Form 3160-3
(June 2015)

FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

**APPLICATION FOR PERMIT TO DRILL OR REENTER**

5. Lease Serial No.: NMNM128836

6. If Indian, Allotee or Tribe Name:

1a. Type of work: ☑ DRILL ☐ REENTER

1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other

1c. Type of Completion: ☐ Hydraulic Fracturing ☑ Single Zone ☐ Multiple Zone

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

8. Lease Name and Well No.: GOLDEN TEE 31 FED COM 504H

2. Name of Operator: AVANT OPERATING LLC

9. API Well No.: **30-025-49406**

3a. Address: 1515 WYNKOOP STREET, SUITE 700, DENVER, CO 802

3b. Phone No. *(include area code)*: (720) 746-5045

10. Field and Pool, or Exploratory: Antelope Ridge/Bone Spring North

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*

At surface: NENE / 550 FNL / 400 FEL / LAT 32.3539218 / LONG -103.3994781

At proposed prod. zone: SWNE / 2540 FNL / 2178 FEL / LAT 32.3339368 / LONG -103.4052252

11. Sec., T. R. M. or Blk. and Survey or Area: SEC 31/T22S/R35E/NMP

14. Distance in miles and direction from nearest town or post office*: 15 miles

12. County or Parish: LEA

13. State: NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any): 430 feet

16. No of acres in lease:

17. Spacing Unit dedicated to this well: 240.15

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.: 30 feet

19. Proposed Depth: 10500 feet / 18235 feet

20. BLM/BIA Bond No. in file: FED: NMB001882

21. Elevations (Show whether DF, KDB, RT, GL, etc.): 3511 feet

22. Approximate date work will start*: 04/01/2021

23. Estimated duration: 60 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification.
6. Such other site specific information and/or plans as may be requested by the BLM.

| 25. Signature | Name *(Printed/Typed)* | Date |
|---|---|---|
| (Electronic Submission) | BRIAN WOOD / Ph: (720) 746-5045 | 02/20/2021 |

Title: President

| Approved by *(Signature)* | Name *(Printed/Typed)* | Date |
|---|---|---|
| (Electronic Submission) | Cody Layton / Ph: (575) 234-5959 | 09/09/2021 |

| Title | Office |
|---|---|
| Assistant Field Manager Lands & Minerals | Carlsbad Field Office |

Application approval 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.
Conditions of approval, if any, are attached.

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.

**NGMP Rec 09/10/2021**

**SL**

APPROVED WITH CONDITIONS

KZ
**09/27/2021**

(Continued on page 2)

*(Instructions on page 2)

**Approval Date: 09/09/2021**

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

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

☐ AMENDED REPORT

# WELL LOCATION AND ACREAGE DEDICATION PLAT

| [1] API Number | [2] Pool Code | [3] Pool Name |
|---|---|---|
| 30-025-49406 | 2205 | ANTELOPE RIDGE; BONE SPRING, NORTH |

| [4] Property Code | [5] Property Name | [6] Well Number |
|---|---|---|
| 331355 | Golden Tee 31 Fed Com | 504H |
| [7] OGRID No. | [8] Operator Name | [9] Elevation |
| 330396 | Avant Operating, LLC | 3511 |

## [10] Surface Location

| UL or lot no. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---|---|---|---|---|---|---|---|---|---|
| A | 31 | 22 S | 35 E | | 550 | North | 400 | East | Lea |

## [11] Bottom Hole Location If Different From Surface

| UL or lot no. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---|---|---|---|---|---|---|---|---|---|
| G | 6 | 23 S | 35 E | | 2540 | North | 2178 | East | Lea |

| [12] Dedicated Acres | [13] Joint or Infill | [14] Consolidation Code | [15] Order No. |
|---|---|---|---|
| 240.15 | | C | |

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

16

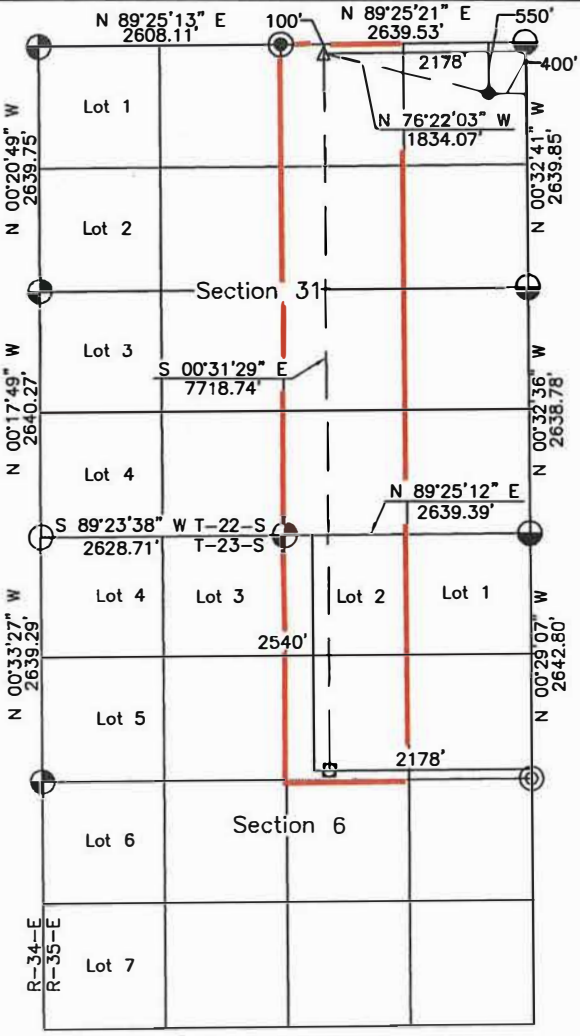
SURFACE LOCATION
NAD 83 NMSPC ZONE 3001
Y= 493746.26 N
X= 829709.46 E
LAT.= 32.3539218° N
LONG.= 103.3994781° W

FIRST TAKE POINT
NAD 83 NMSPC ZONE 3001
100' FNL, 2178' FEL
SEC. 31, T22S, R35E
Y= 494178.54 N
X= 827927.06 E
LAT.= 32.3551525° N
LONG.= 103.4052374° W

LAST TAKE POINT
NAD 83 NMSPC ZONE 3001
2540' FNL, 2178' FEL
SEC. 6, T23S, R35E
Y= 486460.13 N
X= 827997.74 E
LAT.= 32.3339368° N
LONG.= 103.4052252° W

BOTTOM HOLE LOCATION
NAD 83 NMSPC ZONE 3001
Y= 486460.13 N
X= 827997.74 E
LAT.= 32.3339368° N
LONG.= 103.4052252° W

Legend:
- ● = Surface Location
- ○ = Bottom Hole Location
- △ = First Take Point (FTP)
- □ = Last Take Point (LTP)
- ◒ = Found 1913 USGLO Brass Cap
- ◒ = Found 1918 USGLO Brass Cap
- ◉ = Found 1" Iron Rod
- ◎ = Found 1/2" Rebar with Cap
- ◯ = Found Cut Tee Post




## [17] OPERATOR CERTIFICATION

*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.*

Signature — Date: 2-19-21

BRIAN WOOD
Printed Name

brian@permitswest.com
E-mail Address

(505) 466-8120

## [18] SURVEYOR CERTIFICATION

*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.*

1/21/21
Date of Survey
Plat Revised: 1/27/21
Signature and Seal of Professional Surveyor:

MARSHALL W. LINDEEN
NEW MEXICO
17078
2-8-21
PROFESSIONAL SURVEYOR

17078
Certificate Number

State of New Mexico
Energy, Minerals and Natural Resources Department

Submit Electronically
Via E-permitting

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

# NATURAL GAS MANAGEMENT PLAN

This Natural Gas Management Plan must be submitted with each Application for Permit to Drill (APD) for a new or recompleted well.

## Section 1 – Plan Description
**Effective May 25, 2021**

**I. Operator:** Avant Operating, LLC **OGRID:** 330396 **Date:** 08/18/21

**II. Type:** ☒ Original ☐ Amendment due to ☐ 19.15.27.9.D(6)(a) NMAC ☐ 19.15.27.9.D(6)(b) NMAC ☐ Other.
If Other, please describe: _____

**III. Well(s):** Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

| Well Name | API | ULSTR | Footages | Anticipated Oil BBL/D | Anticipated Gas MCF/D | Anticipated Produced Water BBL/D |
|---|---|---|---|---|---|---|
| Golden Tee 31 Fed Com 304H | | A-31-22S-35E | 550 FNL; 430 FEL | 2,700 | 6,000 | 10,500 |
| Golden Tee 31 Fed Com 305H | | A-31-22S-35E | 700 FNL; 430 FEL | 2,700 | 6,000 | 10,500 |
| Golden Tee 31 Fed Com 306H | | A-31-22S-35E | 850 FNL; 430 FEL | 2,700 | 6,000 | 10,500 |
| Golden Tee 31 Fed Com 504H | 30-025-49406 | A-31-22S-35E | 550 FNL; 400 FEL | 2,700 | 6,000 | 10,500 |
| Golden Tee 31 Fed Com 505H | | A-31-22S-35E | 700 FNL; 400 FEL | 2,700 | 6,000 | 10,500 |
| Golden Tee 31 Fed Com 506H | | A-31-22S-35E | 850 FNL; 400 FWL | 2,700 | 6,000 | 10,500 |

**IV. Central Delivery Point Name:** Golden Tee CTB [See 19.15.27.9(D)(1) NMAC]

**V. Anticipated Schedule:** Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

| Well Name | API | Spud Date | TD Reached Date | Completion Commencement Date | Initial Flow Back Date | First Production Date |
|---|---|---|---|---|---|---|
| Golden Tee 31 Fed Com 304H | | 7/15/2022 | 9/15/2022 | 10/16/2022 | 11/27/2022 | 12/1/2022 |
| Golden Tee 31 Fed Com 305H | | 7/15/2022 | 9/30/2022 | 10/16/2022 | 11/27/2022 | 12/1/2022 |
| Golden Tee 31 Fed Com 306H | | 7/15/2022 | 10/15/2022 | 10/16/2022 | 11/27/2022 | 12/1/2022 |
| Golden Tee 31 Fed Com 504H | 30-025-49406 | 7/15/2022 | 7/30/2022 | 10/16/2022 | 11/27/2022 | 12/1/2022 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Golden Tee 31 Fed Com 505H | | 7/15/2022 | 8/15/2022 | 10/16/2022 | 11/27/2022 | 12/1/2022 |
| Golden Tee 31 Fed Com 506H | | 7/15/2022 | 8/30/2022 | 10/16/2022 | 11/27/2022 | 12/1/2022 |

**VI. Separation Equipment:** ☒ Attach a complete description of how Operator will size separation equipment to optimize gas capture.

**VII. Operational Practices:** ☒ Attach a complete description of the actions Operator will take to comply with the requirements of Subsection A through F of 19.15.27.8 NMAC.

**VIII. Best Management Practices:** ☒ Attach a complete description of Operator's best management practices to minimize venting during active and planned maintenance.

## Section 2 – Enhanced Plan

**EFFECTIVE APRIL 1, 2022**

Beginning April 1, 2022, an operator that is not in compliance with its statewide natural gas capture requirement for the applicable reporting area must complete this section.

☐ Operator certifies that it is not required to complete this section because Operator is in compliance with its statewide natural gas capture requirement for the applicable reporting area.

**IX. Anticipated Natural Gas Production:**

| Well | API | Anticipated Average Natural Gas Rate MCF/D | Anticipated Volume of Natural Gas for the First Year MCF |
|---|---|---|---|
| | | | |
| | | | |

**X. Natural Gas Gathering System (NGGS):**

| Operator | System | ULSTR of Tie-in | Anticipated Gathering Start Date | Available Maximum Daily Capacity of System Segment Tie-in |
|---|---|---|---|---|
| | | | | |
| | | | | |

**XI. Map.** ☐ Attach an accurate and legible map depicting the location of the well(s), the anticipated pipeline route(s) connecting the production operations to the existing or planned interconnect of the natural gas gathering system(s), and the maximum daily capacity of the segment or portion of the natural gas gathering system(s) to which the well(s) will be connected.

**XII. Line Capacity.** The natural gas gathering system ☐ will ☐ will not have capacity to gather 100% of the anticipated natural gas production volume from the well prior to the date of first production.

**XIII. Line Pressure.** Operator ☐ does ☐ does not anticipate that its existing well(s) connected to the same segment, or portion, of the natural gas gathering system(s) described above will continue to meet anticipated increases in line pressure caused by the new well(s).

☐ Attach Operator's plan to manage production in response to the increased line pressure.

**XIV. Confidentiality:** ☐ Operator asserts confidentiality pursuant to Section 71-2-8 NMSA 1978 for the information provided in Section 2 as provided in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and attaches a full description of the specific information for which confidentiality is asserted and the basis for such assertion.

## Section 3 - Certifications

**Effective May 25, 2021**

Operator certifies that, after reasonable inquiry and based on the available information at the time of submittal:

☒ Operator will be able to connect the well(s) to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system; or

☐ Operator will not be able to connect to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system. ***If Operator checks this box, Operator will select one of the following:***

**Well Shut-In.** ☐ Operator will shut-in and not produce the well until it submits the certification required by Paragraph (4) of Subsection D of 19.15.27.9 NMAC; or

**Venting and Flaring Plan.** ☐ Operator has attached a venting and flaring plan that evaluates and selects one or more of the potential alternative beneficial uses for the natural gas until a natural gas gathering system is available, including:

- **(a)** power generation on lease;
- **(b)** power generation for grid;
- **(c)** compression on lease;
- **(d)** liquids removal on lease;
- **(e)** reinjection for underground storage;
- **(f)** reinjection for temporary storage;
- **(g)** reinjection for enhanced oil recovery;
- **(h)** fuel cell production; and
- **(i)** other alternative beneficial uses approved by the division.

## Section 4 - Notices

1. If, at any time after Operator submits this Natural Gas Management Plan and before the well is spud:

**(a)** Operator becomes aware that the natural gas gathering system it planned to connect the well(s) to has become unavailable or will not have capacity to transport one hundred percent of the production from the well(s), no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised venting and flaring plan containing the information specified in Paragraph (5) of Subsection D of 19.15.27.9 NMAC; or

**(b)** Operator becomes aware that it has, cumulatively for the year, become out of compliance with its baseline natural gas capture rate or natural gas capture requirement, no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised Natural Gas Management Plan for each well it plans to spud during the next 90 days containing the information specified in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and shall file an update for each Natural Gas Management Plan until Operator is back in compliance with its baseline natural gas capture rate or natural gas capture requirement.

2. OCD may deny or conditionally approve an APD if Operator does not make a certification, fails to submit an adequate venting and flaring plan which includes alternative beneficial uses for the anticipated volume of natural gas produced, or if OCD determines that Operator will not have adequate natural gas takeaway capacity at the time a well will be spud.

