

Well Name: CUTBOW 36 1 FEDERAL COM	Well Location: T19S / R32E / SEC 25 / SESW /	County or Parish/State:
Well Number: 502H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM77054	Unit or CA Name:	Unit or CA Number:
US Well Number: 3002551650	Well Status: Approved Application for Permit to Drill	Operator: AVANT OPERATING LLC

Notice of Intent

Sundry ID: 2768727

Type of Submission: Notice of Intent

Type of Action: APD Change

Date Sundry Submitted: 02/08/2024

Time Sundry Submitted: 10:21

Date proposed operation will begin: 03/01/2024

Procedure Description: Avant Operating, LLC requests to move the SHL & BHL from what was originally permitted. The SHL will move from 749' FSL & 1471' FWL to 741' FSL & 1489' FWL and the BHL will move from 100' FSL & 1185' FWL to 100 FSL & 1530 FWL. Please see attached updated well plat and directional survey to reflect this change. Avant Operating, LLC would like to also request a secondary drilling procedure. If full returns are lost while drilling the 12.25" intermediate hole section, a DV tool will be set @ 3,200' and the attached 2 stage cement design job will be executed.

NOI Attachments

Procedure Description

Cutbow_502H_Sundry_Attachments_20240208102113.pdf

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Conditions of Approval

Additional

25_19_32_N_Sundry_ID_2768727_Cutbow_36_1_Federal_Com_502H_Lea_NM077054_AVANT_OPERATING_LLC_13_22d_1_24_2023_LV_20240229134429.pdf

Cutbow_36_1_Federal_Com_502H_Dr_COA_20240229134429.pdf

Operator

I certify that the foregoing is true and correct. Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction. Electronic submission of Sundry Notices through this system satisfies regulations requiring a

Operator Electronic Signature: MEGHAN TWELE	Signed on: FEB 08, 2024 10:21 AM
Name: AVANT OPERATING LLC	
Title: Contract Regulatory Analyst	
Street Address: 1515 WYNKOOP ST SUITE 700	
City: DENVER	State: CO
Phone: (720) 339-6880	
Email address: MTWELE@OUTLOOK.COM	

Field

Representative Name:		
Street Address:		
City:	State:	Zip:
Phone:		
Email address:		

BLM Point of Contact

BLM POC Name: CODY LAYTON	BLM POC Title: Assistant Field Manager Lands & Minerals
BLM POC Phone: 5752345959	BLM POC Email Address: clayton@blm.gov
Disposition: Approved	Disposition Date: 03/05/2024
Signature: Cody R. Layton	

Form 3160-5
(June 2019)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

SUNDRY NOTICES AND REPORTS ON WELLS
Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

5. Lease Serial No.	
6. If Indian, Allottee or Tribe Name	
7. If Unit of CA/Agreement, Name and/or No.	
8. Well Name and No.	
9. API Well No.	
10. Field and Pool or Exploratory Area	
11. Country or Parish, State	

SUBMIT IN TRIPLICATE - Other instructions on page 2	
1. Type of Well	
<input type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other	
2. Name of Operator	
3a. Address	3b. Phone No. (include area code)
4. Location of Well (Footage, Sec., T.,R.,M., or Survey Description)	

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA				
TYPE OF SUBMISSION	TYPE OF ACTION			
<input type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Hydraulic Fracturing	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input type="checkbox"/> Other
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	

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

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

THE SPACE FOR FEDERAL OR STATE OFFICE USE		
Approved by	Title	Date
Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.	Office	

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

(Instructions on page 2)

GENERAL INSTRUCTIONS

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

SPECIFIC INSTRUCTIONS

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

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

NOTICES

The privacy Act of 1974 and the regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.

AUTHORITY: 30 U.S.C. 181 et seq., 351 et seq., 25 U.S.C. 396; 43 CFR 3160.

PRINCIPAL PURPOSE: The information is used to: (1) Evaluate, when appropriate, approve applications, and report completion of subsequent well operations, on a Federal or Indian lease; and (2) document for administrative use, information for the management, disposal and use of National Resource lands and resources, such as: (a) evaluating the equipment and procedures to be used during a proposed subsequent well operation and reviewing the completed well operations for compliance with the approved plan; (b) requesting and granting approval to perform those actions covered by 43 CFR 3162.3-2, 3162.3-3, and 3162.3-4; (c) reporting the beginning or resumption of production, as required by 43 CFR 3162.4-1(c) and (d) analyzing future applications to drill or modify operations in light of data obtained and methods used.

ROUTINE USES: Information from the record and/or the record will be transferred to appropriate Federal, State, local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecutions in connection with congressional inquiries or to consumer reporting agencies to facilitate collection of debts owed the Government.

EFFECT OF NOT PROVIDING THE INFORMATION: Filing of this notice and report and disclosure of the information is mandatory for those subsequent well operations specified in 43 CFR 3162.3-2, 3162.3-3, 3162.3-4.

The Paperwork Reduction Act of 1995 requires us to inform you that:

The BLM collects this information to evaluate proposed and/or completed subsequent well operations on Federal or Indian oil and gas leases.

Response to this request is mandatory.

The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

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

Additional Information

Location of Well

0. SHL: SESW / 749 FSL / 1471 FWL / TWSP: 19S / RANGE: 32E / SECTION: 25 / LAT: 32.6261038 / LONG: -103.7234864 (TVD: 0 feet, MD: 0 feet)
PPP: SWSW / 479 FSL / 1197 FWL / TWSP: 19S / RANGE: 32E / SECTION: 25 / LAT: 32.6253645 / LONG: -103.7243762 (TVD: 8850 feet, MD: 8874 feet)
PPP: NWNW / 0 FNL / 1185 FWL / TWSP: 19S / RANGE: 32E / SECTION: 36 / LAT: 32.624122 / LONG: -103.724411 (TVD: 9788 feet, MD: 10035 feet)
PPP: SWNW / 1320 FNL / 1185 FWL / TWSP: 20S / RANGE: 32E / SECTION: 1 / LAT: 32.60602 / LONG: -103.72447 (TVD: 9800 feet, MD: 16590 feet)
BHL: SWSW / 100 FSL / 1185 FWL / TWSP: 20S / RANGE: 32E / SECTION: 1 / LAT: 32.5952739 / LONG: -103.7245109 (TVD: 9800 feet, MD: 20520 feet)

25-19-32-N Sundry ID 2768727 Cutbow 36 1 Federal Com 502H Lea NM077054 AVANT OPERATING LLC 13-22d 1-24-2023 LV

Cutbow 36 1 Federal Com 502H

20	surface csg in a		24	inch hole.		Design Factors			Surface			
Segment	#/ft	Grade		Coupling	Joint	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"	94.00		j 55	btc	12.69	0.85	1.31	1,175	4	2.20	1.48	110,450
"B"				btc				0				0
w/8.4#/g mud, 30min Sfc Csg Test psig: 964				Tail Cmt	does not	circ to sfc.	Totals:	1,175				110,450
Comparison of Proposed to Minimum Required Cement Volumes												
Hole Size	Annular Volume	1 Stage Cmt Sx	1 Stage CuFt Cmt	Min Cu Ft	1 Stage % Excess	Drilling Mud Wt	Calc MASP	Req'd BOPE				Min Dist Hole-Cplg
24	0.9599	1055	1822	1128	62	10.00	960	2M				1.50
Site plot (pipe racks S or E) as per C.D. 131.D 4.1 not found.												

13 3/8		casing inside the		20		Design Factors				Int 1		
Segment	#/ft	Grade		Coupling	Joint	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"	54.50		j 55	ltc	3.20	0.7	1.37	2,950	2	2.75	1.18	160,775
"B"								0				0
w/8.4#/g mud, 30min Sfc Csg Test psig: 631								Totals:	2,950			160,775
The cement volume(s) are intended to achieve a top of						0	ft from surface or a		1175			overlap.
Hole Size	Annular Volume	1 Stage Cmt Sx	1 Stage CuFt Cmt	Min Cu Ft	1 Stage % Excess	Drilling Mud Wt	Calc MASP	Req'd BOPE				Min Dist Hole-Cplg
17 1/2	0.6946	1675	2972	2430	22	10.50	995	2M				2.06
D V Tool(s):						sum of sx		Σ CuFt				Σ%excess
t by stage % :						#VALUE!		#VALUE!	1675	2972		22
Class 'C' tail cmt yld > 1.35												

9 5/8		casing inside the		13 3/8		Design Factors				Int 2		
Segment	#/ft	Grade		Coupling	Joint	Collapse	Burst	Length	B@S	a-B	a-C	Weight
"A"	40.00	j 55		ltc	2.83	1.47	0.79	4,000	2	1.39	2.97	160,000
"B"	40.00	hcl 80		ltc	34.88	2.11	1.15	603	3	2.03	4.25	24,120
w/8.4#/g mud, 30min Sfc Csg Test psig: 1,020								Totals:		4,603		184,120
The cement volume(s) are intended to achieve a top of					2450	ft from surface or a			500			overlap.
Hole Size	Annular Volume	1 Stage Cmt Sx	1 Stage CuFt Cmt	Min Cu Ft	1 Stage % Excess	Drilling Mud Wt	Calc MASP	Req'd BOPE				Min Dist Hole-Cplg
12 1/4	0.3132	390	595	699	-15	8.40	2833	5M				0.81
Setting Depths for D V Tool(s):			3200	sum of sx			Σ CuFt				Σ%excess	
% excess cmt by stage:		35	538	1290			2251				222	
Class 'C' tail cmt yld > 1.35												
Burst Frac Gradient(s) for Segment(s): A, B, C, D = 0.99, b, c, d All > 0.70,												

5 1/2		casing inside the		9 5/8		Design Factors				Prod 1		
Segment	#/ft	Grade		Coupling	Joint	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"	20.00		hpc 110	gbcd	3.49	2.65	2.88	9,032	3	5.07	4.67	180,640
"B"	20.00		hpc 110	gbcd	44.60	2.45	2.88	11,430	3	5.07	4.31	228,600
w/8.4#/g mud, 30min Sfc Csg Test psig: 1,987								Totals:	20,462		409,240	
The cement volume(s) are intended to achieve a top of					4403	ft from surface or a			200	overlap.		
Hole Size	Annular Volume	1 Stage Cmt Sx	1 Stage CuFt Cmt	Min Cu Ft	1 Stage % Excess	Drilling Mud Wt	Calc MASP	Req'd BOPE	Min Dist Hole-Cplg			
8 3/4	0.2526	3685	6390	4058	57	9.80			1.23			
Class 'H' tail cmt yld > 1.20												
Capitan Reef est top XXXX.												

