

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

OCD Hobbs

FORM APPROVED  
OMB NO. 1004-0137  
Expires: January 31, 2018**SUNDRY NOTICES AND REPORTS ON WELLS**  
*Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.*5. Lease Serial No.  
NMLC029519B

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.

8. Well Name and No.  
BLACK & TAN 27 FEDERAL COM 303H9. API Well No.  
30-025-4392110. Field and Pool or Exploratory Area  
LEA, BONESPRING, S11. County or Parish, State  
LEA COUNTY, NM**SUBMIT IN TRIPLICATE - Other instructions on page 2**

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other2. Name of Operator  
APACHE CORPORATIONContact: SORINA FLORES  
E-Mail: sorina.flores@apachecorp.com3a. Address  
303 VETERANS AIRPARK LN #1000  
MIDLAND, TX 797053b. Phone No. (include area code)  
Ph: 432-818-1167

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

Sec 27 T20S R34E Mer NMP SESW 215FSL 2160FWL  
32.537436 N Lat, 103.549659 W Lon**12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA**

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

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

BLM-CO-1463 NMB-000736 NATIONWIDE

APACHE REQUEST TO CORRECT SHL CALLS FOR THE BLACK &amp; TAN 27 FEDERAL COM 303H, SURVEYOR MADE A TYPO MISTAKE ON SHL WEST LINE CALL, LAT/LONGS ARE CORRECT.

APPROVED SHL: 215' FSL & 2110' FWL  
CORRECTED SHL: 215' FSL & 2160' FWL

APACHE ALSO REQUEST TO CHANGE BHL IN ORDER TO ACCOMMODATE FUTURE WELL DEVELOPMENT. REVISED DIRECTIONAL SURVEY AND REVISED C-102 ATTACHED.

APPROVED BHL: 280' FNL &amp; 1670' FWL

8/30/2017: Engineering review completed by M. Hague. All previous COAs still apply.

Surface move good SR 10-6-2017

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

Electronic Submission #386031 verified by the BLM Well Information System  
For APACHE CORPORATION, sent to the Hobbs  
Committed to AFMSS for processing by MUSTAFA HAQUE on 08/30/2017 ()

Name (Printed/Typed) SORINA FLORES

Title SUBMITTING CONTACT

Signature (Electronic Submission)

Date 08/24/2017

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

Approved By

Title For FIELD MANAGER

Date 10/10/17

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

Office CARLSBAD FIELD OFFICE

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

(Instructions on page 2)

**\*\* OPERATOR-SUBMITTED \*\* OPERATOR-SUBMITTED \*\* OPERATOR-SUBMITTED \*\***

**Additional data for EC transaction #386031 that would not fit on the form**

**32. Additional remarks, continued**

NEW BHL: 280' FNL & 2188' FWL



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 & 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

|                                                              |                      |                                                                     |                     |                                                      |                                         |
|--------------------------------------------------------------|----------------------|---------------------------------------------------------------------|---------------------|------------------------------------------------------|-----------------------------------------|
| <sup>1</sup> API Number<br><b>30-025-43921</b>               |                      | <sup>2</sup> Pool Code<br><b>37580</b>                              |                     | <sup>3</sup> Pool Name<br><b>LEA, BONESPRING, S.</b> |                                         |
| <sup>4</sup> Property Code<br><b>319397</b>                  |                      | <sup>5</sup> Property Name<br><b>BLACK &amp; TAN 27 FEDERAL COM</b> |                     |                                                      | <sup>6</sup> Well Number<br><b>303H</b> |
| <sup>7</sup> GRID NO.<br><b>873</b>                          |                      | <sup>8</sup> Operator Name<br><b>APACHE CORPORATION</b>             |                     |                                                      | <sup>9</sup> Elevation<br><b>3715'</b>  |
| <sup>10</sup> Surface Location                               |                      |                                                                     |                     |                                                      |                                         |
| UL or lot no.<br><b>N</b>                                    | Section<br><b>27</b> | Township<br><b>20S</b>                                              | Range<br><b>34E</b> | Lot Idn                                              | Feet from the<br><b>215</b>             |
|                                                              |                      |                                                                     |                     | North/South line<br><b>SOUTH</b>                     | Feet From the<br><b>2160</b>            |
|                                                              |                      |                                                                     |                     | East/West line<br><b>WEST</b>                        | County<br><b>LEA</b>                    |
| <sup>11</sup> Bottom Hole Location If Different From Surface |                      |                                                                     |                     |                                                      |                                         |
| UL or lot no.<br><b>C</b>                                    | Section<br><b>27</b> | Township<br><b>20S</b>                                              | Range<br><b>34E</b> | Lot Idn                                              | Feet from the<br><b>280</b>             |
|                                                              |                      |                                                                     |                     | North/South line<br><b>NORTH</b>                     | Feet from the<br><b>2188</b>            |
|                                                              |                      |                                                                     |                     | East/West line<br><b>WEST</b>                        | County<br><b>LEA</b>                    |
| <sup>12</sup> Dedicated Acres<br><b>160</b>                  |                      | <sup>13</sup> Joint or Infill                                       |                     | <sup>14</sup> Consolidation Code                     |                                         |
| <sup>15</sup> Order No.                                      |                      |                                                                     |                     |                                                      |                                         |

