

Well Name	Well Number	US Well Number	Lease Number	Case Number	Operator
GRAYLING 14	606H		NMNM025497	NMNM025497	AVANT
GRAYLING 14	505H		NMNM025497	NMNM025497	AVANT
GRAYLING 14	305H		NMNM025497	NMNM025497	AVANT
GRAYLING 14	604H		NMNM025497	NMNM025497	AVANT
GRAYLING 14	205H		NMNM025497	NMNM025497	AVANT
GRAYLING 14	306H		NMNM025497	NMNM025497	AVANT
GRAYLING 14	504H		NMNM025497	NMNM025497	AVANT
GRAYLING 14	605H		NMNM025497	NMNM025497	AVANT
GRAYLING 14	204H		NMNM025497	NMNM025497	AVANT
GRAYLING 14	206H		NMNM025497	NMNM025497	AVANT
GRAYLING 14	304H		NMNM025497	NMNM025497	AVANT
GRAYLING 14	506H		NMNM025497	NMNM025497	AVANT

Notice of Intent

**Sundry ID:** 2827178

**Type of Submission:** Notice of Intent

**Date Sundry Submitted:** 12/12/2024

**Date proposed operation will begin:** 12/12/2024

**Type of Action:** APD Change

**Time Sundry Submitted:** 02:44

**Procedure Description:** Avant Operating, LLC would like to request offline cement variances for the Grayling Pad 3 wells below, please see attached offline cement procedures for reference. Grayling 14 Fed Com 204H APD ID 10400096908 Grayling 14 Fed Com 205H APD ID 10400096950 Grayling 14 Fed Com 206H APD ID 10400096951 Grayling 14 Fed Com 304H APD ID 10400096954 Grayling 14 Fed Com 305H APD ID 10400096955 Grayling 14 Fed Com 306H APD ID 10400096956 Grayling 14 Fed Com 504H APD ID 10400096962 Grayling 14 Fed Com 505H APD ID 10400096963 Grayling 14 Fed Com 506H APD ID 10400096964 Grayling 14 Fed Com 604H APD ID 10400096971 Grayling 14 Fed Com 604H APD ID 10400096972 Grayling 14 Fed Com 604H APD ID 10400096973

NOI Attachments

Procedure Description

- Avant\_\_\_Offline\_Cementing\_Procedure\_20241212104321.pdf
- Avant\_Surface\_Casing\_Cement\_Variance\_20241212104307.pdf

Conditions of Approval

Specialist Review

Offline\_Cementing\_COA\_Variance\_20241212152038.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: DEC 12, 2024 02:44 PM

Name: AVANT OPERATING LLC

Title: Contract Regulatory Analyst

Street Address: 1515 WYNKOOP ST SUITE 700

City: DENVERState: 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: LONG VO

BLM POC Title: Petroleum Engineer

BLM POC Phone: 5759885402

BLM POC Email Address: LVO@BLM.GOV

Disposition: Approved

Disposition Date: 12/12/2024

Signature: Long Vo

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****Additional Remarks**

Grayling 14 Fed Com 604H APD ID 10400096972

Grayling 14 Fed Com 604H APD ID 10400096973

**Batch Well Data**

GRAYLING 14 FED COM 204H, US Well Number: null, Case Number: NMNM025497, Lease Number: NMNM025497,  
Operator:AVANT OPERATING LLC

GRAYLING 14 FED COM 205H, US Well Number: null, Case Number: NMNM025497, Lease Number: NMNM025497,  
Operator:AVANT OPERATING LLC

GRAYLING 14 FED COM 206H, US Well Number: null, Case Number: NMNM025497, Lease Number: NMNM025497,  
Operator:AVANT OPERATING LLC

GRAYLING 14 FED COM 304H, US Well Number: null, Case Number: NMNM025497, Lease Number: NMNM025497,  
Operator:AVANT OPERATING LLC

GRAYLING 14 FED COM 305H, US Well Number: null, Case Number: NMNM025497, Lease Number: NMNM025497,  
Operator:AVANT OPERATING LLC

GRAYLING 14 FED COM 306H, US Well Number: null, Case Number: NMNM025497, Lease Number: NMNM025497,  
Operator:AVANT OPERATING LLC

GRAYLING 14 FED COM 504H, US Well Number: null, Case Number: NMNM025497, Lease Number: NMNM025497,  
Operator:AVANT OPERATING LLC