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Avant Operating LLC
LEASE NO.:	NMNM077054
LOCATION:	Section 25, T.19 S., R.32 E., NMPM
COUNTY:	Lea County, New Mexico

WELL NAME & NO.:	Cutbow 36 1 Federal Com 502H
SURFACE HOLE FOOTAGE:	741'/S & 1489'/W
BOTTOM HOLE FOOTAGE:	100'/S & 1530'/W
ATS/API ID:	30-025-51650
APD ID:	10400089125
Sundry ID:	2768727

COA

H2S	Yes <input type="button" value="v"/>		
Potash	Secretary <input type="button" value="v"/>		
Cave/Karst Potential	Low <input type="button" value="v"/>		
Cave/Karst Potential	<input type="checkbox"/> Critical		
Variance	<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> Flex Hose	<input checked="" type="checkbox"/> Other
Wellhead	Diverter <input type="button" value="v"/>		
Other	<input checked="" type="checkbox"/> 4 String	Capitan Reef Int 2 <input type="button" value="v"/>	<input type="checkbox"/> WIPP
Other	Pilot Hole None <input type="button" value="v"/>	<input type="checkbox"/> Open Annulus	
Cementing	Contingency Squeeze None <input type="button" value="v"/>	Echo-Meter None <input type="button" value="v"/>	Primary Cement Squeeze None <input type="button" value="v"/>
Special Requirements	<input type="checkbox"/> Water Disposal/Injection	<input checked="" type="checkbox"/> COM	<input type="checkbox"/> Unit
Special Requirements	<input type="checkbox"/> Batch Sundry		
Special Requirements Variance	<input type="checkbox"/> Break Testing	<input type="checkbox"/> Offline Cementing	<input type="checkbox"/> Casing Clearance

A. HYDROGEN SULFIDE

A Hydrogen Sulfide (H₂S) Drilling Plan shall be activated 500 feet prior to drilling into the **Delware and Bone Springs** formation. As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.

B. CASING

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

1. The **20 inch** surface casing shall be set at approximately **1175 feet** (a minimum of **25 feet (Lea County)** into the Rustler Anhydrite, above the salt, and below usable fresh water) and cemented to the surface. The surface hole shall be **24 inch** in diameter.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
 - b. Wait on cement (WOC) time for a primary cement job will be a minimum of **24 hours in the Potash Area** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
 - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
 - d. If cement falls back, remedial cementing will be done prior to drilling out that string.

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

2. The minimum required fill of cement behind the **13-3/8 inch** intermediate casing is:
 - Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst, potash or capitan reef. Cement excess is less than 25%, more cement is required if washout occurs. Adjust cement volume and excess based on a fluid caliper or similar method that reflects the as-drilled size of the wellbore.**
 - ❖ In Secretary Potash Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.

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

Option 1 (Single Stage):

- Cement should tie-back at least **50 feet** on top of Capitan Reef top **or 500 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.

Option 2:

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

DV tool(s) shall be set a minimum of 50' below previous shoe and a minimum of 200' above current shoe. Operator shall contact the BLM if DV tool(s) depth cannot be set in this range. If an ECP is used, it is to be set a minimum of 50' below the shoe to provide cement across the shoe. If it cannot be set below the shoe, a CBL shall be run to verify cement coverage.

In Capitan Reef a DV tool shall be set a maximum of 200' above the top of Capitan Reef.

- a. First stage to DV tool(s): Cement to circulate. If cement does not circulate off the DV tool(s), contact the appropriate BLM office before proceeding with second stage cement job.
 - b. Second stage above DV tool(s):
 - Cement should tie-back at least **50 feet** on top of Capitan Reef top **or 500 feet** into the previous casing, whichever is greater. Operator shall provide method of verification.
Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst, potash or capitan reef.
4. The minimum required fill of cement behind the 5-1/2 inch production casing is:
- Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.

C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).'
- 2.

Option 1:

- a. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be tested to **1500** psi. A Diverter system is approved as a variance to drill the **13-3/8** inch intermediate casing section in a **20** inch hole.
- b. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **13-3/8** inch intermediate casing shoe shall be **3000 (3M)** psi.
- c. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9-5/8** inch intermediate casing shoe shall be **5000 (5M)** psi.

Option 2:

- a. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be tested to **1500** psi. A Diverter system is approved as a variance to drill the **13-3/8** inch intermediate casing section in a **20** inch hole.
- b. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the **13-3/8** inch intermediate casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the intermediate 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.
- The operator will submit an as-drilled survey well plat of the well completion, but are not limited to, those specified in Onshore Order 1 and 2.
- 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)
689-5981

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
 - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
 - b. When the operator proposes to set surface casing with Spudder Rig
 - Notify the BLM when moving in and removing the Spudder Rig.
 - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
 - BOP/BOPE test to be conducted per 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.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.
2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.

7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in 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 cement), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
 - b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the cement plug. The BOPE test can be initiated after bumping the cement plug with the casing valve open. (only applies to single stage cement jobs, prior to the cement setting up.)
 - c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer and can be initiated immediately with the casing valve open. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to 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.

LVO 2/29/2024

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

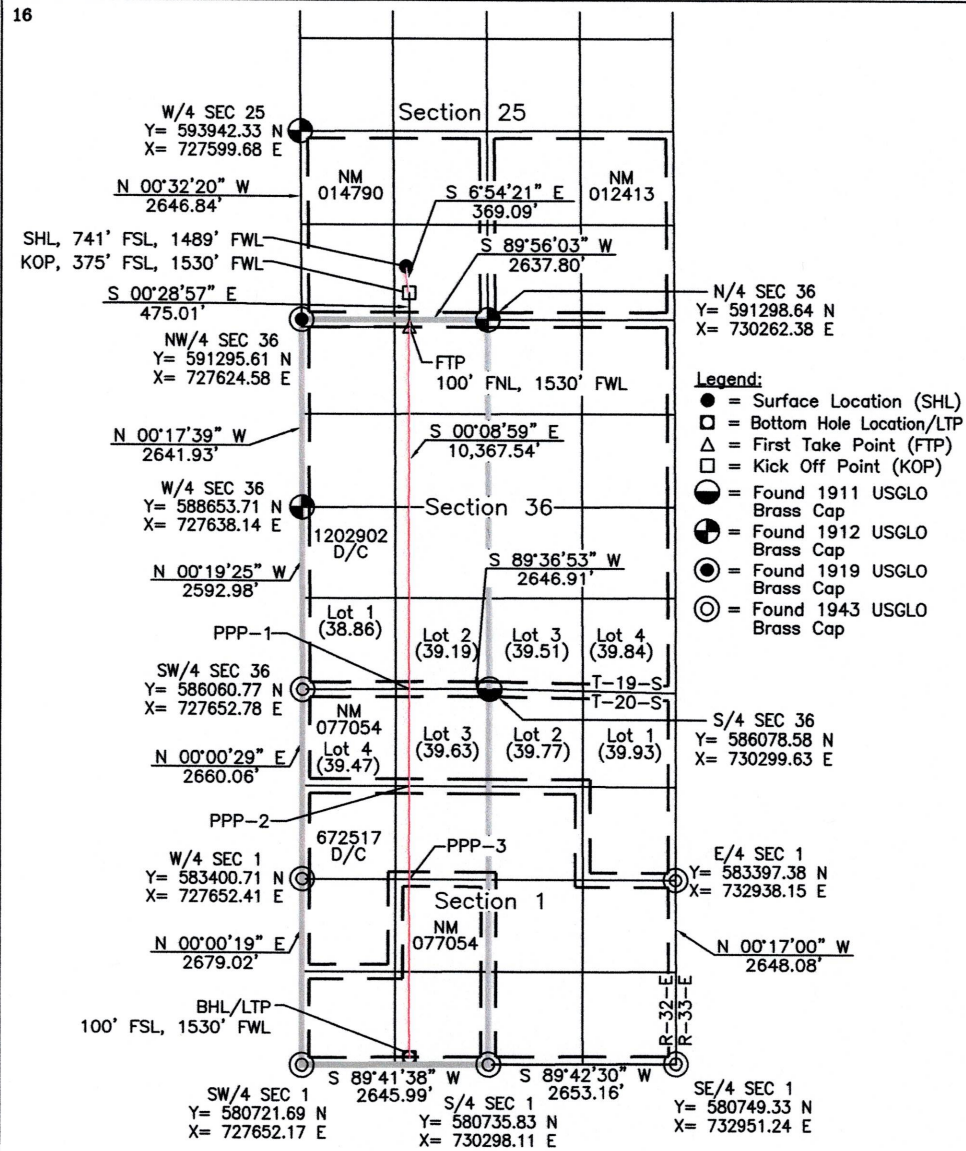
¹ API Number 30-025-51650	² Pool Code 27220	³ Pool Name Gem;Bone Spring
⁴ Property Code 333338	⁵ Property Name Cutbow 36 1 Federal Com	⁶ Well Number 502H
⁷ GRID No. 330396	⁸ Operator Name Avant Operating, LLC	⁹ Elevation 3580

¹⁰ Surface Location									
UL or lot no. N	Section 25	Township 19 S	Range 32 E	Lot Idn	Feet from the 741	North/South line South	Feet from the 1489	East/West line West	County Lea

¹¹ Bottom Hole Location If Different From Surface									
UL or lot no. N	Section 1	Township 20 S	Range 32 E	Lot Idn	Feet from the 100	North/South line South	Feet from the 1530	East/West line West	County Lea

¹² Dedicated Acres SECTION 36: NW/4, N/2SW/4, LOT 1 (38.86), LOT 2 (39.19): 318.05 Ac. SECTION 1: LOT 4 (39.47), LOT 3 (39.63), S/2NW/4, SW/4: 319.10 Ac. TOTAL: 637.15 Ac.	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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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



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

2/7/2024

Date

Printed Name

mtwele@outlook.com

E-mail Address

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.