**I certify that, after reasonable inquiry, the statements in and attached to this Natural Gas Management Plan are true and correct to the best of my knowledge and acknowledge that a false statement may be subject to civil and criminal penalties under the Oil and Gas Act.**

| | |
|---|---|
| Signature: | |
| Printed Name: | John Harper |
| Title: | VP of Geosciences |
| E-mail Address: | John@Avantor.com |
| Date: | 8/18/21 |
| Phone: | 678-988-6644 |

| **OIL CONSERVATION DIVISION**<br>**(Only applicable when submitted as a standalone form)** |
|---|
| Approved By: |
| Title: |
| Approval Date: |
| Conditions of Approval: |

**Avant Operating, LLC Natural Gas Management Plan**

VI. Separation equipment will be sized by construction engineering staff based on stated manufacturer daily throughput capacities and anticipated daily production rates to ensure adequate capacity. Closed vent system piping,compression needs, and VRUs will be sized utilizing ProMax modelling software to ensure adequate capacity for anticipated production volumes and conditions.

VII. Avant Operating, LLC (Avant) will take the following actions to comply with the regulations listed in 19.15.27.8:

A. Avant will maximize the recovery of natural gas by minimizing the waste, as defined by 19.15.2 NMAC,of natural gas through venting and flaring. Avant will ensure that well(s) will be connected to a natural gas gathering system with sufficient capacity to transport natural gas.

B. All drilling operations will be equipped with a rig flare located at least 100' from the nearest surface hole.Rig flare will be utilized to combust any natural gas that is brought to surface during normal drilling operations. In the case of emergency venting or flaring the volumes will be estimated and reported appropriately.

C. During completion operations any natural gas brought to surface will be flared. Immediately following the finish of completion operations, all well flowback will be directed to permanent separation equipment.Produced natural gas from separation equipment will be sent to sales. It is not anticipated that gas will notmeet pipeline standards. However, if natural gas does not meet gathering pipeline quality specifications, Avant will flare the natural gas for 60 days or until the natural gas meets the pipeline quality specifications, whichever is sooner. Avant will ensure that the flare is sized properly and is equipped withautomatic igniter or continuous pilot. The gas sample will be analyzed twice per week and the gas will be routed into a gathering system as soon as pipeline specifications are met.

D. Natural gas will not be flared with the exceptions and provisions listed in the 19.15.27.8 D.(I) through (4).If there is no adequate takeaway for the separator gas, well(s) will be shut in until the natural gas gathering system is available with exception of emergency or malfunction situations. Venting and/or flaring volumes will be estimated and repo1ted appropriately.

E. Avant will comply with the performance standards requirements and provisions listed in 19.15.27.8 (l) through (8). All equipment will be designed and sized to handle maximum anticipated pressures and throughputs to minimize the waste. Production storage tanks constructed after May 25, 2021, will be equipped with automatic gauging system. Flares constructed after May 25, 2021, will be equipped withautomatic igniter or continuous pilot. Flares will be located at least 100' from the well and storage tanksunless otherwise approved by the division. Avant will conduct AVO inspections as described in 19.15.27.8 E (5) (a) with frequencies specified in 19.15.27.8 E (5) (b) and (c). All emergencies will be resolved as quickly and safely as feasible to minimize waste.

F. The volume of natural gas that is vented or flared as the result of malfunction or emergency during drilling and completions operations will be estimated. The volume of natural gas that is vented, flared, orbeneficially used during production operations, will be measured, or estimated. Avant will install equipment to measure

VIII. For maintenance activities involving production equipment and compression, venting will be limited to the depressurization of the subject equipment to ensure safe working conditions. For maintenance of production and compression equipment the associated producing wells will be shut in to eliminate venting. For maintenance of VRUs all gas normally routed to the VRU will be routed to flare to eliminate venting.

AFMSS

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

# Drilling Plan Data Report

09/10/2021

**APD ID:** 10400069537

**Submission Date:** 02/20/2021

**Operator Name:** AVANT OPERATING LLC

**Well Name:** GOLDEN TEE 31 FED COM

**Well Number:** 504H

**Well Type:** OIL WELL

**Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

## Section 1 - Geologic Formations

| Formation ID | Formation Name | Elevation | True Vertical Depth | Measured Depth | Lithologies | Mineral Resources | Producing Formation |
|---|---|---|---|---|---|---|---|
| 1613264 | QUATERNARY | 3511 | 0 | 0 | OTHER : Caliche | USEABLE WATER | N |
| 1613257 | RUSTLER ANHYDRITE | 1687 | 1824 | 1825 | ANHYDRITE | NONE | N |
| 1613258 | TOP SALT | 1321 | 2190 | 2197 | SALT | NONE | N |
| 1613259 | BASE OF SALT | -539 | 4050 | 4115 | SALT | NONE | N |
| 1613260 | SALADO | -708 | 4219 | 4290 | SALT | NONE | N |
| 1613261 | CAPITAN REEF | -1277 | 4788 | 4876 | LIMESTONE | USEABLE WATER | N |
| 1613254 | CHERRY CANYON | -2418 | 5929 | 6053 | SANDSTONE | NATURAL GAS, OIL | N |
| 1613255 | BRUSHY CANYON | -3737 | 7248 | 7414 | SANDSTONE | NATURAL GAS, OIL | N |
| 1613256 | BONE SPRING LIME | -5205 | 8716 | 8921 | LIMESTONE | NATURAL GAS, OIL | N |
| 1613262 | AVALON SAND | -5286 | 8797 | 9003 | LIMESTONE, OTHER : A | NATURAL GAS, OIL | N |
| 1613265 | AVALON SAND | -5541 | 9052 | 9258 | LIMESTONE, OTHER : B | NATURAL GAS, OIL | N |
| 1613263 | BONE SPRING 1ST | -6220 | 9731 | 9937 | SANDSTONE | NATURAL GAS, OIL | N |
| 1613266 | BONE SPRING 2ND | -6746 | 10257 | 10484 | SANDSTONE | NATURAL GAS, OIL | Y |

## Section 2 - Blowout Prevention

**Operator Name:** AVANT OPERATING LLC

**Well Name:** GOLDEN TEE 31 FED COM **Well Number:** 504H

**Pressure Rating (PSI):** 5M **Rating Depth:** 10000

**Equipment:** A minimum 5M system will be used. The minimum blowout preventer equipment (BOPE) shown in BOP Diagram will consist of a single ram, mud cross and double ram-type (10,000 psi WP) preventer, and an annular preventer (5000-psi WP). Both units will be hydraulically operated, and the ram-type will be equipped with blind rams on bottom and drill pipe rams on top. All BOPE will be tested in accordance with Onshore Oil & Gas Order 2.
**Requesting Variance?** YES

**Variance request:** Variance is requested to use a co-flex line between the BOP and choke manifold (instead of using a 4" OD steel line). Co-flex line will be tested in accordance with highest BOP test pressures (5000 psi) before drilling out of surface casing and (5000 psi) before drilling out of intermediate casing. Pressure tests will be charted for records. The manufacturers hydrostatic test report will be kept on location for inspection.
**Testing Procedure:** Before drilling out of the surface casing, the ram-type BOP and accessory equipment will be tested to 5000 (high) / 250 (low) psig and the annular preventer to 3500 (high) / 250 (low) psig by an independent service company. Test charts will be kept on location at all times. Surface casing will be tested to 1500 psi for 30 minutes. Before drilling out of the intermediate casing, the ram-type BOP and accessory equipment will be tested to 5000 (high) / 250 (low) psig and the annular preventer to 3500 (high) / 250 (low) psig by an independent service company. Test charts will be kept on location at all times. Intermediate casing will be tested to 2000 psi for 30 minutes. A solid steel body pack-off will be used after running and cementing the intermediate casing. After installation, pack-off and lower flange will be pressure tested to 5000 psi. Pipe rams will be operationally checked each 24-hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. A hydraulically operated choke will be installed prior to drilling out of the intermediate casing shoe. This pressure test will be repeated at least once every 30 days, as per Onshore Order 2. Kelly cock will be kept in the drill string at all times. Full opening drill pipe stabbing valve (inside BOP) with proper drill pipe connections will be on the rig floor at all time. The multi-bowl wellhead will be installed by a third-party welder while being monitored by the vendors representative. All BOP equipment will be tested using a conventional test plug - not a cup or J-packer type. Both the surface and intermediate casing strings will be tested as per Onshore Order 2 to at least 0.22 psi/ft or 1500 psi, whichever is greater.
**Choke Diagram Attachment:**

GoldenTee_504H_Choke_20210220092545.pdf

**BOP Diagram Attachment:**

GoldenTee_504H_BOP_20210220092601.pdf

## Section 3 - Casing

| Casing ID | String Type | Hole Size | Csg Size | Condition | Standard | Tapered String | Top Set MD | Bottom Set MD | Top Set TVD | Bottom Set TVD | Top Set MSL | Bottom Set MSL | Calculated casing length MD | Grade | Weight | Joint Type | Collapse SF | Burst SF | Joint SF Type | Joint SF | Body SF Type | Body SF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SURFACE | 17.5 | 13.375 | NEW | API | N | 0 | 1875 | 0 | 1874 | 3511 | 1637 | 1875 | J-55 | 54.5 | ST&C | 1.125 | 1.125 | DRY | 1.6 | DRY | 1.6 |
| 2 | INTERMEDIATE | 12.25 | 9.625 | NEW | API | N | 0 | 4000 | 0 | 3938 | 3449 | -427 | 4000 | J-55 | 40 | LT&C | 1.125 | 1.125 | DRY | 1.6 | DRY | 1.6 |
| 3 | INTERMEDIATE | 12.25 | 9.625 | NEW | API | N | 4000 | 5830 | 3938 | 5713 | -427 | -2202 | 1830 | HCK-55 | 40 | LT&C | 1.125 | 1.125 | DRY | 1.6 | DRY | 1.6 |

**Operator Name:** AVANT OPERATING LLC

**Well Name:** GOLDEN TEE 31 FED COM **Well Number:** 504H

| Casing ID | String Type | Hole Size | Csg Size | Condition | Standard | Tapered String | Top Set MD | Bottom Set MD | Top Set TVD | Bottom Set TVD | Top Set MSL | Bottom Set MSL | Calculated casing length MD | Grade | Weight | Joint Type | Collapse SF | Burst SF | Joint SF Type | Joint SF | Body SF Type | Body SF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | PRODUCTION | 8.75 | 5.5 | NEW | API | N | 0 | 18235 | 0 | 10500 | 3449 | -6989 | 18235 | P-110 | 20 | BUTT | 1.125 | 1.125 | DRY | 1.6 | DRY | 1.6 |

**Casing Attachments**

**Casing ID:** 1 **String Type:** SURFACE

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

GoldenTee_Casing_Design_Assumptions_20210220092634.pdf

**Casing ID:** 2 **String Type:** INTERMEDIATE

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

GoldenTee_Casing_Design_Assumptions_20210220092704.pdf

**Operator Name:** AVANT OPERATING LLC

**Well Name:** GOLDEN TEE 31 FED COM **Well Number:** 504H

**Casing Attachments**

**Casing ID:** 3 **String Type:** INTERMEDIATE

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

GoldenTee_Casing_Design_Assumptions_20210220092739.pdf

**Casing ID:** 4 **String Type:** PRODUCTION

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

GoldenTee_Casing_Design_Assumptions_20210220092810.pdf

## Section 4 - Cement

| String Type | Lead/Tail | Stage Tool Depth | Top MD | Bottom MD | Quantity(sx) | Yield | Density | Cu Ft | Excess% | Cement type | Additives |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SURFACE | Lead | | 0 | 1875 | 1240 | 1.77 | 13.5 | 2194 | 50 | Class C | 0.05% CSA-100 + 1% salt BWOW + 0.05% C-45 + 4% STE + 4 lb/sk Kolseal |
| SURFACE | Tail | | 0 | 1875 | 342 | 1.33 | 14.8 | 454 | 50 | Class C | 2% CaCl2 |
| INTERMEDIATE | Lead | 4200 | 0 | 4200 | 695 | 2.22 | 12 | 1542 | 50 | Class C based HSLD 94 | 0.5% C-45 + 0.03% CSA-1000 + 0.25% C-503P + 2% salt BWOW |
| INTERMEDIATE | Tail | | 0 | 4200 | 100 | 1.14 | 14.8 | 114 | 50 | Class C 50/50 Poz | 0.1% C-45 |

**Operator Name:** AVANT OPERATING LLC

**Well Name:** GOLDEN TEE 31 FED COM **Well Number:** 504H

| String Type | Lead/Tail | Stage Tool Depth | Top MD | Bottom MD | Quantity(sx) | Yield | Density | Cu Ft | Excess% | Cement type | Additives |
|---|---|---|---|---|---|---|---|---|---|---|---|
| INTERMEDIATE | Lead | | 4200 | 5830 | 250 | 2.24 | 12 | 560 | 25 | Class C based HSLD 94 | 0.25% C-45 + 0.03% CSA-1000 + 0.2% citric acid + 0.2% CFL-1 + 6# CT-15 + 0.5% salt BWOW |
| INTERMEDIATE | Tail | | 4200 | 5830 | 140 | 1.52 | 13.5 | 212 | 25 | Class C based HSLD 100 | 0.1% C-45 + 0.1% C-51 + 0.07% citric acid + 4% STE + 0.25% C503P + 0.2% CFL-1 |
| PRODUCTION | Lead | | 4738 | 18235 | 555 | 3.74 | 10.5 | 2075 | 25 | Class C based HSLD 94 | Class C based HSLD 94 + 0.75% C-45 + 0.55% citric acid + 0.25% CSA-1000 + 0.3% C-503P + 0.5% salt BWOW |
| PRODUCTION | Tail | | 4738 | 18235 | 2191 | 1.46 | 13 | 3198 | 25 | Class H based HSLD 80 | 0.1% CSA-1000 + 0.25% C-503P + 0.04% C-23 + 0.3% CFL-1 + 1# Gypseal + 0.5% salt BWOW |

## Section 5 - Circulating Medium

**Mud System Type:** Closed

**Will an air or gas system be Used?** NO

**Description of the equipment for the circulating system in accordance with Onshore Order #2:**

**Diagram of the equipment for the circulating system in accordance with Onshore Order #2:**

**Describe what will be on location to control well or mitigate other conditions:** Sufficient mud materials (e. g., barite, bentonite, LCM) to maintain mud properties and meet minimum lost circulation and weight increase requirements will be on site at all times. If any lost circulation occurs below the base of salt, Avant will switch drilling mud from brine to fresh water to protect the Capitan Reef until intermediate casing is set.
**Describe the mud monitoring system utilized:** An electronic pit volume totalizer (PVT) mud system will monitor pit volumes for gains or losses, flow rate, pump pressures, and stroke rate.

