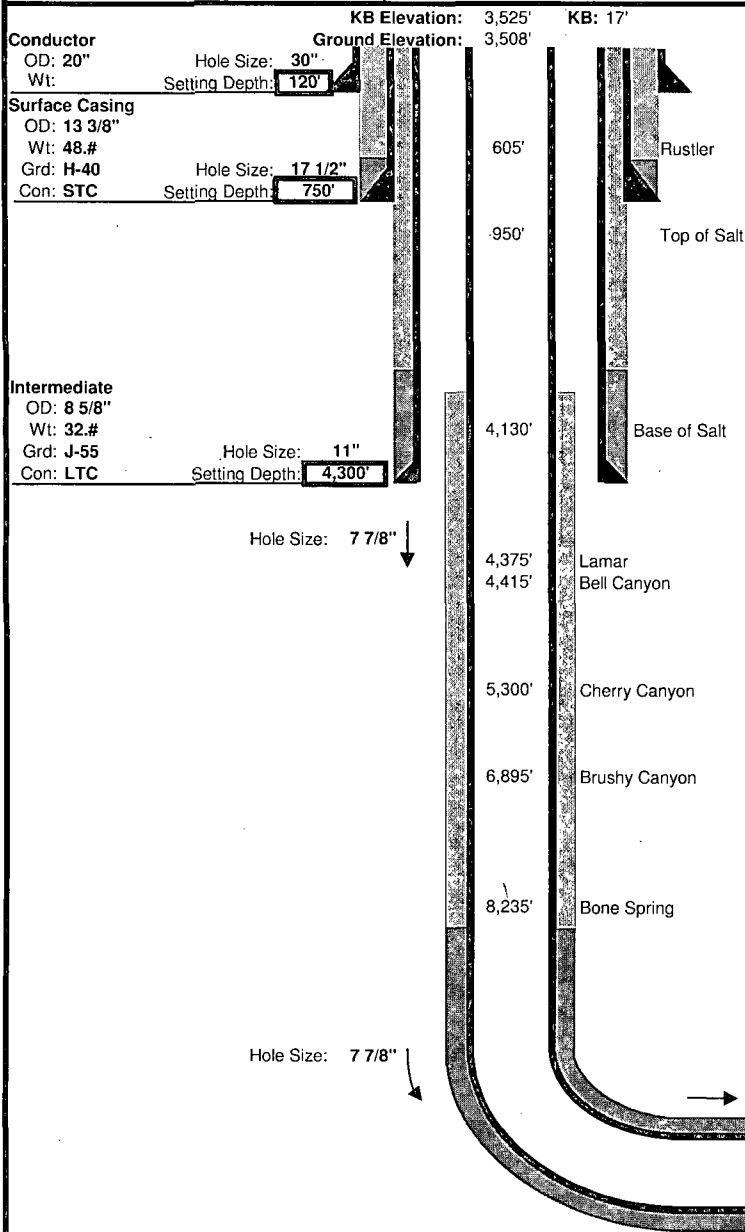
NMOCD's forms C-102, C-144(CLEZ) pit permit, well-bore diagram with casing program, directional planning report, depth to ground water report, NSL application and other information is enclosed. There are no known high levels of H<sub>2</sub>S in this area. However, monitoring of H<sub>2</sub>S and well readiness will be utilized in the drilling of this well. Surface hole will be drilled with fresh water mud, intermediate-brine and production hole with cut-brine.



Drilling Engineer: Dan Melcher  
Superintendent: Daniel Gipson  
Geologist: Corey Dimond

Well Name: Big Sinks 16-24-31 State 1H  
Target: First Bone Spring Shale  
County, State: Eddy, NM  
Surface Location: 150' FSL 400' FWL, Section 16, Township 24 S, Range 31 E  
BH Location: 200' FNL 400' FWL, Section 16, Township 24 S, Range 31 E  
SHL Latitude: 32.210376  
SHL Longitude: -103.789519  
BHL Latitude: 32.22393  
BHL Longitude: -103.789526  
Coordinates: NAD 27  
SHL North: 440680  
SHL East: 668195  
BHL North: 445610  
BHL East: 668168  
Coordinates: NMSPCE

Drilling Rig: Trinidad 110  
Directional: Phoenix  
Drilling Mud: Nova  
Cement: Schlumberger  
Wellhead: Sunbelt  
Property Number: 0  
AFE Number: 0



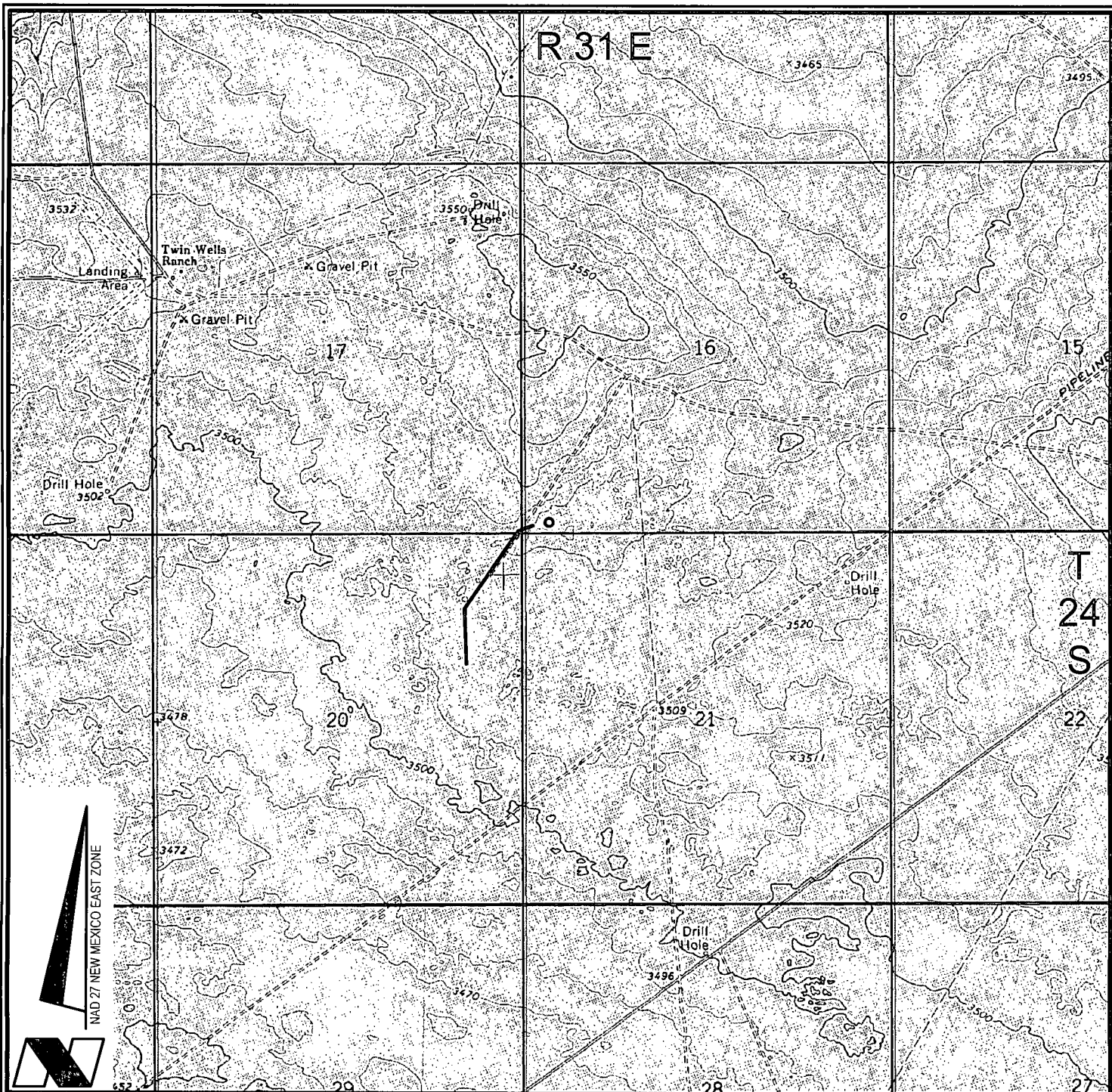
| Wellhead Equipment |                                                     |
|--------------------|-----------------------------------------------------|
| A Section          | 13-3/8" x 13-5/8" 5K SOW                            |
| B Section          | 13-5/8" 5K x 11" 5K                                 |
| C Section          | 11" 5K X 7-1/16" 10K w/10k gate valve               |
| D Section          | N/A                                                 |
| Required BOP Stack | 13-5/8" 5K- Double, Annular, Rot Head w/orbit valve |