1/27/24

Date of Survey

Plat Revised: 1/29/24

Signature and Seal of Professional Surveyor

Signature and Seal of Professional Surveyor

17078

2-6-24

PROFESSIONAL SURVEYOR

17078

Certificate Number

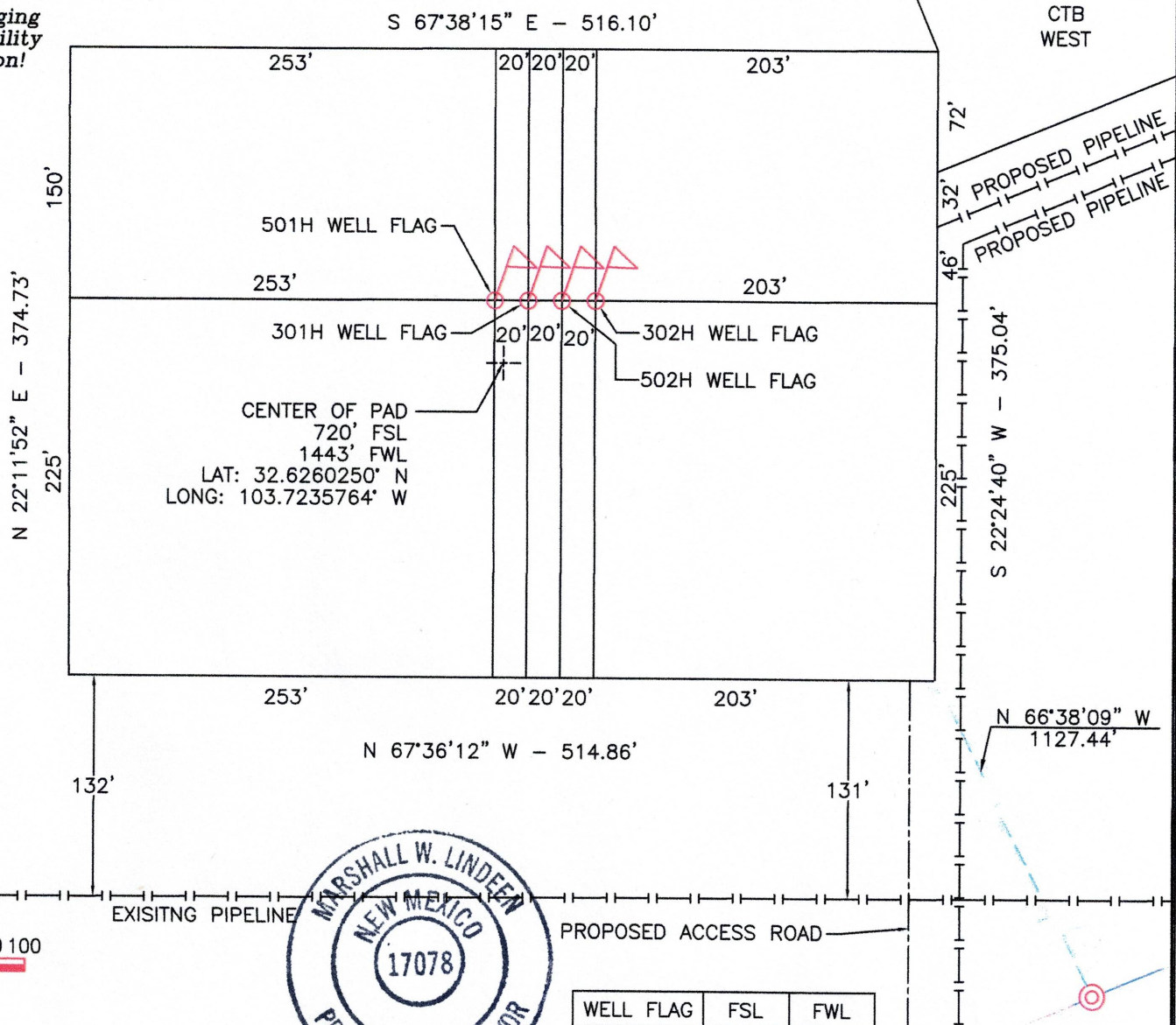
SURFACE LOCATION NAD 83 NMSPC ZONE 3001 Y= 592038.77 N X= 729106.72 E LAT.= 32.6260833° N LONG.= 103.7234269° W	FIRST TAKE POINT NAD 83 NMSPC ZONE 3001 100' FNL, 1530' FWL SEC. 36, T19S, R32E Y= 591197.37 N X= 729155.10 E LAT.= 32.6237699° N LONG.= 103.7232855° W	PPP-2 NAD 83 NMSPC ZONE 3001 1351' FNL, 1519' FWL SEC. 1, T20S, R32E Y= 584719.75 N X= 729172.02 E LAT: 32.6059654° N LONG: 103.7233512° W	LAST TAKE POINT NAD 83 NMSPC ZONE 3001 100' FSL, 1530' FWL SEC. 1, T20S, R32E Y= 580829.86 N X= 729182.18 E LAT.= 32.5952735° N LONG.= 103.7233907° W
KICK OFF POINT NAD 83 NMSPC ZONE 3001 375' FSL, 1530' FWL SEC. 25, T19S, R32E Y= 591672.36 N X= 729151.10 E LAT.= 32.6250755° N LONG.= 103.7232896° W	PPP-1 NAD 83 NMSPC ZONE 3001 0' FNL, 1516' FWL SEC. 1, T20S, R32E Y= 586070.97 N X= 729168.49 E LAT: 32.6096793° N LONG: 103.7233375° W	PPP-3 NAD 83 NMSPC ZONE 3001 2670' FSL, 1523' FWL SEC. 1, T20S, R32E Y= 583399.75 N X= 729175.46 E LAT: 32.6023372° N LONG: 103.7233646° W	BOTTOM HOLE LOCATION NAD 83 NMSPC ZONE 3001 Y= 580829.86 N X= 729182.18 E LAT.= 32.5952735° N LONG.= 103.7233907° W

AVANT OPERATING, LLC

CUTBOW PAD 2

SECTION 25, T-19-S, R-32-E, N.M.P.M., LEA COUNTY, N.M.

Before digging
call for utility
line location!



0 20 40 60 80 100
SCALE: 1"=100'



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

DATE

WELL FLAG	FSL	FWL
501H	757'	1452'
301H	749'	1471'
502H	741'	1489'
302H	734'	1508'

Fd. Bc.
U.S.G.L.O.
1912
1/4 COR.

OWNER	SQ. FT.	ACRES
BUREAU OF LAND MANAGEMENT	193,371	4.439

AVANT OPERATING, LLC

SURVEYED: 1/19/24 & 1/27/24	REV. DATE: 1/29/24	APP. BY: M.W.L.
DRAWN BY: A.A.D.	DATE DRAWN: 9/25/23	FILE NAME: 11646-Pad



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

WELL DETAILS: Cutbow 36 1 Federal Com 502H

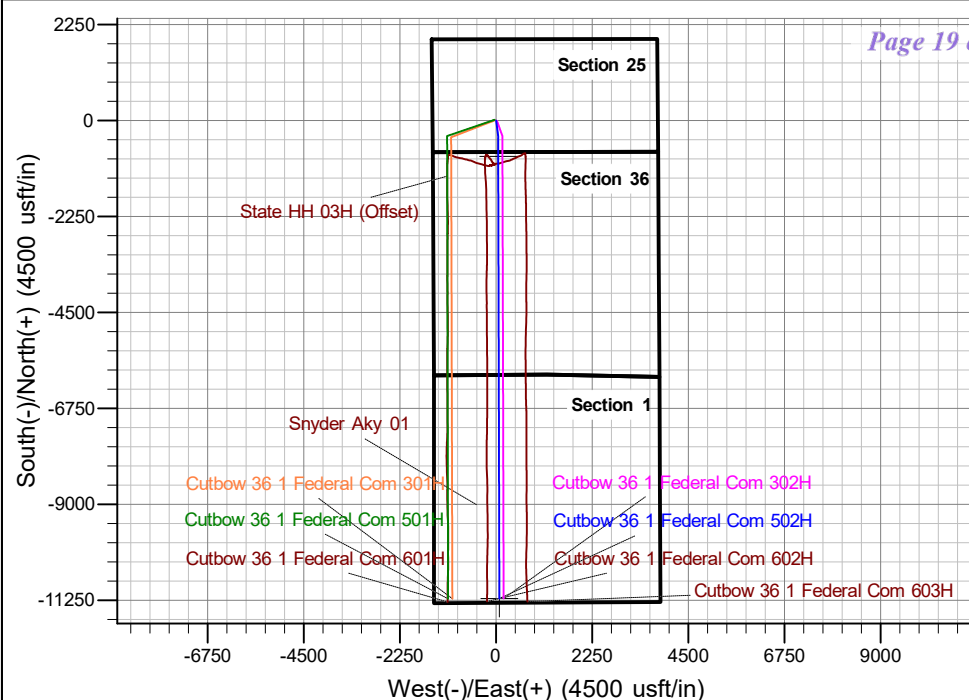
Ground Elev: 3580.0 KB: 3606.5

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	592038.77	729106.72	32.6260833°N	103.7234269°W

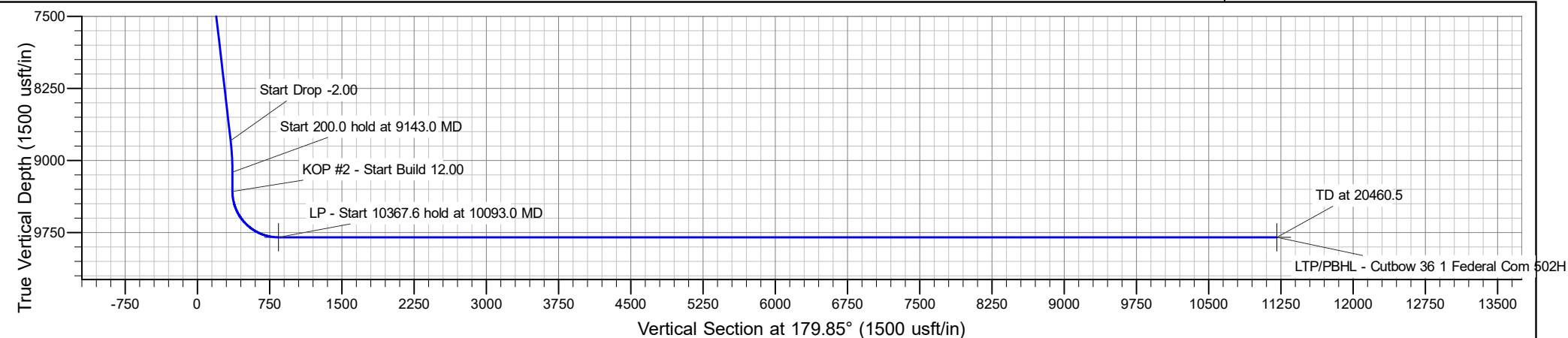
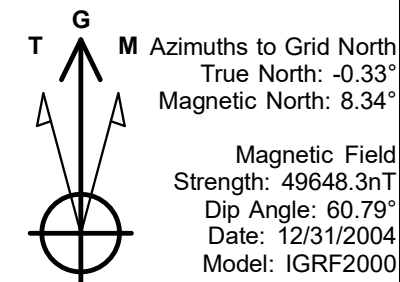
PROJECT DETAILS: Lea Co., NM (NAD 83)

