U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

# Sundry Print Report

07/25/2024

**Well Name:** SANDRA JEAN 23 FED COM

**Well Location:** T20S / R33E / SEC 23 / SWSE / 32.5519275 / -103.632085

**County or Parish/State:** LEA / NM

**Well Number:** 503H

**Type of Well:** OIL WELL

**Allottee or Tribe Name:**

**Lease Number:** NMNM29704

**Unit or CA Name:**

**Unit or CA Number:**

**US Well Number:** 3002552640

**Operator:** AVANT OPERATING LLC

## Notice of Intent

**Sundry ID:** 2801877

**Type of Submission:** Notice of Intent

**Type of Action:** APD Change

**Date Sundry Submitted:** 07/18/2024

**Time Sundry Submitted:** 09:31

**Date proposed operation will begin:** 08/01/2024

**Procedure Description:** Avant Operating, LLC would like to request that the TVD to the Sandra Jean 23 Fed Com 503H be changed to 10,080'. Please see the attached updated documentation for this request. Thank you!

## NOI Attachments

**Procedure Description**

5.5_in_20__P110HC_INT_SP_20240718213122.pdf

Avant_Natural_Resources_Sandra_Jean_23_Fed_Com_503H_No_Pricing_20240718213108.pdf

Sandra_Jean_23_Fed_Com_503H_Plan_0.1_Report_20240718213055.pdf

Sandra_Jean_23_Fed_Com_503H_WBS_Prelim_v2_20240718213043.pdf

**Well Name:** SANDRA JEAN 23 FED COM

**Well Location:** T20S / R33E / SEC 23 / SWSE / 32.5519275 / -103.632085

**County or Parish/State:** LEA / NM

**Well Number:** 503H

**Type of Well:** OIL WELL

**Allottee or Tribe Name:**

**Lease Number:** NMNM29704

**Unit or CA Name:**

**Unit or CA Number:**

**US Well Number:** 3002552640

**Operator:** AVANT OPERATING LLC

## Conditions of Approval

**Additional**

Sandra_Jean_23_Fed_Com_503H_Dr_COA_20240724100858.pdf

23_20_33_O_Sundry_ID_2801877_Sandra_Jean_23_Fed_Com_503H_Lea_NM29704_AVANT_OPERATING_LLC_13_22fa_8_9_2023_LV_20240724100858.pdf

## Operator

*I certify that the foregoing is true and correct. 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. Electronic submission of Sundry Notices through this system satisfies regulations requiring a*

**Operator Electronic Signature:** SARAH FERREYROS

**Signed on:** JUL 18, 2024 09:31 PM

**Name:** AVANT OPERATING LLC

**Title:** Director of Regulatory

**Street Address:** 1515 WYNKOOP

**City:** DENVER **State:** CO

**Phone:** (720) 854-9020

**Email address:** SARAH@AVANTNR.COM

## Field

**Representative Name:**

**Street Address:**

**City:** **State:** **Zip:**

**Phone:**

**Email address:**

## BLM Point of Contact

**BLM POC Name:** CHRISTOPHER WALLS

**BLM POC Title:** Petroleum Engineer

**BLM POC Phone:** 5752342234

**BLM POC Email Address:** cwalls@blm.gov

**Disposition:** Approved

**Disposition Date:** 07/25/2024

**Signature:** Chris Walls

Form 3160-5
(June 2019)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires: October 31, 2021

**SUNDRY NOTICES AND REPORTS ON WELLS**

***Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.***

***SUBMIT IN TRIPLICATE*** *- Other instructions on page 2*

5. Lease Serial No.

6. If Indian, Allottee or Tribe Name

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

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

8. Well Name and No.

2. Name of Operator

9. API Well No.

3a. Address

3b. Phone No. *(include area code)*

10. Field and Pool or Exploratory Area

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

11. Country or Parish, State

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

| TYPE OF SUBMISSION | TYPE OF ACTION | | | |
|---|---|---|---|---|
| ☐ Notice of Intent | ☐ Acidize | ☐ Deepen | ☐ Production (Start/Resume) | ☐ Water Shut-Off |
| | ☐ Alter Casing | ☐ Hydraulic Fracturing | ☐ Reclamation | ☐ Well Integrity |
| ☐ Subsequent Report | ☐ Casing Repair | ☐ New Construction | ☐ Recomplete | ☐ Other |
| | ☐ Change Plans | ☐ Plug and Abandon | ☐ Temporarily Abandon | |
| ☐ Final Abandonment Notice | ☐ Convert to Injection | ☐ Plug Back | ☐ Water Disposal | |

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 recomplete 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 perfonned 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 recompletion 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 detennined that the site is ready for final inspection.)

14. I hereby certify that the foregoing is true and correct. Name *(Printed/Typed)*

Title

Signature

Date

**THE SPACE FOR FEDERAL OR STATE OFICE USE**

Approved by

Title

Date

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

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)

## GENERAL INSTRUCTIONS

This form is designed for submitting proposals to perform certain well operations and reports of such operations when completed as indicated on Federal and Indian lands pursuant to applicable Federal law and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local area or regional procedures and practices, are either shown below, will be issued by or may be obtained from the local Federal office.

## SPECIFIC INSTRUCTIONS

*Item 4* - Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult the local Federal office for specific instructions.

*Item 13:* Proposals to abandon a well and subsequent reports of abandonment should include such special information as is required by the local Federal office. In addition, such proposals and reports should include reasons for the abandonment; data on any former or present productive zones or other zones with present significant fluid contents not sealed off by cement or otherwise; depths (top and bottom) and method of placement of cement plugs; mud or other material placed below, between and above plugs; amount, size, method of parting of any casing, liner or tubing pulled and the depth to the top of any tubing left in the hole; method of closing top of well and date well site conditioned for final inspection looking for approval of the abandonment. If the proposal will involve **hydraulic fracturing operations**, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

## NOTICES

The privacy Act of 1974 and the regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.
AUTHORITY: 30 U.S.C. 181 et seq., 351 et seq., 25 U.S.C. 396; 43 CFR 3160.
PRINCIPAL PURPOSE: The information is used to: (1) Evaluate, when appropriate, approve applications, and report completion of subsequent well operations, on a Federal or Indian lease; and (2) document for administrative use, information for the management, disposal and use of National Resource lands and resources, such as: (a) evaluating the equipment and procedures to be used during a proposed subsequent well operation and reviewing the completed well operations for compliance with the approved plan; (b) requesting and granting approval to perform those actions covered by 43 CFR 3162.3-2, 3162.3-3, and 3162.3-4; (c) reporting the beginning or resumption of production, as required by 43 CFR 3162.4-1(c)and (d) analyzing future applications to drill or modify operations in light of data obtained and methods used.
ROUTINE USES: Information from the record and/or the record will be transferred to appropriate Federal, State, local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecutions in connection with congressional inquiries or to consumer reporting agencies to facilitate collection of debts owed the Government.
EFFECT OF NOT PROVIDING THE INFORMATION: Filing of this notice and report and disclosure of the information is mandatory for those subsequent well operations specified in 43 CFR 3162.3-2, 3162.3-3, 3162.3-4.

The Paperwork Reduction Act of 1995 requires us to inform you that:
The BLM collects this information to evaluate proposed and/or completed subsequent well operations on Federal or Indian oil and gas leases.
Response to this request is mandatory.
The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

**BURDEN HOURS STATEMENT:** Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect ofthis form to U.S. Department ofthe Interior, Bureau ofLand Management (1004-0137), Bureau Information Collection Clearance Officer (WO-630), 1849 C St., N.W., Mail Stop 401 LS, Washington, D.C. 20240

## Additional Information

### Location of Well

0. SHL: SWSE / 200 FSL / 2077 FEL / TWSP: 20S / RANGE: 33E / SECTION: 23 / LAT: 32.5519275 / LONG: -103.632085 ( TVD: 0 feet, MD: 0 feet )

PPP: SWSE / 100 FSL / 2178 FEL / TWSP: 20S / RANGE: 33E / SECTION: 23 / LAT: 32.5516528 / LONG: -103.6324124 ( TVD: 10400 feet, MD: 10675 feet )

BHL: NENE / 100 FNL / 2178 FEL / TWSP: 20S / RANGE: 33E / SECTION: 23 / LAT: 32.5656378 / LONG: -103.6324138 ( TVD: 10400 feet, MD: 15335 feet )

# PECOS DISTRICT
# DRILLING CONDITIONS OF APPROVAL

| | |
|---|---|
| **OPERATOR'S NAME:** | **Avant Operating LLC** |
| **LEASE NO.:** | **NMNM29704** |
| **LOCATION:** | Section 23, T.20 S., R.33 E., NMPM |
| **COUNTY:** | Lea County, New Mexico |

| | |
|---|---|
| **WELL NAME & NO.:** | **Sandra Jean 23 Fed Com 503H** |
| **SURFACE HOLE FOOTAGE:** | 200'/S & 2077'/E |
| **BOTTOM HOLE FOOTAGE** | 100'/N & 2178'/E |
| **ATS/API ID:** | **3002552640** |
| **APD ID:** | **10400092829** |
| **Sundry ID:** | **2801877** |

COA

| | | | |
|---|---|---|---|
| H2S | Yes | | |
| Potash | R-111-P | | |
| Cave/Karst Potential | Low | | |
| Cave/Karst Potential | ☐ Critical | | |
| Variance | ☐ None | ☑ Flex Hose | ☐ Other |
| Wellhead | Diverter | | |
| Other | ☑ 4 String | Capitan Reef<br>Int 2 | ☐ WIPP |
| Other | Pilot Hole<br>None | ☐ Open Annulus | |
| Cementing | Contingency Squeeze<br>None | Echo-Meter<br>None | Primary Cement Squeeze<br>None |
| Special Requirements | ☐ Water Disposal/Injection | ☑ COM | ☐ Unit |
| Special Requirements | ☐ Batch Sundry | | |
| Special Requirements Variance | ☐ Break Testing | ☑ Offline Cementing | ☐ Casing Clearance |

## A. HYDROGEN SULFIDE

A Hydrogen Sulfide (H2S) Drilling Plan shall be activated 500 feet prior to drilling into the **Delaware** formation. As a result, the Hydrogen Sulfide area must meet **43 CFR part 3170 Subpart 3176** requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.