| Mud              |              |            |         |         |
|------------------|--------------|------------|---------|---------|
| Depth            | Type         | Weight     | F. Vis  | FL      |
| 0' - 750'        | Spud Mud     | 8.4 - 8.7  | 32 - 34 | NC - NC |
| 750' - 4,300'    | Brine        | 9.5 - 10.1 | 28 - 29 | NC - NC |
| 4,300' - 9,045'  | FW/Cut Brine | 8.3 - 9.5  | 28 - 29 | NC - NC |
| 9,045' - 9,794'  | Cut Brine    | 8.3 - 9.5  | 32 - 36 | 15 - 25 |
| 9,794' - 14,248' | FW/Cut Brine | 8.3 - 9.5  | 28 - 29 | NC - NC |

| Cement       |        |         |      |      |      |     |
|--------------|--------|---------|------|------|------|-----|
| Slurry       | Top    | Btm     | Wt   | Yld  | %Exc | Bbl |
| Surface      |        |         |      |      |      |     |
| Lead         | 0'     | 650'    | 13.7 | 1.65 | 250  | 251 |
| Tail         | 650'   | 750'    | 14.8 | 1.33 | 250  | 50  |
| Intermediate |        |         |      |      |      |     |
| Lead         | 0'     | 3,800'  | 12.0 | 1.99 | 250  | 547 |
| Tail         | 3,800' | 4,300'  | 14.2 | 1.37 | 250  | 82  |
| Production   |        |         |      |      |      |     |
| Lead         | 3,800' | 9,045'  | 12.4 | 2.19 | 75   | 272 |
| Tail         | 9,045' | 14,248' | 14.5 | 1.28 | 75   | 283 |

| Type    | Logs             | Interval                 | Vendor  |
|---------|------------------|--------------------------|---------|
| OH      | Triple Combo     | Base of Curve to Int Csg | TBD     |
| Mud Log | 2 man mudlogging | Int Csg to EOC           | Nomac   |
| LWD     | MWD Gamma        | Curve and Lateral        | Phoenix |

| Directional Plan |                                                                          |       |        |        |        |       |
|------------------|--------------------------------------------------------------------------|-------|--------|--------|--------|-------|
| Target Line:     | 9,522' @ 0' VS w/ 89.9 deg inclination                                   |       |        |        |        |       |
| Target Window:   | 20' above, 20' below, 50' left, 50' right                                |       |        |        |        |       |
|                  | MD                                                                       | INC   | AZM    | TVD    | VS     | DLS   |
| KOP              | 9,045'                                                                   | 0.00  | 0.00   | 9,045' | 0'     | 0.00  |
| EOB              | 9,794'                                                                   | 89.90 | 359.69 | 9,522' | 477'   | 12.00 |
| TD               | 14,248'                                                                  | 89.90 | 359.69 | 9,530' | 4,930' | 0.00  |
| Hardlines:       | Lateral- 330' from parallel lease lines.<br>Vertical- Actual Lease Lines |       |        |        |        |       |
| Notes:           | Please note SHL and BHL distance from lease lines                        |       |        |        |        |       |



VICINITY MAP

**CHEVRON U.S.A. INC.**  
 BIG SINKS 16-24-31 STATE NO. 1H WELL  
 LOCATED 150' FSL AND 400' FWL  
 SECTION 16, T24S-R31E  
 EDDY COUNTY, NEW MEXICO



Lafayette New Orleans Houston  
 135 Regency Sq. Lafayette, LA 70508  
 Ph. 337-237-2200 Fax. 337-232-3299  
[www.fenstermaker.com](http://www.fenstermaker.com)

DRAWN BY: BMO

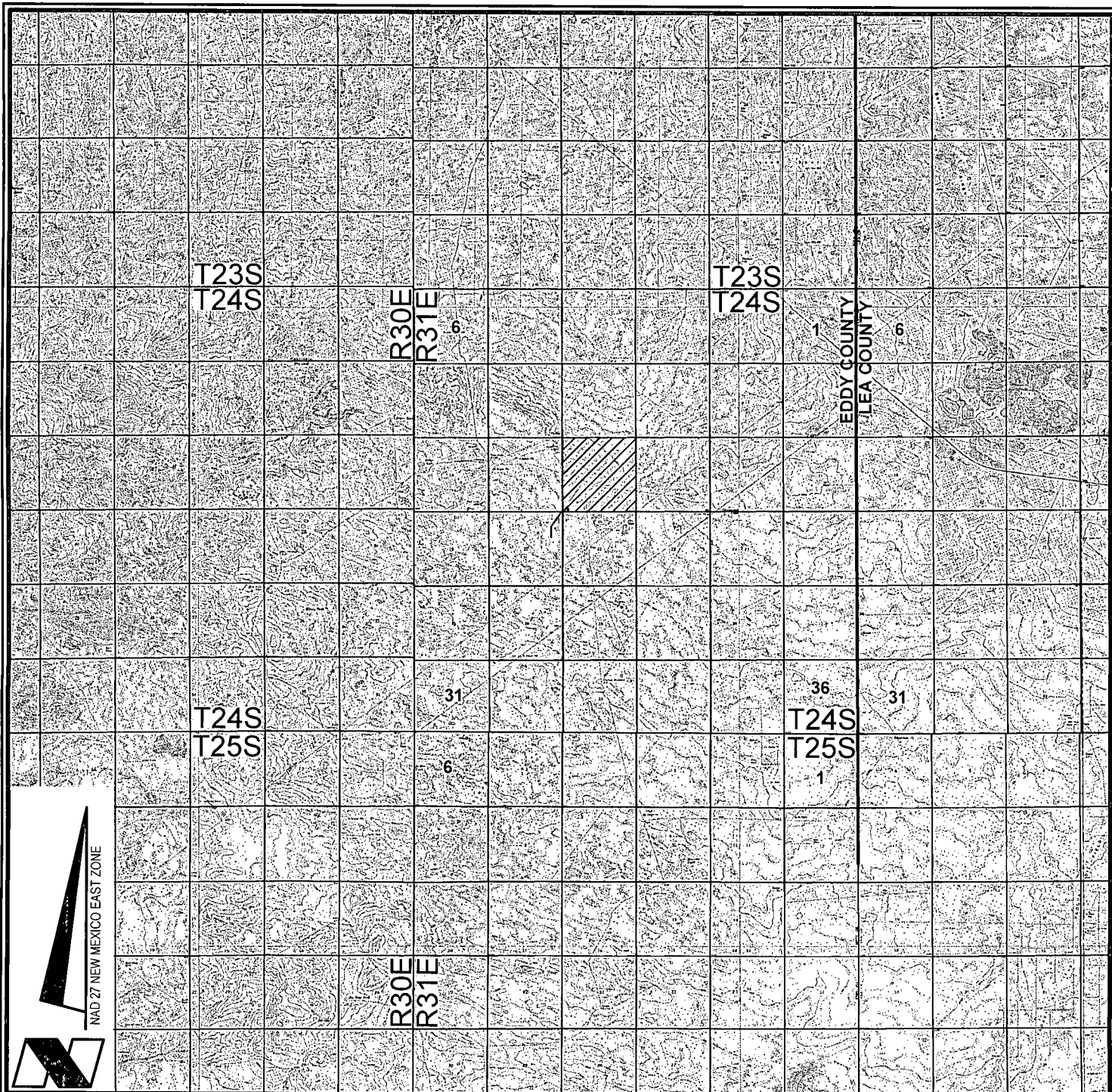
REVISED:

DATE: 01/11/2013

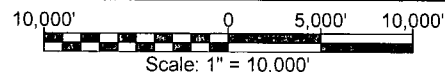
PROJ. MGR.: DBM

SHEET 1 OF 3 SHEETS

FILENAME: T:\2012\12128555\DWG\Big Sinks 16-24-31 STATE 1H APD.dwg



VICINITY MAP



**CHEVRON U.S.A. INC.**  
*BIG SINKS 16-24-31 STATE NO. 1H WELL*  
*LOCATED 150' FSL AND 400' FWL*  
 SECTION 16, T24S-R31E  
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DRAWN BY: BMO

PROJ. MGR.: DBM

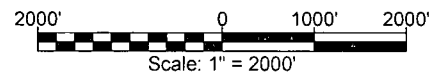
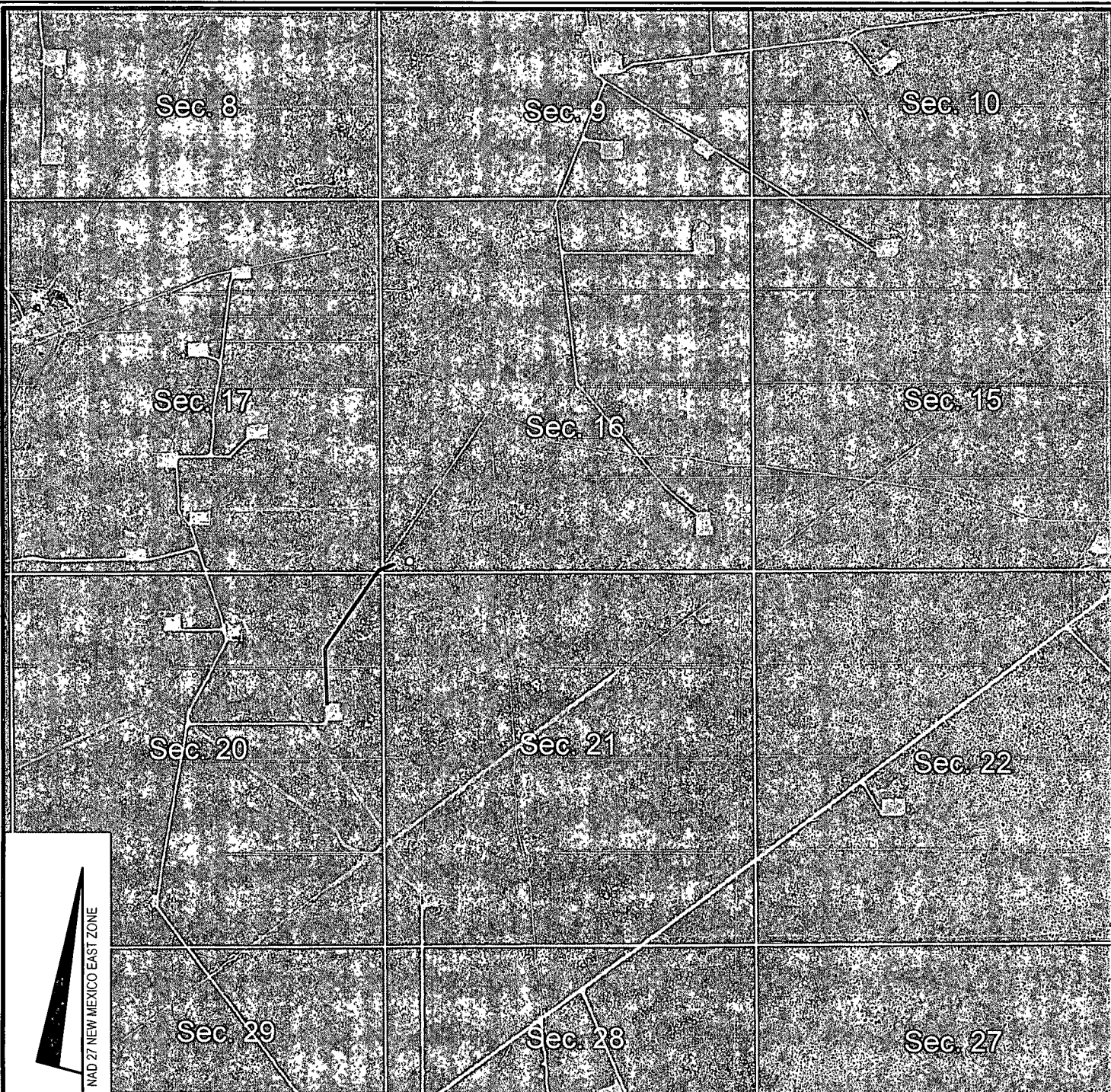
REVISED:

DATE: 01/11/2013

SHEET 2 OF 3 SHEETS

FILENAME: T:\2012\2128555\DWG\Big Sinks 16-24-31 STATE 1H APD.dwg





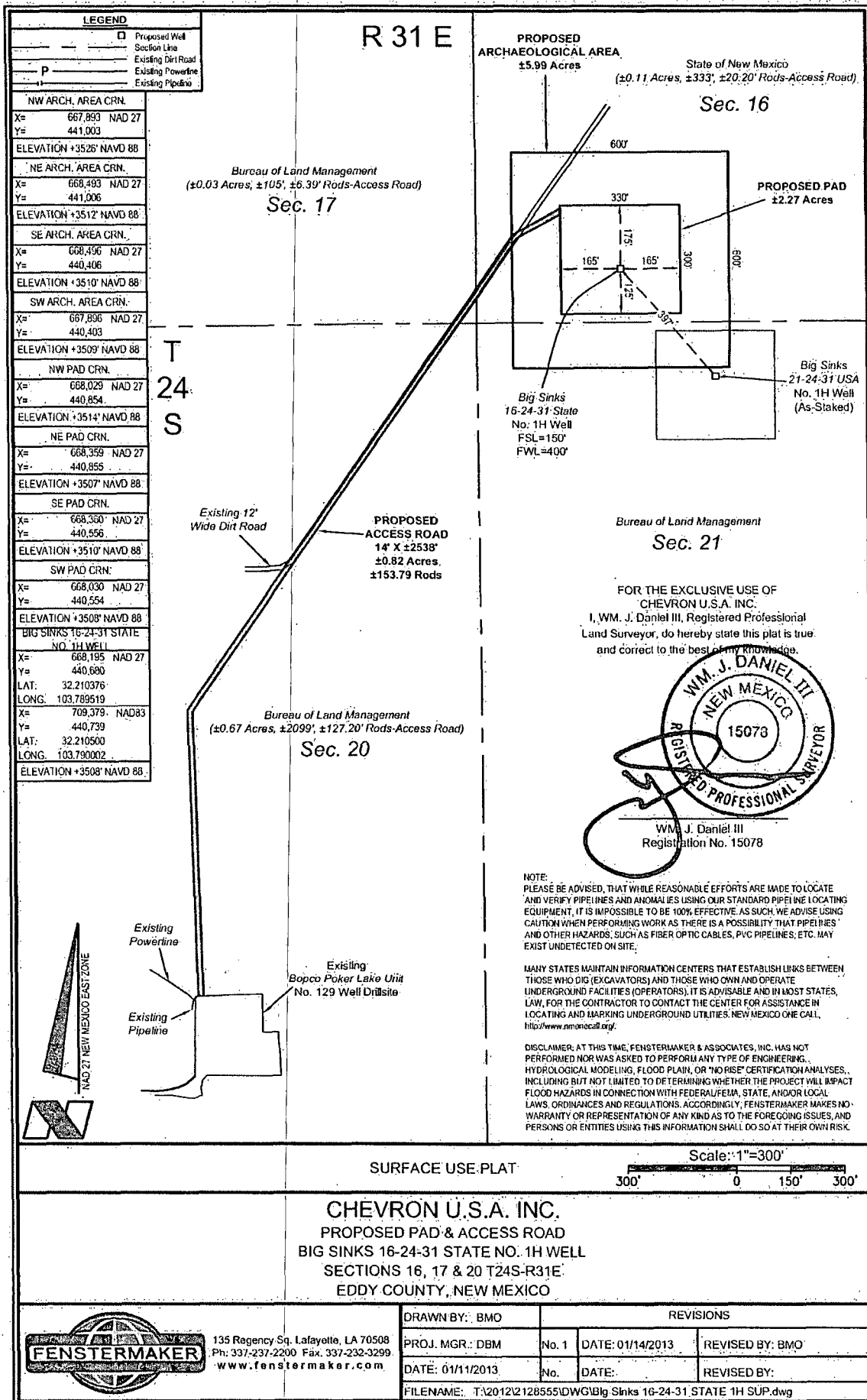
-  = FEDERAL LAND
-  = FEE LAND
-  = STATE LAND