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

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                                                                                                |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <p><sup>16</sup> (C) 2188' BH/EP<br/>2188' LTP<br/>40 Ac.</p> <p>(B) DETAIL "A"<br/>3715.3' 680' 3711.5'<br/>600' S. L.<br/>3721.2' 3719.2'<br/>40 Ac.</p> <p>2161' PP<br/>2160' SL/KOP</p> <p>(A)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  | <p>(D) 280' BH/EP<br/>330' LTP<br/>40 Ac.</p> <p>27<br/>360' PP<br/>215' SL/KOP</p> <p>(H)</p> |  | <p>(E) <b>17 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/><i>Sorina L Flores</i> 8/24/2017<br/>Signature Date<br/><b>SORINA L. FLORES</b><br/>Printed Name<br/>sorina.flores@apachecorp.com<br/>E-mail Address</p> <p>(F) <b>18 SURVEYOR CERTIFICATION</b><br/>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.<br/><b>2-27-2017</b><br/>Date of Survey<br/>Signature and Seal of Professional Surveyor<br/><b>19680</b><br/>Certificate Number<br/>8/23/17 Dir Pln</p> |  |
| <p><b>GEODETIC DATA</b><br/>NAD 83 GRID - NM EAST</p> <p><b>SURFACE LOCATION (SL)</b><br/>N: 560138.3 - E: 782842.6<br/>LAT: 32.5374362° N LONG: 103.5496593° W<br/>LAT: 32°32'14.7703" N LONG: 103°32'58.7732" W</p> <p><b>KICK OFF POINT (KOP)</b><br/>N: 560138.3 - E: 782842.6<br/>LAT: 32.5374362° N LONG: 103.5496593° W<br/>LAT: 32°32'14.7703" N LONG: 103°32'58.7732" W<br/>MD = 10,628.67 / TVD = 10,628.67</p> <p><b>PENETRATION POINT (PP)</b><br/>N: 560282.9 - E: 782842.4<br/>LAT: 32.5378336° N LONG: 103.5496564° W<br/>LAT: 32°32'16.2011" N LONG: 103°32'58.7631" W<br/>MD = 11,010.38 / TVD = 10,971.00</p> <p><b>LAST TAKE POINT (LTP)</b><br/>N: 564874.3 - E: 782837.0<br/>LAT: 32.5504530° N LONG: 103.5495643° W<br/>LAT: 32°33'01.6309" N LONG: 103°32'58.4314" W<br/>MD = 15,637.82 / TVD = 11,031.87</p> <p><b>BOTTOM HOLE/EXIT POINT (BH/EP)</b><br/>N: 564924.3 - E: 782837.0<br/>LAT: 32.5505907° N LONG: 103.5495633° W<br/>LAT: 32°33'02.1265" N LONG: 103°32'58.4279" W<br/>MD = 15,687.86 / TVD = 11,031.00</p> <p><b>CORNER DATA</b><br/>NAD 83 GRID - NM EAST<br/>A: N 559906.6 - E 780684.6<br/>B: N 562546.2 - E 780666.1<br/>C: N 565185.2 - E 780647.6<br/>D: N 565208.2 - E 783290.2<br/>E: N 565231.3 - E 785934.3<br/>F: N 562589.8 - E 785953.8<br/>G: N 559946.7 - E 785975.6<br/>H: N 559927.1 - E 783330.5<br/>1: N 559916.8 - E 782007.5<br/>2: N 565196.7 - E 781968.9</p> |  |                                                                                                |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |

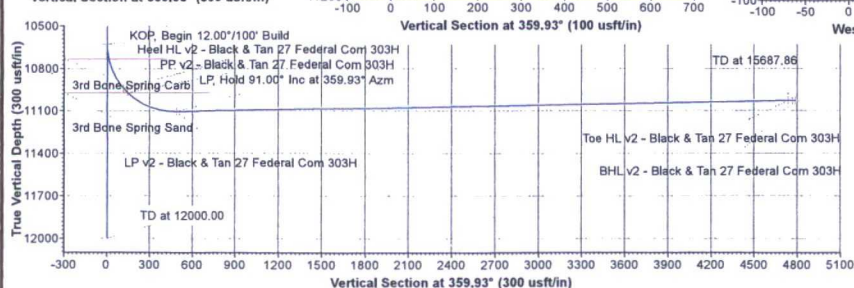
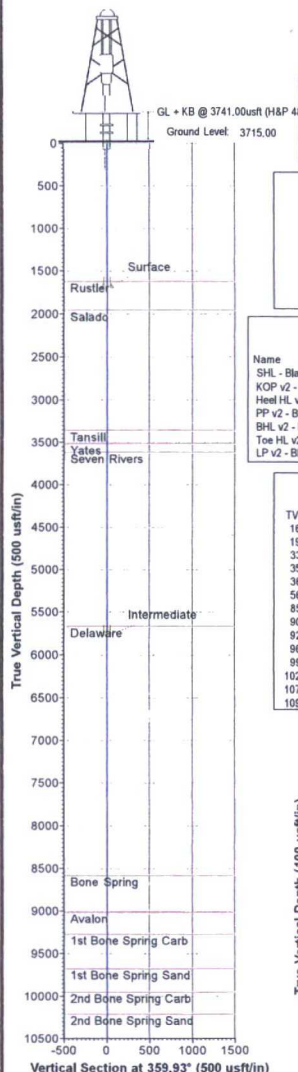
Job No.: LS1702123D2