## B. CASING

**Surface casing must be kept fluid filled to meet BLM minimum collapse requirement.**

1. The **20** inch surface casing shall be set at approximately **1660 feet** (a minimum of **25 feet (Lea County)** into the Rustler Anhydrite and above the salt when present, and below usable fresh water) and cemented to the surface. The surface hole shall be **24** inch in diameter.

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
    b. Wait on cement (WOC) time for a primary cement job will be a minimum of **24 hours in the Potash Area** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
    c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
    d. If cement falls back, remedial cementing will be done prior to drilling out that string.

**Intermediate casing must be kept fluid filled to meet BLM minimum collapse requirement.**

2. The minimum required fill of cement behind the **13-3/8** inch intermediate casing shall be set at approximately **3403 feet** is:

    - Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst, potash or capitan reef. Cement excess is less than 25%, more cement is required if washout occurs. Adjust cement volume and excess based on a fluid caliper or similar method that reflects the as-drilled size of the wellbore.**

- ❖ In R111 Potash Areas if cement does not circulate to surface on the first two salt protection casing strings, the cement on the 3rd casing salt string must come to surface.

- ❖ In Capitan Reef Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.

3. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:

   - Cement to surface. If cement does not circulate see B.1.a, c-d above. Operator shall provide method of verification.
     **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst, potash or capitan reef. Cement excess is less than 25%, more cement is required if washout occurs. Adjust cement volume and excess based on a fluid caliper or similar method that reflects the as-drilled size of the wellbore.**

4. The minimum required fill of cement behind the **5-1/2** inch production casing is:

   - Cement should tie-back at least **50 feet** on top of Capitan Reef top **or 500 feet** into the previous casing, whichever is greater. Operator shall provide method of verification.
     **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst, potash or capitan reef. Cement excess is less than 25%, more cement is required if washout occurs. Adjust cement volume and excess based on a fluid caliper or similar method that reflects the as-drilled size of the wellbore.**

## C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).'

2.

**Option 1:**

a. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be tested to **1500** psi. A Diverter system is approved as a variance to drill the **13-3/8** inch intermediate casing section in a **17-1/2** inch hole.

b. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **13-3/8** inch intermediate casing shoe shall be **3000 (3M)** psi.

c. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9-5/8** inch intermediate casing shoe shall be **5000 (5M)** psi.

**Option 2:**

a. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be tested to **1500** psi. A Diverter system is approved as a variance to drill the **13-3/8** inch intermediate casing section in a **17-1/2** inch hole.

b. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the **13-3/8** inch surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** psi.

   a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
   b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
   c. Manufacturer representative shall install the test plug for the initial BOP test.
   d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
   e. Whenever any seal subject to test pressure is broken, all the tests in 43 CFR 3172.6(b)(9) must be followed.

**D. SPECIAL REQUIREMENT (S)**

**Communitization Agreement**

- The operator will submit a Communitization Agreement to the Santa Fe Office, 301 Dinosaur Trail Santa Fe, New Mexico 87508, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- The operator will submit an as-drilled survey well plat of the well completion, but are not limited to, those specified in **43 CFR part 3170 Subpart 3171**

- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

**Offline Cementing**

Operator has been **(Approved)** to pump the proposed cement program offline in the **Intermediate(s) interval**.

Offline cementing should commence within 24 hours of landing the casing for the interval.

Notify the BLM 4hrs prior to cementing offline at **Lea County: 575-689-5981**.

# GENERAL REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

a. Spudding well (minimum of 24 hours)
b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
c. BOPE tests (minimum of 4 hours)

☑ Lea County
Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240,
(575) 689-5981

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.

   a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
   b. When the operator proposes to set surface casing with Spudder Rig
      - Notify the BLM when moving in and removing the Spudder Rig.
      - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
      - BOP/BOPE test to be conducted per **43 CFR part 3170 Subpart 3172** as soon as 2nd Rig is rigged up on well.

2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report when present.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.

3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.

4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.

5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.

7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in **43 CFR part 3170 Subpart 3172** and **API STD 53 Sec. 5.3**.

2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.

3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.

4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:

    a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
    b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
    c. Manufacturer representative shall install the test plug for the initial BOP test.
    d. Whenever any seal subject to test pressure is broken, all the tests in 43 CFR 3172.6(b)(9) must be followed.
    e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.

5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

    a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead cement), whichever is greater. However, if the float does not hold, cut-

off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the cement plug. The BOPE test can be initiated after bumping the cement plug with the casing valve open. (only applies to single stage cement jobs, prior to the cement setting up.)

c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer and can be initiated immediately with the casing valve open. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to **43 CFR part 3170 Subpart 3172** with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

e. The results of the test shall be reported to the appropriate BLM office.

f. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.

g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per **43 CFR part 3170 Subpart 3172**.

C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

D. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

Long Vo (LVO) 7/24/2024

23-20-33-O Sundry ID 2801877 Sandra Jean 23 Fed Com 503H Lea NM29704 AVANT OPERATING LLC 13-22fa 8-9-2023 LV

Sandra Jean 23 Fed Com 503H

| 20 | surface csg in a | 24 | inch hole. | | Design Factors | | | | Surface | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Segment | #/ft | Grade | Coupling | Joint | Collapse | Burst | Length | B@s | a-B | a-C | Weight |
| "A" | 94.00 | j 55 | btc | 8.98 | 0.6 | 1.14 | 1,660 | 3 | 1.91 | 1.05 | 156,040 |
| "B" | | | btc | | | | 0 | | | | 0 |
| | w/8.4#/g mud, 30min Sfc Csg Test psig: 753 | | Tail Cmt | does not | circ to sfc. | Totals: | 1,660 | | | | 156,040 |

Comparison of Proposed to Minimum Required Cement Volumes

| Hole Size | Annular Volume | 1 Stage Cmt Sx | 1 Stage CuFt Cmt | Min Cu Ft | 1 Stage % Excess | Drilling Mud Wt | Calc MASP | Req'd BOPE | Min Dist Hole-Cplg |
|---|---|---|---|---|---|---|---|---|---|
| 24 | 0.9599 | 1250 | 2221 | #N/A | #N/A | 10.00 | 1108 | 2M | 1.50 |

Site plat (pipe racks S or E) as per O.O.1 III.D.4.i not found.

| 13 3/8 | casing inside the | 20 | | | Design Factors | | | | Int 1 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Segment | #/ft | Grade | Coupling | Body | Collapse | Burst | Length | B@s | a-B | a-C | Weight |
| "A" | 54.50 | j 55 | btc | 4.60 | 0.61 | 1.2 | 3,403 | 1 | 2.43 | 1.02 | 185,464 |
| "B" | | | | | | | 0 | | | | 0 |
| | w/8.4#/g mud, 30min Sfc Csg Test psig: 426 | | | | | Totals: | 3,403 | | | | 185,464 |
| | The cement volume(s) are intended to achieve a top of | | | 0 | ft from surface or a | | 1660 | | | | overlap. |

| Hole Size | Annular Volume | 1 Stage Cmt Sx | 1 Stage CuFt Cmt | Min Cu Ft | 1 Stage % Excess | Drilling Mud Wt | Calc MASP | Req'd BOPE | Min Dist Hole-Cplg |
|---|---|---|---|---|---|---|---|---|---|
| 17 1/2 | 0.6946 | 1895 | 3404 | 2902 | 17 | 10.50 | 1125 | 2M | 1.56 |
| D V Tool(s): | | | | | | | sum of sx | Σ CuFt | Σ%excess |
| t by stage % : | | #VALUE! | #VALUE! | | | | 1895 | 3404 | 17 |

Class 'C' tail cmt yld > 1.35

| 9 5/8 | casing inside the | 13 3/8 | | | Design Factors | | | | Int 2 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Segment | #/ft | Grade | Coupling | Body | Collapse | Burst | Length | B@s | a-B | a-C | Weight |
| "A" | 40.00 | j 55 | btc | 3.03 | 1.47 | 0.79 | 4,000 | 2 | 1.43 | 2.97 | 160,000 |
| "B" | 40.00 | hcl 80 | btc | 19.09 | 1.86 | 1.16 | 1,202 | 3 | 2.09 | 3.76 | 48,080 |
| "C" | | | | | | | 0 | | | | 0 |
| "D" | | | | | | | 0 | | | | 0 |
| | w/8.4#/g mud, 30min Sfc Csg Test psig: 1,020 | | | | | Totals: | 5,202 | | | | 208,080 |
| | The cement volume(s) are intended to achieve a top of | | | 0 | ft from surface or a | | 3403 | | | | overlap. |

| Hole Size | Annular Volume | 1 Stage Cmt Sx | 1 Stage CuFt Cmt | Min Cu Ft | 1 Stage % Excess | Drilling Mud Wt | Calc MASP | Req'd BOPE | Min Dist Hole-Cplg |
|---|---|---|---|---|---|---|---|---|---|
| 12 1/4 | 0.3132 | 1125 | 2000 | 1798 | 11 | 8.40 | 2757 | 3M | 0.81 |

Class 'C' tail cmt yld > 1.35

Burst Frac Gradient(s) for Segment(s): A, B, C, D = 0.99, b, c, d All > 0.70, OK.

| 5 1/2 | casing inside the | 9 5/8 | | | Design Factors | | | | Prod 1 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Segment | #/ft | Grade | Coupling | Joint | Collapse | Burst | Length | B@s | a-B | a-C | Weight |
| "A" | 20.00 | p 110 | intrepid-sp | 3.18 | 2.45 | 2.54 | 15,014 | 3 | 4.58 | 4.43 | 300,280 |
| "B" | | | | | | | 0 | | | | 0 |
| | w/8.4#/g mud, 30min Sfc Csg Test psig: 2,218 | | | | | Totals: | 15,014 | | | | 300,280 |
| | The cement volume(s) are intended to achieve a top of | | | 3543 | ft from surface or a | | 1659 | | | | overlap. |

| Hole Size | Annular Volume | 1 Stage Cmt Sx | 1 Stage CuFt Cmt | Min Cu Ft | 1 Stage % Excess | Drilling Mud Wt | Calc MASP | Req'd BOPE | Min Dist Hole-Cplg |
|---|---|---|---|---|---|---|---|---|---|
| 8 3/4 | 0.2526 | 880 | 3027 | 2911 | 4 | 9.50 | | | 1.23 |

Class 'H' tail cmt yld > 1.20 Capitan Reef est top XXXX.