## Circulating Medium Table

**Operator Name:** AVANT OPERATING LLC

**Well Name:** GOLDEN TEE 31 FED COM **Well Number:** 504H

| Top Depth | Bottom Depth | Mud Type | Min Weight (lbs/gal) | Max Weight (lbs/gal) | Density (lbs/cu ft) | Gel Strength (lbs/100 sqft) | PH | Viscosity (CP) | Salinity (ppm) | Filtration (cc) | Additional Characteristics |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 1875 | OTHER : Fresh water spud | 8.6 | 8.8 | | | | | | | |
| 1875 | 5830 | OTHER : Brine | 10 | 10.2 | | | | | | | |
| 5830 | 18235 | OIL-BASED MUD | 8.8 | 9.2 | | | | | | | |

## Section 6 - Test, Logging, Coring

**List of production tests including testing procedures, equipment and safety measures:**

No core or open hole or cased hole log is planned. GR log will be acquired by MWD tools throughout the well.

**List of open and cased hole logs run in the well:**

GAMMA RAY LOG,MEASUREMENT WHILE DRILLING,

**Coring operation description for the well:**

None

## Section 7 - Pressure

**Anticipated Bottom Hole Pressure:** 4914 **Anticipated Surface Pressure:** 2603

**Anticipated Bottom Hole Temperature(F):** 165

**Anticipated abnormal pressures, temperatures, or potential geologic hazards?** NO

**Describe:**

**Contingency Plans geoharzards description:**

**Contingency Plans geohazards attachment:**

**Hydrogen Sulfide drilling operations plan required?** YES

**Hydrogen sulfide drilling operations plan:**

GoldenTee_504H_H2S_Plan_20210220093122.pdf

**Operator Name:** AVANT OPERATING LLC

**Well Name:** GOLDEN TEE 31 FED COM **Well Number:** 504H

## Section 8 - Other Information

**Proposed horizontal/directional/multi-lateral plan submission:**

GoldenTee_504H_Horizontal_Plan_20210220093135.pdf

**Other proposed operations facets description:**

All casing strings below the conductor will be pressure tested to 0.22 psi/ft of casing string length or 1500 psi, whichever is greater, but not to exceed 70% of the minimum internal yield. If pressure declines more than 10% in 30 minutes, then corrective action will be taken.

**Other proposed operations facets attachment:**

GoldenTee_504H_Drill_Plan_20210220093152.pdf

GoldenTee_504H_Anti_Collision_Report_20210220093212.pdf

GoldenTee_Speedhead_Specs_20210220093222.pdf

Closed_Loop_20210220093233.pdf

CoFlex_Certs_20210717095652.pdf

GoldenTee_Casing_Procedures_20210717095707.pdf

**Other Variance attachment:**

Casing_Cementing_Variance_Request_20210717095718.pdf

AVANT NATURAL RESOURCES

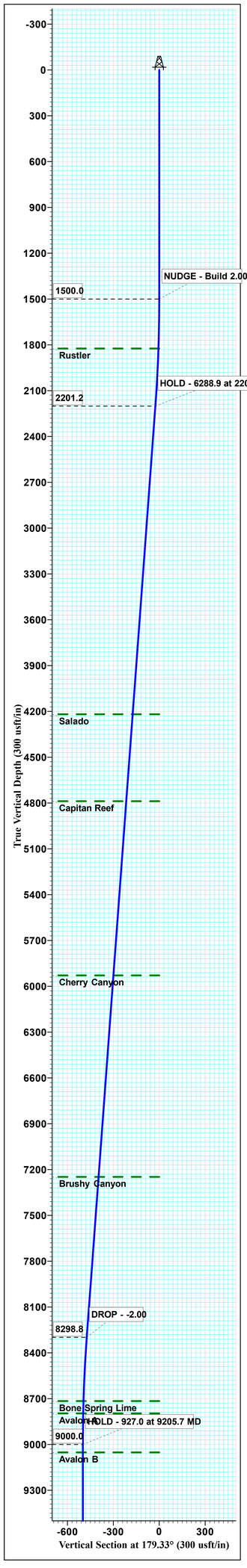
Azimuths to Grid North
True North: -0.50°
Magnetic North: 6.02°

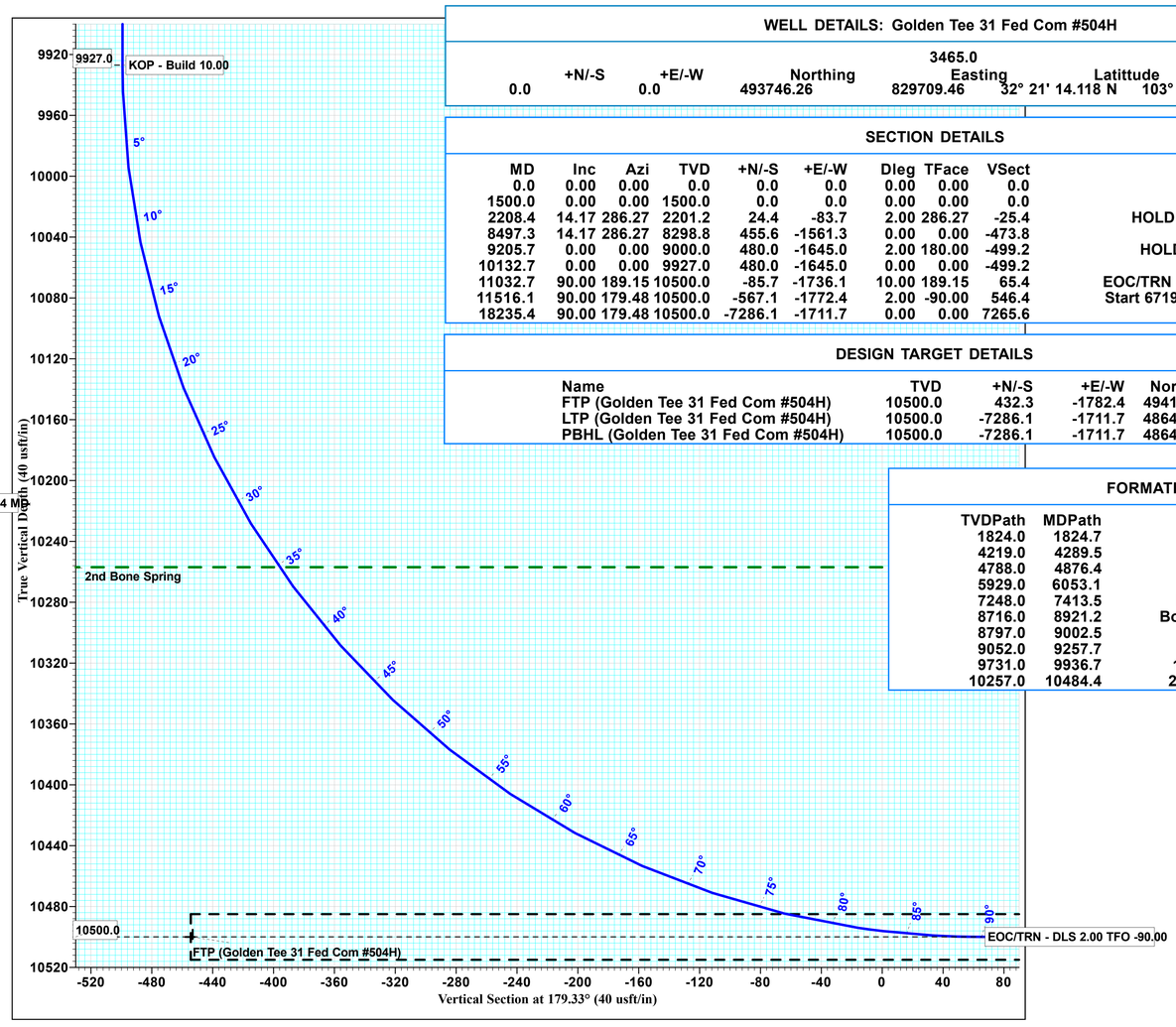
Magnetic Field
Strength: 47846.7nT
Dip Angle: 60.00°
Date: 01/03/2021
Model: HDGM

To convert a Magnetic Direction to a Grid Direction, Add 6.02°

Avant Natural Resources
Project: Lea County, NM (NAD 83 NME)
Site: (Golden Tee) Sec-31_T-22-S_R-35-E
Well: Golden Tee 31 Fed Com #504H
Wellbore: OWB
Design: Plan #2
Lat: 32° 21' 14.118 N
Long: 103° 23' 58.121 W
Pad GL: 3465.0
KB: KB @ 3490.0usft

HELIX Directional Drilling Specialists




WELL DETAILS: Golden Tee 31 Fed Com #504H

3465.0

| +N/-S | +E/-W | Northing | Easting | Latittude | Longitude |
|---|---|---|---|---|---|
| 0.0 | 0.0 | 493746.26 | 829709.46 | 32° 21' 14.118 N | 103° 23' 58.121 W |

SECTION DETAILS

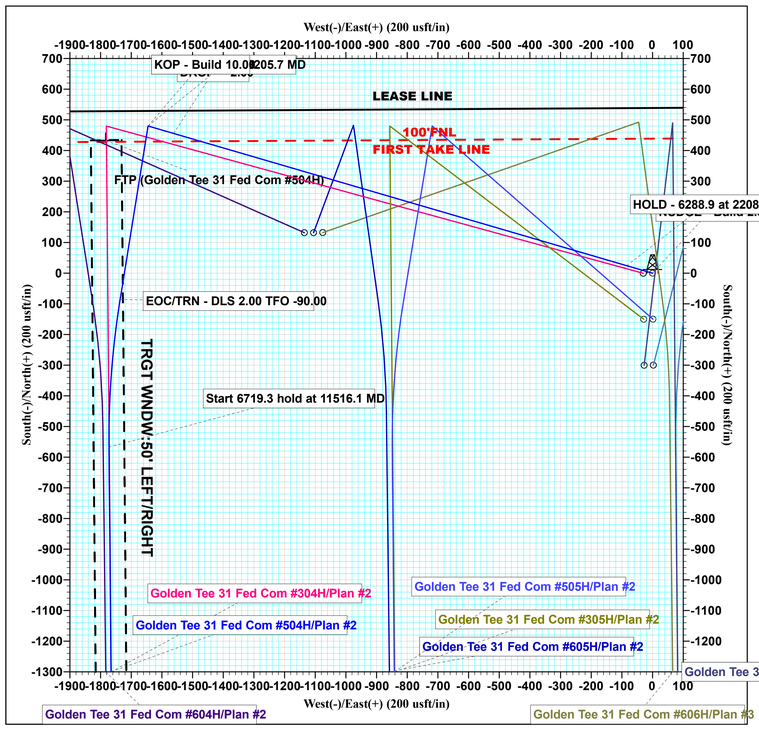
| MD | Inc | Azi | TVD | +N/-S | +E/-W | Dleg | TFace | VSect | Annotation |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.0 | |
| 1500.0 | 0.00 | 0.00 | 1500.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.0 | NUDGE - Build 2.00 |
| 2208.4 | 14.17 | 286.27 | 2201.2 | 24.4 | -83.7 | 2.00 | 286.27 | -25.4 | HOLD - 6288.9 at 2208.4 MD |
| 8497.3 | 14.17 | 286.27 | 8298.8 | 455.6 | -1561.3 | 0.00 | 0.00 | -473.8 | DROP - -2.00 |
| 9205.7 | 0.00 | 0.00 | 9000.0 | 480.0 | -1645.0 | 2.00 | 180.00 | -499.2 | HOLD - 927.0 at 9205.7 MD |
| 10132.7 | 0.00 | 0.00 | 9927.0 | 480.0 | -1645.0 | 0.00 | 0.00 | -499.2 | KOP - Build 10.00 |
| 11032.7 | 90.00 | 189.15 | 10500.0 | -85.7 | -1736.1 | 10.00 | 189.15 | 65.4 | EOC/TRN - DLS 2.00 TFO -90.00 |
| 11516.1 | 90.00 | 179.48 | 10500.0 | -567.1 | -1772.4 | 2.00 | -90.00 | 546.4 | Start 6719.3 hold at 11516.1 MD |
| 18235.4 | 90.00 | 179.48 | 10500.0 | -7286.1 | -1711.7 | 0.00 | 0.00 | 7265.6 | TD at 18235.4 |