GRAYLING 14 FED COM 505H, US Well Number: null, Case Number: NMNM025497, Lease Number: NMNM025497,  
Operator:AVANT OPERATING LLC

GRAYLING 14 FED COM 506H, US Well Number: null, Case Number: NMNM025497, Lease Number: NMNM025497,  
Operator:AVANT OPERATING LLC

GRAYLING 14 FED COM 604H, US Well Number: null, Case Number: NMNM025497, Lease Number: NMNM025497,  
Operator:AVANT OPERATING LLC

GRAYLING 14 FED COM 605H, US Well Number: null, Case Number: NMNM025497, Lease Number: NMNM025497,  
Operator:AVANT OPERATING LLC

GRAYLING 14 FED COM 606H, US Well Number: null, Case Number: NMNM025497, Lease Number: NMNM025497,  
Operator:AVANT OPERATING LLC

CONFIDENTIAL



## Offline Cementing Summary – Intermediate Casing

No changes to the cement program will take place for offline cementing.

**Note: Offline cementing will only be preformed within the Bone Springs and shallower with a MASP less than 5000 psi.**

1. Run casing as per normal operations. While running casing, conduct negative pressure test and test back pressure valves.
  - a. Float equipment is equipped with two back pressure valves rated to a minimum of 5,000 psi.
2. Land production casing on mandrel hanger through BOP.
  - a. If casing is unable to be landed with a mandrel hanger, then the **casing will be cemented online.**
  - b. Shoe assembly shown in Figure 1.
3. Break circulation and confirm no restrictions.
  - a. Ensure no blockage of float equipment and appropriate annular returns.
  - b. Perform flow check to confirm well is static.
4. Set pack-off
  - a. If utilizing a fluted/ported mandrel hanger, ensure well is static on the annulus and inside the casing by filling the pipe with kill weight fluid, remove landing joint, and set annular packoff through BOP. Pressure test to 5,000 psi for 10 min.
  - b. If utilizing a solid mandrel hanger, ensure well is static on the annulus and inside the casing by filling the pipe with kill weight fluid. Pressure test seals to 5,000 psi for 10 min. Remove landing joint through BOP.
5. After confirmation of both annular barriers and the two casing barriers, install TA plug and pressure test to 5,000 psi for 10 min. Notify the BLM with intent to proceed with nipple down and offline cementing.
  - a. Minimum 4 hrs notice.
6. With the well secured and BLM notified, nipple down BOP and secure with 10k cement tool and cement head.
  - a. **Note: If any of the mechanical barriers fail to pressure test or well does not remain static, the BOP stack will not be nipped down until after the cement job has concluded and both lead and tail slurry have reached 500 psi.**
7. Skid/Walk rig off current well.
8. Rig up return lines to take returns from wellhead to pits and rig choke.
  - a. Test all connections and lines from wellhead to choke manifold to 5,000 psi high for 10 min.
  - b. If either test fails, perform corrections and retest before proceeding.
9. Rig up cementing lines.
  - a. Pressure test cement lines against cement head to 80% of casing burst for 10 min.
10. Break circulation on well to confirm no restrictions.
  - a. If gas is present on circulation, well will be shut in and returns rerouted through gas buster.
  - b. Max anticipated time before circulating with cement truck is 6 hrs.
11. Pump cement job as per plan.
  - a. At plug bump, test casing to 0.22 psi/ft or 1500 psi, whichever is greater.
  - b. If plug does not bump on calculated, shut down and wait 8 hrs or 500 psi compressive strength, whichever is greater before testing casing.
  - c. If an influx is taken while cementing, Well Control Procedure from Appendix III will be followed.
12. Confirm well is static and floats are holding after cement job.
  - a. With floats holding and backside static:
    - i. Remove cement head.
  - b. If floats are leaking:
    - i. Shut-in well and WOC (Wait on Cement) until tail slurry reaches 500 psi compressive strength and the casing is static prior to removing cement head.
  - c. If there is flow on the backside:
    - i. Shut in well and WOC until tail slurry reaches 500 psi compressive strength. Ensure that the casing is static prior to removing cement head.
  - d. If bradenhead cement remediation is required, Well Control Procedure from Appendix IV will be followed.
13. Remove offline cement tool.
14. Install night cap with pressure gauge for monitoring.
15. Test night cap to 5,000 psi for 10 min.