# Performance Data Sheet

**Issued on: 01.09.2023**

INTERPIPE

| OD Label | LM Label | Grade | Connection |
|---|---|---|---|
| 5 1/2 | 20.00 | P110HC | INTREPID-SP® |

## PIPE BODY PROPERTIES

| Nominal OD | Nominal ID | Nominal WT | Nominal LM |
|---|---|---|---|
| 5.500 inch<br>139,70 mm | 4.778 inch<br>121,36 mm | 0.361 inch<br>9,17 mm | 20.00 ppf<br>29,76 kg/m |

| Standard Drift | Minimal YS | Maximal YS | Minimal UTS |
|---|---|---|---|
| 4.653 inch<br>118,19 mm | 110 ksi<br>758 MPa | 140 ksi<br>965 MPa | 125 ksi<br>862 MPa |

## CONNECTION PROPERTIES & PERFORMANCES

| Name | Type | Coupling OD | Connection ID |
|---|---|---|---|
| **INTREPID-SP®** | Semi-Premium T&C | 6.300 inch<br>160,02 mm | 4.778 inch<br>121,36 mm |

| Coupling length | Tension efficiency | Compression Efficiency | Make-up loss |
|---|---|---|---|
| 9.449 inch<br>240,00 mm | 641 klb<br>2 850 kN<br>100 % PB | 641 klb<br>2 850 kN<br>100 % PB | 4.126 inch<br>104,80 mm |

| Burst | Collapse | Max. Bending | Max. Load on Coupling Face |
|---|---|---|---|
| 12 640 Psi<br>87,1 MPa<br>100 % PB | 12 200 Psi<br>84,1 MPa<br>100 % PB | 46 °/100 ft<br>46 °/30 m | 583 klb<br>2 591 kN |

## FIELD TORQE VALUES

| | [ft-lb] | [N·m] |
|---|---|---|
| Min. Make-Up Torque | 12 400 | 16 800 |
| Opt. Make-Up Torque | 13 800 | 18 700 |
| Max. Make-Up Torque | 15 200 | 20 600 |

| | [ft-lb] | [N·m] |
|---|---|---|
| Operational Torque | 21 500 | 29 150 |
| Yield Torque | 23 900 | 32 400 |

PROPOSAL#: 230609161704-D

# CEMENT PROCEDURE & PROPOSAL

**PREPARED FOR:**

Mr. Braden Harris
EMAIL: braden@avantnr.com
PHONE NUMBER: 406-600-3310

# Avant Natural Resources

## Sandra Jean 23 Fed Com #503H

Lea County, NM
Rig: H&P 460
API Number: 30-025-52640

**Service Point**

Odessa
1400 S JBS Parkway Odessa, TX 79766
432-701-8955

**Technical Writer**
Jonathan Smith
jonathan@wtcementers.com
432-701-3719

**WTC Representative**
Jon Reynolds
jon@wtcementers.com
432-257-1234



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Avant Natural Resources
Sandra Jean 23 Fed Com #503H
Lea County, NM
Rig: H&P 460

# Surface

PROPOSAL#: 230609161704-D

| WELL INFORMATION | |
|---|---|
| MUD | 8.4# Spud Mud |
| PREVIOUS PIPE | 30" 98.89# CSG to 120 |
| OPEN HOLE | 24" OH to 1453 |
| CASING/INJECTION | 20" 94# J-55/BTC to 1453 |
| MD | 1453 |
| TVD | 1453 |
| EST BHST/BHCT | 92-F / 85-F (0.8-F/100-FT) |
| NOTES | Standby charges start after WTC has been on location for more than 4-hrs. |

**VOLUMES**

| FLUID NAME | LENGTH (ft) | OD (in.) | ID (in.) | XS (%) | FACTOR (bbl/ft) | VOLUME (bbl) |
|---|---|---|---|---|---|---|
| Lead | 120 | 29.376 | 20 | | 0.4497 | 54.0 |
| Lead | 1033 | 24 | 20 | 50% | 0.2564 | 264.9 |
| Tail | 300 | 24 | 20 | 20% | 0.2052 | 61.5 |
| SHOE JOINT | 40 | 20 | 19.124 | | 0.3553 | 14.2 |

**FLUIDS**

| SPACER | |
|---|---|
| | Fresh Water |
| VOLUME | 20-bbl |

| Lead | | |
|---|---|---|
| | 35% Ch_Poz+65% Class C+6% Gel+5% SALT+0.25PPS Pol-E-Flake+0.005GPS NoFoam V1A | |
| VOLUME | 930-SX | *319.7-bbls* |
| DENSITY | 12.8-ppg | |
| YIELD | 1.93-cf/sx | |
| MIX WATER | 10.57-gps | |
| TOP OF CEMENT | Surface | |
| EXCESS | 50% | |

Avant Natural Resources
Sandra Jean 23 Fed Com #503H
Lea County, NM
Rig: H&P 460

# Surface

PROPOSAL#: 230609161704-D

| Tail | | |
|---|---|---|
| | 100% Class C+1% CaCl2+0.005GPS NoFoam V1A | |
| VOLUME | 320-SX | *75.8-bbls* |
| DENSITY | 14.8-ppg | |
| YIELD | 1.33-cf/sx | |
| MIX WATER | 6.34-gps | |
| TOP OF CEMENT | 1153-ft | |
| EXCESS | 20% | |
| **DISPLACEMENT** | | |
| | Displacement | |
| VOLUME | 502-bbl | |

Avant Natural Resources
Sandra Jean 23 Fed Com #503H
Lea County, NM
Rig: H&P 460

# 1st Intermediate

PROPOSAL#: 230609161704-D

| WELL INFORMATION | |
|---|---|
| MUD | 10.5# Brine |
| PREVIOUS PIPE | 20'' 94# CSG to 1453 |
| OPEN HOLE | 17.5'' OH to 3403 |
| CASING/INJECTION | 13.375'' 54.5# J-55/BTC to 3403 |
| MD | 3403 |
| TVD | 3403 |
| EST BHST/BHCT | 108-F / 96-F (0.8-F/100-FT) |
| NOTES | Standby charges start after WTC has been on location for more than 4-hrs. |

**VOLUMES**

| FLUID NAME | LENGTH (ft) | OD (in.) | ID (in.) | XS (%) | FACTOR (bbl/ft) | VOLUME (bbl) |
|---|---|---|---|---|---|---|
| Lead | 1453 | 19.124 | 13.375 | | 0.1815 | 263.7 |
| Lead | 1268 | 17.5 | 13.375 | 50% | 0.1856 | 235.3 |
| Tail | 682 | 17.5 | 13.375 | 20% | 0.1485 | 101.2 |
| SHOE JOINT | 40 | 13.375 | 12.615 | | 0.1546 | 6.2 |

**FLUIDS**

SPACER

Fresh Water

| | |
|---|---|
| VOLUME | 25-bbl |

Lead

35% Ch_Poz+65% Class C+6% Gel+5% SALT+0.05% R-1300+0.25PPS Pol-E-Flake+0.005GPS NoFoam V1A

| | | |
|---|---|---|
| VOLUME | 1450-SX | *498.4-bbls* |
| DENSITY | 12.8-ppg | |
| YIELD | 1.93-cf/sx | |
| MIX WATER | 10.57-gps | |
| TOP OF CEMENT | Surface | |
| EXCESS | 50% | |

Avant Natural Resources
Sandra Jean 23 Fed Com #503H
Lea County, NM
Rig: H&P 460

# 1st Intermediate

PROPOSAL#: 230609161704-D

| Tail | | |
|---|---|---|
| | 100% Class C+5% SALT+0.005GPS NoFoam V1A | |
| VOLUME | 445-SX | *107.8-bbls* |
| DENSITY | 14.8-ppg | |
| YIELD | 1.36-cf/sx | |
| MIX WATER | 6.51-gps | |
| TOP OF CEMENT | 2721-ft | |
| EXCESS | 20% | |
| **DISPLACEMENT** | | |
| | Displacement | |
| VOLUME | 519.9-bbl | |