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

System Datum: Mean Sea Level

**SECTION DETAILS**

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	5620.0	0.00	0.00	5620.0	0.0	0.0	0.00	0.00	0.0	KOP - Start Build 2.00
3	5949.9	6.60	172.62	5949.2	-18.8	2.4	2.00	172.62	18.8	Start 2863.1 hold at 5949.9 MD
4	8813.0	6.60	172.62	8793.3	-345.1	44.7	0.00	0.00	345.2	Start Drop -2.00
5	9143.0	0.00	179.85	9122.5	-363.9	47.1	2.00	180.00	364.1	Start 200.0 hold at 9143.0 MD
6	9343.0	0.00	179.85	9322.5	-363.9	47.1	0.00	0.00	364.1	KOP #2 - Start Build 12.00
7	10093.0	90.00	179.85	9800.0	-841.4	48.4	12.00	0.00	841.5	LP - Start 10367.6 hold at 10093.0 MD
8	20460.5	90.00	179.85	9800.0	-11208.9	75.5	0.00	0.00	11209.1	TD at 20460.5





Avant Operating, LLC

Lea Co., NM (NAD 83)

Cutbow 36 1 Federal Com Pad 2

Cutbow 36 1 Federal Com 502H

OH

Plan: Plan 0.2

Standard Planning Report

07 February, 2024





Planning Report



Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Cutbow 36 1 Federal Com 502H
Company:	Avant Operating, LLC	TVD Reference:	Well @ 3606.5usft (3606.5)
Project:	Lea Co., NM (NAD 83)	MD Reference:	Well @ 3606.5usft (3606.5)
Site:	Cutbow 36 1 Federal Com Pad 2	North Reference:	Grid
Well:	Cutbow 36 1 Federal Com 502H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 0.2		

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

Site	Cutbow 36 1 Federal Com Pad 2		
Site Position:		Northing:	591,898.24 usft
From:	Map	Easting:	729,027.52 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32.6256983°N
		Longitude:	103.7236868°W

Well	Cutbow 36 1 Federal Com 502H		
Well Position	+N/-S	0.0 usft	Northing:
	+E/-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	
Grid Convergence:	0.33 °		
		Latitude:	32.6260833°N
		Longitude:	103.7234269°W
		Ground Level:	3,580.0 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2000	12/31/2004	8.66	60.79	49,648.30006672

Design	Plan 0.2				
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	0.0	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	179.85	

Plan Survey Tool Program	Date	2/7/2024			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.0	20,460.5 Plan 0.2 (OH)	B001Mb_MWD+HRGM		
			OWSG MWD + HRGM		

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
5,620.0	0.00	0.00	5,620.0	0.0	0.0	0.00	0.00	0.00	0.00	
5,949.9	6.60	172.62	5,949.2	-18.8	2.4	2.00	2.00	0.00	172.62	
8,813.0	6.60	172.62	8,793.3	-345.1	44.7	0.00	0.00	0.00	0.00	
9,143.0	0.00	179.85	9,122.5	-363.9	47.1	2.00	-2.00	0.00	180.00	
9,343.0	0.00	179.85	9,322.5	-363.9	47.1	0.00	0.00	0.00	0.00	
10,093.0	90.00	179.85	9,800.0	-841.4	48.4	12.00	12.00	0.00	0.00	FTP - Cutbow 36 1 Fe
20,460.5	90.00	179.85	9,800.0	-11,208.9	75.5	0.00	0.00	0.00	0.00	LTP/PBHL - Cutbow 3



Planning Report



Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Cutbow 36 1 Federal Com 502H
Company:	Avant Operating, LLC	TVD Reference:	Well @ 3606.5usft (3606.5)
Project:	Lea Co., NM (NAD 83)	MD Reference:	Well @ 3606.5usft (3606.5)
Site:	Cutbow 36 1 Federal Com Pad 2	North Reference:	Grid
Well:	Cutbow 36 1 Federal Com 502H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 0.2		

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	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	0.00
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	0.00
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	0.00
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	0.00
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	0.00
4,600.0	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	0.00
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	0.00
4,800.0	0.00	0.00	4,800.0	0.0	0.0	0.0	0.00	0.00	0.00
4,900.0	0.00	0.00	4,900.0	0.0	0.0	0.0	0.00	0.00	0.00
5,000.0	0.00	0.00	5,000.0	0.0	0.0	0.0	0.00	0.00	0.00
5,100.0	0.00	0.00	5,100.0	0.0	0.0	0.0	0.00	0.00	0.00
5,200.0	0.00	0.00	5,200.0	0.0	0.0	0.0	0.00	0.00	0.00
5,300.0	0.00	0.00	5,300.0	0.0	0.0	0.0	0.00	0.00	0.00



Planning Report



Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Cutbow 36 1 Federal Com 502H
Company:	Avant Operating, LLC	TVD Reference:	Well @ 3606.5usft (3606.5)
Project:	Lea Co., NM (NAD 83)	MD Reference:	Well @ 3606.5usft (3606.5)
Site:	Cutbow 36 1 Federal Com Pad 2	North Reference:	Grid
Well:	Cutbow 36 1 Federal Com 502H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 0.2		

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)
5,400.0	0.00	0.00	5,400.0	0.0	0.0	0.0	0.00	0.00	0.00
5,500.0	0.00	0.00	5,500.0	0.0	0.0	0.0	0.00	0.00	0.00
5,600.0	0.00	0.00	5,600.0	0.0	0.0	0.0	0.00	0.00	0.00
5,620.0	0.00	0.00	5,620.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP - Start Build 2.00									
5,700.0	1.60	172.62	5,700.0	-1.1	0.1	1.1	2.00	2.00	0.00
5,800.0	3.60	172.62	5,799.9	-5.6	0.7	5.6	2.00	2.00	0.00
5,900.0	5.60	172.62	5,899.6	-13.6	1.8	13.6	2.00	2.00	0.00
5,949.9	6.60	172.62	5,949.2	-18.8	2.4	18.8	2.00	2.00	0.00
Start 2863.1 hold at 5949.9 MD									
6,000.0	6.60	172.62	5,998.9	-24.5	3.2	24.5	0.00	0.00	0.00
6,100.0	6.60	172.62	6,098.3	-35.9	4.7	35.9	0.00	0.00	0.00
6,200.0	6.60	172.62	6,197.6	-47.3	6.1	47.3	0.00	0.00	0.00
6,300.0	6.60	172.62	6,297.0	-58.7	7.6	58.7	0.00	0.00	0.00
6,400.0	6.60	172.62	6,396.3	-70.1	9.1	70.1	0.00	0.00	0.00
6,500.0	6.60	172.62	6,495.6	-81.5	10.6	81.5	0.00	0.00	0.00
6,600.0	6.60	172.62	6,595.0	-92.9	12.0	92.9	0.00	0.00	0.00
6,700.0	6.60	172.62	6,694.3	-104.3	13.5	104.3	0.00	0.00	0.00
6,800.0	6.60	172.62	6,793.6	-115.7	15.0	115.7	0.00	0.00	0.00
6,900.0	6.60	172.62	6,893.0	-127.1	16.5	127.1	0.00	0.00	0.00
7,000.0	6.60	172.62	6,992.3	-138.5	17.9	138.5	0.00	0.00	0.00
7,100.0	6.60	172.62	7,091.7	-149.9	19.4	149.9	0.00	0.00	0.00
7,200.0	6.60	172.62	7,191.0	-161.3	20.9	161.3	0.00	0.00	0.00
7,300.0	6.60	172.62	7,290.3	-172.7	22.4	172.7	0.00	0.00	0.00
7,400.0	6.60	172.62	7,389.7	-184.1	23.8	184.1	0.00	0.00	0.00
7,500.0	6.60	172.62	7,489.0	-195.5	25.3	195.5	0.00	0.00	0.00
7,600.0	6.60	172.62	7,588.3	-206.9	26.8	206.9	0.00	0.00	0.00
7,700.0	6.60	172.62	7,687.7	-218.3	28.3	218.3	0.00	0.00	0.00
7,800.0	6.60	172.62	7,787.0	-229.7	29.7	229.7	0.00	0.00	0.00
7,900.0	6.60	172.62	7,886.4	-241.1	31.2	241.1	0.00	0.00	0.00
8,000.0	6.60	172.62	7,985.7	-252.5	32.7	252.5	0.00	0.00	0.00
8,100.0	6.60	172.62	8,085.0	-263.9	34.2	263.9	0.00	0.00	0.00
8,200.0	6.60	172.62	8,184.4	-275.2	35.6	275.3	0.00	0.00	0.00
8,300.0	6.60	172.62	8,283.7	-286.6	37.1	286.7	0.00	0.00	0.00
8,400.0	6.60	172.62	8,383.0	-298.0	38.6	298.1	0.00	0.00	0.00
8,500.0	6.60	172.62	8,482.4	-309.4	40.1	309.5	0.00	0.00	0.00
8,600.0	6.60	172.62	8,581.7	-320.8	41.5	320.9	0.00	0.00	0.00
8,700.0	6.60	172.62	8,681.1	-332.2	43.0	332.3	0.00	0.00	0.00
8,800.0	6.60	172.62	8,780.4	-343.6	44.5	343.7	0.00	0.00	0.00
8,813.0	6.60	172.62	8,793.3	-345.1	44.7	345.2	0.00	0.00	0.00
Start Drop -2.00									
8,900.0	4.86	172.62	8,879.9	-353.7	45.8	353.8	2.00	-2.00	0.00
9,000.0	2.86	172.62	8,979.6	-360.4	46.7	360.5	2.00	-2.00	0.00
9,100.0	0.86	172.62	9,079.6	-363.6	47.1	363.7	2.00	-2.00	0.00
9,143.0	0.00	179.85	9,122.5	-363.9	47.1	364.1	2.00	-2.00	0.00
Start 200.0 hold at 9143.0 MD									
9,200.0	0.00	0.00	9,179.6	-363.9	47.1	364.1	0.00	0.00	0.00
9,300.0	0.00	0.00	9,279.6	-363.9	47.1	364.1	0.00	0.00	0.00
9,343.0	0.00	0.00	9,322.5	-363.9	47.1	364.1	0.00	0.00	0.00
KOP #2 - Start Build 12.00									
9,400.0	6.84	179.85	9,379.4	-367.3	47.1	367.5	12.00	12.00	0.00
9,500.0	18.84	179.85	9,476.8	-389.5	47.2	389.6	12.00	12.00	0.00
9,600.0	30.84	179.85	9,567.3	-431.5	47.3	431.6	12.00	12.00	0.00