**CHEVRON U.S.A. INC.**  
**BIG SINKS 16-24-31 STATE NO. 1H WELL**  
**LOCATED 150' FSL AND 400' FWL**  
**SECTION 16, T24S-R31E**  
**EDDY COUNTY, NEW MEXICO**



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|                                                                   |          |                     |
|-------------------------------------------------------------------|----------|---------------------|
| DRAWN BY: BMO                                                     | REVISED: | DATE: 01/11/2013    |
| PROJ. MGR.: DBM                                                   |          | SHEET 3 OF 3 SHEETS |
| FILENAME: T:\2012\2128555\DWG\Big Sinks 16-24-31 STATE 1H APD.dwg |          |                     |





# **Permian District**

**NM -Eddy [Non-PLU Avalon Project]**

**Big Sinks 16-24-31 State 1H**

**Well #1**

**Wellbore #1**

**Plan: Plat 16Jan13**

## **Standard Planning Report**

**25 January, 2013**

# Chesapeake Operating

## Planning Report

|                  |                                    |                                     |                                  |
|------------------|------------------------------------|-------------------------------------|----------------------------------|
| <b>Database:</b> | Drilling Database                  | <b>Local Co-ordinate Reference:</b> | Site Big Sinks 16-24-31 State 1H |
| <b>Company:</b>  | Permian District                   | <b>TVD Reference:</b>               | RKB @ 3525.0usft                 |
| <b>Project:</b>  | NM - Eddy (Non-PLU Avalon Project) | <b>MD Reference:</b>                | RKB @ 3525.0usft                 |
| <b>Site:</b>     | Big Sinks 16-24-31 State 1H        | <b>North Reference:</b>             | Grid                             |
| <b>Well:</b>     | Well #1                            | <b>Survey Calculation Method:</b>   | Minimum Curvature                |
| <b>Wellbore:</b> | Wellbore #1                        |                                     |                                  |
| <b>Design:</b>   | Plat 16Jan13                       |                                     |                                  |

|                    |                                    |                      |              |
|--------------------|------------------------------------|----------------------|--------------|
| <b>Project</b>     | NM - Eddy (Non-PLU Avalon Project) |                      |              |
| <b>Map System:</b> | US State Plane 1983                | <b>System Datum:</b> | Ground Level |
| <b>Geo Datum:</b>  | North American Datum 1983          |                      |              |
| <b>Map Zone:</b>   | New Mexico Eastern Zone            |                      |              |

|                              |                             |                          |                        |
|------------------------------|-----------------------------|--------------------------|------------------------|
| <b>Site</b>                  | Big Sinks 16-24-31 State 1H |                          |                        |
| <b>Site Position:</b>        |                             | <b>Northing:</b>         | 440,680.00 ft          |
| <b>From:</b>                 | Map                         | <b>Easting:</b>          | 668,195.00 ft          |
| <b>Position Uncertainty:</b> | 0.0 usft                    | <b>Slot Radius:</b>      | 13.200 in              |
|                              |                             | <b>Latitude:</b>         | 32° 12' 39.01818552 N  |
|                              |                             | <b>Longitude:</b>        | 103° 55' 23.39146307 W |
|                              |                             | <b>Grid Convergence:</b> | 0.22 °                 |

|                             |              |                            |                                |
|-----------------------------|--------------|----------------------------|--------------------------------|
| <b>Well</b>                 | Well #1      |                            |                                |
| <b>Well Position</b>        | <b>+N/-S</b> | 0.0 usft                   | <b>Northing:</b> 440,680.00 ft |
|                             | <b>+E/-W</b> | 0.0 usft                   | <b>Easting:</b> 668,195.00 ft  |
| <b>Position Uncertainty</b> | 0.0 usft     | <b>Wellhead Elevation:</b> | 3,508.0 usft                   |
|                             |              | <b>Latitude:</b>           | 32° 12' 39.01818552 N          |
|                             |              | <b>Longitude:</b>          | 103° 55' 23.39146307 W         |
|                             |              | <b>Ground Level:</b>       | 3,508.0 usft                   |

|                  |                   |                    |                     |
|------------------|-------------------|--------------------|---------------------|
| <b>Wellbore</b>  | Wellbore #1       |                    |                     |
| <b>Magnetics</b> | <b>Model Name</b> | <b>Sample Date</b> | <b>Declination</b>  |
|                  | IGRF2010          | 1/25/2013          | (°)                 |
|                  |                   |                    | 7.55                |
|                  |                   |                    | Dip Angle (°)       |
|                  |                   |                    | 60.07               |
|                  |                   |                    | Field Strength (nT) |
|                  |                   |                    | 48,385              |

|                          |                         |              |                          |
|--------------------------|-------------------------|--------------|--------------------------|
| <b>Design</b>            | Plat 16Jan13            |              |                          |
| <b>Audit Notes:</b>      |                         |              |                          |
| <b>Version:</b>          | <b>Phase:</b>           | PLAN         | <b>Tie On Depth:</b> 0.0 |
| <b>Vertical Section:</b> | <b>Depth From (TVD)</b> | <b>+N/-S</b> | <b>+E/-W</b>             |
|                          | (usft)                  | (usft)       | (usft)                   |
|                          | 0.0                     | 0.0          | 0.0                      |
|                          |                         |              | <b>Direction</b> (°)     |
|                          |                         |              | 359.69                   |

|                       |                    |                |                       |              |              |                    |                   |                  |            |                         |
|-----------------------|--------------------|----------------|-----------------------|--------------|--------------|--------------------|-------------------|------------------|------------|-------------------------|
| <b>Plan Sections</b>  |                    |                |                       |              |              |                    |                   |                  |            |                         |
| <b>Measured Depth</b> | <b>Inclination</b> | <b>Azimuth</b> | <b>Vertical Depth</b> | <b>+N/-S</b> | <b>+E/-W</b> | <b>Dogleg Rate</b> | <b>Build Rate</b> | <b>Turn Rate</b> | <b>TFO</b> | <b>Target</b>           |
| (usft)                | (°)                | (°)            | (usft)                | (usft)       | (usft)       | (°/100usft)        | (°/100usft)       | (°/100usft)      | (°)        |                         |
| 0.0                   | 0.00               | 0.00           | 0.0                   | 0.0          | 0.0          | 0.00               | 0.00              | 0.00             | 0.00       |                         |
| 9,045.4               | 0.00               | 0.00           | 9,045.4               | 0.0          | 0.0          | 0.00               | 0.00              | 0.00             | 0.00       |                         |
| 9,794.5               | 89.90              | 359.69         | 9,522.8               | 476.6        | -2.6         | 12.00              | 12.00             | 0.00             | 359.69     |                         |
| 14,248.0              | 89.90              | 359.69         | 9,530.6               | 4,930.0      | -27.0        | 0.00               | 0.00              | 0.00             | 0.00       | 0.00 Big Sinks 16-24-31 |