Project: Lea County, NM (NAD83 NME)  
Site: Black & Tan 27 Federal Com  
Well: 303H  
Wellbore: ST01  
Design: Plan 2 08-17-17  
Rig: H&P 482



Azimuths to Grid North  
True North: -0.42°  
Magnetic North: 6.33°  
  
Magnetic Field  
Strength: 48308.5nT  
Dip Angle: 60.52°  
Date: 8/19/2017  
Model: HDGM

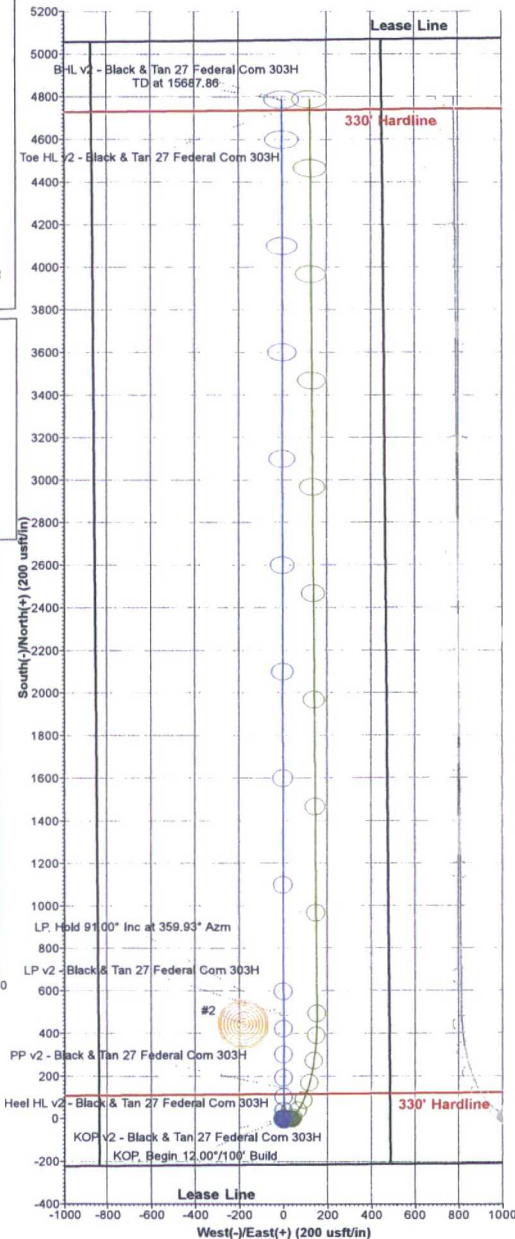
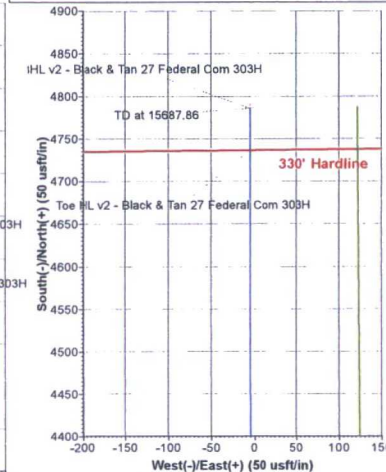
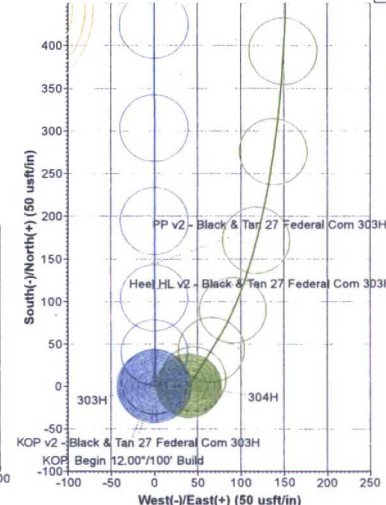


| WELL DETAILS |      |      |           |              |                    |                     |           |  |  |
|--------------|------|------|-----------|--------------|--------------------|---------------------|-----------|--|--|
|              | +N/S | +E/W | North     | Ground Level | 3715.00            | Latitude            | Longitude |  |  |
| 0.00         | 0.00 | 0.00 | 560138.30 | 782842.60    | 32° 32' 14.77000 N | 103° 32' 58.77357 W |           |  |  |