Planning Report



Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Cutbow 36 1 Federal Com 502H
Company:	Avant Operating, LLC	TVD Reference:	Well @ 3606.5usft (3606.5)
Project:	Lea Co., NM (NAD 83)	MD Reference:	Well @ 3606.5usft (3606.5)
Site:	Cutbow 36 1 Federal Com Pad 2	North Reference:	Grid
Well:	Cutbow 36 1 Federal Com 502H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 0.2		

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)	
9,700.0	42.84	179.85	9,647.2	-491.3	47.4	491.4	12.00	12.00	0.00	
9,800.0	54.84	179.85	9,712.9	-566.5	47.6	566.6	12.00	12.00	0.00	
9,900.0	66.84	179.85	9,761.5	-653.6	47.9	653.8	12.00	12.00	0.00	
10,000.0	78.84	179.85	9,791.0	-749.0	48.1	749.1	12.00	12.00	0.00	
10,093.0	90.00	179.85	9,800.0	-841.4	48.4	841.5	12.00	12.00	0.00	
LP - Start 10367.6 hold at 10093.0 MD - FTP - Cutbow 36 1 Federal Com 502H										
10,100.0	90.00	179.85	9,800.0	-848.4	48.4	848.6	0.00	0.00	0.00	
10,200.0	90.00	179.85	9,800.0	-948.4	48.6	948.6	0.00	0.00	0.00	
10,300.0	90.00	179.85	9,800.0	-1,048.4	48.9	1,048.6	0.00	0.00	0.00	
10,400.0	90.00	179.85	9,800.0	-1,148.4	49.2	1,148.6	0.00	0.00	0.00	
10,500.0	90.00	179.85	9,800.0	-1,248.4	49.4	1,248.6	0.00	0.00	0.00	
10,600.0	90.00	179.85	9,800.0	-1,348.4	49.7	1,348.6	0.00	0.00	0.00	
10,700.0	90.00	179.85	9,800.0	-1,448.4	50.0	1,448.6	0.00	0.00	0.00	
10,800.0	90.00	179.85	9,800.0	-1,548.4	50.2	1,548.6	0.00	0.00	0.00	
10,900.0	90.00	179.85	9,800.0	-1,648.4	50.5	1,648.6	0.00	0.00	0.00	
11,000.0	90.00	179.85	9,800.0	-1,748.4	50.7	1,748.6	0.00	0.00	0.00	
11,100.0	90.00	179.85	9,800.0	-1,848.4	51.0	1,848.6	0.00	0.00	0.00	
11,200.0	90.00	179.85	9,800.0	-1,948.4	51.3	1,948.6	0.00	0.00	0.00	
11,300.0	90.00	179.85	9,800.0	-2,048.4	51.5	2,048.6	0.00	0.00	0.00	
11,400.0	90.00	179.85	9,800.0	-2,148.4	51.8	2,148.6	0.00	0.00	0.00	
11,500.0	90.00	179.85	9,800.0	-2,248.4	52.0	2,248.6	0.00	0.00	0.00	
11,600.0	90.00	179.85	9,800.0	-2,348.4	52.3	2,348.6	0.00	0.00	0.00	
11,700.0	90.00	179.85	9,800.0	-2,448.4	52.6	2,448.6	0.00	0.00	0.00	
11,800.0	90.00	179.85	9,800.0	-2,548.4	52.8	2,548.6	0.00	0.00	0.00	
11,900.0	90.00	179.85	9,800.0	-2,648.4	53.1	2,648.6	0.00	0.00	0.00	
12,000.0	90.00	179.85	9,800.0	-2,748.4	53.3	2,748.6	0.00	0.00	0.00	
12,100.0	90.00	179.85	9,800.0	-2,848.4	53.6	2,848.6	0.00	0.00	0.00	
12,200.0	90.00	179.85	9,800.0	-2,948.4	53.9	2,948.6	0.00	0.00	0.00	
12,300.0	90.00	179.85	9,800.0	-3,048.4	54.1	3,048.6	0.00	0.00	0.00	
12,400.0	90.00	179.85	9,800.0	-3,148.4	54.4	3,148.6	0.00	0.00	0.00	
12,500.0	90.00	179.85	9,800.0	-3,248.4	54.7	3,248.6	0.00	0.00	0.00	
12,600.0	90.00	179.85	9,800.0	-3,348.4	54.9	3,348.6	0.00	0.00	0.00	
12,700.0	90.00	179.85	9,800.0	-3,448.4	55.2	3,448.6	0.00	0.00	0.00	
12,800.0	90.00	179.85	9,800.0	-3,548.4	55.4	3,548.6	0.00	0.00	0.00	
12,900.0	90.00	179.85	9,800.0	-3,648.4	55.7	3,648.6	0.00	0.00	0.00	
13,000.0	90.00	179.85	9,800.0	-3,748.4	56.0	3,748.6	0.00	0.00	0.00	
13,100.0	90.00	179.85	9,800.0	-3,848.4	56.2	3,848.6	0.00	0.00	0.00	
13,200.0	90.00	179.85	9,800.0	-3,948.4	56.5	3,948.6	0.00	0.00	0.00	
13,300.0	90.00	179.85	9,800.0	-4,048.4	56.7	4,048.6	0.00	0.00	0.00	
13,400.0	90.00	179.85	9,800.0	-4,148.4	57.0	4,148.6	0.00	0.00	0.00	
13,500.0	90.00	179.85	9,800.0	-4,248.4	57.3	4,248.6	0.00	0.00	0.00	
13,600.0	90.00	179.85	9,800.0	-4,348.4	57.5	4,348.6	0.00	0.00	0.00	
13,700.0	90.00	179.85	9,800.0	-4,448.4	57.8	4,448.6	0.00	0.00	0.00	
13,800.0	90.00	179.85	9,800.0	-4,548.4	58.1	4,548.6	0.00	0.00	0.00	
13,900.0	90.00	179.85	9,800.0	-4,648.4	58.3	4,648.6	0.00	0.00	0.00	
14,000.0	90.00	179.85	9,800.0	-4,748.4	58.6	4,748.6	0.00	0.00	0.00	
14,100.0	90.00	179.85	9,800.0	-4,848.4	58.8	4,848.6	0.00	0.00	0.00	
14,200.0	90.00	179.85	9,800.0	-4,948.4	59.1	4,948.6	0.00	0.00	0.00	
14,300.0	90.00	179.85	9,800.0	-5,048.4	59.4	5,048.6	0.00	0.00	0.00	
14,400.0	90.00	179.85	9,800.0	-5,148.4	59.6	5,148.6	0.00	0.00	0.00	
14,500.0	90.00	179.85	9,800.0	-5,248.4	59.9	5,248.6	0.00	0.00	0.00	
14,600.0	90.00	179.85	9,800.0	-5,348.4	60.1	5,348.6	0.00	0.00	0.00	
14,700.0	90.00	179.85	9,800.0	-5,448.4	60.4	5,448.6	0.00	0.00	0.00	
14,800.0	90.00	179.85	9,800.0	-5,548.4	60.7	5,548.6	0.00	0.00	0.00	



Planning Report



Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Cutbow 36 1 Federal Com 502H
Company:	Avant Operating, LLC	TVD Reference:	Well @ 3606.5usft (3606.5)
Project:	Lea Co., NM (NAD 83)	MD Reference:	Well @ 3606.5usft (3606.5)
Site:	Cutbow 36 1 Federal Com Pad 2	North Reference:	Grid
Well:	Cutbow 36 1 Federal Com 502H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 0.2		