Avant Natural Resources
Sandra Jean 23 Fed Com #503H
Lea County, NM
Rig: H&P 460

# 2nd Intermediate

PROPOSAL#: 230609161704-D

| WELL INFORMATION | |
|---|---|
| MUD | 8.4# Fresh Water |
| PREVIOUS PIPE | 13.375'' 54.5# CSG to 3403 |
| OPEN HOLE | 12.25'' OH to 5204 |
| CASING/INJECTION | 9.625'' 40# J-55/L-80/HC/BTC to 5204 |
| MD | 5204 |
| TVD | 5200 |
| EST BHST/BHCT | 122-F / 106-F (0.8-F/100-FT) |
| NOTES | Standby charges start after WTC has been on location for more than 4-hrs. |

**VOLUMES**

| FLUID NAME | LENGTH (ft) | OD (in.) | ID (in.) | XS (%) | FACTOR (bbl/ft) | VOLUME (bbl) |
|---|---|---|---|---|---|---|
| Lead | 3403 | 12.615 | 9.625 | | 0.0646 | 219.8 |
| Lead | 758 | 12.25 | 9.625 | 50% | 0.0837 | 63.4 |
| Tail | 1043 | 12.25 | 9.625 | 20% | 0.0669 | 69.8 |
| SHOE JOINT | 40 | 9.625 | 8.835 | | 0.0758 | 3.0 |

**FLUIDS**

**SPACER**

Fresh Water

| | |
|---|---|
| VOLUME | 25-bbl |

**Lead**

35% Ch_Poz+65% Class C+6% Gel+5% SALT+0.2% R-1300+0.25PPS Pol-E-Flake+0.005GPS NoFoam V1A

| | | |
|---|---|---|
| VOLUME | 825-SX | *283.6-bbls* |
| DENSITY | 12.8-ppg | |
| YIELD | 1.93-cf/sx | |
| MIX WATER | 10.57-gps | |
| TOP OF CEMENT | Surface | |
| EXCESS | 50% | |

Avant Natural Resources
Sandra Jean 23 Fed Com #503H
Lea County, NM
Rig: H&P 460

# 2nd Intermediate

PROPOSAL#: 230609161704-D

| Tail | | |
|---|---|---|
| | 100% Class C+5% SALT+0.005GPS NoFoam V1A | |
| VOLUME | 300-SX | *72.7-bbls* |
| DENSITY | 14.8-ppg | |
| YIELD | 1.36-cf/sx | |
| MIX WATER | 6.51-gps | |
| TOP OF CEMENT | 4161-ft | |
| EXCESS | 20% | |
| **DISPLACEMENT** | | |
| | Displacement | |
| VOLUME | 391.5-bbl | |

Avant Natural Resources
Sandra Jean 23 Fed Com #503H
Lea County, NM
Rig: H&P 460

# Production

PROPOSAL#: 230609161704-D

| WELL INFORMATION | |
|---|---|
| MUD | 9.5# OBM |
| PREVIOUS PIPE | 9.625'' 40# CSG to 5204 |
| OPEN HOLE | 8.75'' OH to 15015 |
| CASING/INJECTION | 5.5'' 20# P-110 HC Intrepid SP to 15015 |
| MD | 15015 |
| TVD | 10080 |
| EST BHST/BHCT | 166-F / 166-F (0.85-F/100-FT) |
| KOP | 9605 |
| NOTES | Standby charges start after WTC has been on location for more than 8-hrs. |

**VOLUMES**

| FLUID NAME | LENGTH (ft) | OD (in.) | ID (in.) | XS (%) | FACTOR (bbl/ft) | VOLUME (bbl) |
|---|---|---|---|---|---|---|
| Lead | 5204 | 8.835 | 5.5 | | 0.0464 | 241.7 |
| Lead | 4401 | 8.75 | 5.5 | 50% | 0.0675 | 297.0 |
| Tail | 5410 | 8.75 | 5.5 | 20% | 0.0540 | 292.0 |
| SHOE JOINT | 80 | 5.5 | 4.778 | | 0.0222 | 1.8 |

**FLUIDS**

SPACER

Wt. Spacer 37.53GPB Water+8PPB PolyScrub 4320+89.54PPB Barite+1GPB HoleScrub 4311+1PPB R-1300

| | |
|---|---|
| VOLUME | 40-bbl |
| DENSITY | 10-ppg |

Lead

100% ProLiteCh+5PPS Plexcrete STE+2% SMS+0.65% R-1300+0.2% FL-24+3PPS Gilsonite+0.005GPS NoFoam V1A

| | | |
|---|---|---|
| VOLUME | 880-SX | *539.1-bbls* |
| DENSITY | 10.7-ppg | |
| YIELD | 3.44-cf/sx | |
| MIX WATER | 21.64-gps | |
| TOP OF CEMENT | Surface | |
| EXCESS | 50% | |

Avant Natural Resources
Sandra Jean 23 Fed Com #503H
Lea County, NM
Rig: H&P 460

# Production

PROPOSAL#: 230609161704-D

| Tail | | |
|---|---|---|
| 50% Ch_Poz+50% Class H+5% SALT+0.05% RCKCAS-100+0.75% FR-5+0.5% FL-24+0.005GPS NoFoam V1A | | |
| VOLUME | 1325-SX | *295-bbls* |
| DENSITY | 14.5-ppg | |
| YIELD | 1.25-cf/sx | |
| MIX WATER | 5.74-gps | |
| TOP OF CEMENT | 9605-ft | |
| EXCESS | 20% | |
| **DISPLACEMENT** | | |
| Fresh Water+ 0.25GPT Plexcide 24L+1GPT Corplex | | |
| VOLUME | 331.2-bbl | |
| DENSITY | 8.34-ppg | |

| CHEMICAL DESCRIPTIONS | | |
|---|---|---|
| **CHEMICAL NAME** | **CODE** | **DESCRIPTION** |
| Ch_Poz | WTC237 | Poz - Fly Ash, Extender |
| Class H | WTC101 | API Cement |
| Class C | WTC100 | API Cement |
| Premium C | WTC270 | API Cement |
| ProLiteCh | | Blended Based Cement |
| Plexcrete SFA | WTC129 | Cement Strength Enhancer |
| Gel | WTC102 | Extender |
| Micro Crystal | WTC212 | Cement Strength Enhancer |
| Micro Shell | WTC209 | Cement Strength Enhancer |
| WTC1 | WTC250 | Extender |
| Plexcrete STE | WTC127 | Cement Strength Enhancer |
| FAR-2 | WTC260 | Cement Strength Enhancer |
| Gypsum | WTC111 | Free Water Control, Extender |
| CaCl2 | WTC112 | Accelerator |
| SMS | WTC115 | Free Water Control, Extender |
| RCKCAS-100 | WTC276 | Free Water Control, Anti-Settling Agent |
| SA-1 | WTC264 | Free Water Control, Extender |
| R-33 | WTC243 | Lignosulfonate Retarder |
| R-1300 | WTC201 | Low Temperature Retarder |
| FR-5 | WTC258 | Lignosulfonate Retarder |
| CRT-201 | WTC278 | Lignosulfonate Retarder |
| C-37 | WTC224 | Dispersant, Friction Reducer |
| FL-24 | WTC277 | Fluid Loss (polymers/copolymers - 300-F max) |
| EC-10 | WTC120 | Expanding Agent |
| Gas Bond | WTC126 | Gas Migration Control (Hydrogen Generating) |
| Gilsonite | WTC003 | Premium Lost Circulation Material, Free Water Control |
| Pol-E-Flake | WTC106 | Lost Circulation Material |
| Web Seal | WTC133 | Premium Fiber Lost Circulation Material |
| Zone Seal | WTC207 | Premium Lost Circulation Material |
| NoFoam V1A | WTC105 | Liquid Defoamer |
| Water | | Fresh Water |
| PolyScrub 4320 | WTC232 | Spacer Gelling Agent |
| Barite | WTC116 | Weighting Agent |
| HoleScrub 4311 | WTC281 | Surfactant |
| HoleScrub 4305 | WTC213 | Surfactant |
| HoleScrub 4308 | WTC215 | Surfactant |
| Soda Ash | WTC164 | pH Control |
| R-1300 | WTC201 | Low Temperature Retarder |
| SuspendaCem 6302 | WTC005 | Free Water Control, Anti-Settling Agent |
| Sugar | WTC119 | Retarder |
| AI-1, Acid Inhibitor | WTC015 | Corrosion Inhibitor |
| Plexcide 24L | WTC166 | Biocide |
| Corplex | WTC134 | Corrosion Inhibitor |
| Clay Max | WTC096 | KCL Substitute |
| Zone Seal | WTC207 | Premium Lost Circulation Material |