# Chesapeake Operating

## Planning Report

|           |                                  |                              |                                  |
|-----------|----------------------------------|------------------------------|----------------------------------|
| Database: | Drilling Database                | Local Co-ordinate Reference: | Site Big Sinks 16-24-31 State 1H |
| Company:  | Permian District                 | TVD Reference:               | RKB @ 3525.0usft                 |
| Project:  | NM Eddy (Non-PLU Avalon Project) | MD Reference:                | RKB @ 3525.0usft                 |
| Site:     | Big Sinks 16-24-31 State 1H      | North Reference:             | Grid                             |
| Well:     | Well #1                          | Survey Calculation Method:   | Minimum Curvature                |
| Wellbore: | Wellbore #1                      |                              |                                  |
| Design:   | Plat 16Jan13                     |                              |                                  |

| Planned Survey        |                 |             |                       |              |              |                         |                         |                        |                       |  |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|--|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |  |
| 0.0                   | 0.00            | 0.00        | 0.0                   | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 100.0                 | 0.00            | 0.00        | 100.0                 | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 200.0                 | 0.00            | 0.00        | 200.0                 | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 300.0                 | 0.00            | 0.00        | 300.0                 | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 400.0                 | 0.00            | 0.00        | 400.0                 | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 500.0                 | 0.00            | 0.00        | 500.0                 | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 600.0                 | 0.00            | 0.00        | 600.0                 | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 700.0                 | 0.00            | 0.00        | 700.0                 | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 800.0                 | 0.00            | 0.00        | 800.0                 | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 900.0                 | 0.00            | 0.00        | 900.0                 | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 1,000.0               | 0.00            | 0.00        | 1,000.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 1,100.0               | 0.00            | 0.00        | 1,100.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 1,200.0               | 0.00            | 0.00        | 1,200.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 1,300.0               | 0.00            | 0.00        | 1,300.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 1,400.0               | 0.00            | 0.00        | 1,400.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 1,500.0               | 0.00            | 0.00        | 1,500.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 1,600.0               | 0.00            | 0.00        | 1,600.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 1,700.0               | 0.00            | 0.00        | 1,700.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 1,800.0               | 0.00            | 0.00        | 1,800.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 1,900.0               | 0.00            | 0.00        | 1,900.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 2,000.0               | 0.00            | 0.00        | 2,000.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 2,100.0               | 0.00            | 0.00        | 2,100.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 2,200.0               | 0.00            | 0.00        | 2,200.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 2,300.0               | 0.00            | 0.00        | 2,300.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 2,400.0               | 0.00            | 0.00        | 2,400.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 2,500.0               | 0.00            | 0.00        | 2,500.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 2,600.0               | 0.00            | 0.00        | 2,600.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 2,700.0               | 0.00            | 0.00        | 2,700.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 2,800.0               | 0.00            | 0.00        | 2,800.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 2,900.0               | 0.00            | 0.00        | 2,900.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 3,000.0               | 0.00            | 0.00        | 3,000.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 3,100.0               | 0.00            | 0.00        | 3,100.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 3,200.0               | 0.00            | 0.00        | 3,200.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 3,300.0               | 0.00            | 0.00        | 3,300.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 3,400.0               | 0.00            | 0.00        | 3,400.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 3,500.0               | 0.00            | 0.00        | 3,500.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 3,600.0               | 0.00            | 0.00        | 3,600.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 3,700.0               | 0.00            | 0.00        | 3,700.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 3,800.0               | 0.00            | 0.00        | 3,800.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 3,900.0               | 0.00            | 0.00        | 3,900.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 4,000.0               | 0.00            | 0.00        | 4,000.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 4,100.0               | 0.00            | 0.00        | 4,100.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 4,200.0               | 0.00            | 0.00        | 4,200.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 4,300.0               | 0.00            | 0.00        | 4,300.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 4,400.0               | 0.00            | 0.00        | 4,400.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 4,500.0               | 0.00            | 0.00        | 4,500.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 4,600.0               | 0.00            | 0.00        | 4,600.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 4,700.0               | 0.00            | 0.00        | 4,700.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 4,800.0               | 0.00            | 0.00        | 4,800.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 4,900.0               | 0.00            | 0.00        | 4,900.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 5,000.0               | 0.00            | 0.00        | 5,000.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 5,100.0               | 0.00            | 0.00        | 5,100.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 5,200.0               | 0.00            | 0.00        | 5,200.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 5,300.0               | 0.00            | 0.00        | 5,300.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |  |

# Chesapeake Operating

## Planning Report

|           |                                    |                              |                                   |
|-----------|------------------------------------|------------------------------|-----------------------------------|
| Database: | Drilling Database                  | Local Co-ordinate Reference: | Site: Big Sinks 16-24-31 State 1H |
| Company:  | Permian District                   | TVD Reference:               | RKB @ 3525.0usft                  |
| Project:  | NM - Eddy (Non-PLU Avalon Project) | MD Reference:                | RKB @ 3525.0usft                  |
| Site:     | Big Sinks 16-24-31 State 1H        | North Reference:             | Grid                              |
| Well:     | Well #1                            | Survey Calculation Method:   | Minimum Curvature                 |
| Wellbore: | Wellbore #1                        |                              |                                   |
| Design:   | Plat 16Jan13                       |                              |                                   |