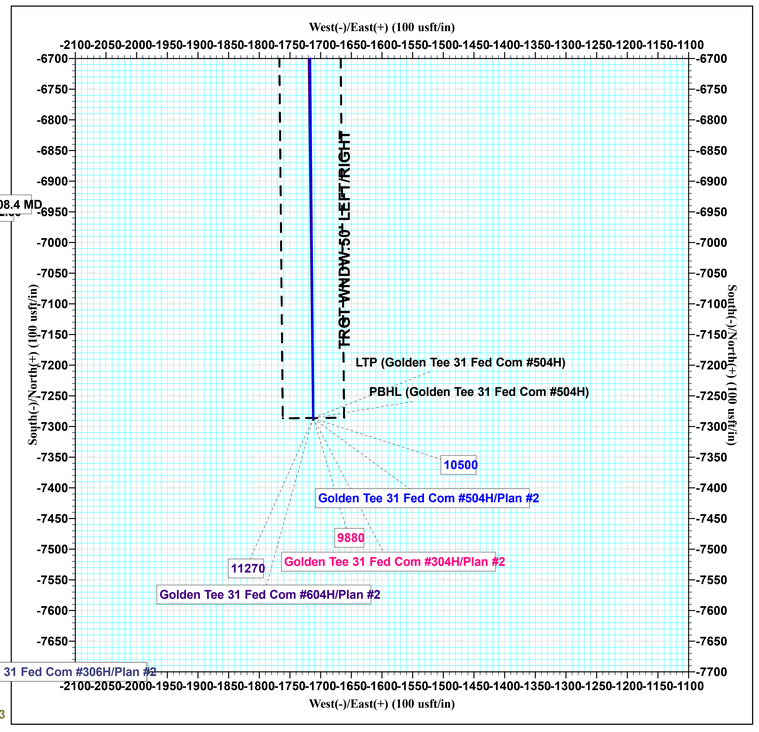
DESIGN TARGET DETAILS

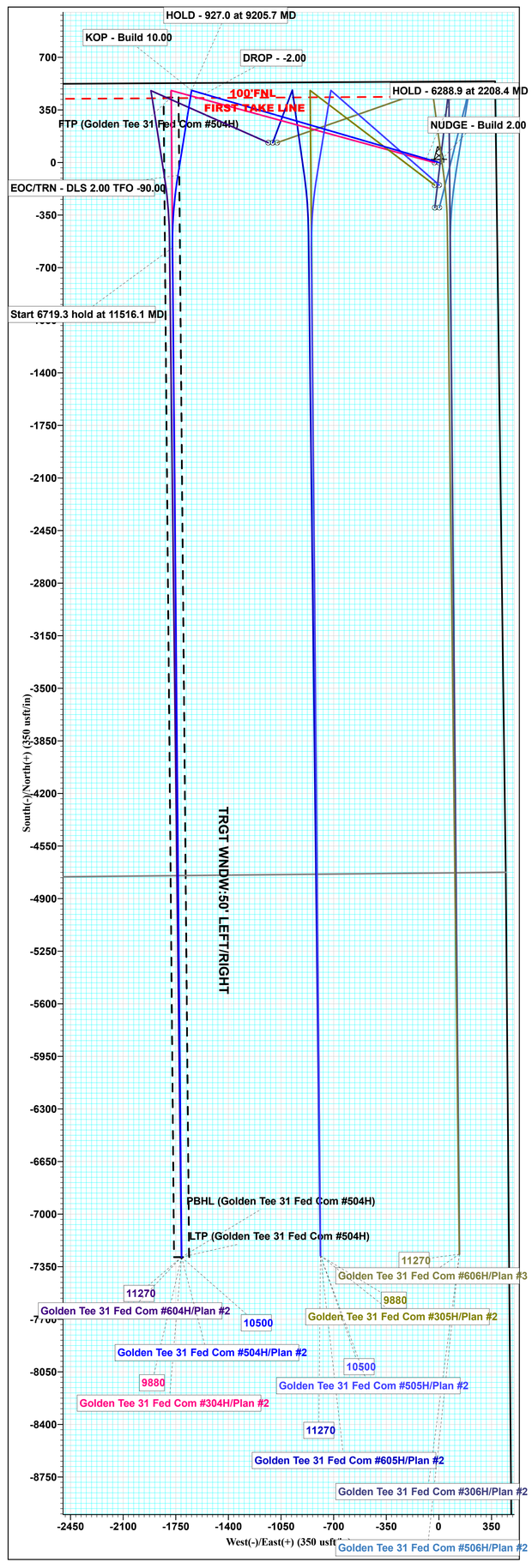
| Name | TVD | +N/-S | +E/-W | Northing | Easting |
|---|---|---|---|---|---|
| FTP (Golden Tee 31 Fed Com #504H) | 10500.0 | 432.3 | -1782.4 | 494178.54 | 827927.06 |
| LTP (Golden Tee 31 Fed Com #504H) | 10500.0 | -7286.1 | -1711.7 | 486460.13 | 827997.74 |
| PBHL (Golden Tee 31 Fed Com #504H) | 10500.0 | -7286.1 | -1711.7 | 486460.13 | 827997.74 |

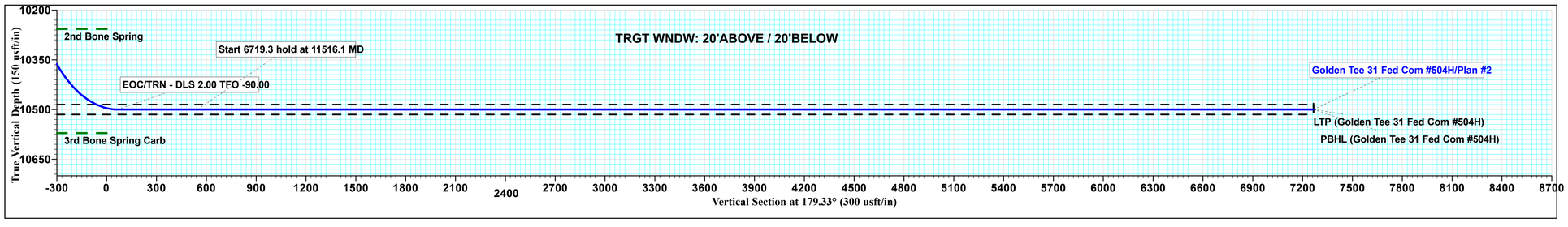
FORMATIONS

| TVDPath | MDPath | Formation |
|---|---|---|
| 1824.0 | 1824.7 | Rustler |
| 4219.0 | 4289.5 | Salado |
| 4788.0 | 4876.4 | Capitan Reef |
| 5929.0 | 6053.1 | Cherry Canyon |
| 7248.0 | 7413.5 | Brushy Canyon |
| 8716.0 | 8921.2 | Bone Spring Lime |
| 8797.0 | 9002.5 | Avalon A |
| 9052.0 | 9257.7 | Avalon B |
| 9731.0 | 9936.7 | 1st Bone Spring |
| 10257.0 | 10484.4 | 2nd Bone Spring |



AVANT NATURAL RESOURCES

# Intrepid
## Planning Report

HELIX Directional Drilling Specialists

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.15 Single User Db | **Local Co-ordinate Reference:** | Well Golden Tee 31 Fed Com #504H |
| **Company:** | Avant Natural Resources | **TVD Reference:** | KB @ 3490.0usft |
| **Project:** | Lea County, NM (NAD 83 NME) | **MD Reference:** | KB @ 3490.0usft |
| **Site:** | (Golden Tee) Sec-31_T-22-S_R-35-E | **North Reference:** | Grid |
| **Well:** | Golden Tee 31 Fed Com #504H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OWB | | |
| **Design:** | Plan #2 | | |

**Project** Lea County, NM (NAD 83 NME)

| | | | |
|---|---|---|---|
| **Map System:** | US State Plane 1983 | **System Datum:** | Mean Sea Level |
| **Geo Datum:** | North American Datum 1983 | | |
| **Map Zone:** | New Mexico Eastern Zone | | |

**Site** (Golden Tee) Sec-31_T-22-S_R-35-E

| | | | | | |
|---|---|---|---|---|---|
| **Site Position:** | | **Northing:** | 494,078.21 usft | **Latitude:** | 32° 21' 17.720 N |
| **From:** | Map | **Easting:** | 826,006.49 usft | **Longitude:** | 103° 24' 41.253 W |
| **Position Uncertainty:** | 0.0 usft | **Slot Radius:** | 13-3/16 " | **Grid Convergence:** | 0.49 ° |

**Well** Golden Tee 31 Fed Com #504H

| | | | | | | |
|---|---|---|---|---|---|---|
| **Well Position** | **+N/-S** | -331.9 usft | **Northing:** | 493,746.26 usft | **Latitude:** | 32° 21' 14.118 N |
| | **+E/-W** | 3,703.0 usft | **Easting:** | 829,709.46 usft | **Longitude:** | 103° 23' 58.121 W |
| **Position Uncertainty** | | 0.0 usft | **Wellhead Elevation:** | | **Ground Level:** | 3,465.0 usft |

**Wellbore** OWB

| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
|---|---|---|---|---|---|
| | HDGM | 01/03/21 | 6.52 | 60.00 | 47,846.74842861 |

**Design** Plan #2

**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 | 179.33 |

**Plan Survey Tool Program** **Date** 02/14/21

| | Depth From (usft) | Depth To (usft) | Survey (Wellbore) | Tool Name | Remarks |
|---|---|---|---|---|---|
| 1 | 0.0 | 18,235.3 | Plan #2 (OWB) | MWD | |
| | | | | OWSG MWD - Standard | |

**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 | |
| 1,500.0 | 0.00 | 0.00 | 1,500.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 2,208.4 | 14.17 | 286.27 | 2,201.2 | 24.4 | -83.7 | 2.00 | 2.00 | 0.00 | 286.27 | |
| 8,497.3 | 14.17 | 286.27 | 8,298.8 | 455.6 | -1,561.3 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 9,205.7 | 0.00 | 0.00 | 9,000.0 | 480.0 | -1,645.0 | 2.00 | -2.00 | 0.00 | 180.00 | |
| 10,132.7 | 0.00 | 0.00 | 9,927.0 | 480.0 | -1,645.0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 11,032.7 | 90.00 | 189.15 | 10,500.0 | -85.7 | -1,736.1 | 10.00 | 10.00 | 0.00 | 189.15 | |
| 11,516.1 | 90.00 | 179.48 | 10,500.0 | -567.1 | -1,772.4 | 2.00 | 0.00 | -2.00 | -90.00 | |
| 18,235.4 | 90.00 | 179.48 | 10,500.0 | -7,286.1 | -1,711.7 | 0.00 | 0.00 | 0.00 | 0.00 | PBHL (Golden Tee |

AVANT NATURAL RESOURCES

# Intrepid
## Planning Report

HELIX Directional Drilling Specialists

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.15 Single User Db | **Local Co-ordinate Reference:** | Well Golden Tee 31 Fed Com #504H |
| **Company:** | Avant Natural Resources | **TVD Reference:** | KB @ 3490.0usft |
| **Project:** | Lea County, NM (NAD 83 NME) | **MD Reference:** | KB @ 3490.0usft |
| **Site:** | (Golden Tee) Sec-31_T-22-S_R-35-E | **North Reference:** | Grid |
| **Well:** | Golden Tee 31 Fed Com #504H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OWB | | |
| **Design:** | Plan #2 | | |

**Planned Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 100.0 | 0.00 | 0.00 | 100.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 200.0 | 0.00 | 0.00 | 200.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 300.0 | 0.00 | 0.00 | 300.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 400.0 | 0.00 | 0.00 | 400.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 500.0 | 0.00 | 0.00 | 500.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 600.0 | 0.00 | 0.00 | 600.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 700.0 | 0.00 | 0.00 | 700.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 800.0 | 0.00 | 0.00 | 800.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 900.0 | 0.00 | 0.00 | 900.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,000.0 | 0.00 | 0.00 | 1,000.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,100.0 | 0.00 | 0.00 | 1,100.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,200.0 | 0.00 | 0.00 | 1,200.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,300.0 | 0.00 | 0.00 | 1,300.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,400.0 | 0.00 | 0.00 | 1,400.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,500.0 | 0.00 | 0.00 | 1,500.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,600.0 | 2.00 | 286.27 | 1,600.0 | 0.5 | -1.7 | -0.5 | 2.00 | 2.00 | 0.00 |
| 1,700.0 | 4.00 | 286.27 | 1,699.8 | 2.0 | -6.7 | -2.0 | 2.00 | 2.00 | 0.00 |
| 1,800.0 | 6.00 | 286.27 | 1,799.5 | 4.4 | -15.1 | -4.6 | 2.00 | 2.00 | 0.00 |
| 1,824.7 | 6.49 | 286.27 | 1,824.0 | 5.1 | -17.6 | -5.4 | 2.00 | 2.00 | 0.00 |
| **Rustler** | | | | | | | | | |
| 1,900.0 | 8.00 | 286.27 | 1,898.7 | 7.8 | -26.8 | -8.1 | 2.00 | 2.00 | 0.00 |
| 2,000.0 | 10.00 | 286.27 | 1,997.5 | 12.2 | -41.8 | -12.7 | 2.00 | 2.00 | 0.00 |
| 2,100.0 | 12.00 | 286.27 | 2,095.6 | 17.5 | -60.1 | -18.2 | 2.00 | 2.00 | 0.00 |
| 2,208.4 | 14.17 | 286.27 | 2,201.2 | 24.4 | -83.7 | -25.4 | 2.00 | 2.00 | 0.00 |
| 2,300.0 | 14.17 | 286.27 | 2,290.0 | 30.7 | -105.2 | -31.9 | 0.00 | 0.00 | 0.00 |
| 2,400.0 | 14.17 | 286.27 | 2,387.0 | 37.5 | -128.7 | -39.0 | 0.00 | 0.00 | 0.00 |
| 2,500.0 | 14.17 | 286.27 | 2,483.9 | 44.4 | -152.2 | -46.2 | 0.00 | 0.00 | 0.00 |
| 2,600.0 | 14.17 | 286.27 | 2,580.9 | 51.3 | -175.7 | -53.3 | 0.00 | 0.00 | 0.00 |
| 2,700.0 | 14.17 | 286.27 | 2,677.8 | 58.1 | -199.2 | -60.4 | 0.00 | 0.00 | 0.00 |
| 2,800.0 | 14.17 | 286.27 | 2,774.8 | 65.0 | -222.7 | -67.6 | 0.00 | 0.00 | 0.00 |
| 2,900.0 | 14.17 | 286.27 | 2,871.8 | 71.8 | -246.2 | -74.7 | 0.00 | 0.00 | 0.00 |
| 3,000.0 | 14.17 | 286.27 | 2,968.7 | 78.7 | -269.7 | -81.8 | 0.00 | 0.00 | 0.00 |
| 3,100.0 | 14.17 | 286.27 | 3,065.7 | 85.5 | -293.2 | -89.0 | 0.00 | 0.00 | 0.00 |
| 3,200.0 | 14.17 | 286.27 | 3,162.6 | 92.4 | -316.6 | -96.1 | 0.00 | 0.00 | 0.00 |
| 3,300.0 | 14.17 | 286.27 | 3,259.6 | 99.3 | -340.1 | -103.2 | 0.00 | 0.00 | 0.00 |
| 3,400.0 | 14.17 | 286.27 | 3,356.6 | 106.1 | -363.6 | -110.4 | 0.00 | 0.00 | 0.00 |
| 3,500.0 | 14.17 | 286.27 | 3,453.5 | 113.0 | -387.1 | -117.5 | 0.00 | 0.00 | 0.00 |
| 3,600.0 | 14.17 | 286.27 | 3,550.5 | 119.8 | -410.6 | -124.6 | 0.00 | 0.00 | 0.00 |
| 3,700.0 | 14.17 | 286.27 | 3,647.4 | 126.7 | -434.1 | -131.7 | 0.00 | 0.00 | 0.00 |
| 3,800.0 | 14.17 | 286.27 | 3,744.4 | 133.5 | -457.6 | -138.9 | 0.00 | 0.00 | 0.00 |
| 3,900.0 | 14.17 | 286.27 | 3,841.3 | 140.4 | -481.1 | -146.0 | 0.00 | 0.00 | 0.00 |
| 4,000.0 | 14.17 | 286.27 | 3,938.3 | 147.2 | -504.6 | -153.1 | 0.00 | 0.00 | 0.00 |
| 4,100.0 | 14.17 | 286.27 | 4,035.3 | 154.1 | -528.1 | -160.3 | 0.00 | 0.00 | 0.00 |
| 4,200.0 | 14.17 | 286.27 | 4,132.2 | 161.0 | -551.6 | -167.4 | 0.00 | 0.00 | 0.00 |
| 4,289.5 | 14.17 | 286.27 | 4,219.0 | 167.1 | -572.6 | -173.8 | 0.00 | 0.00 | 0.00 |
| **Salado** | | | | | | | | | |
| 4,300.0 | 14.17 | 286.27 | 4,229.2 | 167.8 | -575.1 | -174.5 | 0.00 | 0.00 | 0.00 |
| 4,400.0 | 14.17 | 286.27 | 4,326.1 | 174.7 | -598.6 | -181.7 | 0.00 | 0.00 | 0.00 |
| 4,500.0 | 14.17 | 286.27 | 4,423.1 | 181.5 | -622.1 | -188.8 | 0.00 | 0.00 | 0.00 |
| 4,600.0 | 14.17 | 286.27 | 4,520.1 | 188.4 | -645.6 | -195.9 | 0.00 | 0.00 | 0.00 |
| 4,700.0 | 14.17 | 286.27 | 4,617.0 | 195.2 | -669.1 | -203.1 | 0.00 | 0.00 | 0.00 |
| 4,800.0 | 14.17 | 286.27 | 4,714.0 | 202.1 | -692.6 | -210.2 | 0.00 | 0.00 | 0.00 |