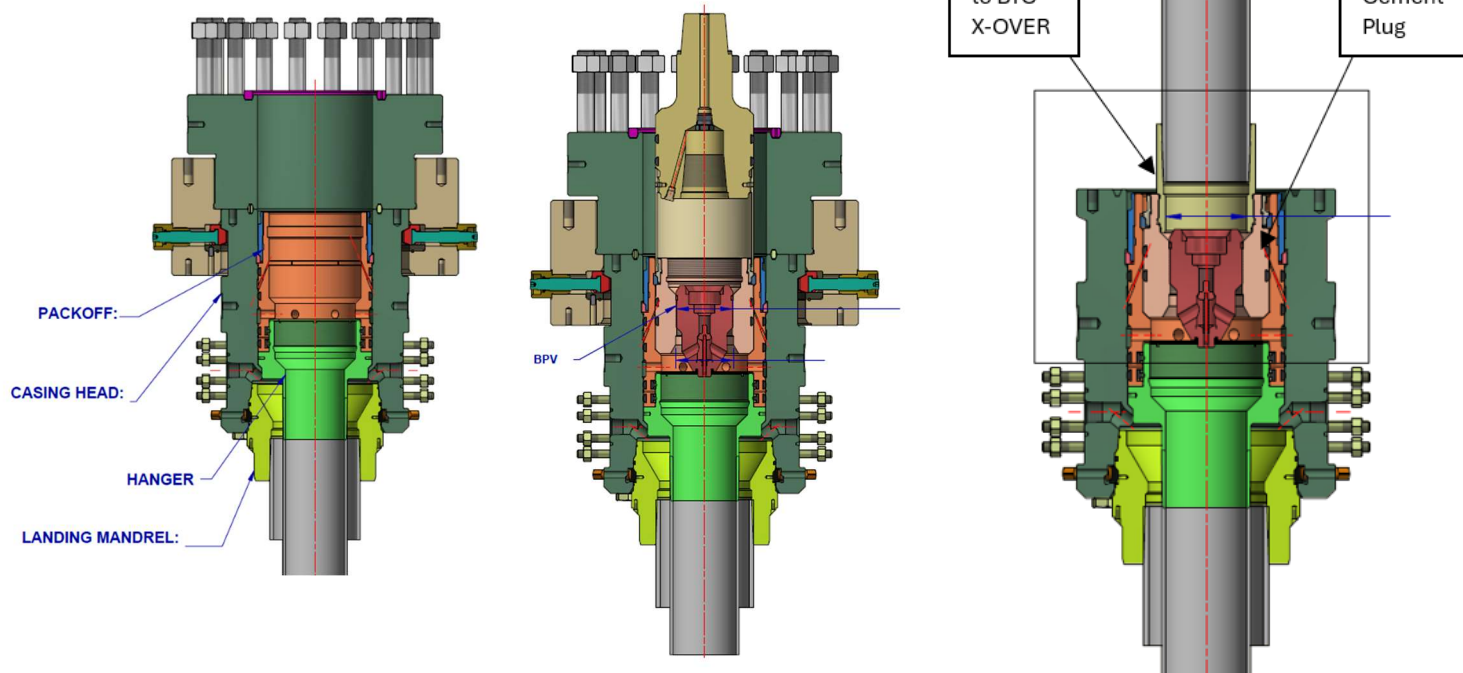


## Appendix

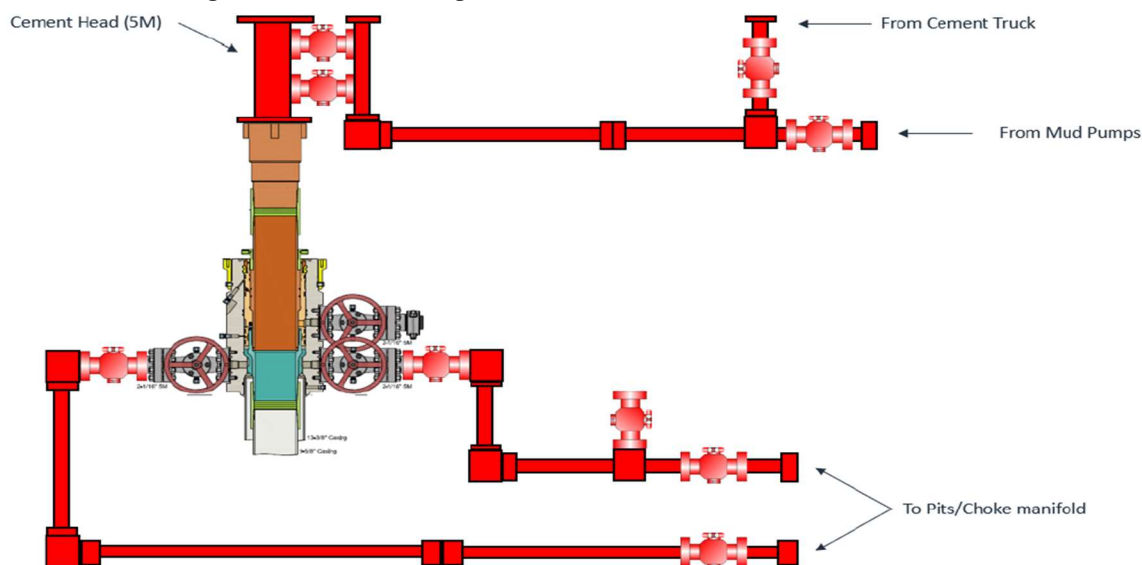
### I. Offline cementing equipment ratings – 5M requirement

#### Component RWP

1. Pack-off 10M
2. Cement head 10M
3. Casing Wellhead Valves 10M
4. Annular Wellhead Valves 5M
5. TA Plug 10M
6. Float Valves 5M
7. 2" 1502 Lo-Torque Valves 15M