# Avant Operating, LLC

**Lea Co., NM (NAD 83)**
**Sandra Jean 23 Fed Com Pad 2**
**Sandra Jean 23 Fed Com 503H**

**OH**

**Plan: Plan 0.1**

# Standard Planning Report

**17 July, 2024**

# Planning Report

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.16 Single User Db | **Local Co-ordinate Reference:** | Well Sandra Jean 23 Fed Com 503H |
| **Company:** | Avant Operating, LLC | **TVD Reference:** | WELL @ 3658.5usft (3658.5) |
| **Project:** | Lea Co., NM (NAD 83) | **MD Reference:** | WELL @ 3658.5usft (3658.5) |
| **Site:** | Sandra Jean 23 Fed Com Pad 2 | **North Reference:** | Grid |
| **Well:** | Sandra Jean 23 Fed Com 503H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OH | | |
| **Design:** | Plan 0.1 | | |

| **Project** | Lea Co., NM (NAD 83) | | |
|---|---|---|---|
| **Map System:** | US State Plane 1983 | **System Datum:** | Mean Sea Level |
| **Geo Datum:** | North American Datum 1983 | | |
| **Map Zone:** | New Mexico Eastern Zone | | |

| **Site** | Sandra Jean 23 Fed Com Pad 2 | | | | |
|---|---|---|---|---|---|
| **Site Position:** | | **Northing:** | 565,233.85 usft | **Latitude:** | 32.551928 |
| **From:** | Lat/Long | **Easting:** | 757,466.12 usft | **Longitude:** | -103.631891 |
| **Position Uncertainty:** | 0.0 usft | **Slot Radius:** | 13-3/16 " | | |

| **Well** | Sandra Jean 23 Fed Com 503H | | | | | |
|---|---|---|---|---|---|---|
| **Well Position** | **+N/-S** | 0.0 usft | **Northing:** | 565,233.38 usft | **Latitude:** | 32.551928 |
| | **+E/-W** | 0.0 usft | **Easting:** | 757,406.16 usft | **Longitude:** | -103.632085 |
| **Position Uncertainty** | | 0.0 usft | **Wellhead Elevation:** | usft | **Ground Level:** | 3,632.0 usft |
| **Grid Convergence:** | | 0.38 ° | | | | |

| **Wellbore** | OH | | | |
|---|---|---|---|---|
| **Magnetics** | **Model Name** | **Sample Date** | **Declination (°)** | **Dip Angle (°)** | **Field Strength (nT)** |
| | IGRF2000 | 12/31/2004 | 8.62 | 60.74 | 49,613.83867380 |

| **Design** | Plan 0.1 | | | |
|---|---|---|---|---|
| **Audit Notes:** | | | | |
| **Version:** | **Phase:** | PROTOTYPE | **Tie On Depth:** | 0.0 |

| **Vertical Section:** | **Depth From (TVD) (usft)** | **+N/-S (usft)** | **+E/-W (usft)** | **Direction (°)** |
|---|---|---|---|---|
| | 0.0 | 0.0 | 0.0 | 359.62 |

**Plan Survey Tool Program** **Date** 7/17/2024

| | Depth From (usft) | Depth To (usft) | Survey (Wellbore) | Tool Name | Remarks |
|---|---|---|---|---|---|
| 1 | 0.0 | 15,014.0 | Plan 0.1 (OH) | B001Mb_MWD+HRGM<br>OWSG MWD + HRGM | |

# Planning Report

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.16 Single User Db | **Local Co-ordinate Reference:** | Well Sandra Jean 23 Fed Com 503H |
| **Company:** | Avant Operating, LLC | **TVD Reference:** | WELL @ 3658.5usft (3658.5) |
| **Project:** | Lea Co., NM (NAD 83) | **MD Reference:** | WELL @ 3658.5usft (3658.5) |
| **Site:** | Sandra Jean 23 Fed Com Pad 2 | **North Reference:** | Grid |
| **Well:** | Sandra Jean 23 Fed Com 503H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OH | | |
| **Design:** | Plan 0.1 | | |

**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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 5,500.0 | 0.00 | 0.00 | 5,500.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 5,697.4 | 3.95 | 204.15 | 5,697.2 | -6.2 | -2.8 | 2.00 | 2.00 | 0.00 | 204.15 | |
| 7,807.9 | 3.95 | 204.15 | 7,802.8 | -138.8 | -62.2 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 8,005.3 | 0.00 | 0.00 | 8,000.0 | -145.0 | -65.0 | 2.00 | -2.00 | 0.00 | 180.00 | |
| 9,607.9 | 0.00 | 0.00 | 9,602.5 | -145.0 | -65.0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 10,357.9 | 90.00 | 356.17 | 10,080.0 | 331.4 | -96.9 | 12.00 | 12.00 | 0.00 | 356.17 | |
| 10,374.9 | 90.00 | 356.17 | 10,080.0 | 348.4 | -98.0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 10,547.1 | 90.00 | 359.62 | 10,080.0 | 520.4 | -104.3 | 2.00 | 0.00 | 2.00 | 90.00 | |
| 15,014.0 | 90.00 | 359.62 | 10,080.0 | 4,987.3 | -134.2 | 0.00 | 0.00 | 0.00 | 0.00 | Sandra Jean 503H LT |

# Planning Report

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.16 Single User Db | **Local Co-ordinate Reference:** | Well Sandra Jean 23 Fed Com 503H |
| **Company:** | Avant Operating, LLC | **TVD Reference:** | WELL @ 3658.5usft (3658.5) |
| **Project:** | Lea Co., NM (NAD 83) | **MD Reference:** | WELL @ 3658.5usft (3658.5) |
| **Site:** | Sandra Jean 23 Fed Com Pad 2 | **North Reference:** | Grid |
| **Well:** | Sandra Jean 23 Fed Com 503H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OH | | |
| **Design:** | Plan 0.1 | | |

**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 |
| 1,428.0 | 0.00 | 0.00 | 1,428.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| **RUSTLER** | | | | | | | | | |
| 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 |
| **YATES** | | | | | | | | | |
| 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 |
| 3,593.0 | 0.00 | 0.00 | 3,593.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| **CAPITAN REEF** | | | | | | | | | |
| 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 |

# Planning Report

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.16 Single User Db | **Local Co-ordinate Reference:** | Well Sandra Jean 23 Fed Com 503H |
| **Company:** | Avant Operating, LLC | **TVD Reference:** | WELL @ 3658.5usft (3658.5) |
| **Project:** | Lea Co., NM (NAD 83) | **MD Reference:** | WELL @ 3658.5usft (3658.5) |
| **Site:** | Sandra Jean 23 Fed Com Pad 2 | **North Reference:** | Grid |
| **Well:** | Sandra Jean 23 Fed Com 503H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OH | | |
| **Design:** | Plan 0.1 | | |

**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) |
|---|---|---|---|---|---|---|---|---|---|
| 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 |
| 5,250.0 | 0.00 | 0.00 | 5,250.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| **CHERRY CANYON** | | | | | | | | | |
| 5,260.0 | 0.00 | 0.00 | 5,260.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| **DELAWARE** | | | | | | | | | |
| 5,300.0 | 0.00 | 0.00 | 5,300.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 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 |
| **KOP - Start Build 2.00** | | | | | | | | | |
| 5,600.0 | 2.00 | 204.15 | 5,600.0 | -1.6 | -0.7 | -1.6 | 2.00 | 2.00 | 0.00 |
| 5,697.4 | 3.95 | 204.15 | 5,697.2 | -6.2 | -2.8 | -6.2 | 2.00 | 2.00 | 0.00 |
| **Start 2110.5 hold at 5697.4 MD** | | | | | | | | | |
| 5,700.0 | 3.95 | 204.15 | 5,699.8 | -6.4 | -2.9 | -6.3 | 0.00 | 0.00 | 0.00 |
| 5,800.0 | 3.95 | 204.15 | 5,799.6 | -12.6 | -5.7 | -12.6 | 0.00 | 0.00 | 0.00 |
| 5,900.0 | 3.95 | 204.15 | 5,899.4 | -18.9 | -8.5 | -18.9 | 0.00 | 0.00 | 0.00 |
| 6,000.0 | 3.95 | 204.15 | 5,999.1 | -25.2 | -11.3 | -25.1 | 0.00 | 0.00 | 0.00 |
| 6,100.0 | 3.95 | 204.15 | 6,098.9 | -31.5 | -14.1 | -31.4 | 0.00 | 0.00 | 0.00 |
| 6,200.0 | 3.95 | 204.15 | 6,198.7 | -37.8 | -16.9 | -37.7 | 0.00 | 0.00 | 0.00 |
| 6,300.0 | 3.95 | 204.15 | 6,298.4 | -44.1 | -19.8 | -43.9 | 0.00 | 0.00 | 0.00 |
| 6,400.0 | 3.95 | 204.15 | 6,398.2 | -50.3 | -22.6 | -50.2 | 0.00 | 0.00 | 0.00 |
| 6,500.0 | 3.95 | 204.15 | 6,497.9 | -56.6 | -25.4 | -56.5 | 0.00 | 0.00 | 0.00 |
| 6,600.0 | 3.95 | 204.15 | 6,597.7 | -62.9 | -28.2 | -62.7 | 0.00 | 0.00 | 0.00 |
| 6,700.0 | 3.95 | 204.15 | 6,697.5 | -69.2 | -31.0 | -69.0 | 0.00 | 0.00 | 0.00 |
| 6,702.5 | 3.95 | 204.15 | 6,700.0 | -69.4 | -31.1 | -69.1 | 0.00 | 0.00 | 0.00 |
| **BRUSHY CANYON** | | | | | | | | | |
| 6,800.0 | 3.95 | 204.15 | 6,797.2 | -75.5 | -33.8 | -75.2 | 0.00 | 0.00 | 0.00 |
| 6,900.0 | 3.95 | 204.15 | 6,897.0 | -81.8 | -36.6 | -81.5 | 0.00 | 0.00 | 0.00 |
| 7,000.0 | 3.95 | 204.15 | 6,996.8 | -88.0 | -39.5 | -87.8 | 0.00 | 0.00 | 0.00 |
| 7,100.0 | 3.95 | 204.15 | 7,096.5 | -94.3 | -42.3 | -94.0 | 0.00 | 0.00 | 0.00 |
| 7,200.0 | 3.95 | 204.15 | 7,196.3 | -100.6 | -45.1 | -100.3 | 0.00 | 0.00 | 0.00 |
| 7,300.0 | 3.95 | 204.15 | 7,296.0 | -106.9 | -47.9 | -106.6 | 0.00 | 0.00 | 0.00 |
| 7,400.0 | 3.95 | 204.15 | 7,395.8 | -113.2 | -50.7 | -112.8 | 0.00 | 0.00 | 0.00 |
| 7,500.0 | 3.95 | 204.15 | 7,495.6 | -119.5 | -53.5 | -119.1 | 0.00 | 0.00 | 0.00 |
| 7,600.0 | 3.95 | 204.15 | 7,595.3 | -125.7 | -56.4 | -125.4 | 0.00 | 0.00 | 0.00 |
| 7,700.0 | 3.95 | 204.15 | 7,695.1 | -132.0 | -59.2 | -131.6 | 0.00 | 0.00 | 0.00 |
| 7,807.9 | 3.95 | 204.15 | 7,802.8 | -138.8 | -62.2 | -138.4 | 0.00 | 0.00 | 0.00 |
| **Start Drop -2.00** | | | | | | | | | |
| 7,900.0 | 2.11 | 204.15 | 7,894.7 | -143.2 | -64.2 | -142.8 | 2.00 | -2.00 | 0.00 |
| 8,005.3 | 0.00 | 0.00 | 8,000.0 | -145.0 | -65.0 | -144.6 | 2.00 | -2.00 | 0.00 |
| **Start 1602.5 hold at 8005.3 MD** | | | | | | | | | |
| 8,100.0 | 0.00 | 0.00 | 8,094.7 | -145.0 | -65.0 | -144.6 | 0.00 | 0.00 | 0.00 |
| 8,200.0 | 0.00 | 0.00 | 8,194.7 | -145.0 | -65.0 | -144.6 | 0.00 | 0.00 | 0.00 |
| 8,300.0 | 0.00 | 0.00 | 8,294.7 | -145.0 | -65.0 | -144.6 | 0.00 | 0.00 | 0.00 |
| 8,326.3 | 0.00 | 0.00 | 8,321.0 | -145.0 | -65.0 | -144.6 | 0.00 | 0.00 | 0.00 |
| **Top of BSGL** | | | | | | | | | |
| 8,400.0 | 0.00 | 0.00 | 8,394.7 | -145.0 | -65.0 | -144.6 | 0.00 | 0.00 | 0.00 |
| 8,500.0 | 0.00 | 0.00 | 8,494.7 | -145.0 | -65.0 | -144.6 | 0.00 | 0.00 | 0.00 |
| 8,600.0 | 0.00 | 0.00 | 8,594.7 | -145.0 | -65.0 | -144.6 | 0.00 | 0.00 | 0.00 |
| 8,700.0 | 0.00 | 0.00 | 8,694.7 | -145.0 | -65.0 | -144.6 | 0.00 | 0.00 | 0.00 |