AVANT NATURAL RESOURCES

# Intrepid
## Planning Report

HELIX Directional Drilling Specialists

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.15 Single User Db | **Local Co-ordinate Reference:** | Well Golden Tee 31 Fed Com #504H |
| **Company:** | Avant Natural Resources | **TVD Reference:** | KB @ 3490.0usft |
| **Project:** | Lea County, NM (NAD 83 NME) | **MD Reference:** | KB @ 3490.0usft |
| **Site:** | (Golden Tee) Sec-31_T-22-S_R-35-E | **North Reference:** | Grid |
| **Well:** | Golden Tee 31 Fed Com #504H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OWB | | |
| **Design:** | Plan #2 | | |

**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) |
|---|---|---|---|---|---|---|---|---|---|
| 4,876.4 | 14.17 | 286.27 | 4,788.0 | 207.3 | -710.5 | -215.6 | 0.00 | 0.00 | 0.00 |
| **Capitan Reef** | | | | | | | | | |
| 4,900.0 | 14.17 | 286.27 | 4,810.9 | 209.0 | -716.1 | -217.3 | 0.00 | 0.00 | 0.00 |
| 5,000.0 | 14.17 | 286.27 | 4,907.9 | 215.8 | -739.6 | -224.4 | 0.00 | 0.00 | 0.00 |
| 5,100.0 | 14.17 | 286.27 | 5,004.8 | 222.7 | -763.1 | -231.6 | 0.00 | 0.00 | 0.00 |
| 5,200.0 | 14.17 | 286.27 | 5,101.8 | 229.5 | -786.6 | -238.7 | 0.00 | 0.00 | 0.00 |
| 5,300.0 | 14.17 | 286.27 | 5,198.8 | 236.4 | -810.1 | -245.8 | 0.00 | 0.00 | 0.00 |
| 5,400.0 | 14.17 | 286.27 | 5,295.7 | 243.2 | -833.6 | -253.0 | 0.00 | 0.00 | 0.00 |
| 5,500.0 | 14.17 | 286.27 | 5,392.7 | 250.1 | -857.1 | -260.1 | 0.00 | 0.00 | 0.00 |
| 5,600.0 | 14.17 | 286.27 | 5,489.6 | 256.9 | -880.6 | -267.2 | 0.00 | 0.00 | 0.00 |
| 5,700.0 | 14.17 | 286.27 | 5,586.6 | 263.8 | -904.1 | -274.4 | 0.00 | 0.00 | 0.00 |
| 5,800.0 | 14.17 | 286.27 | 5,683.6 | 270.7 | -927.6 | -281.5 | 0.00 | 0.00 | 0.00 |
| 5,900.0 | 14.17 | 286.27 | 5,780.5 | 277.5 | -951.1 | -288.6 | 0.00 | 0.00 | 0.00 |
| 6,000.0 | 14.17 | 286.27 | 5,877.5 | 284.4 | -974.6 | -295.7 | 0.00 | 0.00 | 0.00 |
| 6,053.1 | 14.17 | 286.27 | 5,929.0 | 288.0 | -987.0 | -299.5 | 0.00 | 0.00 | 0.00 |
| **Cherry Canyon** | | | | | | | | | |
| 6,100.0 | 14.17 | 286.27 | 5,974.4 | 291.2 | -998.1 | -302.9 | 0.00 | 0.00 | 0.00 |
| 6,200.0 | 14.17 | 286.27 | 6,071.4 | 298.1 | -1,021.6 | -310.0 | 0.00 | 0.00 | 0.00 |
| 6,300.0 | 14.17 | 286.27 | 6,168.3 | 304.9 | -1,045.1 | -317.1 | 0.00 | 0.00 | 0.00 |
| 6,400.0 | 14.17 | 286.27 | 6,265.3 | 311.8 | -1,068.5 | -324.3 | 0.00 | 0.00 | 0.00 |
| 6,500.0 | 14.17 | 286.27 | 6,362.3 | 318.7 | -1,092.0 | -331.4 | 0.00 | 0.00 | 0.00 |
| 6,600.0 | 14.17 | 286.27 | 6,459.2 | 325.5 | -1,115.5 | -338.5 | 0.00 | 0.00 | 0.00 |
| 6,700.0 | 14.17 | 286.27 | 6,556.2 | 332.4 | -1,139.0 | -345.7 | 0.00 | 0.00 | 0.00 |
| 6,800.0 | 14.17 | 286.27 | 6,653.1 | 339.2 | -1,162.5 | -352.8 | 0.00 | 0.00 | 0.00 |
| 6,900.0 | 14.17 | 286.27 | 6,750.1 | 346.1 | -1,186.0 | -359.9 | 0.00 | 0.00 | 0.00 |
| 7,000.0 | 14.17 | 286.27 | 6,847.1 | 352.9 | -1,209.5 | -367.1 | 0.00 | 0.00 | 0.00 |
| 7,100.0 | 14.17 | 286.27 | 6,944.0 | 359.8 | -1,233.0 | -374.2 | 0.00 | 0.00 | 0.00 |
| 7,200.0 | 14.17 | 286.27 | 7,041.0 | 366.6 | -1,256.5 | -381.3 | 0.00 | 0.00 | 0.00 |
| 7,300.0 | 14.17 | 286.27 | 7,137.9 | 373.5 | -1,280.0 | -388.4 | 0.00 | 0.00 | 0.00 |
| 7,400.0 | 14.17 | 286.27 | 7,234.9 | 380.4 | -1,303.5 | -395.6 | 0.00 | 0.00 | 0.00 |
| 7,413.5 | 14.17 | 286.27 | 7,248.0 | 381.3 | -1,306.7 | -396.5 | 0.00 | 0.00 | 0.00 |
| **Brushy Canyon** | | | | | | | | | |
| 7,500.0 | 14.17 | 286.27 | 7,331.8 | 387.2 | -1,327.0 | -402.7 | 0.00 | 0.00 | 0.00 |
| 7,600.0 | 14.17 | 286.27 | 7,428.8 | 394.1 | -1,350.5 | -409.8 | 0.00 | 0.00 | 0.00 |
| 7,700.0 | 14.17 | 286.27 | 7,525.8 | 400.9 | -1,374.0 | -417.0 | 0.00 | 0.00 | 0.00 |
| 7,800.0 | 14.17 | 286.27 | 7,622.7 | 407.8 | -1,397.5 | -424.1 | 0.00 | 0.00 | 0.00 |
| 7,900.0 | 14.17 | 286.27 | 7,719.7 | 414.6 | -1,421.0 | -431.2 | 0.00 | 0.00 | 0.00 |
| 8,000.0 | 14.17 | 286.27 | 7,816.6 | 421.5 | -1,444.5 | -438.4 | 0.00 | 0.00 | 0.00 |
| 8,100.0 | 14.17 | 286.27 | 7,913.6 | 428.4 | -1,468.0 | -445.5 | 0.00 | 0.00 | 0.00 |
| 8,200.0 | 14.17 | 286.27 | 8,010.5 | 435.2 | -1,491.5 | -452.6 | 0.00 | 0.00 | 0.00 |
| 8,300.0 | 14.17 | 286.27 | 8,107.5 | 442.1 | -1,515.0 | -459.7 | 0.00 | 0.00 | 0.00 |
| 8,400.0 | 14.17 | 286.27 | 8,204.5 | 448.9 | -1,538.5 | -466.9 | 0.00 | 0.00 | 0.00 |
| 8,497.3 | 14.17 | 286.27 | 8,298.8 | 455.6 | -1,561.3 | -473.8 | 0.00 | 0.00 | 0.00 |
| 8,500.0 | 14.11 | 286.27 | 8,301.4 | 455.8 | -1,562.0 | -474.0 | 2.00 | -2.00 | 0.00 |
| 8,600.0 | 12.11 | 286.27 | 8,398.8 | 462.1 | -1,583.8 | -480.6 | 2.00 | -2.00 | 0.00 |
| 8,700.0 | 10.11 | 286.27 | 8,496.9 | 467.5 | -1,602.3 | -486.2 | 2.00 | -2.00 | 0.00 |
| 8,800.0 | 8.11 | 286.27 | 8,595.7 | 472.0 | -1,617.5 | -490.8 | 2.00 | -2.00 | 0.00 |
| 8,900.0 | 6.11 | 286.27 | 8,694.9 | 475.4 | -1,629.4 | -494.5 | 2.00 | -2.00 | 0.00 |
| 8,921.2 | 5.69 | 286.27 | 8,716.0 | 476.0 | -1,631.5 | -495.1 | 2.00 | -2.00 | 0.00 |
| **Bone Spring Lime** | | | | | | | | | |
| 9,000.0 | 4.11 | 286.27 | 8,794.5 | 477.9 | -1,637.9 | -497.1 | 2.00 | -2.00 | 0.00 |
| 9,002.5 | 4.06 | 286.27 | 8,797.0 | 478.0 | -1,638.1 | -497.1 | 2.00 | -2.00 | 0.00 |
| **Avalon A** | | | | | | | | | |
| 9,100.0 | 2.11 | 286.27 | 8,894.3 | 479.5 | -1,643.1 | -498.6 | 2.00 | -2.00 | 0.00 |

AVANT NATURAL RESOURCES

# Intrepid
## Planning Report

HELIX Directional Drilling Specialists

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.15 Single User Db | **Local Co-ordinate Reference:** | Well Golden Tee 31 Fed Com #504H |
| **Company:** | Avant Natural Resources | **TVD Reference:** | KB @ 3490.0usft |
| **Project:** | Lea County, NM (NAD 83 NME) | **MD Reference:** | KB @ 3490.0usft |
| **Site:** | (Golden Tee) Sec-31_T-22-S_R-35-E | **North Reference:** | Grid |
| **Well:** | Golden Tee 31 Fed Com #504H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OWB | | |
| **Design:** | Plan #2 | | |

**Planned Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|
| 9,205.7 | 0.00 | 0.00 | 9,000.0 | 480.0 | -1,645.0 | -499.2 | 2.00 | -2.00 | 0.00 |
| 9,257.7 | 0.00 | 0.00 | 9,052.0 | 480.0 | -1,645.0 | -499.2 | 0.00 | 0.00 | 0.00 |
| **Avalon B** | | | | | | | | | |
| 9,300.0 | 0.00 | 0.00 | 9,094.3 | 480.0 | -1,645.0 | -499.2 | 0.00 | 0.00 | 0.00 |
| 9,400.0 | 0.00 | 0.00 | 9,194.3 | 480.0 | -1,645.0 | -499.2 | 0.00 | 0.00 | 0.00 |
| 9,500.0 | 0.00 | 0.00 | 9,294.3 | 480.0 | -1,645.0 | -499.2 | 0.00 | 0.00 | 0.00 |
| 9,600.0 | 0.00 | 0.00 | 9,394.3 | 480.0 | -1,645.0 | -499.2 | 0.00 | 0.00 | 0.00 |
| 9,700.0 | 0.00 | 0.00 | 9,494.3 | 480.0 | -1,645.0 | -499.2 | 0.00 | 0.00 | 0.00 |
| 9,800.0 | 0.00 | 0.00 | 9,594.3 | 480.0 | -1,645.0 | -499.2 | 0.00 | 0.00 | 0.00 |
| 9,900.0 | 0.00 | 0.00 | 9,694.3 | 480.0 | -1,645.0 | -499.2 | 0.00 | 0.00 | 0.00 |
| 9,936.7 | 0.00 | 0.00 | 9,731.0 | 480.0 | -1,645.0 | -499.2 | 0.00 | 0.00 | 0.00 |
| **1st Bone Spring** | | | | | | | | | |
| 10,000.0 | 0.00 | 0.00 | 9,794.3 | 480.0 | -1,645.0 | -499.2 | 0.00 | 0.00 | 0.00 |
| 10,100.0 | 0.00 | 0.00 | 9,894.3 | 480.0 | -1,645.0 | -499.2 | 0.00 | 0.00 | 0.00 |
| 10,132.7 | 0.00 | 0.00 | 9,927.0 | 480.0 | -1,645.0 | -499.2 | 0.00 | 0.00 | 0.00 |
| 10,150.0 | 1.73 | 189.15 | 9,944.3 | 479.7 | -1,645.0 | -498.9 | 10.00 | 10.00 | 0.00 |
| 10,200.0 | 6.73 | 189.15 | 9,994.2 | 476.1 | -1,645.6 | -495.3 | 10.00 | 10.00 | 0.00 |
| 10,250.0 | 11.73 | 189.15 | 10,043.5 | 468.2 | -1,646.9 | -487.4 | 10.00 | 10.00 | 0.00 |
| 10,300.0 | 16.73 | 189.15 | 10,091.9 | 456.1 | -1,648.9 | -475.3 | 10.00 | 10.00 | 0.00 |
| 10,350.0 | 21.73 | 189.15 | 10,139.1 | 439.8 | -1,651.5 | -459.1 | 10.00 | 10.00 | 0.00 |
| 10,400.0 | 26.73 | 189.15 | 10,184.7 | 419.5 | -1,654.7 | -438.9 | 10.00 | 10.00 | 0.00 |
| 10,450.0 | 31.73 | 189.15 | 10,228.3 | 395.4 | -1,658.6 | -414.8 | 10.00 | 10.00 | 0.00 |
| 10,484.4 | 35.17 | 189.15 | 10,257.0 | 376.8 | -1,661.6 | -396.2 | 10.00 | 10.00 | 0.00 |
| **2nd Bone Spring** | | | | | | | | | |
| 10,500.0 | 36.73 | 189.15 | 10,269.7 | 367.7 | -1,663.1 | -387.1 | 10.00 | 10.00 | 0.00 |
| 10,550.0 | 41.73 | 189.15 | 10,308.4 | 336.5 | -1,668.1 | -356.0 | 10.00 | 10.00 | 0.00 |
| 10,600.0 | 46.73 | 189.15 | 10,344.2 | 302.1 | -1,673.7 | -321.6 | 10.00 | 10.00 | 0.00 |
| 10,650.0 | 51.73 | 189.15 | 10,376.8 | 264.7 | -1,679.7 | -284.3 | 10.00 | 10.00 | 0.00 |
| 10,700.0 | 56.73 | 189.15 | 10,406.1 | 224.6 | -1,686.1 | -244.3 | 10.00 | 10.00 | 0.00 |
| 10,750.0 | 61.73 | 189.15 | 10,431.6 | 182.2 | -1,693.0 | -202.0 | 10.00 | 10.00 | 0.00 |
| 10,800.0 | 66.73 | 189.15 | 10,453.4 | 137.8 | -1,700.1 | -157.7 | 10.00 | 10.00 | 0.00 |
| 10,850.0 | 71.73 | 189.15 | 10,471.1 | 91.7 | -1,707.5 | -111.6 | 10.00 | 10.00 | 0.00 |
| 10,900.0 | 76.73 | 189.15 | 10,484.7 | 44.2 | -1,715.2 | -64.2 | 10.00 | 10.00 | 0.00 |
| 10,950.0 | 81.73 | 189.15 | 10,494.0 | -4.3 | -1,723.0 | -15.8 | 10.00 | 10.00 | 0.00 |
| 11,000.0 | 86.73 | 189.15 | 10,499.0 | -53.4 | -1,730.9 | 33.2 | 10.00 | 10.00 | 0.00 |
| 11,032.7 | 90.00 | 189.15 | 10,500.0 | -85.7 | -1,736.1 | 65.4 | 10.00 | 10.00 | 0.00 |
| 11,100.0 | 90.00 | 187.80 | 10,500.0 | -152.2 | -1,746.0 | 131.8 | 2.00 | 0.00 | -2.00 |
| 11,200.0 | 90.00 | 185.80 | 10,500.0 | -251.5 | -1,757.9 | 231.0 | 2.00 | 0.00 | -2.00 |
| 11,300.0 | 90.00 | 183.80 | 10,500.0 | -351.2 | -1,766.3 | 330.5 | 2.00 | 0.00 | -2.00 |
| 11,400.0 | 90.00 | 181.80 | 10,500.0 | -451.0 | -1,771.1 | 430.3 | 2.00 | 0.00 | -2.00 |
| 11,500.0 | 90.00 | 179.80 | 10,500.0 | -551.0 | -1,772.5 | 530.3 | 2.00 | 0.00 | -2.00 |
| 11,516.1 | 90.00 | 179.48 | 10,500.0 | -567.1 | -1,772.4 | 546.4 | 2.00 | 0.00 | -2.00 |
| 11,600.0 | 90.00 | 179.48 | 10,500.0 | -651.0 | -1,771.7 | 630.3 | 0.00 | 0.00 | 0.00 |
| 11,700.0 | 90.00 | 179.48 | 10,500.0 | -751.0 | -1,770.8 | 730.3 | 0.00 | 0.00 | 0.00 |
| 11,800.0 | 90.00 | 179.48 | 10,500.0 | -851.0 | -1,769.9 | 830.3 | 0.00 | 0.00 | 0.00 |
| 11,900.0 | 90.00 | 179.48 | 10,500.0 | -951.0 | -1,769.0 | 930.3 | 0.00 | 0.00 | 0.00 |
| 12,000.0 | 90.00 | 179.48 | 10,500.0 | -1,051.0 | -1,768.1 | 1,030.3 | 0.00 | 0.00 | 0.00 |
| 12,100.0 | 90.00 | 179.48 | 10,500.0 | -1,151.0 | -1,767.2 | 1,130.3 | 0.00 | 0.00 | 0.00 |
| 12,200.0 | 90.00 | 179.48 | 10,500.0 | -1,251.0 | -1,766.3 | 1,230.3 | 0.00 | 0.00 | 0.00 |
| 12,300.0 | 90.00 | 179.48 | 10,500.0 | -1,351.0 | -1,765.4 | 1,330.3 | 0.00 | 0.00 | 0.00 |
| 12,400.0 | 90.00 | 179.48 | 10,500.0 | -1,451.0 | -1,764.5 | 1,430.3 | 0.00 | 0.00 | 0.00 |
| 12,500.0 | 90.00 | 179.48 | 10,500.0 | -1,551.0 | -1,763.6 | 1,530.3 | 0.00 | 0.00 | 0.00 |
| 12,600.0 | 90.00 | 179.48 | 10,500.0 | -1,651.0 | -1,762.7 | 1,630.3 | 0.00 | 0.00 | 0.00 |