### II. Cementing Instrumentation Diagram

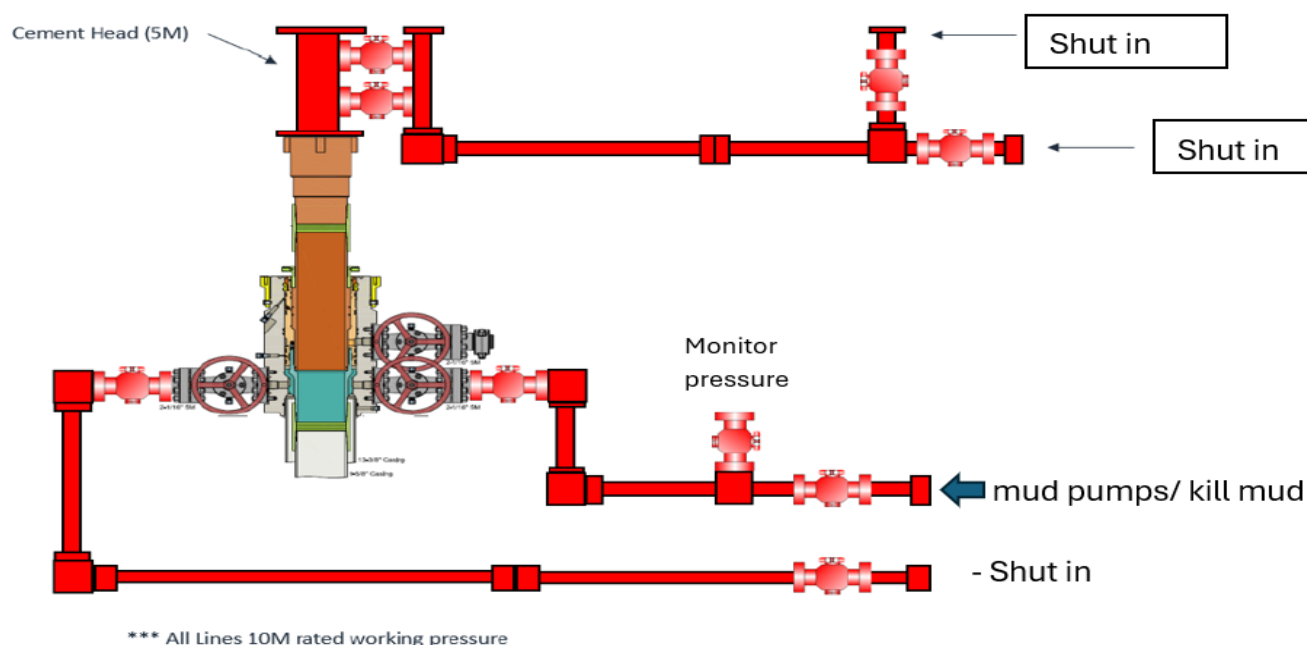


\*\*\* All Lines 10M rated working pressure

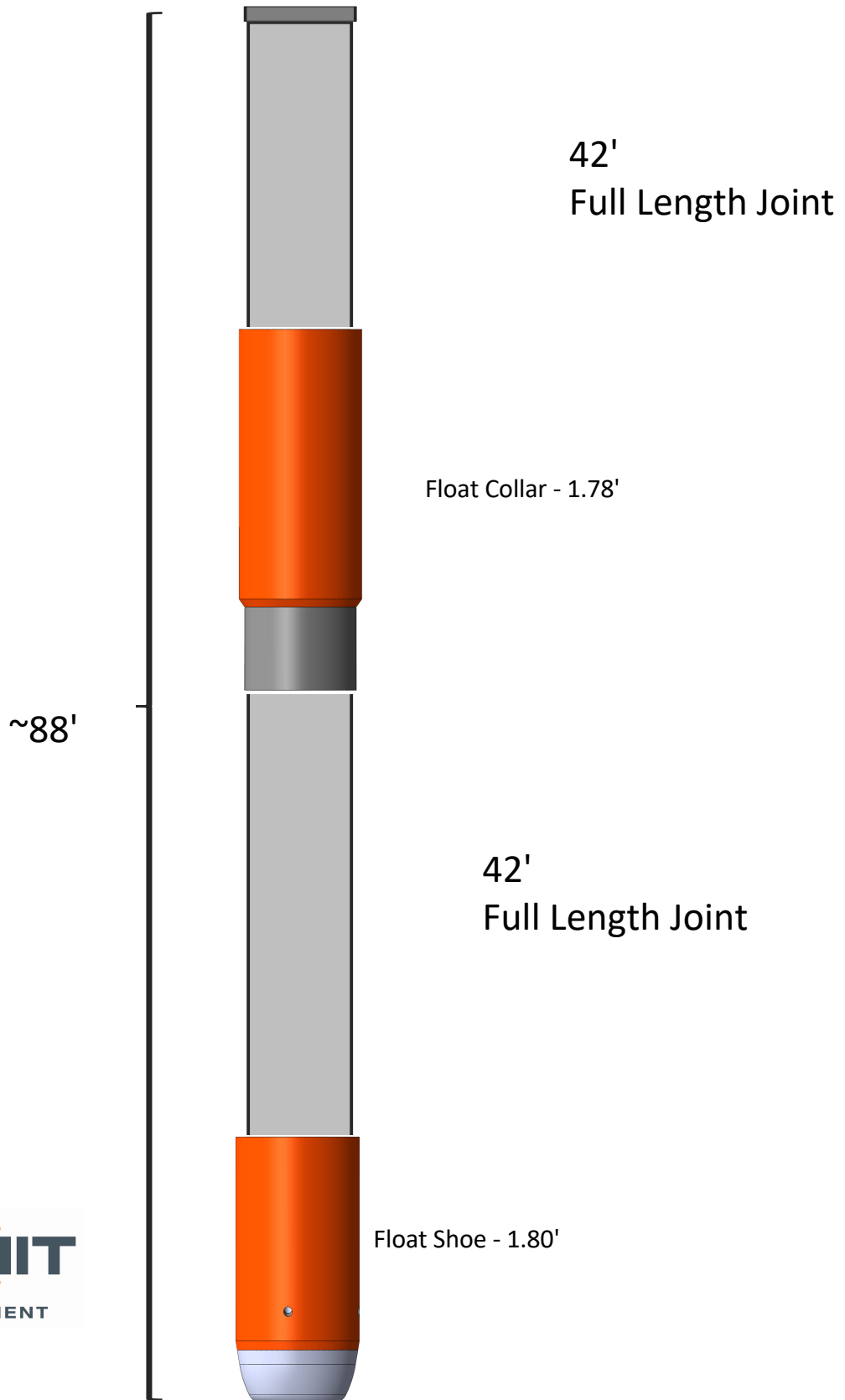


- III. Well Control Procedure (Influx occurs while cementing)
8. Alert location and shut down pumps.
  9. Shut-in the well and record pressures and pit levels
  10. Open choke and resume pumping to take returns through choke manifold to mud/gas separator.
  11. Bump plug, close choke and cement head.
  12. Record time, SICP, annulus pressure, pit gain.