| SECTION DETAILS |          |       |        |          |         |       |       |        |         |                                          |                                    |
|-----------------|----------|-------|--------|----------|---------|-------|-------|--------|---------|------------------------------------------|------------------------------------|
| Sec             | MD       | Inc   | Azi    | TVD      | +N/S    | +E/W  | Dleg  | TFace  | VSet    | Target                                   | Annotation                         |
| 1               | 0.00     | 0.00  | 0.00   | 0.00     | 0.00    | 0.00  | 0.00  | 0.00   | 0.00    |                                          |                                    |
| 2               | 10628.67 | 0.00  | 0.00   | 10628.67 | 0.00    | 0.00  | 0.00  | 0.00   | 0.00    |                                          | KOP, Begin 12.00°/100' Build       |
| 3               | 11387.00 | 91.00 | 359.93 | 11106.06 | 485.80  | -0.57 | 12.00 | 359.93 | 485.80  |                                          | LP, Hold 91.00° Inc at 359.93° Azm |
| 4               | 15687.86 | 91.00 | 359.93 | 11031.00 | 4786.00 | -5.60 | 0.00  | 0.00   | 4786.00 | BHL v2 - Black & Tan 27 Federal Com 303H | TD at 15687.86                     |

| DESIGN TARGET DETAILS                        |          |         |       |           |           |                    |                     |  |  |
|----------------------------------------------|----------|---------|-------|-----------|-----------|--------------------|---------------------|--|--|
| Name                                         | TVD      | +N/S    | +E/W  | North     | Easting   | Latitude           | Longitude           |  |  |
| SHL - Black & Tan 27 Federal Com 303H        | 0.00     | 0.00    | 0.00  | 560138.30 | 782842.60 | 32° 32' 14.77000 N | 103° 32' 58.77357 W |  |  |
| KOP v2 - Black & Tan 27 Federal Com 303H     | 10628.67 | 0.00    | 0.00  | 560138.30 | 782842.60 | 32° 32' 14.77000 N | 103° 32' 58.77357 W |  |  |
| Heel HL v2 - Black & Tan 27 Federal Com 303H | 10939.47 | 115.01  | -0.13 | 560253.31 | 782842.47 | 32° 32' 15.90799 N | 103° 32' 58.76521 W |  |  |
| PP v2 - Black & Tan 27 Federal Com 303H      | 10971.00 | 144.63  | -0.17 | 560282.93 | 782842.43 | 32° 32' 16.20107 N | 103° 32' 58.76313 W |  |  |
| BHL v2 - Black & Tan 27 Federal Com 303H     | 11031.00 | 4786.00 | -5.60 | 564824.30 | 782837.06 | 32° 32' 12.612 N   | 103° 32' 58.42757 W |  |  |
| Toe HL v2 - Black & Tan 27 Federal Com 303H  | 11031.87 | 4735.95 | -5.54 | 564874.25 | 782837.06 | 32° 32' 1.63089 N  | 103° 32' 58.43117 W |  |  |
| LP v2 - Black & Tan 27 Federal Com 303H      | 11106.06 | 485.80  | -0.57 | 560624.10 | 782842.03 | 32° 32' 19.57683 N | 103° 32' 58.73847 W |  |  |

| FORMATION TOP DETAILS |          |                      |          |        |
|-----------------------|----------|----------------------|----------|--------|
| TVDPath               | MDPath   | Formation            | DipAngle | DipDir |
| 1626.00               | 1626.00  | Rustler              |          |        |
| 1961.00               | 1961.00  | Salado               |          |        |
| 3363.00               | 3363.00  | Tansill              |          |        |
| 3521.00               | 3521.00  | Yates                |          |        |
| 3621.00               | 3621.00  | Seven Rivers         |          |        |
| 5671.00               | 5671.00  | Delaware             |          |        |
| 8581.00               | 8581.00  | Bone Spring          |          |        |
| 9016.00               | 9016.00  | Avalon               |          |        |
| 9271.00               | 9271.00  | 1st Bone Spring Carb |          |        |
| 9676.00               | 9676.00  | 1st Bone Spring Sand |          |        |
| 9951.00               | 9951.00  | 2nd Bone Spring Carb |          |        |
| 10211.00              | 10211.00 | 2nd Bone Spring Sand |          |        |
| 10731.00              | 10731.00 | 3rd Bone Spring Carb |          |        |
| 10971.00              | 11010.38 | 3rd Bone Spring Sand |          |        |





# **Apache Corporation**

**Lea County, NM (NAD83 NME)  
Black & Tan 27 Federal Com  
303H**

**ST01**

**Plan: Plan 2 08-17-17**

## **Standard Planning Report**

**17 August, 2017**







# Phoenix Technology Services LP

Planning Report



**Database:** Compass 5000 GCR  
**Company:** Apache Corporation  
**Project:** Lea County, NM (NAD83 NME)  
**Site:** Black & Tan 27 Federal Com  
**Well:** 303H  
**Wellbore:** ST01  
**Design:** Plan 2 08-17-17

**Local Co-ordinate Reference:** Well 303H  
**TVD Reference:** GL + KB @ 3741.00usft (H&P 482)  
**MD Reference:** GL + KB @ 3741.00usft (H&P 482)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature

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

|                              |                            |                          |                     |
|------------------------------|----------------------------|--------------------------|---------------------|
| <b>Site</b>                  | Black & Tan 27 Federal Com |                          |                     |
| <b>Site Position:</b>        |                            | <b>Northing:</b>         | 560,131.70 usft     |
| <b>From:</b>                 | Map                        | <b>Easting:</b>          | 781,352.90 usft     |
| <b>Position Uncertainty:</b> | 0.00 usft                  | <b>Slot Radius:</b>      | 13-3/16 "           |
|                              |                            | <b>Latitude:</b>         | 32° 32' 14.81280 N  |
|                              |                            | <b>Longitude:</b>        | 103° 33' 16.17520 W |
|                              |                            | <b>Grid Convergence:</b> | 0.42 °              |

|                             |              |                            |                     |
|-----------------------------|--------------|----------------------------|---------------------|
| <b>Well</b>                 | 303H         |                            |                     |
| <b>Well Position</b>        | <b>+N/-S</b> | 6.60 usft                  | <b>Northing:</b>    |
|                             | <b>+E/-W</b> | 1,489.70 usft              | <b>Easting:</b>     |
| <b>Position Uncertainty</b> | 0.00 usft    | <b>Wellhead Elevation:</b> | 0.00 usft           |
|                             |              | <b>Latitude:</b>           | 32° 32' 14.77000 N  |
|                             |              | <b>Longitude:</b>          | 103° 32' 58.77358 W |
|                             |              | <b>Ground Level:</b>       | 3,715.00 usft       |

|                  |                   |                    |                     |
|------------------|-------------------|--------------------|---------------------|
| <b>Wellbore</b>  | ST01              |                    |                     |
| <b>Magnetics</b> | <b>Model Name</b> | <b>Sample Date</b> | <b>Declination</b>  |
|                  | HDGM              | 8/19/2017          | (°)                 |
|                  |                   |                    | 6.75                |
|                  |                   |                    | Dip Angle (°)       |
|                  |                   |                    | 60.52               |
|                  |                   |                    | Field Strength (nT) |
|                  |                   |                    | 48,309              |

|                          |                         |              |                      |
|--------------------------|-------------------------|--------------|----------------------|
| <b>Design</b>            | Plan 2 08-17-17         |              |                      |
| <b>Audit Notes:</b>      |                         |              |                      |
| <b>Version:</b>          | <b>Phase:</b>           | PROTOTYPE    | <b>Tie On Depth:</b> |
|                          |                         |              | 0.00                 |
| <b>Vertical Section:</b> | <b>Depth From (TVD)</b> | <b>+N/-S</b> | <b>+E/-W</b>         |
|                          | (usft)                  | (usft)       | (usft)               |
|                          | 0.00                    | 0.00         | 0.00                 |
|                          |                         |              | <b>Direction</b>     |
|                          |                         |              | (°)                  |
|                          |                         |              | 359.93               |

| Plan Sections         |                 |             |                       |              |              |                         |                        |                       |         |                     |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|------------------------|-----------------------|---------|---------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) | TFO (°) | Target              |
| 0.00                  | 0.00            | 0.00        | 0.00                  | 0.00         | 0.00         | 0.00                    | 0.00                   | 0.00                  | 0.00    |                     |
| 10,628.67             | 0.00            | 0.00        | 10,628.67             | 0.00         | 0.00         | 0.00                    | 0.00                   | 0.00                  | 0.00    |                     |
| 11,387.00             | 91.00           | 359.93      | 11,106.06             | 485.80       | -0.57        | 12.00                   | 12.00                  | 0.00                  | 359.93  |                     |
| 15,687.86             | 91.00           | 359.93      | 11,031.00             | 4,786.00     | -5.60        | 0.00                    | 0.00                   | 0.00                  | 0.00    | BHL v2 - Black & T: |



# Phoenix Technology Services LP

## Planning Report



Database: Compass 5000 GCR  
Company: Apache Corporation  
Project: Lea County, NM (NAD83 NME)  
Site: Black & Tan 27 Federal Com  
Well: 303H  
Wellbore: ST01  
Design: Plan 2 08-17-17

Local Co-ordinate Reference: Well 303H  
TVD Reference: GL + KB @ 3741.00usft (H&P 482)  
MD Reference: GL + KB @ 3741.00usft (H&P 482)  
North Reference: Grid  
Survey Calculation Method: Minimum Curvature