# Planning Report

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.16 Single User Db | **Local Co-ordinate Reference:** | Well Sandra Jean 23 Fed Com 503H |
| **Company:** | Avant Operating, LLC | **TVD Reference:** | WELL @ 3658.5usft (3658.5) |
| **Project:** | Lea Co., NM (NAD 83) | **MD Reference:** | WELL @ 3658.5usft (3658.5) |
| **Site:** | Sandra Jean 23 Fed Com Pad 2 | **North Reference:** | Grid |
| **Well:** | Sandra Jean 23 Fed Com 503H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OH | | |
| **Design:** | Plan 0.1 | | |

**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) |
|---|---|---|---|---|---|---|---|---|---|
| 8,800.0 | 0.00 | 0.00 | 8,794.7 | -145.0 | -65.0 | -144.6 | 0.00 | 0.00 | 0.00 |
| 8,900.0 | 0.00 | 0.00 | 8,894.7 | -145.0 | -65.0 | -144.6 | 0.00 | 0.00 | 0.00 |
| 9,000.0 | 0.00 | 0.00 | 8,994.7 | -145.0 | -65.0 | -144.6 | 0.00 | 0.00 | 0.00 |
| 9,100.0 | 0.00 | 0.00 | 9,094.7 | -145.0 | -65.0 | -144.6 | 0.00 | 0.00 | 0.00 |
| 9,200.0 | 0.00 | 0.00 | 9,194.7 | -145.0 | -65.0 | -144.6 | 0.00 | 0.00 | 0.00 |
| 9,300.0 | 0.00 | 0.00 | 9,294.7 | -145.0 | -65.0 | -144.6 | 0.00 | 0.00 | 0.00 |
| 9,400.0 | 0.00 | 0.00 | 9,394.7 | -145.0 | -65.0 | -144.6 | 0.00 | 0.00 | 0.00 |
| 9,400.3 | 0.00 | 0.00 | 9,395.0 | -145.0 | -65.0 | -144.6 | 0.00 | 0.00 | 0.00 |
| **Top of FBSG SD** | | | | | | | | | |
| 9,500.0 | 0.00 | 0.00 | 9,494.7 | -145.0 | -65.0 | -144.6 | 0.00 | 0.00 | 0.00 |
| 9,607.9 | 0.00 | 0.00 | 9,602.5 | -145.0 | -65.0 | -144.6 | 0.00 | 0.00 | 0.00 |
| **KOP #2 - Start Build 12.00** | | | | | | | | | |
| 9,625.0 | 2.06 | 356.17 | 9,619.7 | -144.7 | -65.0 | -144.3 | 12.00 | 12.00 | 0.00 |
| 9,650.0 | 5.06 | 356.17 | 9,644.6 | -143.1 | -65.1 | -142.7 | 12.00 | 12.00 | 0.00 |
| 9,675.0 | 8.06 | 356.17 | 9,669.5 | -140.3 | -65.3 | -139.9 | 12.00 | 12.00 | 0.00 |
| 9,682.6 | 8.97 | 356.17 | 9,677.0 | -139.2 | -65.4 | -138.7 | 12.00 | 12.00 | 0.00 |
| **Top of SBSG Shale** | | | | | | | | | |
| 9,700.0 | 11.06 | 356.17 | 9,694.1 | -136.2 | -65.6 | -135.7 | 12.00 | 12.00 | 0.00 |
| 9,725.0 | 14.06 | 356.17 | 9,718.5 | -130.7 | -66.0 | -130.3 | 12.00 | 12.00 | 0.00 |
| 9,750.0 | 17.06 | 356.17 | 9,742.6 | -124.0 | -66.4 | -123.6 | 12.00 | 12.00 | 0.00 |
| 9,775.0 | 20.06 | 356.17 | 9,766.3 | -116.1 | -66.9 | -115.7 | 12.00 | 12.00 | 0.00 |
| 9,800.0 | 23.06 | 356.17 | 9,789.5 | -106.9 | -67.5 | -106.5 | 12.00 | 12.00 | 0.00 |
| 9,825.0 | 26.06 | 356.17 | 9,812.3 | -96.6 | -68.2 | -96.1 | 12.00 | 12.00 | 0.00 |
| 9,850.0 | 29.06 | 356.17 | 9,834.4 | -85.0 | -69.0 | -84.6 | 12.00 | 12.00 | 0.00 |
| 9,875.0 | 32.06 | 356.17 | 9,856.0 | -72.4 | -69.9 | -71.9 | 12.00 | 12.00 | 0.00 |
| 9,900.0 | 35.06 | 356.17 | 9,876.8 | -58.6 | -70.8 | -58.1 | 12.00 | 12.00 | 0.00 |
| 9,925.0 | 38.06 | 356.17 | 9,896.9 | -43.7 | -71.8 | -43.2 | 12.00 | 12.00 | 0.00 |
| 9,940.6 | 39.93 | 356.17 | 9,909.0 | -33.9 | -72.4 | -33.4 | 12.00 | 12.00 | 0.00 |
| **Top of SBSG SD** | | | | | | | | | |
| 9,950.0 | 41.06 | 356.17 | 9,916.1 | -27.8 | -72.8 | -27.3 | 12.00 | 12.00 | 0.00 |
| 9,975.0 | 44.06 | 356.17 | 9,934.6 | -11.0 | -74.0 | -10.5 | 12.00 | 12.00 | 0.00 |
| 9,978.6 | 44.49 | 356.17 | 9,937.1 | -8.4 | -74.1 | -8.0 | 12.00 | 12.00 | 0.00 |
| **Sandra Jean 503H FTP** | | | | | | | | | |
| 10,000.0 | 47.06 | 356.17 | 9,952.1 | 6.8 | -75.2 | 7.3 | 12.00 | 12.00 | 0.00 |
| 10,025.0 | 50.06 | 356.17 | 9,968.6 | 25.5 | -76.4 | 26.0 | 12.00 | 12.00 | 0.00 |
| 10,050.0 | 53.06 | 356.17 | 9,984.1 | 45.1 | -77.7 | 45.6 | 12.00 | 12.00 | 0.00 |
| 10,075.0 | 56.06 | 356.17 | 9,998.6 | 65.4 | -79.1 | 65.9 | 12.00 | 12.00 | 0.00 |
| 10,100.0 | 59.06 | 356.17 | 10,012.0 | 86.4 | -80.5 | 87.0 | 12.00 | 12.00 | 0.00 |
| 10,125.0 | 62.06 | 356.17 | 10,024.3 | 108.2 | -81.9 | 108.7 | 12.00 | 12.00 | 0.00 |
| 10,150.0 | 65.06 | 356.17 | 10,035.5 | 130.5 | -83.4 | 131.0 | 12.00 | 12.00 | 0.00 |
| 10,175.0 | 68.06 | 356.17 | 10,045.4 | 153.4 | -85.0 | 153.9 | 12.00 | 12.00 | 0.00 |
| 10,200.0 | 71.06 | 356.17 | 10,054.1 | 176.8 | -86.5 | 177.3 | 12.00 | 12.00 | 0.00 |
| 10,225.0 | 74.06 | 356.17 | 10,061.6 | 200.5 | -88.1 | 201.1 | 12.00 | 12.00 | 0.00 |
| 10,250.0 | 77.06 | 356.17 | 10,067.9 | 224.7 | -89.7 | 225.3 | 12.00 | 12.00 | 0.00 |
| 10,275.0 | 80.06 | 356.17 | 10,072.8 | 249.1 | -91.4 | 249.7 | 12.00 | 12.00 | 0.00 |
| 10,300.0 | 83.06 | 356.17 | 10,076.5 | 273.8 | -93.0 | 274.4 | 12.00 | 12.00 | 0.00 |
| 10,325.0 | 86.06 | 356.17 | 10,078.9 | 298.6 | -94.7 | 299.3 | 12.00 | 12.00 | 0.00 |
| 10,350.0 | 89.06 | 356.17 | 10,079.9 | 323.6 | -96.3 | 324.2 | 12.00 | 12.00 | 0.00 |
| 10,357.9 | 90.00 | 356.17 | 10,080.0 | 331.4 | -96.9 | 332.0 | 12.00 | 12.00 | 0.00 |
| **Start 17.0 hold at 10357.9 MD** | | | | | | | | | |
| 10,374.9 | 90.00 | 356.17 | 10,080.0 | 348.4 | -98.0 | 349.0 | 0.00 | 0.00 | 0.00 |
| **Turn - Start DLS 2.00 TFO 90.00** | | | | | | | | | |
| 10,400.0 | 90.00 | 356.68 | 10,080.0 | 373.5 | -99.6 | 374.1 | 2.00 | 0.00 | 2.00 |