| Planned Survey        |                 |             |                       |              |              |                         |                         |                        |                       |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
| 5,400.0               | 0.00            | 0.00        | 5,400.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 5,500.0               | 0.00            | 0.00        | 5,500.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 5,600.0               | 0.00            | 0.00        | 5,600.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 5,700.0               | 0.00            | 0.00        | 5,700.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 5,800.0               | 0.00            | 0.00        | 5,800.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 5,900.0               | 0.00            | 0.00        | 5,900.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 6,000.0               | 0.00            | 0.00        | 6,000.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 6,100.0               | 0.00            | 0.00        | 6,100.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 6,200.0               | 0.00            | 0.00        | 6,200.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 6,300.0               | 0.00            | 0.00        | 6,300.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 6,400.0               | 0.00            | 0.00        | 6,400.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 6,500.0               | 0.00            | 0.00        | 6,500.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 6,600.0               | 0.00            | 0.00        | 6,600.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 6,700.0               | 0.00            | 0.00        | 6,700.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 6,800.0               | 0.00            | 0.00        | 6,800.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 6,900.0               | 0.00            | 0.00        | 6,900.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 7,000.0               | 0.00            | 0.00        | 7,000.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 7,100.0               | 0.00            | 0.00        | 7,100.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 7,200.0               | 0.00            | 0.00        | 7,200.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 7,300.0               | 0.00            | 0.00        | 7,300.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 7,400.0               | 0.00            | 0.00        | 7,400.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 7,500.0               | 0.00            | 0.00        | 7,500.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 7,600.0               | 0.00            | 0.00        | 7,600.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 7,700.0               | 0.00            | 0.00        | 7,700.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 7,800.0               | 0.00            | 0.00        | 7,800.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 7,900.0               | 0.00            | 0.00        | 7,900.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 8,000.0               | 0.00            | 0.00        | 8,000.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 8,100.0               | 0.00            | 0.00        | 8,100.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 8,200.0               | 0.00            | 0.00        | 8,200.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 8,300.0               | 0.00            | 0.00        | 8,300.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 8,400.0               | 0.00            | 0.00        | 8,400.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 8,500.0               | 0.00            | 0.00        | 8,500.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 8,600.0               | 0.00            | 0.00        | 8,600.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 8,700.0               | 0.00            | 0.00        | 8,700.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 8,800.0               | 0.00            | 0.00        | 8,800.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 8,900.0               | 0.00            | 0.00        | 8,900.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 9,000.0               | 0.00            | 0.00        | 9,000.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 9,045.4               | 0.00            | 0.00        | 9,045.4               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 9,050.0               | 0.56            | 359.69      | 9,050.0               | 0.0          | 0.0          | 0.0                     | 12.00                   | 12.00                  | 0.00                  |
| 9,075.0               | 3.56            | 359.69      | 9,075.0               | 0.9          | 0.0          | 0.9                     | 12.00                   | 12.00                  | 0.00                  |
| 9,100.0               | 6.56            | 359.69      | 9,099.9               | 3.1          | 0.0          | 3.1                     | 12.00                   | 12.00                  | 0.00                  |
| 9,125.0               | 9.56            | 359.69      | 9,124.6               | 6.6          | 0.0          | 6.6                     | 12.00                   | 12.00                  | 0.00                  |
| 9,150.0               | 12.56           | 359.69      | 9,149.2               | 11.4         | -0.1         | 11.4                    | 12.00                   | 12.00                  | 0.00                  |
| 9,175.0               | 15.56           | 359.69      | 9,173.4               | 17.5         | -0.1         | 17.5                    | 12.00                   | 12.00                  | 0.00                  |
| 9,200.0               | 18.56           | 359.69      | 9,197.3               | 24.8         | -0.1         | 24.8                    | 12.00                   | 12.00                  | 0.00                  |
| 9,225.0               | 21.56           | 359.69      | 9,220.8               | 33.4         | -0.2         | 33.4                    | 12.00                   | 12.00                  | 0.00                  |
| 9,250.0               | 24.56           | 359.69      | 9,243.8               | 43.2         | -0.2         | 43.2                    | 12.00                   | 12.00                  | 0.00                  |
| 9,275.0               | 27.56           | 359.69      | 9,266.2               | 54.2         | -0.3         | 54.2                    | 12.00                   | 12.00                  | 0.00                  |
| 9,300.0               | 30.56           | 359.69      | 9,288.1               | 66.3         | -0.4         | 66.3                    | 12.00                   | 12.00                  | 0.00                  |
| 9,325.0               | 33.56           | 359.69      | 9,309.3               | 79.6         | -0.4         | 79.6                    | 12.00                   | 12.00                  | 0.00                  |
| 9,350.0               | 36.56           | 359.69      | 9,329.7               | 93.9         | -0.5         | 93.9                    | 12.00                   | 12.00                  | 0.00                  |
| 9,375.0               | 39.56           | 359.69      | 9,349.4               | 109.3        | -0.6         | 109.3                   | 12.00                   | 12.00                  | 0.00                  |
| 9,400.0               | 42.56           | 359.69      | 9,368.3               | 125.8        | -0.7         | 125.8                   | 12.00                   | 12.00                  | 0.00                  |
| 9,425.0               | 45.56           | 359.69      | 9,386.2               | 143.1        | -0.8         | 143.1                   | 12.00                   | 12.00                  | 0.00                  |

# Chesapeake Operating

## Planning Report

|                  |                                    |                                     |                                  |
|------------------|------------------------------------|-------------------------------------|----------------------------------|
| <b>Database:</b> | Drilling Database                  | <b>Local Co-ordinate Reference:</b> | Site Big Sinks 16-24-31 State 1H |
| <b>Company:</b>  | Permian District                   | <b>TVD Reference:</b>               | RKB @ 3525.0usft                 |
| <b>Project:</b>  | NM - Eddy (Non-PLU Avalon Project) | <b>MD Reference:</b>                | RKB @ 3525.0usft                 |
| <b>Site:</b>     | Big Sinks 16-24-31 State 1H        | <b>North Reference:</b>             | Grid                             |
| <b>Well:</b>     | Well #1                            | <b>Survey Calculation Method:</b>   | Minimum Curvature                |
| <b>Wellbore:</b> | Wellbore #1                        |                                     |                                  |
| <b>Design:</b>   | Plat 16Jan13                       |                                     |                                  |