AVANT NATURAL RESOURCES

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| **Wellbore:** | OWB | | |
| **Design:** | Plan #2 | | |

**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) |
|---|---|---|---|---|---|---|---|---|---|
| 12,700.0 | 90.00 | 179.48 | 10,500.0 | -1,751.0 | -1,761.7 | 1,730.3 | 0.00 | 0.00 | 0.00 |
| 12,800.0 | 90.00 | 179.48 | 10,500.0 | -1,851.0 | -1,760.8 | 1,830.3 | 0.00 | 0.00 | 0.00 |
| 12,900.0 | 90.00 | 179.48 | 10,500.0 | -1,951.0 | -1,759.9 | 1,930.3 | 0.00 | 0.00 | 0.00 |
| 13,000.0 | 90.00 | 179.48 | 10,500.0 | -2,051.0 | -1,759.0 | 2,030.3 | 0.00 | 0.00 | 0.00 |
| 13,100.0 | 90.00 | 179.48 | 10,500.0 | -2,151.0 | -1,758.1 | 2,130.3 | 0.00 | 0.00 | 0.00 |
| 13,200.0 | 90.00 | 179.48 | 10,500.0 | -2,251.0 | -1,757.2 | 2,230.3 | 0.00 | 0.00 | 0.00 |
| 13,300.0 | 90.00 | 179.48 | 10,500.0 | -2,351.0 | -1,756.3 | 2,330.3 | 0.00 | 0.00 | 0.00 |
| 13,400.0 | 90.00 | 179.48 | 10,500.0 | -2,451.0 | -1,755.4 | 2,430.3 | 0.00 | 0.00 | 0.00 |
| 13,500.0 | 90.00 | 179.48 | 10,500.0 | -2,551.0 | -1,754.5 | 2,530.3 | 0.00 | 0.00 | 0.00 |
| 13,600.0 | 90.00 | 179.48 | 10,500.0 | -2,650.9 | -1,753.6 | 2,630.3 | 0.00 | 0.00 | 0.00 |
| 13,700.0 | 90.00 | 179.48 | 10,500.0 | -2,750.9 | -1,752.7 | 2,730.3 | 0.00 | 0.00 | 0.00 |
| 13,800.0 | 90.00 | 179.48 | 10,500.0 | -2,850.9 | -1,751.8 | 2,830.3 | 0.00 | 0.00 | 0.00 |
| 13,900.0 | 90.00 | 179.48 | 10,500.0 | -2,950.9 | -1,750.9 | 2,930.3 | 0.00 | 0.00 | 0.00 |
| 14,000.0 | 90.00 | 179.48 | 10,500.0 | -3,050.9 | -1,750.0 | 3,030.3 | 0.00 | 0.00 | 0.00 |
| 14,100.0 | 90.00 | 179.48 | 10,500.0 | -3,150.9 | -1,749.1 | 3,130.3 | 0.00 | 0.00 | 0.00 |
| 14,200.0 | 90.00 | 179.48 | 10,500.0 | -3,250.9 | -1,748.2 | 3,230.3 | 0.00 | 0.00 | 0.00 |
| 14,300.0 | 90.00 | 179.48 | 10,500.0 | -3,350.9 | -1,747.3 | 3,330.3 | 0.00 | 0.00 | 0.00 |
| 14,400.0 | 90.00 | 179.48 | 10,500.0 | -3,450.9 | -1,746.4 | 3,430.3 | 0.00 | 0.00 | 0.00 |
| 14,500.0 | 90.00 | 179.48 | 10,500.0 | -3,550.9 | -1,745.5 | 3,530.3 | 0.00 | 0.00 | 0.00 |
| 14,600.0 | 90.00 | 179.48 | 10,500.0 | -3,650.9 | -1,744.6 | 3,630.3 | 0.00 | 0.00 | 0.00 |
| 14,700.0 | 90.00 | 179.48 | 10,500.0 | -3,750.9 | -1,743.7 | 3,730.3 | 0.00 | 0.00 | 0.00 |
| 14,800.0 | 90.00 | 179.48 | 10,500.0 | -3,850.9 | -1,742.8 | 3,830.3 | 0.00 | 0.00 | 0.00 |
| 14,900.0 | 90.00 | 179.48 | 10,500.0 | -3,950.9 | -1,741.9 | 3,930.3 | 0.00 | 0.00 | 0.00 |
| 15,000.0 | 90.00 | 179.48 | 10,500.0 | -4,050.9 | -1,741.0 | 4,030.3 | 0.00 | 0.00 | 0.00 |
| 15,100.0 | 90.00 | 179.48 | 10,500.0 | -4,150.9 | -1,740.1 | 4,130.3 | 0.00 | 0.00 | 0.00 |
| 15,200.0 | 90.00 | 179.48 | 10,500.0 | -4,250.9 | -1,739.2 | 4,230.3 | 0.00 | 0.00 | 0.00 |
| 15,300.0 | 90.00 | 179.48 | 10,500.0 | -4,350.9 | -1,738.2 | 4,330.3 | 0.00 | 0.00 | 0.00 |
| 15,400.0 | 90.00 | 179.48 | 10,500.0 | -4,450.9 | -1,737.3 | 4,430.3 | 0.00 | 0.00 | 0.00 |
| 15,500.0 | 90.00 | 179.48 | 10,500.0 | -4,550.9 | -1,736.4 | 4,530.3 | 0.00 | 0.00 | 0.00 |
| 15,600.0 | 90.00 | 179.48 | 10,500.0 | -4,650.9 | -1,735.5 | 4,630.3 | 0.00 | 0.00 | 0.00 |
| 15,700.0 | 90.00 | 179.48 | 10,500.0 | -4,750.9 | -1,734.6 | 4,730.3 | 0.00 | 0.00 | 0.00 |
| 15,800.0 | 90.00 | 179.48 | 10,500.0 | -4,850.9 | -1,733.7 | 4,830.3 | 0.00 | 0.00 | 0.00 |
| 15,900.0 | 90.00 | 179.48 | 10,500.0 | -4,950.9 | -1,732.8 | 4,930.3 | 0.00 | 0.00 | 0.00 |
| 16,000.0 | 90.00 | 179.48 | 10,500.0 | -5,050.8 | -1,731.9 | 5,030.3 | 0.00 | 0.00 | 0.00 |
| 16,100.0 | 90.00 | 179.48 | 10,500.0 | -5,150.8 | -1,731.0 | 5,130.3 | 0.00 | 0.00 | 0.00 |
| 16,200.0 | 90.00 | 179.48 | 10,500.0 | -5,250.8 | -1,730.1 | 5,230.3 | 0.00 | 0.00 | 0.00 |
| 16,300.0 | 90.00 | 179.48 | 10,500.0 | -5,350.8 | -1,729.2 | 5,330.3 | 0.00 | 0.00 | 0.00 |
| 16,400.0 | 90.00 | 179.48 | 10,500.0 | -5,450.8 | -1,728.3 | 5,430.3 | 0.00 | 0.00 | 0.00 |
| 16,500.0 | 90.00 | 179.48 | 10,500.0 | -5,550.8 | -1,727.4 | 5,530.3 | 0.00 | 0.00 | 0.00 |
| 16,600.0 | 90.00 | 179.48 | 10,500.0 | -5,650.8 | -1,726.5 | 5,630.2 | 0.00 | 0.00 | 0.00 |
| 16,700.0 | 90.00 | 179.48 | 10,500.0 | -5,750.8 | -1,725.6 | 5,730.2 | 0.00 | 0.00 | 0.00 |
| 16,800.0 | 90.00 | 179.48 | 10,500.0 | -5,850.8 | -1,724.7 | 5,830.2 | 0.00 | 0.00 | 0.00 |
| 16,900.0 | 90.00 | 179.48 | 10,500.0 | -5,950.8 | -1,723.8 | 5,930.2 | 0.00 | 0.00 | 0.00 |
| 17,000.0 | 90.00 | 179.48 | 10,500.0 | -6,050.8 | -1,722.9 | 6,030.2 | 0.00 | 0.00 | 0.00 |
| 17,100.0 | 90.00 | 179.48 | 10,500.0 | -6,150.8 | -1,722.0 | 6,130.2 | 0.00 | 0.00 | 0.00 |
| 17,200.0 | 90.00 | 179.48 | 10,500.0 | -6,250.8 | -1,721.1 | 6,230.2 | 0.00 | 0.00 | 0.00 |
| 17,300.0 | 90.00 | 179.48 | 10,500.0 | -6,350.8 | -1,720.2 | 6,330.2 | 0.00 | 0.00 | 0.00 |
| 17,400.0 | 90.00 | 179.48 | 10,500.0 | -6,450.8 | -1,719.3 | 6,430.2 | 0.00 | 0.00 | 0.00 |
| 17,500.0 | 90.00 | 179.48 | 10,500.0 | -6,550.8 | -1,718.4 | 6,530.2 | 0.00 | 0.00 | 0.00 |
| 17,600.0 | 90.00 | 179.48 | 10,500.0 | -6,650.8 | -1,717.5 | 6,630.2 | 0.00 | 0.00 | 0.00 |
| 17,700.0 | 90.00 | 179.48 | 10,500.0 | -6,750.8 | -1,716.6 | 6,730.2 | 0.00 | 0.00 | 0.00 |
| 17,800.0 | 90.00 | 179.48 | 10,500.0 | -6,850.8 | -1,715.7 | 6,830.2 | 0.00 | 0.00 | 0.00 |
| 17,900.0 | 90.00 | 179.48 | 10,500.0 | -6,950.8 | -1,714.8 | 6,930.2 | 0.00 | 0.00 | 0.00 |
| 18,000.0 | 90.00 | 179.48 | 10,500.0 | -7,050.8 | -1,713.8 | 7,030.2 | 0.00 | 0.00 | 0.00 |

AVANT NATURAL RESOURCES

# Intrepid
## Planning Report

HELIX Directional Drilling Specialists

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.15 Single User Db | **Local Co-ordinate Reference:** | Well Golden Tee 31 Fed Com #504H |
| **Company:** | Avant Natural Resources | **TVD Reference:** | KB @ 3490.0usft |
| **Project:** | Lea County, NM (NAD 83 NME) | **MD Reference:** | KB @ 3490.0usft |
| **Site:** | (Golden Tee) Sec-31_T-22-S_R-35-E | **North Reference:** | Grid |
| **Well:** | Golden Tee 31 Fed Com #504H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OWB | | |
| **Design:** | Plan #2 | | |