# Planning Report

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.16 Single User Db | **Local Co-ordinate Reference:** | Well Sandra Jean 23 Fed Com 503H |
| **Company:** | Avant Operating, LLC | **TVD Reference:** | WELL @ 3658.5usft (3658.5) |
| **Project:** | Lea Co., NM (NAD 83) | **MD Reference:** | WELL @ 3658.5usft (3658.5) |
| **Site:** | Sandra Jean 23 Fed Com Pad 2 | **North Reference:** | Grid |
| **Well:** | Sandra Jean 23 Fed Com 503H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OH | | |
| **Design:** | Plan 0.1 | | |

**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) |
|---|---|---|---|---|---|---|---|---|---|
| 10,500.0 | 90.00 | 358.68 | 10,080.0 | 473.4 | -103.6 | 474.0 | 2.00 | 0.00 | 2.00 |
| 10,547.1 | 90.00 | 359.62 | 10,080.0 | 520.4 | -104.3 | 521.1 | 2.00 | 0.00 | 2.00 |
| **LP - Start 4467.0 hold at 10547.1 MD** | | | | | | | | | |
| 10,600.0 | 90.00 | 359.62 | 10,080.0 | 573.4 | -104.7 | 574.0 | 0.00 | 0.00 | 0.00 |
| 10,700.0 | 90.00 | 359.62 | 10,080.0 | 673.4 | -105.3 | 674.0 | 0.00 | 0.00 | 0.00 |
| 10,800.0 | 90.00 | 359.62 | 10,080.0 | 773.4 | -106.0 | 774.0 | 0.00 | 0.00 | 0.00 |
| 10,900.0 | 90.00 | 359.62 | 10,080.0 | 873.4 | -106.7 | 874.0 | 0.00 | 0.00 | 0.00 |
| 11,000.0 | 90.00 | 359.62 | 10,080.0 | 973.4 | -107.3 | 974.0 | 0.00 | 0.00 | 0.00 |
| 11,100.0 | 90.00 | 359.62 | 10,080.0 | 1,073.4 | -108.0 | 1,074.0 | 0.00 | 0.00 | 0.00 |
| 11,200.0 | 90.00 | 359.62 | 10,080.0 | 1,173.4 | -108.7 | 1,174.0 | 0.00 | 0.00 | 0.00 |
| 11,300.0 | 90.00 | 359.62 | 10,080.0 | 1,273.3 | -109.4 | 1,274.0 | 0.00 | 0.00 | 0.00 |
| 11,400.0 | 90.00 | 359.62 | 10,080.0 | 1,373.3 | -110.0 | 1,374.0 | 0.00 | 0.00 | 0.00 |
| 11,500.0 | 90.00 | 359.62 | 10,080.0 | 1,473.3 | -110.7 | 1,474.0 | 0.00 | 0.00 | 0.00 |
| 11,600.0 | 90.00 | 359.62 | 10,080.0 | 1,573.3 | -111.4 | 1,574.0 | 0.00 | 0.00 | 0.00 |
| 11,700.0 | 90.00 | 359.62 | 10,080.0 | 1,673.3 | -112.0 | 1,674.0 | 0.00 | 0.00 | 0.00 |
| 11,800.0 | 90.00 | 359.62 | 10,080.0 | 1,773.3 | -112.7 | 1,774.0 | 0.00 | 0.00 | 0.00 |
| 11,900.0 | 90.00 | 359.62 | 10,080.0 | 1,873.3 | -113.4 | 1,874.0 | 0.00 | 0.00 | 0.00 |
| 12,000.0 | 90.00 | 359.62 | 10,080.0 | 1,973.3 | -114.0 | 1,974.0 | 0.00 | 0.00 | 0.00 |
| 12,100.0 | 90.00 | 359.62 | 10,080.0 | 2,073.3 | -114.7 | 2,074.0 | 0.00 | 0.00 | 0.00 |
| 12,200.0 | 90.00 | 359.62 | 10,080.0 | 2,173.3 | -115.4 | 2,174.0 | 0.00 | 0.00 | 0.00 |
| 12,300.0 | 90.00 | 359.62 | 10,080.0 | 2,273.3 | -116.0 | 2,274.0 | 0.00 | 0.00 | 0.00 |
| 12,400.0 | 90.00 | 359.62 | 10,080.0 | 2,373.3 | -116.7 | 2,374.0 | 0.00 | 0.00 | 0.00 |
| 12,500.0 | 90.00 | 359.62 | 10,080.0 | 2,473.3 | -117.4 | 2,474.0 | 0.00 | 0.00 | 0.00 |
| 12,600.0 | 90.00 | 359.62 | 10,080.0 | 2,573.3 | -118.0 | 2,574.0 | 0.00 | 0.00 | 0.00 |
| 12,700.0 | 90.00 | 359.62 | 10,080.0 | 2,673.3 | -118.7 | 2,674.0 | 0.00 | 0.00 | 0.00 |
| 12,800.0 | 90.00 | 359.62 | 10,080.0 | 2,773.3 | -119.4 | 2,774.0 | 0.00 | 0.00 | 0.00 |
| 12,900.0 | 90.00 | 359.62 | 10,080.0 | 2,873.3 | -120.0 | 2,874.0 | 0.00 | 0.00 | 0.00 |
| 13,000.0 | 90.00 | 359.62 | 10,080.0 | 2,973.3 | -120.7 | 2,974.0 | 0.00 | 0.00 | 0.00 |
| 13,100.0 | 90.00 | 359.62 | 10,080.0 | 3,073.3 | -121.4 | 3,074.0 | 0.00 | 0.00 | 0.00 |
| 13,200.0 | 90.00 | 359.62 | 10,080.0 | 3,173.3 | -122.0 | 3,174.0 | 0.00 | 0.00 | 0.00 |
| 13,300.0 | 90.00 | 359.62 | 10,080.0 | 3,273.3 | -122.7 | 3,274.0 | 0.00 | 0.00 | 0.00 |
| 13,400.0 | 90.00 | 359.62 | 10,080.0 | 3,373.3 | -123.4 | 3,374.0 | 0.00 | 0.00 | 0.00 |
| 13,500.0 | 90.00 | 359.62 | 10,080.0 | 3,473.3 | -124.0 | 3,474.0 | 0.00 | 0.00 | 0.00 |
| 13,600.0 | 90.00 | 359.62 | 10,080.0 | 3,573.3 | -124.7 | 3,574.0 | 0.00 | 0.00 | 0.00 |
| 13,700.0 | 90.00 | 359.62 | 10,080.0 | 3,673.3 | -125.4 | 3,674.0 | 0.00 | 0.00 | 0.00 |
| 13,800.0 | 90.00 | 359.62 | 10,080.0 | 3,773.3 | -126.0 | 3,774.0 | 0.00 | 0.00 | 0.00 |
| 13,900.0 | 90.00 | 359.62 | 10,080.0 | 3,873.3 | -126.7 | 3,874.0 | 0.00 | 0.00 | 0.00 |
| 14,000.0 | 90.00 | 359.62 | 10,080.0 | 3,973.3 | -127.4 | 3,974.0 | 0.00 | 0.00 | 0.00 |
| 14,100.0 | 90.00 | 359.62 | 10,080.0 | 4,073.3 | -128.0 | 4,074.0 | 0.00 | 0.00 | 0.00 |
| 14,200.0 | 90.00 | 359.62 | 10,080.0 | 4,173.3 | -128.7 | 4,174.0 | 0.00 | 0.00 | 0.00 |
| 14,300.0 | 90.00 | 359.62 | 10,080.0 | 4,273.3 | -129.4 | 4,274.0 | 0.00 | 0.00 | 0.00 |
| 14,400.0 | 90.00 | 359.62 | 10,080.0 | 4,373.3 | -130.1 | 4,374.0 | 0.00 | 0.00 | 0.00 |
| 14,500.0 | 90.00 | 359.62 | 10,080.0 | 4,473.3 | -130.7 | 4,474.0 | 0.00 | 0.00 | 0.00 |
| 14,600.0 | 90.00 | 359.62 | 10,080.0 | 4,573.3 | -131.4 | 4,574.0 | 0.00 | 0.00 | 0.00 |
| 14,700.0 | 90.00 | 359.62 | 10,080.0 | 4,673.3 | -132.1 | 4,674.0 | 0.00 | 0.00 | 0.00 |
| 14,800.0 | 90.00 | 359.62 | 10,080.0 | 4,773.3 | -132.7 | 4,774.0 | 0.00 | 0.00 | 0.00 |
| 14,900.0 | 90.00 | 359.62 | 10,080.0 | 4,873.3 | -133.4 | 4,874.0 | 0.00 | 0.00 | 0.00 |
| 15,000.0 | 90.00 | 359.62 | 10,080.0 | 4,973.3 | -134.1 | 4,974.0 | 0.00 | 0.00 | 0.00 |
| 15,014.0 | 90.00 | 359.62 | 10,080.0 | 4,987.3 | -134.2 | 4,988.1 | 0.00 | 0.00 | 0.00 |
| **TD at 15014.0 - Sandra Jean 503H LTP/BHL** | | | | | | | | | |