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)
14,900.0	90.00	179.85	9,800.0	-5,648.4	60.9	5,648.6	0.00	0.00	0.00
15,000.0	90.00	179.85	9,800.0	-5,748.4	61.2	5,748.6	0.00	0.00	0.00
15,100.0	90.00	179.85	9,800.0	-5,848.4	61.4	5,848.6	0.00	0.00	0.00
15,200.0	90.00	179.85	9,800.0	-5,948.4	61.7	5,948.6	0.00	0.00	0.00
15,300.0	90.00	179.85	9,800.0	-6,048.4	62.0	6,048.6	0.00	0.00	0.00
15,400.0	90.00	179.85	9,800.0	-6,148.4	62.2	6,148.6	0.00	0.00	0.00
15,500.0	90.00	179.85	9,800.0	-6,248.4	62.5	6,248.6	0.00	0.00	0.00
15,600.0	90.00	179.85	9,800.0	-6,348.4	62.8	6,348.6	0.00	0.00	0.00
15,700.0	90.00	179.85	9,800.0	-6,448.4	63.0	6,448.6	0.00	0.00	0.00
15,800.0	90.00	179.85	9,800.0	-6,548.4	63.3	6,548.6	0.00	0.00	0.00
15,900.0	90.00	179.85	9,800.0	-6,648.4	63.5	6,648.6	0.00	0.00	0.00
16,000.0	90.00	179.85	9,800.0	-6,748.4	63.8	6,748.6	0.00	0.00	0.00
16,100.0	90.00	179.85	9,800.0	-6,848.4	64.1	6,848.6	0.00	0.00	0.00
16,200.0	90.00	179.85	9,800.0	-6,948.4	64.3	6,948.6	0.00	0.00	0.00
16,300.0	90.00	179.85	9,800.0	-7,048.4	64.6	7,048.6	0.00	0.00	0.00
16,400.0	90.00	179.85	9,800.0	-7,148.4	64.8	7,148.6	0.00	0.00	0.00
16,500.0	90.00	179.85	9,800.0	-7,248.4	65.1	7,248.6	0.00	0.00	0.00
16,600.0	90.00	179.85	9,800.0	-7,348.4	65.4	7,348.6	0.00	0.00	0.00
16,700.0	90.00	179.85	9,800.0	-7,448.4	65.6	7,448.6	0.00	0.00	0.00
16,800.0	90.00	179.85	9,800.0	-7,548.4	65.9	7,548.6	0.00	0.00	0.00
16,900.0	90.00	179.85	9,800.0	-7,648.4	66.2	7,648.6	0.00	0.00	0.00
17,000.0	90.00	179.85	9,800.0	-7,748.4	66.4	7,748.6	0.00	0.00	0.00
17,100.0	90.00	179.85	9,800.0	-7,848.4	66.7	7,848.6	0.00	0.00	0.00
17,200.0	90.00	179.85	9,800.0	-7,948.4	66.9	7,948.6	0.00	0.00	0.00
17,300.0	90.00	179.85	9,800.0	-8,048.4	67.2	8,048.6	0.00	0.00	0.00
17,400.0	90.00	179.85	9,800.0	-8,148.4	67.5	8,148.6	0.00	0.00	0.00
17,500.0	90.00	179.85	9,800.0	-8,248.4	67.7	8,248.6	0.00	0.00	0.00
17,600.0	90.00	179.85	9,800.0	-8,348.4	68.0	8,348.6	0.00	0.00	0.00
17,700.0	90.00	179.85	9,800.0	-8,448.4	68.2	8,448.6	0.00	0.00	0.00
17,800.0	90.00	179.85	9,800.0	-8,548.4	68.5	8,548.6	0.00	0.00	0.00
17,900.0	90.00	179.85	9,800.0	-8,648.4	68.8	8,648.6	0.00	0.00	0.00
18,000.0	90.00	179.85	9,800.0	-8,748.4	69.0	8,748.6	0.00	0.00	0.00
18,100.0	90.00	179.85	9,800.0	-8,848.4	69.3	8,848.6	0.00	0.00	0.00
18,200.0	90.00	179.85	9,800.0	-8,948.4	69.5	8,948.6	0.00	0.00	0.00
18,300.0	90.00	179.85	9,800.0	-9,048.4	69.8	9,048.6	0.00	0.00	0.00
18,400.0	90.00	179.85	9,800.0	-9,148.4	70.1	9,148.6	0.00	0.00	0.00
18,500.0	90.00	179.85	9,800.0	-9,248.4	70.3	9,248.6	0.00	0.00	0.00
18,600.0	90.00	179.85	9,800.0	-9,348.4	70.6	9,348.6	0.00	0.00	0.00
18,700.0	90.00	179.85	9,800.0	-9,448.4	70.9	9,448.6	0.00	0.00	0.00
18,800.0	90.00	179.85	9,800.0	-9,548.4	71.1	9,548.6	0.00	0.00	0.00
18,900.0	90.00	179.85	9,800.0	-9,648.4	71.4	9,648.6	0.00	0.00	0.00
19,000.0	90.00	179.85	9,800.0	-9,748.4	71.6	9,748.6	0.00	0.00	0.00
19,100.0	90.00	179.85	9,800.0	-9,848.4	71.9	9,848.6	0.00	0.00	0.00
19,200.0	90.00	179.85	9,800.0	-9,948.4	72.2	9,948.6	0.00	0.00	0.00
19,300.0	90.00	179.85	9,800.0	-10,048.4	72.4	10,048.6	0.00	0.00	0.00
19,400.0	90.00	179.85	9,800.0	-10,148.4	72.7	10,148.6	0.00	0.00	0.00
19,500.0	90.00	179.85	9,800.0	-10,248.4	72.9	10,248.6	0.00	0.00	0.00
19,600.0	90.00	179.85	9,800.0	-10,348.4	73.2	10,348.6	0.00	0.00	0.00
19,700.0	90.00	179.85	9,800.0	-10,448.4	73.5	10,448.6	0.00	0.00	0.00
19,800.0	90.00	179.85	9,800.0	-10,548.4	73.7	10,548.6	0.00	0.00	0.00
19,900.0	90.00	179.85	9,800.0	-10,648.4	74.0	10,648.6	0.00	0.00	0.00
20,000.0	90.00	179.85	9,800.0	-10,748.4	74.3	10,748.6	0.00	0.00	0.00
20,100.0	90.00	179.85	9,800.0	-10,848.4	74.5	10,848.6	0.00	0.00	0.00
20,200.0	90.00	179.85	9,800.0	-10,948.4	74.8	10,948.6	0.00	0.00	0.00



Planning Report



Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Cutbow 36 1 Federal Com 502H
Company:	Avant Operating, LLC	TVD Reference:	Well @ 3606.5usft (3606.5)
Project:	Lea Co., NM (NAD 83)	MD Reference:	Well @ 3606.5usft (3606.5)
Site:	Cutbow 36 1 Federal Com Pad 2	North Reference:	Grid
Well:	Cutbow 36 1 Federal Com 502H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 0.2		

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)	
20,300.0	90.00	179.85	9,800.0	-11,048.4	75.0	11,048.6	0.00	0.00	0.00	
20,400.0	90.00	179.85	9,800.0	-11,148.4	75.3	11,148.6	0.00	0.00	0.00	
20,460.5	90.00	179.85	9,800.0	-11,208.9	75.5	11,209.1	0.00	0.00	0.00	
TD at 20460.5 - LTP/PBHL - Cutbow 36 1 Federal Com 502H										

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
LTP/PBHL - Cutbow 36	0.00	0.00	9,800.0	-11,208.9	75.5	580,829.86	729,182.18	32.5952735°N	103.7233907°W
- plan hits target center									
- Point									
FTP - Cutbow 36 1 Fede	0.00	0.00	9,800.0	-841.4	48.4	591,197.38	729,155.09	32.6237699°N	103.7232855°W
- plan hits target center									
- Point									

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
5,620.0	5,620.0	0.0	0.0	KOP - Start Build 2.00	
5,949.9	5,949.2	-18.8	2.4	Start 2863.1 hold at 5949.9 MD	
8,813.0	8,793.3	-345.1	44.7	Start Drop -2.00	
9,143.0	9,122.5	-363.9	47.1	Start 200.0 hold at 9143.0 MD	
9,343.0	9,322.5	-363.9	47.1	KOP #2 - Start Build 12.00	
10,093.0	9,800.0	-841.4	48.4	LP - Start 10367.6 hold at 10093.0 MD	
20,460.5	9,800.0	-11,208.9	75.5	TD at 20460.5	



Avant Operating, LLC

Lea Co., NM (NAD 83)

Cutbow 36 1 Federal Com Pad 2

Cutbow 36 1 Federal Com 502H

OH

Plan 0.2

Anticollision Summary Report

07 February, 2024





Anticollision Summary Report



Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Cutbow 36 1 Federal Com 502H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3606.5usft (3606.5)
Reference Site:	Cutbow 36 1 Federal Com Pad 2	MD Reference:	Well @ 3606.5usft (3606.5)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Cutbow 36 1 Federal Com 502H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.2	Offset TVD Reference:	Offset Datum

Reference	Plan 0.2		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum centre distance of 1,000.0usft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	2/7/2024		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	20,460.5	Plan 0.2 (OH)	B001Mb_MWD+HRGM	OWSG MWD + HRGM

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Cutbow 36 1 Federal Com Pad 1						
Cutbow 36 1 Federal Com 601H - OH - Surveys	7,245.8	7,199.7	998.4	947.4	19.568	CC
Cutbow 36 1 Federal Com 601H - OH - Surveys	7,300.0	7,248.5	998.6	947.2	19.434	ES
Cutbow 36 1 Federal Com 601H - OH - Surveys	7,400.0	7,341.9	999.8	947.7	19.202	SF
Cutbow 36 1 Federal Com 602H - OH - Surveys	10,060.4	9,787.9	271.4	201.3	3.872	CC, ES, SF
Cutbow 36 1 Federal Com 603H - OH - Surveys	10,021.4	9,789.5	608.2	537.9	8.651	CC
Cutbow 36 1 Federal Com 603H - OH - Surveys	10,025.0	9,789.9	608.2	537.9	8.649	ES
Cutbow 36 1 Federal Com 603H - OH - Surveys	10,050.0	9,791.9	608.8	538.3	8.644	SF
Cutbow 36 1 Federal Com Pad 2						
Cutbow 36 1 Federal Com 301H - OH - Plan 0.2	2,000.0	2,000.0	19.9	6.1	1.437	Level 3, CC, ES, SF
Cutbow 36 1 Federal Com 302H - OH - Plan 0.2	5,620.0	5,620.0	20.1	-19.7	0.505	Level 1, CC
Cutbow 36 1 Federal Com 302H - OH - Plan 0.2	5,700.0	5,699.6	20.3	-20.1	0.503	Level 1, ES, SF
Cutbow 36 1 Federal Com 501H - OH - Plan 0.2	2,000.0	2,000.0	39.9	26.0	2.875	CC, ES
Cutbow 36 1 Federal Com 501H - OH - Plan 0.2	2,100.0	2,098.9	41.2	26.7	2.828	SF
Snyder Aky 01 (Offset)						
Snyder Aky 01 - Snyder Aky 01 - Surveys	18,254.6	9,678.5	534.9	231.7	1.764	CC, ES, SF
State HH 03H (Offset)						
State HH 03H (Offset) - State HH 03H (Offset) - Surveys						Out of range

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Summary Report



Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Cutbow 36 1 Federal Com 502H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3606.5usft (3606.5)
Reference Site:	Cutbow 36 1 Federal Com Pad 2	MD Reference:	Well @ 3606.5usft (3606.5)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Cutbow 36 1 Federal Com 502H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.2	Offset TVD Reference:	Offset Datum

Reference Depths are relative to Well @ 3606.5usft (3606.5)