| Planned Survey        |                 |             |                       |              |              |                         |                         |                        |                       |  |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|--|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |  |
| 9,450.0               | 48.56           | 359.69      | 9,403.3               | 161.4        | -0.9         | 161.4                   | 12.00                   | 12.00                  | 0.00                  |  |
| 9,475.0               | 51.56           | 359.69      | 9,419.3               | 180.6        | -1.0         | 180.6                   | 12.00                   | 12.00                  | 0.00                  |  |
| 9,500.0               | 54.56           | 359.69      | 9,434.3               | 200.6        | -1.1         | 200.6                   | 12.00                   | 12.00                  | 0.00                  |  |
| 9,525.0               | 57.56           | 359.69      | 9,448.3               | 221.3        | -1.2         | 221.3                   | 12.00                   | 12.00                  | 0.00                  |  |
| 9,550.0               | 60.56           | 359.69      | 9,461.2               | 242.8        | -1.3         | 242.8                   | 12.00                   | 12.00                  | 0.00                  |  |
| 9,575.0               | 63.56           | 359.69      | 9,472.9               | 264.8        | -1.5         | 264.8                   | 12.00                   | 12.00                  | 0.00                  |  |
| 9,600.0               | 66.56           | 359.69      | 9,483.4               | 287.5        | -1.6         | 287.5                   | 12.00                   | 12.00                  | 0.00                  |  |
| 9,625.0               | 69.56           | 359.69      | 9,492.8               | 310.7        | -1.7         | 310.7                   | 12.00                   | 12.00                  | 0.00                  |  |
| 9,650.0               | 72.56           | 359.69      | 9,500.9               | 334.3        | -1.8         | 334.3                   | 12.00                   | 12.00                  | 0.00                  |  |
| 9,675.0               | 75.56           | 359.69      | 9,507.7               | 358.4        | -2.0         | 358.4                   | 12.00                   | 12.00                  | 0.00                  |  |
| 9,700.0               | 78.56           | 359.69      | 9,513.3               | 382.7        | -2.1         | 382.7                   | 12.00                   | 12.00                  | 0.00                  |  |
| 9,725.0               | 81.56           | 359.69      | 9,517.7               | 407.3        | -2.2         | 407.4                   | 12.00                   | 12.00                  | 0.00                  |  |
| 9,750.0               | 84.56           | 359.69      | 9,520.7               | 432.2        | -2.4         | 432.2                   | 12.00                   | 12.00                  | 0.00                  |  |
| 9,775.0               | 87.56           | 359.69      | 9,522.4               | 457.1        | -2.5         | 457.1                   | 12.00                   | 12.00                  | 0.00                  |  |
| 9,794.5               | 89.90           | 359.69      | 9,522.8               | 476.6        | -2.6         | 476.6                   | 12.00                   | 12.00                  | 0.00                  |  |
| 9,800.0               | 89.90           | 359.69      | 9,522.8               | 482.1        | -2.6         | 482.1                   | 0.00                    | 0.00                   | 0.00                  |  |
| 9,900.0               | 89.90           | 359.69      | 9,523.0               | 582.1        | -3.2         | 582.1                   | 0.00                    | 0.00                   | 0.00                  |  |
| 10,000.0              | 89.90           | 359.69      | 9,523.2               | 682.1        | -3.7         | 682.1                   | 0.00                    | 0.00                   | 0.00                  |  |
| 10,100.0              | 89.90           | 359.69      | 9,523.4               | 782.1        | -4.3         | 782.1                   | 0.00                    | 0.00                   | 0.00                  |  |
| 10,200.0              | 89.90           | 359.69      | 9,523.5               | 882.1        | -4.8         | 882.1                   | 0.00                    | 0.00                   | 0.00                  |  |
| 10,300.0              | 89.90           | 359.69      | 9,523.7               | 982.1        | -5.4         | 982.1                   | 0.00                    | 0.00                   | 0.00                  |  |
| 10,400.0              | 89.90           | 359.69      | 9,523.9               | 1,082.1      | -5.9         | 1,082.1                 | 0.00                    | 0.00                   | 0.00                  |  |
| 10,500.0              | 89.90           | 359.69      | 9,524.1               | 1,182.1      | -6.5         | 1,182.1                 | 0.00                    | 0.00                   | 0.00                  |  |
| 10,600.0              | 89.90           | 359.69      | 9,524.2               | 1,282.1      | -7.0         | 1,282.1                 | 0.00                    | 0.00                   | 0.00                  |  |
| 10,700.0              | 89.90           | 359.69      | 9,524.4               | 1,382.1      | -7.6         | 1,382.1                 | 0.00                    | 0.00                   | 0.00                  |  |
| 10,800.0              | 89.90           | 359.69      | 9,524.6               | 1,482.1      | -8.1         | 1,482.1                 | 0.00                    | 0.00                   | 0.00                  |  |
| 10,900.0              | 89.90           | 359.69      | 9,524.8               | 1,582.1      | -8.7         | 1,582.1                 | 0.00                    | 0.00                   | 0.00                  |  |
| 11,000.0              | 89.90           | 359.69      | 9,524.9               | 1,682.1      | -9.2         | 1,682.1                 | 0.00                    | 0.00                   | 0.00                  |  |
| 11,100.0              | 89.90           | 359.69      | 9,525.1               | 1,782.1      | -9.8         | 1,782.1                 | 0.00                    | 0.00                   | 0.00                  |  |
| 11,200.0              | 89.90           | 359.69      | 9,525.3               | 1,882.1      | -10.3        | 1,882.1                 | 0.00                    | 0.00                   | 0.00                  |  |
| 11,300.0              | 89.90           | 359.69      | 9,525.5               | 1,982.1      | -10.9        | 1,982.1                 | 0.00                    | 0.00                   | 0.00                  |  |
| 11,400.0              | 89.90           | 359.69      | 9,525.6               | 2,082.1      | -11.4        | 2,082.1                 | 0.00                    | 0.00                   | 0.00                  |  |
| 11,500.0              | 89.90           | 359.69      | 9,525.8               | 2,182.1      | -12.0        | 2,182.1                 | 0.00                    | 0.00                   | 0.00                  |  |
| 11,600.0              | 89.90           | 359.69      | 9,526.0               | 2,282.1      | -12.5        | 2,282.1                 | 0.00                    | 0.00                   | 0.00                  |  |
| 11,700.0              | 89.90           | 359.69      | 9,526.2               | 2,382.1      | -13.0        | 2,382.1                 | 0.00                    | 0.00                   | 0.00                  |  |
| 11,800.0              | 89.90           | 359.69      | 9,526.3               | 2,482.1      | -13.6        | 2,482.1                 | 0.00                    | 0.00                   | 0.00                  |  |
| 11,900.0              | 89.90           | 359.69      | 9,526.5               | 2,582.1      | -14.1        | 2,582.1                 | 0.00                    | 0.00                   | 0.00                  |  |
| 12,000.0              | 89.90           | 359.69      | 9,526.7               | 2,682.1      | -14.7        | 2,682.1                 | 0.00                    | 0.00                   | 0.00                  |  |
| 12,100.0              | 89.90           | 359.69      | 9,526.9               | 2,782.1      | -15.2        | 2,782.1                 | 0.00                    | 0.00                   | 0.00                  |  |
| 12,200.0              | 89.90           | 359.69      | 9,527.0               | 2,882.1      | -15.8        | 2,882.1                 | 0.00                    | 0.00                   | 0.00                  |  |
| 12,300.0              | 89.90           | 359.69      | 9,527.2               | 2,982.1      | -16.3        | 2,982.1                 | 0.00                    | 0.00                   | 0.00                  |  |
| 12,400.0              | 89.90           | 359.69      | 9,527.4               | 3,082.1      | -16.9        | 3,082.1                 | 0.00                    | 0.00                   | 0.00                  |  |
| 12,500.0              | 89.90           | 359.69      | 9,527.5               | 3,182.0      | -17.4        | 3,182.1                 | 0.00                    | 0.00                   | 0.00                  |  |
| 12,600.0              | 89.90           | 359.69      | 9,527.7               | 3,282.0      | -18.0        | 3,282.1                 | 0.00                    | 0.00                   | 0.00                  |  |
| 12,700.0              | 89.90           | 359.69      | 9,527.9               | 3,382.0      | -18.5        | 3,382.1                 | 0.00                    | 0.00                   | 0.00                  |  |
| 12,800.0              | 89.90           | 359.69      | 9,528.1               | 3,482.0      | -19.1        | 3,482.1                 | 0.00                    | 0.00                   | 0.00                  |  |
| 12,900.0              | 89.90           | 359.69      | 9,528.2               | 3,582.0      | -19.6        | 3,582.1                 | 0.00                    | 0.00                   | 0.00                  |  |
| 13,000.0              | 89.90           | 359.69      | 9,528.4               | 3,682.0      | -20.2        | 3,682.1                 | 0.00                    | 0.00                   | 0.00                  |  |
| 13,100.0              | 89.90           | 359.69      | 9,528.6               | 3,782.0      | -20.7        | 3,782.1                 | 0.00                    | 0.00                   | 0.00                  |  |
| 13,200.0              | 89.90           | 359.69      | 9,528.8               | 3,882.0      | -21.3        | 3,882.1                 | 0.00                    | 0.00                   | 0.00                  |  |
| 13,300.0              | 89.90           | 359.69      | 9,528.9               | 3,982.0      | -21.8        | 3,982.1                 | 0.00                    | 0.00                   | 0.00                  |  |
| 13,400.0              | 89.90           | 359.69      | 9,529.1               | 4,082.0      | -22.4        | 4,082.1                 | 0.00                    | 0.00                   | 0.00                  |  |
| 13,500.0              | 89.90           | 359.69      | 9,529.3               | 4,182.0      | -22.9        | 4,182.1                 | 0.00                    | 0.00                   | 0.00                  |  |
| 13,600.0              | 89.90           | 359.69      | 9,529.5               | 4,282.0      | -23.5        | 4,282.1                 | 0.00                    | 0.00                   | 0.00                  |  |



# Chesapeake Operating

## Planning Report

|           |                                    |                              |                                  |
|-----------|------------------------------------|------------------------------|----------------------------------|
| Database: | Drilling Database                  | Local Co-ordinate Reference: | Site Big Sinks 16-24-31 State 1H |
| Company:  | Permian District                   | TVD Reference:               | RKB @ 3525.0usft                 |
| Project:  | NM - Eddy (Non-PLU-Avalon Project) | MD Reference:                | RKB @ 3525.0usft                 |
| Site:     | Big Sinks 16-24-31 State 1H        | North Reference:             | Grid                             |
| Well:     | Well #1                            | Survey Calculation Method:   | Minimum Curvature                |
| Wellbore: | Wellbore #1                        |                              |                                  |
| Design:   | Plat 16Jan13                       |                              |                                  |