**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) |
|---|---|---|---|---|---|---|---|---|---|
| 18,100.0 | 90.00 | 179.48 | 10,500.0 | -7,150.8 | -1,712.9 | 7,130.2 | 0.00 | 0.00 | 0.00 |
| 18,200.0 | 90.00 | 179.48 | 10,500.0 | -7,250.8 | -1,712.0 | 7,230.2 | 0.00 | 0.00 | 0.00 |
| 18,235.4 | 90.00 | 179.48 | 10,500.0 | -7,286.1 | -1,711.7 | 7,265.6 | 0.00 | 0.00 | 0.00 |

**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 |
|---|---|---|---|---|---|---|---|---|---|
| LTP (Golden Tee 31 F<br>- plan hits target center<br>- Point | 0.00 | 0.00 | 10,500.0 | -7,286.1 | -1,711.7 | 486,460.13 | 827,997.74 | 32° 20' 2.172 N | 103° 24' 18.811 W |
| PBHL (Golden Tee 31<br>- plan hits target center<br>- Rectangle (sides W100.0 H7,720.0 D30.0) | 0.00 | 179.48 | 10,500.0 | -7,286.1 | -1,711.7 | 486,460.13 | 827,997.74 | 32° 20' 2.172 N | 103° 24' 18.811 W |
| FTP (Golden Tee 31 F<br>- plan misses target center by 229.3usft at 10617.5usft MD (10356.0 TVD, 289.3 N, -1675.7 E)<br>- Point | 0.00 | 0.00 | 10,500.0 | 432.3 | -1,782.4 | 494,178.54 | 827,927.06 | 32° 21' 18.549 N | 103° 24' 18.855 W |

**Formations**

| Measured Depth (usft) | Vertical Depth (usft) | Name | Lithology | Dip (°) | Dip Direction (°) |
|---|---|---|---|---|---|
| 1,824.7 | 1,824.0 | Rustler | | | |
| 4,289.5 | 4,219.0 | Salado | | | |
| 4,876.4 | 4,788.0 | Capitan Reef | | | |
| 6,053.1 | 5,929.0 | Cherry Canyon | | | |
| 7,413.5 | 7,248.0 | Brushy Canyon | | | |
| 8,921.2 | 8,716.0 | Bone Spring Lime | | | |
| 9,002.5 | 8,797.0 | Avalon A | | | |
| 9,257.7 | 9,052.0 | Avalon B | | | |
| 9,936.7 | 9,731.0 | 1st Bone Spring | | | |
| 10,484.4 | 10,257.0 | 2nd Bone Spring | | | |

**Plan Annotations**

| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates +N/-S (usft) | Local Coordinates +E/-W (usft) | Comment |
|---|---|---|---|---|
| 1,500.0 | 1,500.0 | 0.0 | 0.0 | NUDGE - Build 2.00 |
| 2,208.4 | 2,201.2 | 24.4 | -83.7 | HOLD - 6288.9 at 2208.4 MD |
| 8,497.3 | 8,298.8 | 455.6 | -1,561.3 | DROP - -2.00 |
| 9,205.7 | 9,000.0 | 480.0 | -1,645.0 | HOLD - 927.0 at 9205.7 MD |
| 10,132.7 | 9,927.0 | 480.0 | -1,645.0 | KOP - Build 10.00 |
| 11,032.7 | 10,500.0 | -85.7 | -1,736.1 | EOC/TRN - DLS 2.00 TFO -90.00 |
| 11,516.1 | 10,500.0 | -567.1 | -1,772.4 | Start 6719.3 hold at 11516.1 MD |
| 18,235.4 | 10,500.0 | -7,286.1 | -1,711.7 | TD at 18235.4 |

# PECOS DISTRICT
# DRILLING CONDITIONS OF APPROVAL

| | |
|---|---|
| **OPERATOR'S NAME:** | **Avant Operating LLC** |
| **LEASE NO.:** | **NMNM128836** |
| **LOCATION:** | Section 31, T.22 S., R.35 E., NMPM |
| **COUNTY:** | Lea County, New Mexico |

| | |
|---|---|
| **WELL NAME & NO.:** | Golden Tee 31 Fed Com 304H |
| **SURFACE HOLE FOOTAGE:** | 550'/N & 430'/E |
| **BOTTOM HOLE FOOTAGE** | 2540'/N & 2178'/E |

| | |
|---|---|
| **WELL NAME & NO.:** | Golden Tee 31 Fed Com 305H |
| **SURFACE HOLE FOOTAGE:** | 700'/N & 430'/E |
| **BOTTOM HOLE FOOTAGE** | 2540'/N & 1254'/E |

| | |
|---|---|
| **WELL NAME & NO.:** | Golden Tee 31 Fed Com 306H |
| **SURFACE HOLE FOOTAGE:** | 850'/N & 430'/E |
| **BOTTOM HOLE FOOTAGE** | 2540'/N & 330'/E |

| | |
|---|---|
| **WELL NAME & NO.:** | Golden Tee 31 Fed Com 504H |
| **SURFACE HOLE FOOTAGE:** | 550'/N & 400'/E |
| **BOTTOM HOLE FOOTAGE** | 2540'/N & 2178'/E |

| | |
|---|---|
| **WELL NAME & NO.:** | Golden Tee 31 Fed Com 505H |
| **SURFACE HOLE FOOTAGE:** | 700'/N & 400'/E |
| **BOTTOM HOLE FOOTAGE** | 2540'/N & 1254'/E |

| | |
|---|---|
| **WELL NAME & NO.:** | Golden Tee 31 Fed Com 506H |
| **SURFACE HOLE FOOTAGE:** | 850'/N & 400'/E |
| **BOTTOM HOLE FOOTAGE** | 2540'/N & 330'/E |

COA

| | | | |
|---|---|---|---|
| H2S | ☐ Yes | ☒ No | |
| Potash | ☒ None | ☐ Secretary | ☐ R-111-P |
| Cave/Karst Potential | ☒ Low | ☐ Medium | ☐ High |
| Cave/Karst Potential | ☐ Critical | | |
| Variance | ☐ None | ☒ Flex Hose | ☐ Other |
| Wellhead | ☐ Conventional | ☒ Multibowl | ☐ Both |
| Other | ☐ 4 String Area | ☑ Capitan Reef | ☐ WIPP |
| Other | ☐ Fluid Filled | ☐ Cement Squeeze | ☐ Pilot Hole |
| Special Requirements | ☐ Water Disposal | ☑ COM | ☐ Unit |





**Approval Date: 09/09/2021**

## A. HYDROGEN SULFIDE

Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

## B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately **1960 feet** (a minimum of **25 feet (Lea County)** into the Rustler Anhydrite and above the salt) and cemented to the surface.

    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 **8 hours** 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.

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

    **Option 1 (Single Stage):**

    - 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 capitan reef.**
      **Cement excess is less than 25%, more cement might be required.**

    **Option 2:**

    Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.

b. Second stage above DV tool:

- Cement to surface. If cement does not circulate, contact the appropriate BLM office.
  **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to capitan reef.**
  **Cement excess is less than 25%, more cement might be required.**

❖ 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.

❖ **Special Capitan Reef requirements.** If lost circulation (50% or greater) occurs below the Base of the Salt, the operator shall do the following:

- Switch to fresh water mud to protect the Capitan Reef and use fresh water mud until setting the intermediate casing. The appropriate BLM office is to be notified for a PET to witness the switch to fresh water.

- Daily drilling reports from the Base of the Salt to the setting of the intermediate casing are to be submitted to the BLM CFO engineering staff via e-mail by 0800 hours each morning. Any lost circulation encountered is to be recorded on these drilling reports. The daily drilling report should show mud volume per shift/tour. Failure to submit these reports will result in an Incidence of Non-Compliance being issued for failure to comply with the Conditions of Approval. If not already planned, the operator shall run a caliper survey for the intermediate well bore and submit to the appropriate BLM office.

3. 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 200 feet** into the previous casing, whichever is greater. 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.**

## 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. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the 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 OOGO2.III.A.2.i 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.
- 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.

# 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)

☒ Eddy County
Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822

☒ Lea County
Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575) 393-3612

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 Onshore Oil and Gas Order No. 2 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.




**Approval Date: 09/09/2021**

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 intergrity 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 intergrity 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



 **Approval Date: 09/09/2021**

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

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 OOGO2.III.A.2.i 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 when specified), whichever is greater. However, if the float does not




**Approval Date: 09/09/2021**

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 plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).

c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 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 Onshore Order No. 2.

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.

AVANT
NATURAL RESOURCES

# Hydrogen Sulfide Plan Summary

A. All personnel shall receive proper H2S training in accordance with Onshore Order III.C.3.a.

B. Briefing Area: two perpendicular areas will be designated by signs and readily accessible.

C. Required Emergency Equipment:

- Well control equipment
  a. Flare line 150' from wellhead to be ignited by flare gun.
  b. Choke manifold with a remotely operated choke.
  c. Mud/gas separator

- Protective equipment for essential personnel.

  Breathing apparatus:
  a. Rescue Packs (SCBA) — 1 unit shall be placed at each breathing area, 2 shall be stored in the safety trailer.
  b. Work/Escape packs —4 packs shall be stored on the rig floor th sufficient air hose not to restrict work activity.
  c. Emergency Escape Packs —4 packs shall be stored in the doghouse for emergency evacuation.

  Auxiliary Rescue Equipment:
  a. Stretcher
  b. Two OSHA full body harness
  c. 100 ft 5/8 inch OSHA approved rope
  d. 1-20# class ABC fire extinguisher

- H2S detection and monitoring equipment:
  The stationary detector with three sensors will be placed in the upper dog house if equipped, set to visually alarm @ 10 ppm and audible @ 14 ppm. Calibrate a minimum of every 30 days or as needed. The sensors will be placed in the following places: Rig floor / Bell nipple / End of flow line or where well bore fluid is being discharged.
  (Gas sample tubes will be stored in the safety trailer)

- Visual warning systems.
  a. One color code condition sign will be placed at the entrance to the site reflecting the possible conditions at the site.
  b. A colored condition flag will be on display, reflecting the current condition at the site at the time.
  c. Two wind socks will be placed in strategic locations, visible from all angles.

- Mud program:
  The mud program has been designed to minimize the volume of H2S circulated to surface. The operator will have the necessary mud products to minimize hazards while drilling in H2S bearing zones.

- Metallurgy:
  All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H2S service.

- Communication:
  Communication will be via cell phones and land lines where available.

Company Personnel to be Notified

| | |
|---|---|
| John Harper, Vice President of Geosciences | Office: (720) 746-5045 |
| | Mobile: (678) 988-6644 |
| Cory Nunez, Engineer | Mobile: (432) 448-3293 |

Local & County Agencies

| | |
|---|---|
| Monument Fire Department | 911 or (575) 393-4339 |
| Hobbs Fire Marshal | (575) 391-8185 |
| Lea County Sheriff (Lovington) | 911 or (575) 396-3611 |
| Lea County Emergency Management (Lovington) | (575) 396-8602 |
| Lea Regional Medical Center Hospital (Hobbs) | (575) 492-5000 |

State Agencies

| | |
|---|---|
| NM State Police (Hobbs) | (575) 392-5588 |
| NM Oil Conservation (Hobbs) | (575) 370-3186 |
| NM Oil Conservation (Santa Fe) | (505) 476-3440 |
| NM Dept. of Transportation (Roswell) | (575) 637-7201 |

Federal Agencies

| | |
|---|---|
| BLM Carlsbad Field Office | (575) 234-5972 |
| BLM Hobbs Field Station | (575) 393-3612 |
| National Response Center | (800) 424-8802 |
| US EPA Region 6 (Dallas) | (800) 887-6063 |
| | (214) 665-6444 |

Veterinarians

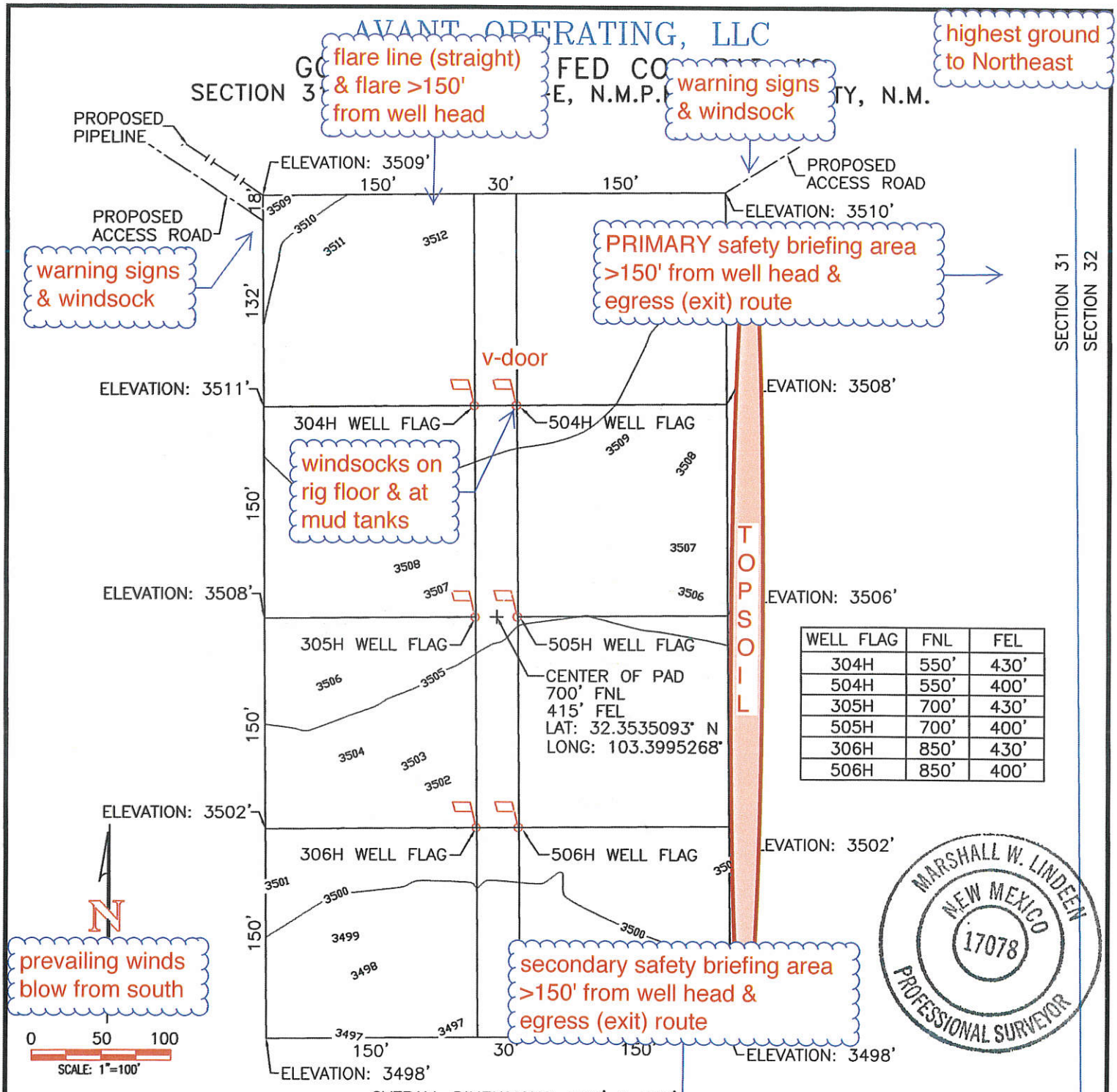
| | |
|---|---|
| Dal Paso Animal Hospital (Hobbs) | (575) 397-2286 |
| Hobbs Animal Clinic & Pet Care (Hobbs) | (575) 392-5563 |
| Great Plains Veterinary Clinic & Hospital (Hobbs) | (575) 392-5513 |

Residents within 2 miles

None

Air Evacuation

| | |
|---|---|
| Med Flight Air Ambulance (Albuquerque) | (800) 842-4431 |
| Lifeguard (Albuquerque) | (888) 866-7256 |




| WELL FLAG | FNL | FEL |
|---|---|---|
| 304H | 550' | 430' |
| 504H | 550' | 400' |
| 305H | 700' | 430' |
| 505H | 700' | 400' |
| 306H | 850' | 430' |
| 506H | 850' | 400' |




NOTES:
1. ALL BEARINGS, DISTANCES & COORDINATES SHOWN ARE BASED UPON THE NEW MEXICO STATE PLANE COORDINATE SYSTEM, EAST ZONE, NAD 83, IN U.S. SURVEY FEET.
2. CONTRACTOR SHALL CONTACT "ONE-CALL" FOR LOCATION OF ANY MARKED OR UNMARKED BURIED PIPELINE OR CABLES ON WELL PAD AND/OR ACCESS ROAD AT LEAST TWO (2) WORKING DAYS PRIOR TO CONSTRUCTION.
3. UNITED FIELD SERVICES, INC. IS NOT LIABLE FOR UNDERGROUND UTILITIES OR PIPELINES.