### 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) |
|------------------------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| 0.00                               | 0.00            | 0.00        | 0.00                  | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 10,628.67                          | 0.00            | 0.00        | 10,628.67             | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| KOP, Begin 12.00°/100' Build       |                 |             |                       |              |              |                         |                         |                        |                       |
| 10,700.00                          | 8.56            | 359.93      | 10,699.74             | 5.32         | -0.01        | 5.32                    | 12.00                   | 12.00                  | 0.00                  |
| 10,800.00                          | 20.56           | 359.93      | 10,796.35             | 30.41        | -0.04        | 30.41                   | 12.00                   | 12.00                  | 0.00                  |
| 10,900.00                          | 32.56           | 359.93      | 10,885.63             | 75.04        | -0.09        | 75.04                   | 12.00                   | 12.00                  | 0.00                  |
| 11,000.00                          | 44.56           | 359.93      | 10,963.68             | 137.26       | -0.16        | 137.26                  | 12.00                   | 12.00                  | 0.00                  |
| 11,100.00                          | 56.56           | 359.93      | 11,027.09             | 214.35       | -0.25        | 214.35                  | 12.00                   | 12.00                  | 0.00                  |
| 11,200.00                          | 68.56           | 359.93      | 11,073.09             | 302.94       | -0.35        | 302.94                  | 12.00                   | 12.00                  | 0.00                  |
| 11,300.00                          | 80.56           | 359.93      | 11,099.67             | 399.15       | -0.47        | 399.15                  | 12.00                   | 12.00                  | 0.00                  |
| 11,387.00                          | 91.00           | 359.93      | 11,106.06             | 485.80       | -0.57        | 485.80                  | 12.00                   | 12.00                  | 0.00                  |
| LP, Hold 91.00° Inc at 359.93° Azm |                 |             |                       |              |              |                         |                         |                        |                       |
| 11,400.00                          | 91.00           | 359.93      | 11,105.83             | 498.79       | -0.58        | 498.79                  | 0.00                    | 0.00                   | 0.00                  |
| 11,500.00                          | 91.00           | 359.93      | 11,104.09             | 598.78       | -0.70        | 598.78                  | 0.00                    | 0.00                   | 0.00                  |
| 11,600.00                          | 91.00           | 359.93      | 11,102.34             | 698.76       | -0.82        | 698.76                  | 0.00                    | 0.00                   | 0.00                  |
| 11,700.00                          | 91.00           | 359.93      | 11,100.60             | 798.75       | -0.93        | 798.75                  | 0.00                    | 0.00                   | 0.00                  |
| 11,800.00                          | 91.00           | 359.93      | 11,098.85             | 898.73       | -1.05        | 898.73                  | 0.00                    | 0.00                   | 0.00                  |
| 11,900.00                          | 91.00           | 359.93      | 11,097.11             | 998.72       | -1.17        | 998.72                  | 0.00                    | 0.00                   | 0.00                  |
| 12,000.00                          | 91.00           | 359.93      | 11,095.36             | 1,098.70     | -1.29        | 1,098.70                | 0.00                    | 0.00                   | 0.00                  |
| 12,100.00                          | 91.00           | 359.93      | 11,093.62             | 1,198.69     | -1.40        | 1,198.69                | 0.00                    | 0.00                   | 0.00                  |
| 12,200.00                          | 91.00           | 359.93      | 11,091.87             | 1,298.67     | -1.52        | 1,298.67                | 0.00                    | 0.00                   | 0.00                  |
| 12,300.00                          | 91.00           | 359.93      | 11,090.13             | 1,398.66     | -1.64        | 1,398.66                | 0.00                    | 0.00                   | 0.00                  |
| 12,400.00                          | 91.00           | 359.93      | 11,088.38             | 1,498.64     | -1.75        | 1,498.64                | 0.00                    | 0.00                   | 0.00                  |
| 12,500.00                          | 91.00           | 359.93      | 11,086.64             | 1,598.63     | -1.87        | 1,598.63                | 0.00                    | 0.00                   | 0.00                  |
| 12,600.00                          | 91.00           | 359.93      | 11,084.89             | 1,698.61     | -1.99        | 1,698.61                | 0.00                    | 0.00                   | 0.00                  |
| 12,700.00                          | 91.00           | 359.93      | 11,083.15             | 1,798.59     | -2.10        | 1,798.60                | 0.00                    | 0.00                   | 0.00                  |
| 12,800.00                          | 91.00           | 359.93      | 11,081.40             | 1,898.58     | -2.22        | 1,898.58                | 0.00                    | 0.00                   | 0.00                  |