# Planning Report

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.16 Single User Db | **Local Co-ordinate Reference:** | Well Sandra Jean 23 Fed Com 503H |
| **Company:** | Avant Operating, LLC | **TVD Reference:** | WELL @ 3658.5usft (3658.5) |
| **Project:** | Lea Co., NM (NAD 83) | **MD Reference:** | WELL @ 3658.5usft (3658.5) |
| **Site:** | Sandra Jean 23 Fed Com Pad 2 | **North Reference:** | Grid |
| **Well:** | Sandra Jean 23 Fed Com 503H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OH | | |
| **Design:** | Plan 0.1 | | |

**Design Targets**

| Target Name - hit/miss target - Shape | Dip Angle (°) | Dip Dir. (°) | TVD (usft) | +N/-S (usft) | +E/-W (usft) | Northing (usft) | Easting (usft) | Latitude | Longitude |
|---|---|---|---|---|---|---|---|---|---|
| Sandra Jean 503H FTP<br>- plan misses target center by 203.2usft at 9978.6usft MD (9937.1 TVD, -8.4 N, -74.1 E)<br>- Point | 0.00 | 0.00 | 10,080.0 | -150.6 | -99.9 | 565,082.79 | 757,306.30 | 32.551515 | -103.632413 |
| Sandra Jean 503H LTP/I<br>- plan hits target center<br>- Point | 0.00 | 0.00 | 10,080.0 | 4,987.3 | -134.2 | 570,220.68 | 757,272.01 | 32.565638 | -103.632414 |

**Casing Points**

| Measured Depth (usft) | Vertical Depth (usft) | Name | Casing Diameter (") | Hole Diameter (") |
|---|---|---|---|---|
| | 10,400.0 | LP | 5-1/2 | 5-1/2 |

**Formations**

| Measured Depth (usft) | Vertical Depth (usft) | Name | Lithology | Dip (°) | Dip Direction (°) |
|---|---|---|---|---|---|
| 1,428.0 | 1,428.0 | RUSTLER | | | |
| 3,200.0 | 3,200.0 | YATES | | | |
| 3,593.0 | 3,593.0 | CAPITAN REEF | | | |
| 5,250.0 | 5,250.0 | CHERRY CANYON | | | |
| 5,260.0 | 5,260.0 | DELAWARE | | | |
| 6,702.5 | 6,700.0 | BRUSHY CANYON | | | |
| 8,326.3 | 8,321.0 | Top of BSGL | | | |
| 9,400.3 | 9,395.0 | Top of FBSG SD | | | |
| 9,682.6 | 9,677.0 | Top of SBSG Shale | | | |
| 9,940.6 | 9,909.0 | Top of SBSG SD | | | |

**Plan Annotations**

| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates +N/-S (usft) | Local Coordinates +E/-W (usft) | Comment |
|---|---|---|---|---|
| 5,500.0 | 5,500.0 | 0.0 | 0.0 | KOP - Start Build 2.00 |
| 5,697.4 | 5,697.2 | -6.2 | -2.8 | Start 2110.5 hold at 5697.4 MD |
| 7,807.9 | 7,802.8 | -138.8 | -62.2 | Start Drop -2.00 |
| 8,005.3 | 8,000.0 | -145.0 | -65.0 | Start 1602.5 hold at 8005.3 MD |
| 9,607.9 | 9,602.5 | -145.0 | -65.0 | KOP #2 - Start Build 12.00 |
| 10,357.9 | 10,080.0 | 331.4 | -96.9 | Start 17.0 hold at 10357.9 MD |
| 10,374.9 | 10,080.0 | 348.4 | -98.0 | Turn - Start DLS 2.00 TFO 90.00 |
| 10,547.1 | 10,080.0 | 520.4 | -104.3 | LP - Start 4467.0 hold at 10547.1 MD |
| 15,014.0 | 10,080.0 | 4,987.3 | -134.2 | TD at 15014.0 |

API: 30-025-52640
REGULATORY: BLM
PERMIT #

RIG: H&P 460
KB: 26.5
GL: 3632

AVANT NATURAL RESOURCES

# Sandra Jean 23 Fed Com 503H

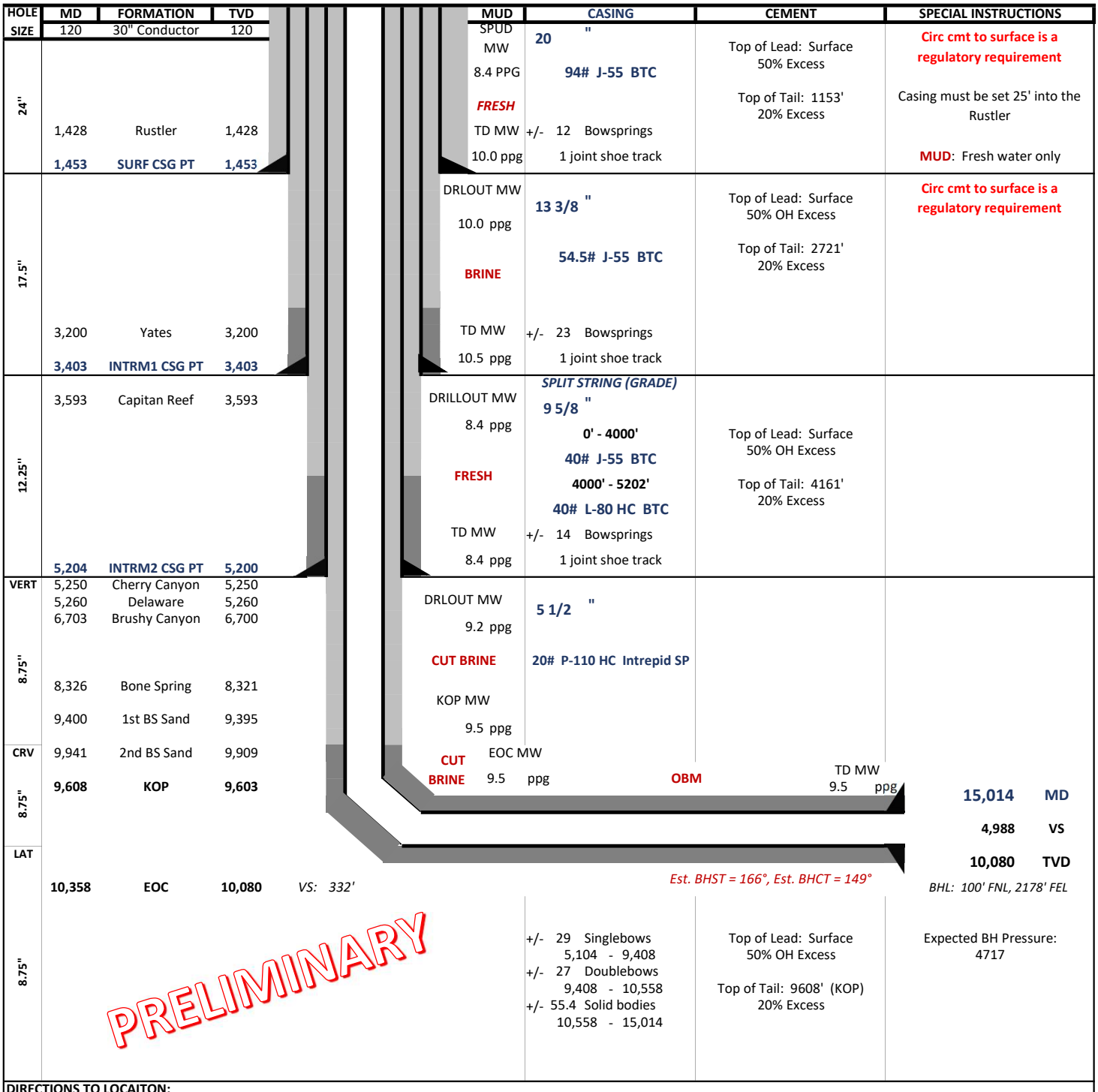
## Bone Springs

Lea County, NM

**AFE: NM0062**

**SHL:** Sec. 23, T-20S, R-33E; 200 FSL, 2077 FEL

Lat: 32.5519275, Long: -103.632085 (NAD83)




**DIRECTIONS TO LOCAITON:**

Ryan Harris (406) 853-6490 H&P 460 DATE: 7/7/2024

**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 Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
**District IV**
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 367410

## CONDITIONS

| | |
|---|---|
| Operator:<br>Avant Operating, LLC<br>1515 Wynkoop Street<br>Denver, CO 80202 | OGRID:<br>330396 |
| | Action Number:<br>367410 |
| | Action Type:<br>[C-103] NOI Change of Plans (C-103A) |

**CONDITIONS**

| Created By | Condition | Condition Date |
|---|---|---|
| pkautz | None | 8/2/2024 |