  13. Shut in annulus valves on wellhead and bleed of return line through the choke.
- IV. Well Control Procedure (Remediation – Bradenhead squeeze)
- a. If well is static:
    1. Rig up cement pump to annulus wellhead valve
    2. Close choke and cement head
    3. Pump planned cement volume down annulus
    4. Shut-in the well and record pressures and pit levels
    5. Record time, SICP, annulus pressure.
    6. Shut in annulus valves on wellhead and bleed of return line through the choke.
  - b. If well is not static:
    1. Rig up mud pump to annulus wellhead valve as shown in Figure 2.
    2. Close choke and cement head
    3. Bullhead kill fluid down annulus while monitoring casing pressure.
    4. Shut-in the well and record pressures and pit levels.
    5. Once well kill is confirmed, continue with cement remediation.

FIGURE 2: Well Control



**Figure 1: Shoe Assembly - Intermediate**



Tanner Osborn  
432-813-3595



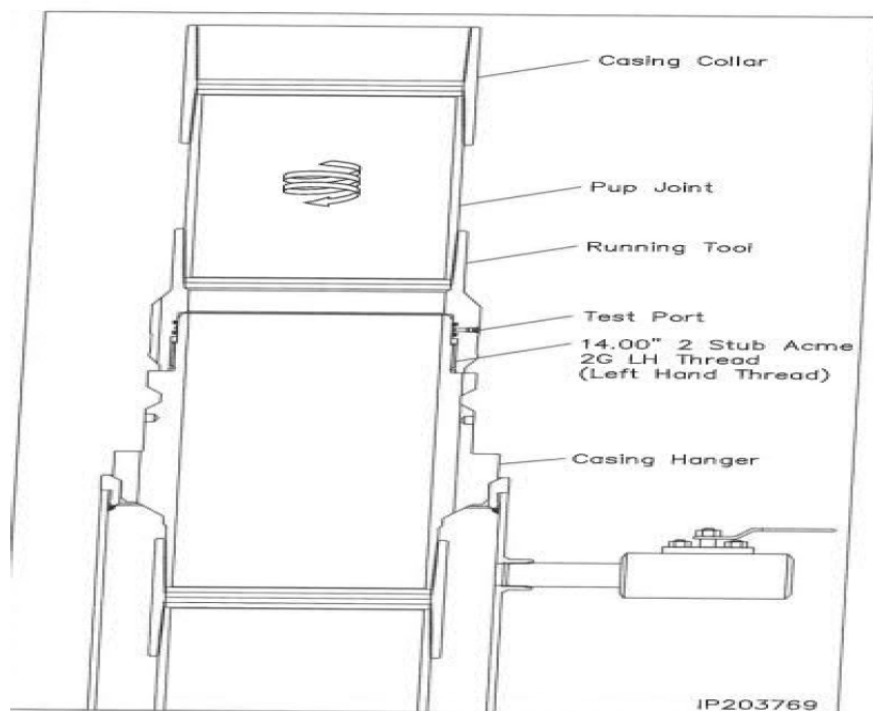
## Offline Cementing Summary – Surface Casing

No changes to the cement program will take place for offline cementing.