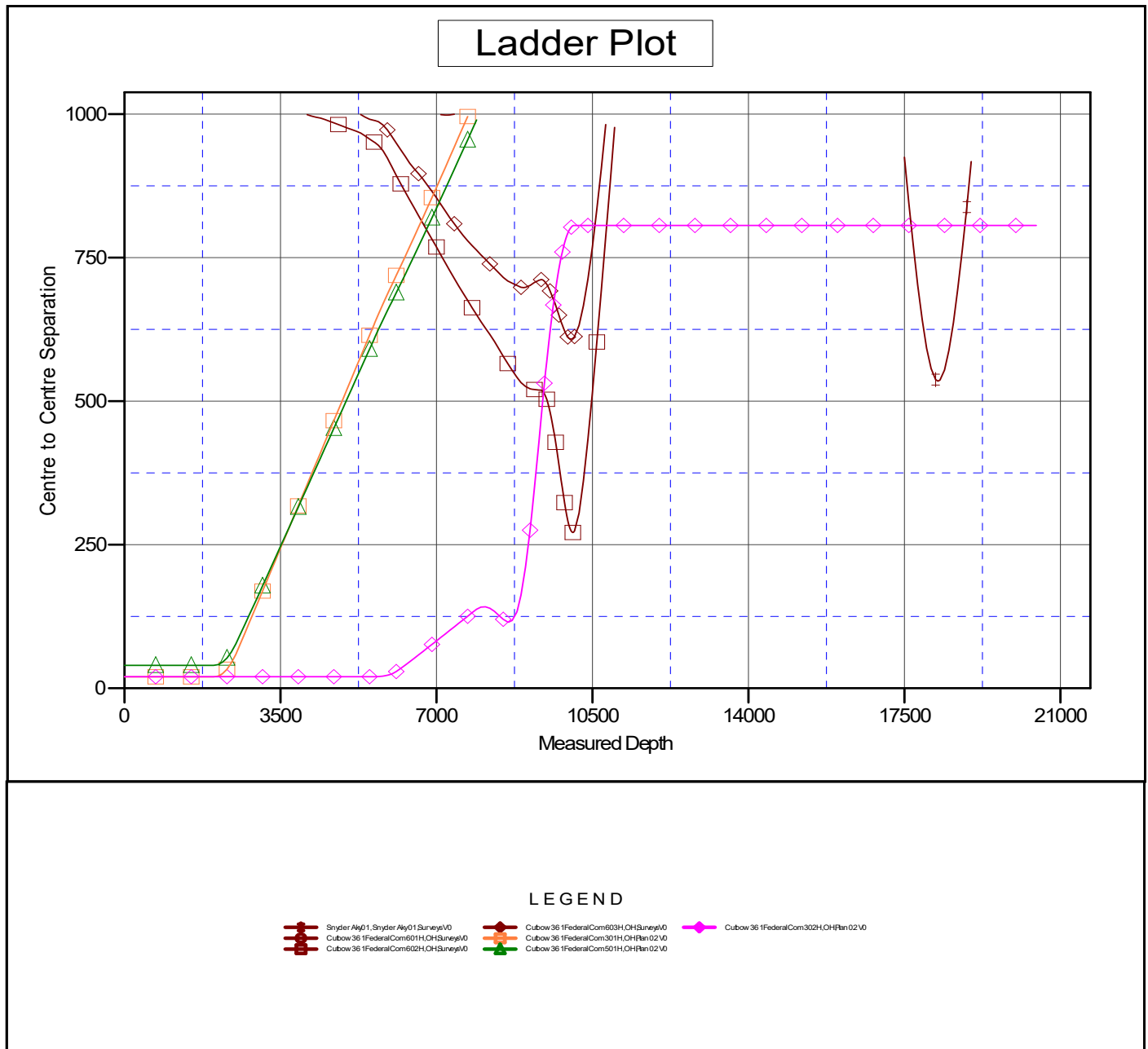
Offset Depths are relative to Offset Datum

Central Meridian is 104.333333°W

Coordinates are relative to: Cutbow 36 1 Federal Com 502H

Coordinate System is US State Plane 1983, New Mexico Eastern Zone

Grid Convergence at Surface is: 0.33°



CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Summary Report



Company:	Avant Operating, LLC	Local Co-ordinate Reference:	Well Cutbow 36 1 Federal Com 502H
Project:	Lea Co., NM (NAD 83)	TVD Reference:	Well @ 3606.5usft (3606.5)
Reference Site:	Cutbow 36 1 Federal Com Pad 2	MD Reference:	Well @ 3606.5usft (3606.5)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Cutbow 36 1 Federal Com 502H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.16 Single User Db
Reference Design:	Plan 0.2	Offset TVD Reference:	Offset Datum

Reference Depths are relative to Well @ 3606.5usft (3606.5)

Offset Depths are relative to Offset Datum

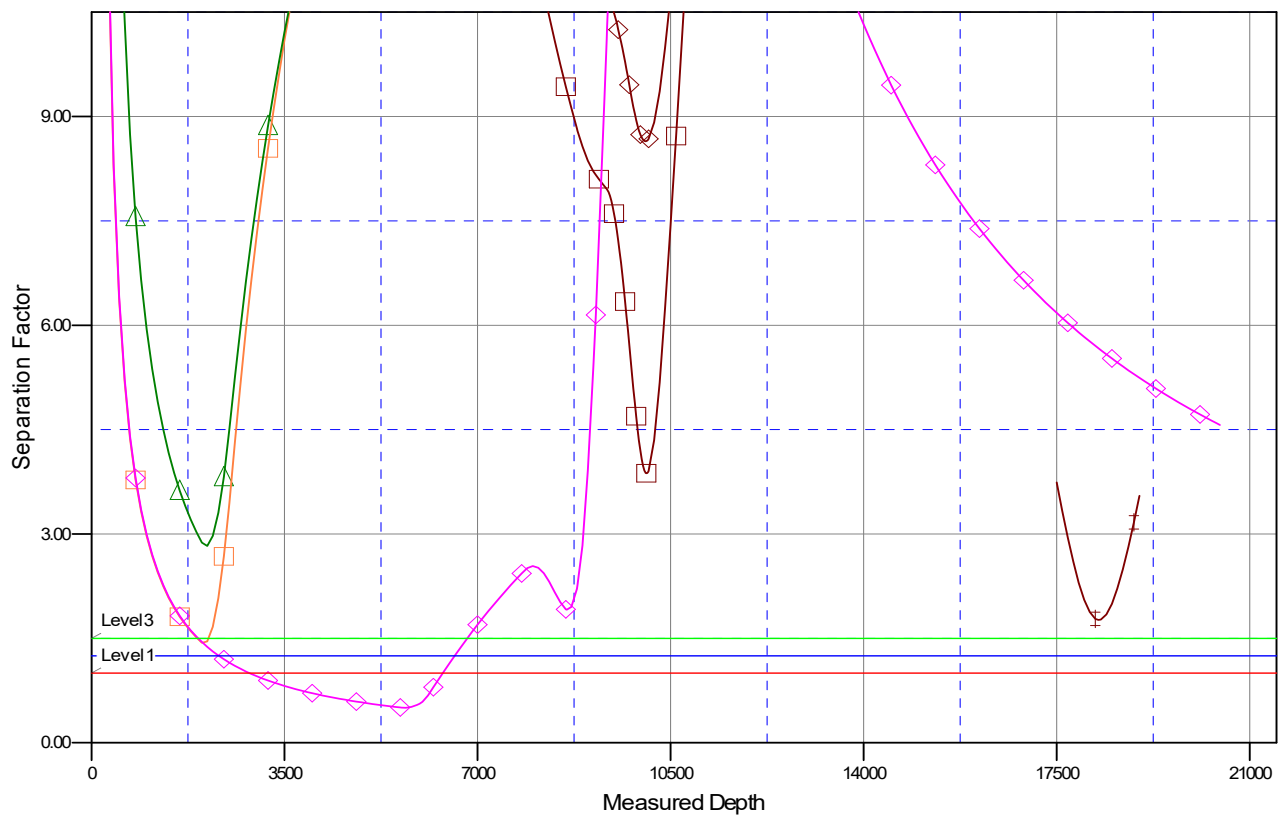
Central Meridian is 104.333333°W

Coordinates are relative to: Cutbow 36 1 Federal Com 502H

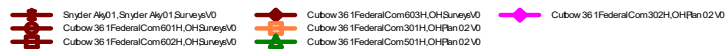
Coordinate System is US State Plane 1983, New Mexico Eastern Zone

Grid Convergence at Surface is: 0.33°

Separation Factor Plot



LEGEND



CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

PROPOSAL#: 220810161844-F



CEMENT PROCEDURE & PROPOSAL

PREPARED FOR:

Mr. Braden Harris

EMAIL: braden@avantnr.com

PHONE NUMBER: 406-600-3310

Avant Natural Resources

Cutbow 36-1 Fed Com #502H

Lea County, NM

API Number: 30-025-51650

Service Point

Odessa

1400 S JBS Parkway Odessa, TX 79766

432-701-8955

Technical Writer

Jonathan Smith

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Jon Reynolds

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.Disclaimer Notice:

The ability of West Texas Cementers to complete this work is subject to the availability of the raw materials required to complete the job.

This information is presented in good faith, but no warranty is given by and West Texas Cementers LLC assumes no liability for advice or recommendations made concerning results to be obtained from the use of any product or service. The results given are estimates based on calculations produced by a computer model including various assumptions on the well, reservoir and treatment. The results depend on input data provided by the Operator and estimates as to unknown data and can be no more accurate than the model, the assumptions and such input data. The information presented is WTC LLC best estimate of the actual results that may be achieved and should be used for comparison purposes rather than absolute values. The quality of input data, and hence results, may be improved through the use of certain tests and procedures which West Texas Cementers LLC can assist in selecting. The Operator has superior knowledge of the well, the reservoir, the field and conditions affecting them. If the Operator is aware of any conditions whereby a neighboring well or wells might be affected by the treatment proposed herein it is the Operator's responsibility to notify the owner or owners of the well or wells accordingly. Prices quoted are estimates only and are good for 30 days from the date of issue. Actual charges may vary depending upon time, equipment, and material ultimately required to perform these services. Freedom from infringement of patents of West Texas Cementers LLC or others is not to be inferred.

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1/25/2024 15:30

VERSION: v0.29

Avant Natural Resources
Cutbow 36-1 Fed Com #502H
Lea County, NM

Surface



PROPOSAL#: 220810161844-F

WELL INFORMATION						
MUD	8.4# Fresh Water					
PREVIOUS PIPE	30" 98.89# CSG to 120					
OPEN HOLE	24" OH to 1175					
CASING/INJECTION	20" 94# J-55/BTC to 1175					
MD	1175					
EST BHST/BHCT	90-F / 82-F (0.8-F/100-FT)					
NOTES	Standby charges start after WTC has been on location for more than 4-hrs.					
VOLUMES						
FLUID NAME	LENGTH (ft)	OD (in.)	ID (in.)	XS (%)	FACTOR (bbl/ft)	VOLUME (bbl)
Lead	120	29.376	20		0.4497	54.0
Lead	755	24	20	50%	0.2564	193.6
Tail	300	24	20	20%	0.2052	61.5
SHOE JOINT	40	20	19.124		0.3553	14.2
FLUIDS						
SPACER						
Fresh Water						
VOLUME	20-bbl					
Lead						
35% B_Poz+65% Class C+6% Gel+5% SALT+0.25PPS Pol-E-Flake+0.005GPS NoFoam V1A						
VOLUME	735-SX					248.7-bbls
DENSITY	12.8-ppg					
YIELD	1.9-cf/sx					
MIX WATER	10.17-gps					
TOP OF CEMENT	Surface					
EXCESS	50%					

Avant Natural Resources
Cutbow 36-1 Fed Com #502H
Lea County, NM

Surface



PROPOSAL#: 220810161844-F

Tail		
	100% Class C+1% CaCl2+0.005GPS NoFoam V1A	
VOLUME	320-SX	75.8-bbls
DENSITY	14.8-ppg	
YIELD	1.33-cf/sx	
MIX WATER	6.34-gps	
TOP OF CEMENT	875-ft	
EXCESS	20%	
DISPLACEMENT		
	Displacement	
VOLUME	403.2-bbl	