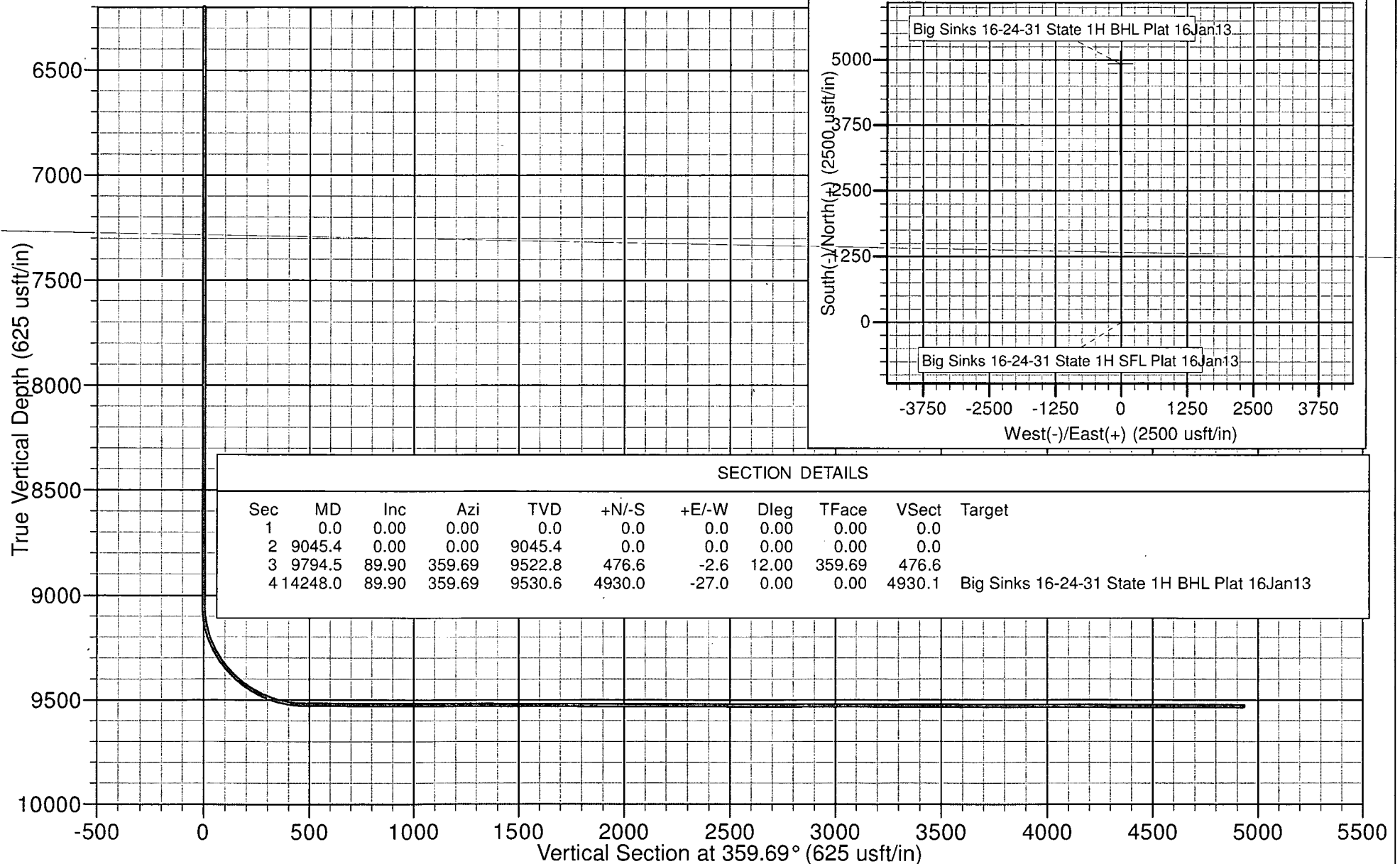
| Planned Survey        |                 |             |                       |              |              |                         |                         |                        |                       |  |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|--|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |  |
| 13,700.0              | 89.90           | 359.69      | 9,529.6               | 4,382.0      | -24.0        | 4,382.1                 | 0.00                    | 0.00                   | 0.00                  |  |
| 13,800.0              | 89.90           | 359.69      | 9,529.8               | 4,482.0      | -24.5        | 4,482.1                 | 0.00                    | 0.00                   | 0.00                  |  |
| 13,900.0              | 89.90           | 359.69      | 9,530.0               | 4,582.0      | -25.1        | 4,582.1                 | 0.00                    | 0.00                   | 0.00                  |  |
| 14,000.0              | 89.90           | 359.69      | 9,530.2               | 4,682.0      | -25.6        | 4,682.1                 | 0.00                    | 0.00                   | 0.00                  |  |
| 14,100.0              | 89.90           | 359.69      | 9,530.3               | 4,782.0      | -26.2        | 4,782.1                 | 0.00                    | 0.00                   | 0.00                  |  |
| 14,200.0              | 89.90           | 359.69      | 9,530.5               | 4,882.0      | -26.7        | 4,882.1                 | 0.00                    | 0.00                   | 0.00                  |  |
| 14,248.0              | 89.90           | 359.69      | 9,530.6               | 4,930.0      | -27.0        | 4,930.1                 | 0.00                    | 0.00                   | 0.00                  |  |

| Design Targets            |               |              |            |              |              |               |              |                   |                   |  |
|---------------------------|---------------|--------------|------------|--------------|--------------|---------------|--------------|-------------------|-------------------|--|
| Target Name               | Dip Angle (°) | Dip Dir. (°) | TVD (usft) | +N/-S (usft) | +E/-W (usft) | Northing (ft) | Easting (ft) | Latitude          | Longitude         |  |
| - hit/miss target         |               |              |            |              |              |               |              |                   |                   |  |
| - Shape                   |               |              |            |              |              |               |              |                   |                   |  |
| Big Sinks 16-24-31 St     | 0.00          | 0.00         | 0.0        | 0.0          | 0.0          | 440,680.00    | 668,195.00   | 12' 39.01818552 N | 55' 23.39146307 W |  |
| - plan hits target center |               |              |            |              |              |               |              |                   |                   |  |
| - Point                   |               |              |            |              |              |               |              |                   |                   |  |
| Big Sinks 16-24-31 St     | 0.00          | 0.00         | 9,530.6    | 4,930.0      | -27.0        | 445,610.00    | 668,168.00   | 13' 27.80550381 N | 55' 23.48673399 W |  |
| - plan hits target center |               |              |            |              |              |               |              |                   |                   |  |
| - Point                   |               |              |            |              |              |               |              |                   |                   |  |

Project: NM -Eddy [Non-PLU Avalon Project]  
 Site: Big Sinks 16-24-31 State 1H  
 Well: Well #1  
 Wellbore: Wellbore #1  
 Design: Plat 16Jan13

PROJECT DETAILS: NM -Eddy [Non-PLU Avalon Project]

Geodetic System: US State Plane 1983  
 Datum: North American Datum 1983  
 Ellipsoid: GRS 1980  
 Zone: New Mexico Eastern Zone  
 System Datum: Ground Level





## New Mexico Office of the State Engineer

### Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced,  
O=orphaned,  
C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest) (NAD83 UTM in meters) (In feet)

| POD Number | Code | Subbasin | County | Q 6 | Q 16 | Q 4 | Sec | Tws | Rng    | X        | Depth Y                 | Depth Well | Water Column |
|------------|------|----------|--------|-----|------|-----|-----|-----|--------|----------|-------------------------|------------|--------------|
| C 02440    |      | C        | ED     | 2   | 3    | 10  | 24S | 31E | 616103 | 3566599* | 350                     |            |              |
|            |      |          |        |     |      |     |     |     |        |          | Average Depth to Water: | --         |              |
|            |      |          |        |     |      |     |     |     |        |          | Minimum Depth:          | --         |              |
|            |      |          |        |     |      |     |     |     |        |          | Maximum Depth:          | --         |              |

**Record Count:** 1

**Basin/County Search:**

Basin: Carlsbad

County: Eddy

Subbasin: Carlsbad

**PLSS Search:**

Section(s): 8, 9, 10, 15, 16, 17, 20, 21, 22

Township: 24S

Range: 31E

\*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

3/5/13 11:50 AM

WATER COLUMN/ AVERAGE  
DEPTH TO WATER