1. Run casing as per normal operations. While running casing, conduct negative pressure test and test back pressure valves.
  - a. Float equipment is equipped with two back pressure valves rated to a minimum of 5,000 psi.
2. Land casing on mandrel hanger.
  - a. If casing is unable to be landed with a mandrel hanger, then the **casing will be cemented online.**
  - b. Shoe assembly shown in Figure 1.
3. Break circulation and confirm no restrictions.
  - a. Ensure no blockage of float equipment and appropriate annular returns.
  - b. Perform flow check to confirm well is static.
5. With the well secured and BLM notified, nipple down diverter and secure with 5k cement adaptor and cement head.
  - a. **Note: If the well does not remain static, the diverter will not be nipped down until after the cement job has concluded and both lead and tail slurry have reached 500 psi.**
6. Skid/Walk rig off current well.
7. Confirm well is static before beginning cement job.
  - a. Cementing operations will not proceed until well is under control. (If well is not static, notify BLM and proceed to kill)
  - b. Casing outlet valves will provide access to the annulus, cement head will provide access to the casing. Rig or third party pump truck will establish circulation while monitoring returns prior to cementing.
  - c. If need be, rig can be moved back over well and diverter nipped back up for any further remediation.
8. Rig up return lines to take returns from wellhead to pits
9. Rig up cementing lines.
  - a. Pressure test cement lines against cement head to 80% of casing burst for 10 min.
10. Break circulation on well to confirm no restrictions while monitoring returns.
  - a. Max anticipated time before circulating with cement truck is 6 hrs.
11. Pump cement job as per plan.
  - a. At plug bump, test casing to 0.22 psi/ft or 1500 psi, whichever is greater.
  - b. If plug does not bump on calculated, shut down and wait 8 hrs or 500 psi compressive strength, whichever is greater before testing casing.
  - c. If cement is not circulated to surface, a CBL will be run to confirm top of cement.
    1. If remediation is required, rig will be skid back over the well to take corrective action.
12. Confirm well is static and floats are holding after cement job.
  - a. With floats holding and backside static:
    - i. Remove cement head.
  - b. If floats are leaking:
    - i. Shut-in well and WOC (Wait on Cement) until tail slurry reaches 500 psi compressive strength and the casing is static prior to removing cement head.
  - c. If there is flow on the backside:
    - i. Shut in well and WOC until tail slurry reaches 500 psi compressive strength. Ensure that the casing is static prior to removing cement head.
13. Remove offline cement tool.
14. Install night cap with pressure gauge for monitoring.

## Appendix

### I. Cementing Instrumentation Diagram



### II. Well Control Procedure (Remediation – Bradenhead squeeze)

1. Rig up cement pump to annulus valve
2. Close choke and cement head
3. Pump planned cement volume down annulus
4. Shut-in the well and record pressures and pit levels
5. Record time, SICP.
6. Shut in annulus valves and bleed off surface line.

## **PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL**

**All Previous COAs Still Apply. Variance request procedure is approved as written, please see below general conditions for variance.**

### **Offline Cementing**

Operator has been (**Approved**) to pump the proposed cement program offline in the **Surface and intermediate(s) intervals.**

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

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

## GENERAL REQUIREMENTS

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

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

☒ Eddy County

**EMAIL** or call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,

**[BLM\\_NM\\_CFO\\_DrillingNotifications@BLM.GOV](mailto:BLM_NM_CFO_DrillingNotifications@BLM.GOV)**

(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 2<sup>nd</sup> Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
    - BOP/BOPE test to be conducted per **43 CFR part 3170 Subpart 3172** as soon as 2nd Rig is rigged up on well.
2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.
3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a

digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

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



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

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in **43 CFR part 3170 Subpart 3172** and **API STD 53 Sec. 5.3**.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.
3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
  - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
  - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
  - c. Manufacturer representative shall install the test plug for the initial BOP test.
  - d. Whenever any seal subject to test pressure is broken, all the tests in 43 CFR 3172.6(b)(9) must be followed.
  - e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
  - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after

installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead cement), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

- b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the cement plug. The BOPE test can be initiated after bumping the cement plug with the casing valve open. (only applies to single stage cement jobs, prior to the cement setting up.)
- c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer and can be initiated immediately with the casing valve open. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to **43 CFR part 3170 Subpart 3172** with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
- d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
- e. The results of the test shall be reported to the appropriate BLM office.
- f. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
- g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.
- h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per **43 CFR**