| 12,900.00                          | 91.00           | 359.93      | 11,079.66             | 1,998.56     | -2.34        | 1,998.57                | 0.00                    | 0.00                   | 0.00                  |
| 13,000.00                          | 91.00           | 359.93      | 11,077.91             | 2,098.55     | -2.46        | 2,098.55                | 0.00                    | 0.00                   | 0.00                  |
| 13,100.00                          | 91.00           | 359.93      | 11,076.16             | 2,198.53     | -2.57        | 2,198.54                | 0.00                    | 0.00                   | 0.00                  |
| 13,200.00                          | 91.00           | 359.93      | 11,074.42             | 2,298.52     | -2.69        | 2,298.52                | 0.00                    | 0.00                   | 0.00                  |
| 13,300.00                          | 91.00           | 359.93      | 11,072.67             | 2,398.50     | -2.81        | 2,398.50                | 0.00                    | 0.00                   | 0.00                  |
| 13,400.00                          | 91.00           | 359.93      | 11,070.93             | 2,498.49     | -2.92        | 2,498.49                | 0.00                    | 0.00                   | 0.00                  |
| 13,500.00                          | 91.00           | 359.93      | 11,069.18             | 2,598.47     | -3.04        | 2,598.47                | 0.00                    | 0.00                   | 0.00                  |
| 13,600.00                          | 91.00           | 359.93      | 11,067.44             | 2,698.46     | -3.16        | 2,698.46                | 0.00                    | 0.00                   | 0.00                  |
| 13,700.00                          | 91.00           | 359.93      | 11,065.69             | 2,798.44     | -3.27        | 2,798.44                | 0.00                    | 0.00                   | 0.00                  |
| 13,800.00                          | 91.00           | 359.93      | 11,063.95             | 2,898.43     | -3.39        | 2,898.43                | 0.00                    | 0.00                   | 0.00                  |
| 13,900.00                          | 91.00           | 359.93      | 11,062.20             | 2,998.41     | -3.51        | 2,998.41                | 0.00                    | 0.00                   | 0.00                  |
| 14,000.00                          | 91.00           | 359.93      | 11,060.46             | 3,098.40     | -3.63        | 3,098.40                | 0.00                    | 0.00                   | 0.00                  |
| 14,100.00                          | 91.00           | 359.93      | 11,058.71             | 3,198.38     | -3.74        | 3,198.38                | 0.00                    | 0.00                   | 0.00                  |
| 14,200.00                          | 91.00           | 359.93      | 11,056.97             | 3,298.37     | -3.86        | 3,298.37                | 0.00                    | 0.00                   | 0.00                  |
| 14,300.00                          | 91.00           | 359.93      | 11,055.22             | 3,398.35     | -3.98        | 3,398.35                | 0.00                    | 0.00                   | 0.00                  |
| 14,400.00                          | 91.00           | 359.93      | 11,053.48             | 3,498.33     | -4.09        | 3,498.34                | 0.00                    | 0.00                   | 0.00                  |
| 14,500.00                          | 91.00           | 359.93      | 11,051.73             | 3,598.32     | -4.21        | 3,598.32                | 0.00                    | 0.00                   | 0.00                  |
| 14,600.00                          | 91.00           | 359.93      | 11,049.99             | 3,698.30     | -4.33        | 3,698.31                | 0.00                    | 0.00                   | 0.00                  |
| 14,700.00                          | 91.00           | 359.93      | 11,048.24             | 3,798.29     | -4.44        | 3,798.29                | 0.00                    | 0.00                   | 0.00                  |
| 14,800.00                          | 91.00           | 359.93      | 11,046.50             | 3,898.27     | -4.56        | 3,898.28                | 0.00                    | 0.00                   | 0.00                  |
| 14,900.00                          | 91.00           | 359.93      | 11,044.75             | 3,998.26     | -4.68        | 3,998.26                | 0.00                    | 0.00                   | 0.00                  |
| 15,000.00                          | 91.00           | 359.93      | 11,043.01             | 4,098.24     | -4.80        | 4,098.25                | 0.00                    | 0.00                   | 0.00                  |
| 15,100.00                          | 91.00           | 359.93      | 11,041.26             | 4,198.23     | -4.91        | 4,198.23                | 0.00                    | 0.00                   | 0.00                  |
| 15,200.00                          | 91.00           | 359.93      | 11,039.51             | 4,298.21     | -5.03        | 4,298.22                | 0.00                    | 0.00                   | 0.00                  |
| 15,300.00                          | 91.00           | 359.93      | 11,037.77             | 4,398.20     | -5.15        | 4,398.20                | 0.00                    | 0.00                   | 0.00                  |
| 15,400.00                          | 91.00           | 359.93      | 11,036.02             | 4,498.18     | -5.26        | 4,498.19                | 0.00                    | 0.00                   | 0.00                  |
| 15,500.00                          | 91.00           | 359.93      | 11,034.28             | 4,598.17     | -5.38        | 4,598.17                | 0.00                    | 0.00                   | 0.00                  |