Avant Natural Resources
Cutbow 36-1 Fed Com #502H
Lea County, NM

1st Intermediate



PROPOSAL#: 220810161844-F

WELL INFORMATION						
MUD	10.5# Brine					
PREVIOUS PIPE	20" 94# CSG to 1175					
OPEN HOLE	17.5" OH to 2950					
CASING/INJECTION	13.375" 54.5# J-55/LTC to 2950					
MD	2950					
EST BHST/BHCT	104-F / 94-F (0.8-F/100-FT)					
NOTES	Standby charges start after WTC has been on location for more than 4-hrs.					
VOLUMES						
FLUID NAME	LENGTH (ft)	OD (in.)	ID (in.)	XS (%)	FACTOR (bbl/ft)	VOLUME (bbl)
Lead	1175	19.124	13.375		0.1815	213.2
Lead	1185	17.5	13.375	50%	0.1856	219.9
Tail	590	17.5	13.375	20%	0.1485	87.6
SHOE JOINT	40	13.375	12.615		0.1546	6.2
FLUIDS						
SPACER						
Fresh Water						
VOLUME	20-bbl					
Lead						
35% B_Poz+65% Class C+6% Gel+5% SALT+0.05% R-1300+0.25PPS Pol-E-Flake+0.005GPS NoFoam V1A						
VOLUME	1285-SX					434.8-bbls
DENSITY	12.8-ppg					
YIELD	1.9-cf/sx					
MIX WATER	10.17-gps					
TOP OF CEMENT	Surface					
EXCESS	50%					

Avant Natural Resources
Cutbow 36-1 Fed Com #502H
Lea County, NM

1st Intermediate



PROPOSAL#: 220810161844-F

Tail		
	100% Class C+5% SALT+0.005GPS NoFoam V1A	
VOLUME	390-SX	94.5-bbls
DENSITY	14.8-ppg	
YIELD	1.36-cf/sx	
MIX WATER	6.51-gps	
TOP OF CEMENT	2360-ft	
EXCESS	20%	
DISPLACEMENT		
	Displacement	
VOLUME	449.8-bbl	

Avant Natural Resources
Cutbow 36-1 Fed Com #502H
Lea County, NM

2nd Multi-Stage Intermediate



PROPOSAL#: 220810161844-F

WELL INFORMATION						
MUD	8.4# Fresh Water					
PREVIOUS PIPE	13.375" 54.5# CSG to 2950					
OPEN HOLE	12.25" OH to 4603					
CASING/INJECTION	9.625" 40# J-55/LTC/L-80-HC to 4603					
MD	4603					
TVD	4600					
EST BHST/BHCT	117-F / 103-F (0.8-F/100-FT)					
DV TOOL	3200					
EST BHST/BHCT STG2	106-F / 95-F (0.8-F/100-FT)					
NOTES	Standby charges start after WTC has been on location for more than 8-hrs.					
VOLUMES						
FLUID NAME	LENGTH (ft)	OD (in.)	ID (in.)	XS (%)	FACTOR (bbl/ft)	VOLUME (bbl)
Stage 1 Lead	482	12.25	9.625	50%	0.0837	40.3
Stage 1 Tail	921	12.25	9.625	20%	0.0669	61.6
Stage 2 Lead	2790	12.615	9.625	50%	0.0969	270.3
Stage 2 Tail	160	12.615	9.625	0%	0.0646	10.3
Stage 2 Tail	250	12.25	9.625	0%	0.0558	13.9
SHOE JOINT	40	9.625	8.835		0.0758	3.0
FLUIDS						
SPACER						
Fresh Water						
VOLUME	25-bbl					
Stage 1 Lead						
35% B_Poz+65% Class C+6% Gel+5% SALT+0.4% R-1300+0.25PPS Pol-E-Flake+0.005GPS NoFoam V1A						
VOLUME	120-SX					
DENSITY	12.8-ppg					
YIELD	1.9-cf/sx					
MIX WATER	10.18-gps					
TOP OF CEMENT	3200-ft					
EXCESS	50%					
						40.6-bbls

40.6-bbls

Avant Natural Resources
Cutbow 36-1 Fed Com #502H
Lea County, NM

2nd Multi-Stage Intermediate



PROPOSAL#: 220810161844-F

Stage 1 Tail		
100% Class C+5% SALT+0.25% CRT-201+0.005GPS NoFoam V1A		
VOLUME	270-SX	65.4-bbls
DENSITY	14.8-ppg	
YIELD	1.36-cf/sx	
MIX WATER	6.49-gps	
TOP OF CEMENT	3682-ft	
EXCESS	20%	
DISPLACEMENT		
Displacement		
VOLUME	346-bbl	
SPACER		
Fresh Water		
VOLUME	20-bbl	
Stage 2 Lead		
35% B_Poz+65% Class C+6% Gel+5% SALT+0.2% R-1300+0.25PPS Pol-E-Flake+0.005GPS NoFoam V1A		
VOLUME	800-SX	270.7-bbls
DENSITY	12.8-ppg	
YIELD	1.9-cf/sx	
MIX WATER	10.18-gps	
TOP OF CEMENT	Surface	
EXCESS	50%	
Stage 2 Tail		
100% Class C+5% SALT+0.005GPS NoFoam V1A		
VOLUME	100-SX	24.2-bbls
DENSITY	14.8-ppg	
YIELD	1.36-cf/sx	
MIX WATER	6.51-gps	
TOP OF CEMENT	2790-ft	
EXCESS	0%	
DISPLACEMENT		
Displacement		
VOLUME	242.6-bbl	

Avant Natural Resources
Cutbow 36-1 Fed Com #502H
Lea County, NM

Production



PROPOSAL#: 220810161844-F

WELL INFORMATION						
MUD	9.8# OBM					
PREVIOUS PIPE	9.625" 40# CSG to 4600					
OPEN HOLE	8.75" OH to 20462					
CASING/INJECTION	5.5" 20# P-110/HC/GBCD to 20462					
MD	20462					
TVD	9800					
EST BHST/BHCT	212-F / 195-F (1.34-F/100-FT)					
KOP	9344					
NOTES	Standby charges start after WTC has been on location for more than 8-hrs.					
VOLUMES						
FLUID NAME	LENGTH (ft)	OD (in.)	ID (in.)	XS (%)	FACTOR (bbl/ft)	VOLUME (bbl)
Lead	4600	8.835	5.5		0.0464	213.6
Lead	4744	8.75	5.5	50%	0.0675	320.1
Tail	11118	8.75	5.5	20%	0.0540	600.2
SHOE JOINT	80	5.5	4.778		0.0222	1.8
FLUIDS						
SPACER						
Wt. Spacer 37.16GPB Water+8PPB PolyScrub 4320+105.54PPB Barite+1GPB HoleScrub 4311+1PPB R-1300						
VOLUME	40-bbl					
DENSITY	10.3-ppg					
Lead						
100% ProLite+5PPS Plexcrete STE+2% SMS+0.65% R-1300+0.2% FL-24+3PPS Gilsonite+0.005GPS NoFoam V1A						
VOLUME	890-SX					
DENSITY	10.7-ppg					
YIELD	3.38-cf/sx					
MIX WATER	21.06-gps					
TOP OF CEMENT	Surface					
EXCESS	50%					
	535.8-bbls					

535.8-bbls

Avant Natural Resources
Cutbow 36-1 Fed Com #502H
Lea County, NM

Production



PROPOSAL#: 220810161844-F

Tail		
50% B_Poz+50% Class H+5% SALT+0.05% RCKCAS-100+0.75% R-1201+0.5% FL-24+0.005GPS NoFoam V1A		
VOLUME	2795-SX	602.3-bbls
DENSITY	14.5-ppg	
YIELD	1.21-cf/sx	
MIX WATER	5.28-gps	
TOP OF CEMENT	9344-ft	
EXCESS	20%	
DISPLACEMENT		
Fresh Water+ 0.25GPT Plexicide 24L+1GPT Corplex		
VOLUME	452-bbl	
DENSITY	8.34-ppg	

CHEMICAL DESCRIPTIONS		
CHEMICAL NAME	CODE	DESCRIPTION
B_Poz	WTC228	Poz - Fly Ash, Extender
Class H	WTC101	API Cement
Class C	WTC100	API Cement
Premium C	WTC270	API Cement
ProLite		Blended Based Cement
Plexcrete SFA	WTC129	Cement Strength Enhancer
Gel	WTC102	Extender
Micro Crystal	WTC212	Cement Strength Enhancer
Micro Shell	WTC209	Cement Strength Enhancer
WTC1	WTC250	Extender
Plexcrete STE	WTC127	Cement Strength Enhancer
FAR-2	WTC260	Cement Strength Enhancer
Gypsum	WTC111	Free Water Control, Extender
CaCl ₂	WTC112	Accelerator
SMS	WTC115	Free Water Control, Extender
RCKCAS-100	WTC276	Free Water Control, Anti-Settling Agent
SA-1	WTC264	Free Water Control, Extender
R-33	WTC243	Lignosulfonate Retarder
R-1300	WTC201	Low Temperature Retarder
CRT-201	WTC278	Lignosulfonate Retarder
R-1201	WTC253	Lignosulfonate Retarder
C-37	WTC224	Dispersant, Friction Reducer
FL-24	WTC277	Fluid Loss (polymers/copolymers - 300-F max)
EC-10	WTC120	Expanding Agent
Gas Bond	WTC126	Gas Migration Control (Hydrogen Generating)
Gilsonite	WTC003	Premium Lost Circulation Material, Free Water Control
Pol-E-Flake	WTC106	Lost Circulation Material
Web Seal	WTC133	Premium Fiber Lost Circulation Material
Zone Seal	WTC207	Premium Lost Circulation Material
NoFoam V1A	WTC105	Liquid Defoamer
Water		Fresh Water
PolyScrub 4320	WTC232	Spacer Gelling Agent
Barite	WTC116	Weighting Agent
HoleScrub 4311	WTC281	Surfactant
HoleScrub 4305	WTC213	Surfactant
HoleScrub 4308	WTC215	Surfactant
Soda Ash	WTC164	pH Control
R-1300	WTC201	Low Temperature Retarder
SuspendaCem 6302	WTC005	Free Water Control, Anti-Settling Agent
Sugar	WTC119	Retarder
AI-1, Acid Inhibitor	WTC015	Corrosion Inhibitor
Plexcide 24L	WTC166	Biocide
Corplex	WTC134	Corrosion Inhibitor
Clay Max	WTC096	KCL Substitute
Zone Seal	WTC207	Premium Lost Circulation Material

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

CONDITIONS

Action 320511

CONDITIONS

Operator: Avant Operating, LLC 1515 Wynkoop Street Denver, CO 80202	OGRID: 330396
	Action Number: 320511
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
pkautz	None	7/24/2024