I, MARSHALL W. LINDEEN, NEW MEXICO PROFESSIONAL SURVEYOR NO. 17078, DO HEREBY CERTIFY THAT THIS SURVEY PLAT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE FOR THIS SURVEY; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO; AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. I FURTHER CERTIFY THAT THIS SURVEY IS NOT A LAND DIVISION OR SUBDIVISION AS DEFINED IN THE NEW MEXICO SUBDIVISION ACT.

MARSHALL W. LINDEEN P.S. #17078

2-8-21
DATE

AVANT OPERATING, LLC

| | | |
|---|---|---|
| SURVEYED: 1/21/21 | REV. DATE: | APP. BY: M.W.L. |
| DRAWN BY: A.A.D. | DATE DRAWN: 1/25/21 | FILE NAME: 11524-PAD2 |

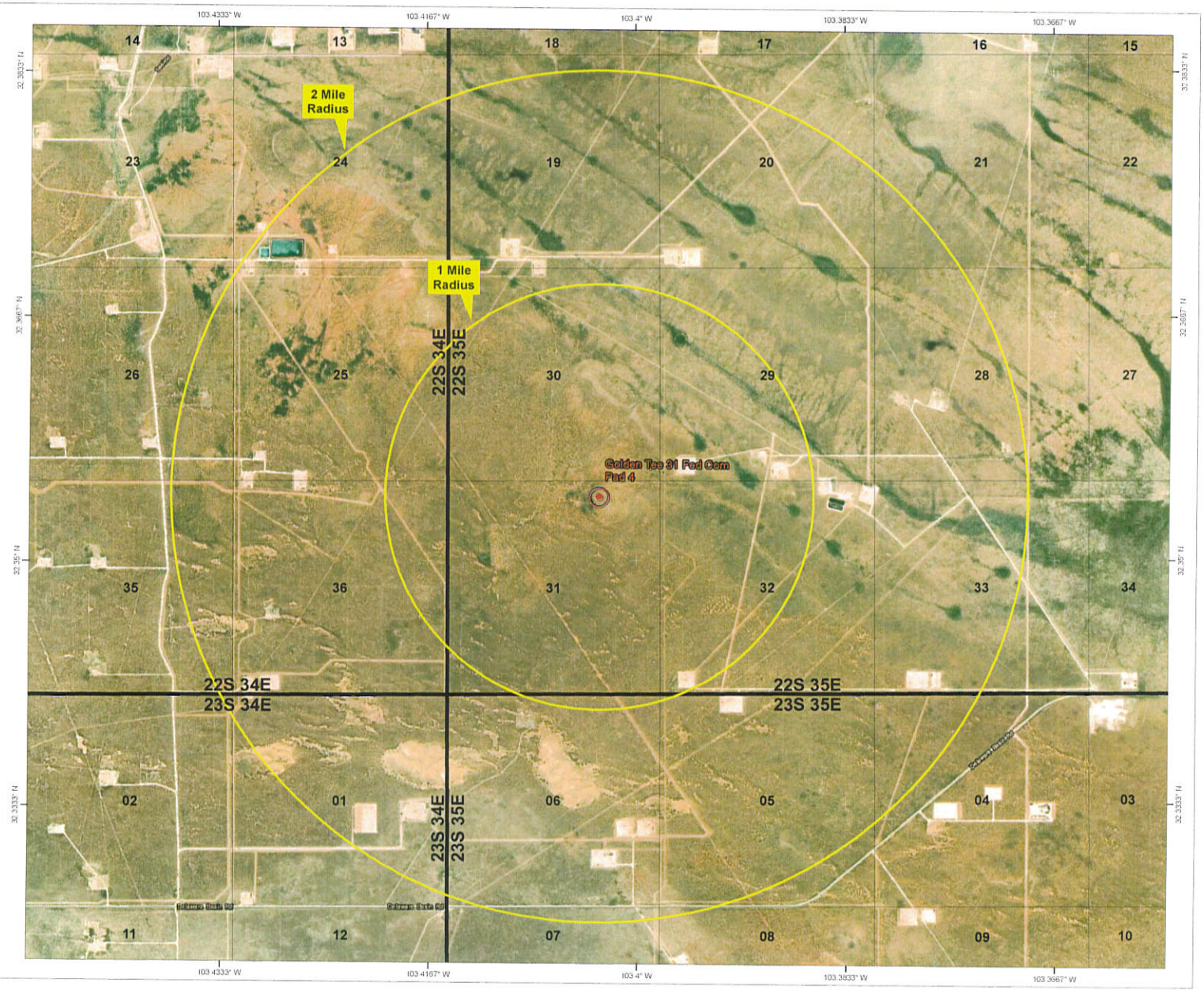
UNITED FIELD SERVICES INC.

P.O. BOX 3651
FARMINGTON, NM 87499
OFFICE: (505) 334-0408

# Avant Operating, LLC

**Golden Tee 31 Fed Com**
**Pad 4**
**H2S Contingency Plan:**
**Radius Map**

Section 31, Township 22S, Range 35E
Lea County, New Mexico




Pad Center

1:27,000

0 0.25 0.5 1

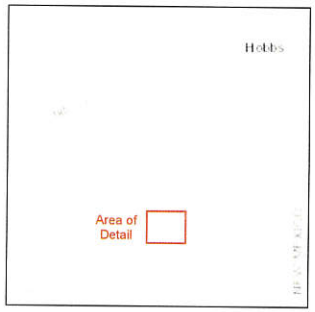
Miles

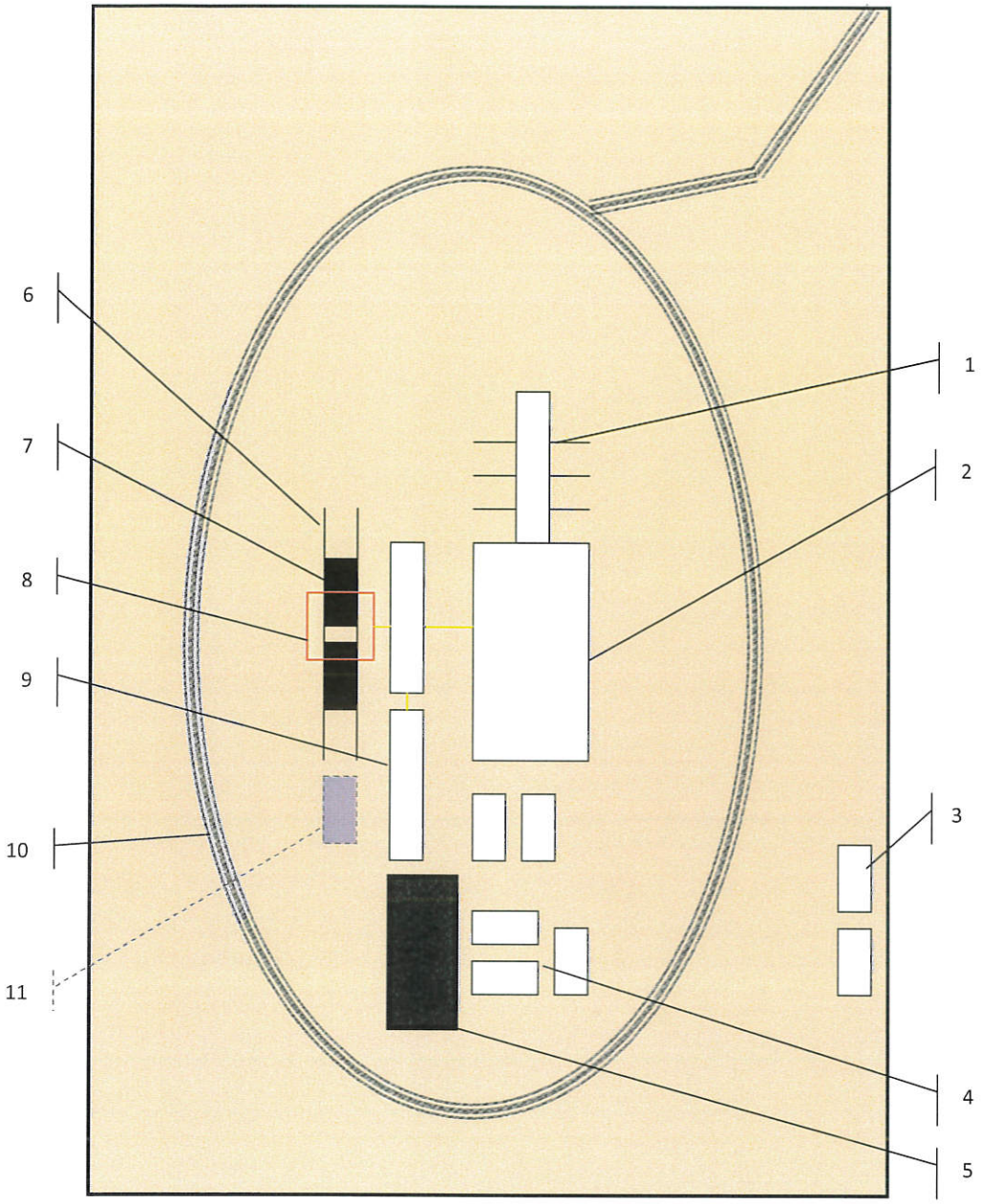
N

NAD 1983 New Mexico State Plane East
FIPS 3001 Feet

PERMITS WEST

Prepared by Permits West, Inc., January 25, 2021
for Avant Operating, LLC






**Schematic Closed Loop Drilling Rig***

1. Pipe Rack
2. Drill Rig
3. House Trailers/ Offices
4. Generator/Fuel/Storage
5. Overflow-Frac Tank
6. Skids
7. Roll Offs
8. Hopper or Centrifuge
9. Mud Tanks
10. Loop Drive
11. Generator (only for use with centrifuge)

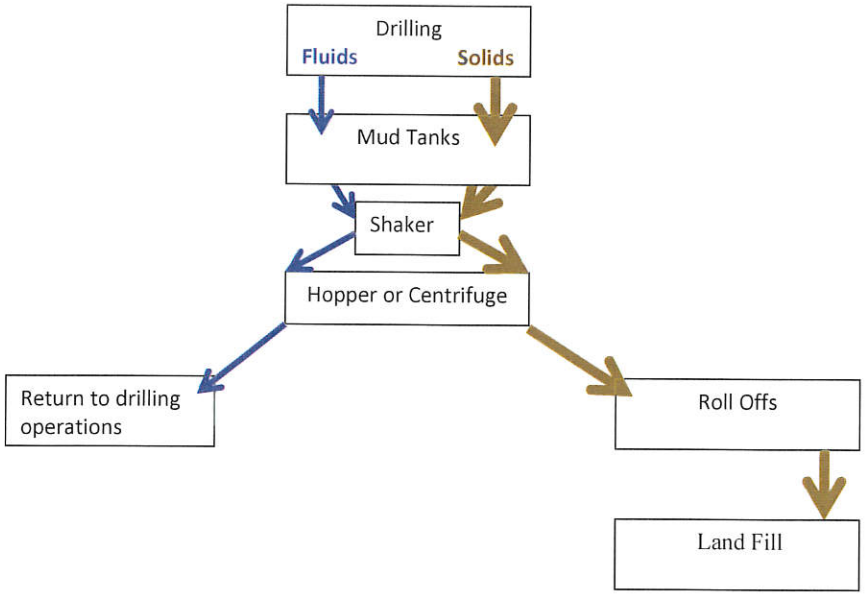
*Not drawn to scale: Closed loop system requires at least 30 feet beyond mud tanks. Ideally 60 feet would be available

Above: Centrifugal Closed Loop System

PERMITS WEST, INC.
PROVIDING PERMITS for LAND USERS
37Verano Loop, Santa Fe, New Mexico 87508 (505) 466-8120


**Closed Loop Drilling System:** Mud tanks to right (1)
Hopper in air to settle out solids (2)
Water return pipe (3)
Shaker between hopper and mud tanks (4)
Roll offs on skids (5)

## Flow Chart for Drilling Fluids and Solids




Photos Courtesy of Gandy Corporation Oil Field Service

**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 47674

## CONDITIONS

| | |
|---|---|
| Operator:<br>Avant Operating, LLC<br>1515 Wynkoop Street<br>Denver, CO 80202 | OGRID:<br>330396 |
| | Action Number:<br>47674 |
| | Action Type:<br>[C-101] BLM - Federal/Indian Land Lease (Form 3160-3) |

**CONDITIONS**

| Created By | Condition | Condition Date |
|---|---|---|
| pkautz | Will require a File As Drilled C-102 and a Directional Survey with the C-104 | 9/27/2021 |
| pkautz | Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string | 9/27/2021 |
| pkautz | Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system | 9/27/2021 |
| pkautz | Cement is required to circulate on both surface and intermediate1 strings of casing | 9/27/2021 |