# Phoenix Technology Services LP

## Planning Report



**Database:** Compass 5000 GCR  
**Company:** Apache Corporation  
**Project:** Lea County, NM (NAD83 NME)  
**Site:** Black & Tan 27 Federal Com  
**Well:** 303H  
**Wellbore:** ST01  
**Design:** Plan 2 08-17-17

**Local Co-ordinate Reference:** Well 303H  
**TVD Reference:** GL + KB @ 3741.00usft (H&P 482)  
**MD Reference:** GL + KB @ 3741.00usft (H&P 482)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature

### 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) |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| 15,600.00             | 91.00           | 359.93      | 11,032.53             | 4,698.15     | -5.50        | 4,698.15                | 0.00                    | 0.00                   | 0.00                  |
| 15,687.86             | 91.00           | 359.93      | 11,031.00             | 4,786.00     | -5.60        | 4,786.00                | 0.00                    | 0.00                   | 0.00                  |
| TD at 15687.86        |                 |             |                       |              |              |                         |                         |                        |                       |

### Design Targets

| Target Name<br>- hit/miss target<br>- Shape                                                                                          | Dip Angle (°) | Dip Dir. (°) | TVD (usft) | +N/-S (usft) | +E/-W (usft) | Northing (usft) | Easting (usft) | Latitude                              | Longitude |
|--------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------|--------------|--------------|-----------------|----------------|---------------------------------------|-----------|
| SHL - Black & Tan 27<br>- plan hits target center<br>- Point                                                                         | 0.00          | 0.01         | 0.00       | 0.00         | 0.00         | 560,138.30      | 782,842.60     | 32° 32' 14.77000 N 03° 32' 58.77358 W |           |
| KOP v2 - Black & Tan<br>- plan hits target center<br>- Point                                                                         | 0.00          | 0.01         | 10,628.67  | 0.00         | 0.00         | 560,138.30      | 782,842.60     | 32° 32' 14.77000 N 03° 32' 58.77358 W |           |
| Heel HL v2 - Black & Tan<br>- plan misses target center by 0.03usft at 10967.14usft MD (10939.49 TVD, 115.03 N, -0.13 E)<br>- Point  | 0.00          | 0.01         | 10,939.47  | 115.01       | -0.13        | 560,253.31      | 782,842.47     | 32° 32' 15.90799 N 03° 32' 58.76521 W |           |
| PP v2 - Black & Tan 2<br>- plan misses target center by 0.03usft at 11010.36usft MD (10970.98 TVD, 144.61 N, -0.17 E)<br>- Point     | 0.00          | 0.01         | 10,971.00  | 144.63       | -0.17        | 560,282.93      | 782,842.43     | 32° 32' 16.20107 N 03° 32' 58.76313 W |           |
| BHL v2 - Black & Tan<br>- plan hits target center<br>- Point                                                                         | 0.00          | 0.00         | 11,031.00  | 4,786.00     | -5.60        | 564,924.30      | 782,837.00     | 32° 33' 2.12612 N 03° 32' 58.42757 W  |           |
| Toe HL v2 - Black & Tan<br>- plan misses target center by 37.80usft at 15600.00usft MD (11032.53 TVD, 4698.15 N, -5.50 E)<br>- Point | 0.00          | 0.01         | 11,031.87  | 4,735.95     | -5.54        | 564,874.25      | 782,837.06     | 32° 33' 1.63089 N 03° 32' 58.43118 W  |           |
| LP v2 - Black & Tan 2<br>- plan hits target center<br>- Point                                                                        | 0.00          | 0.00         | 11,106.06  | 485.80       | -0.57        | 560,624.10      | 782,842.03     | 32° 32' 19.57683 N 03° 32' 58.73847 W |           |

### Casing Points

| Measured Depth (usft) | Vertical Depth (usft) | Name         | Casing Diameter (") | Hole Diameter (") |
|-----------------------|-----------------------|--------------|---------------------|-------------------|
| 1,700.00              | 1,700.00              | Surface      | 13-3/8              | 17-1/2            |
| 5,780.00              | 5,780.00              | Intermediate | 9-5/8               | 12-1/4            |





# Phoenix Technology Services LP

## Planning Report



**Database:** Compass 5000 GCR  
**Company:** Apache Corporation  
**Project:** Lea County, NM (NAD83 NME)  
**Site:** Black & Tan 27 Federal Com  
**Well:** 303H  
**Wellbore:** ST01  
**Design:** Plan 2 08-17-17

**Local Co-ordinate Reference:** Well 303H  
**TVD Reference:** GL + KB @ 3741.00usft (H&P 482)  
**MD Reference:** GL + KB @ 3741.00usft (H&P 482)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature

### Formations

| Measured Depth (usft) | Vertical Depth (usft) | Name                 | Lithology | Dip (°) | Dip Direction (°) |
|-----------------------|-----------------------|----------------------|-----------|---------|-------------------|
| 1,626.00              | 1,626.00              | Rustler              |           |         |                   |
| 1,961.00              | 1,961.00              | Salado               |           |         |                   |
| 3,363.00              | 3,363.00              | Tansill              |           |         |                   |
| 3,521.00              | 3,521.00              | Yates                |           |         |                   |
| 3,621.00              | 3,621.00              | Seven Rivers         |           |         |                   |
| 5,671.00              | 5,671.00              | Delaware             |           |         |                   |
| 8,581.00              | 8,581.00              | Bone Spring          |           |         |                   |
| 9,016.00              | 9,016.00              | Avalon               |           |         |                   |
| 9,271.00              | 9,271.00              | 1st Bone Spring Carb |           |         |                   |
| 9,676.00              | 9,676.00              | 1st Bone Spring Sand |           |         |                   |
| 9,951.00              | 9,951.00              | 2nd Bone Spring Carb |           |         |                   |
| 10,211.00             | 10,211.00             | 2nd Bone Spring Sand |           |         |                   |
| 10,731.80             | 10,731.00             | 3rd Bone Spring Carb |           |         |                   |
| 11,010.38             | 10,971.00             | 3rd Bone Spring Sand |           |         |                   |

### Plan Annotations

| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates |              | Comment                            |
|-----------------------|-----------------------|-------------------|--------------|------------------------------------|
|                       |                       | +N/-S (usft)      | +E/-W (usft) |                                    |
| 10,628.67             | 10,628.67             | 0.00              | 0.00         | KOP, Begin 12.00°/100' Build       |
| 11,387.00             | 11,106.06             | 485.80            | -0.57        | LP, Hold 91.00° Inc at 359.93° Azm |
| 15,687.86             | 11,031.00             | 4,786.00          | -5.60        | TD at 15687.86                     |