**part 3170 Subpart 3172.**

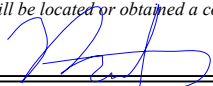


**C. DRILLING MUD**

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

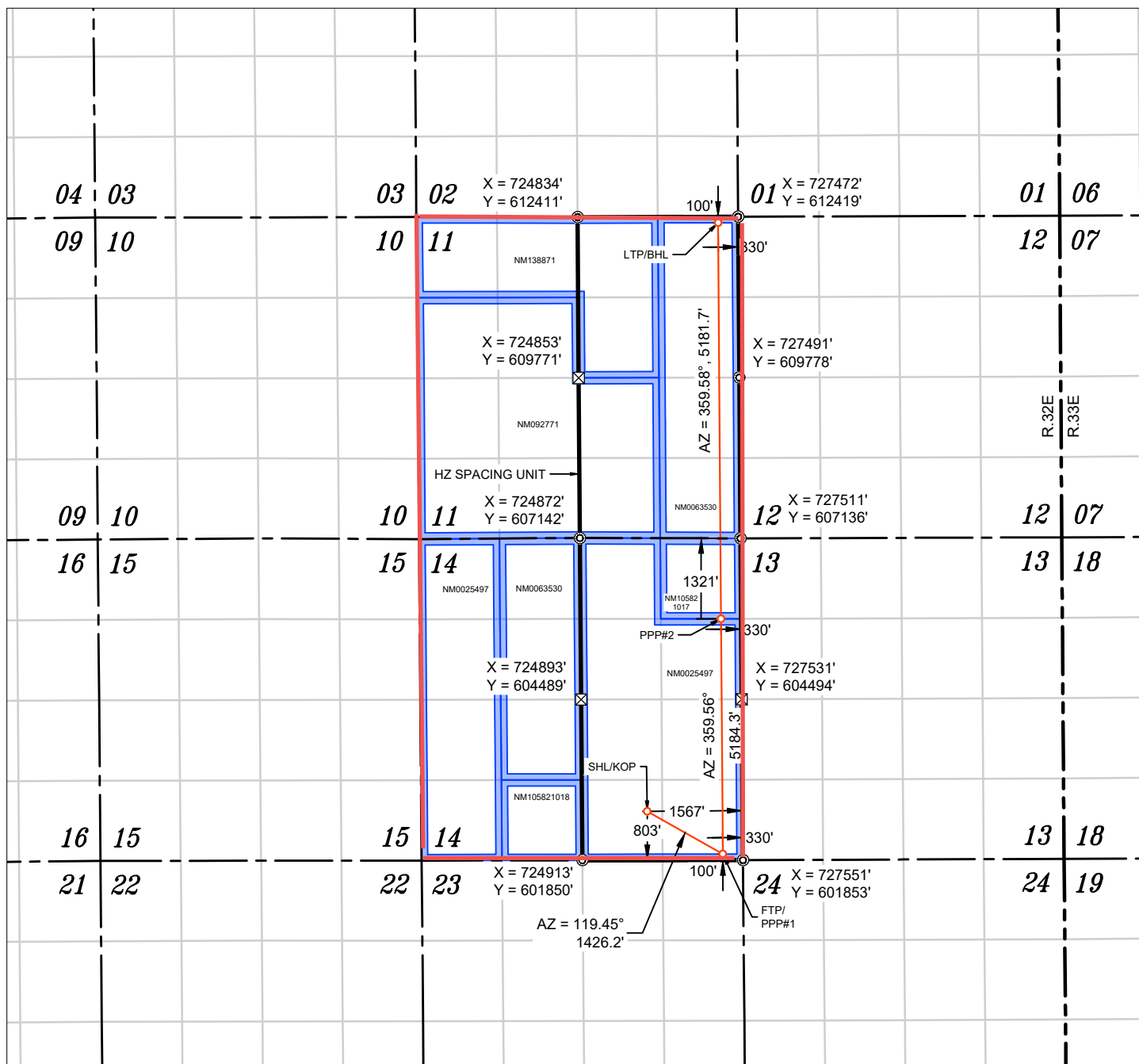
**D. WASTE MATERIAL AND FLUIDS**

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

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

<b>C-102</b>  Submit Electronically Via OCD Permitting	<b>State of New Mexico</b> <b>Energy, Minerals &amp; Natural Resources Department</b> <b>OIL CONSERVATION DIVISION</b>				Revised July 9, 2024				
					Submittal Type:	<input checked="" type="checkbox"/> Initial Submittal			
						<input type="checkbox"/> Amended Report			
				<input type="checkbox"/> As Drilled					
<b>WELL LOCATION INFORMATION</b>									
API Number <b>30-025-54111</b>		Pool Code <b>41442</b>		Pool Name <b>LUSK;BONE SPRING, EAST</b>					
Property Code <b>336580</b>		Property Name <b>GRAYLING 14 FED COM</b>					Well Number <b>#606H</b>		
OGRID No. <b>330396</b>		Operator Name <b>AVANT OPERATING, LLC</b>					Ground Level Elevation <b>3627'</b>		
Surface Owner: <input type="checkbox"/> State <input type="checkbox"/> Fee <input type="checkbox"/> Tribal <input checked="" type="checkbox"/> Federal					Mineral Owner: <input type="checkbox"/> State <input type="checkbox"/> Fee <input type="checkbox"/> Tribal <input checked="" type="checkbox"/> Federal				
<b>Surface Location</b>									
UL <b>O</b>	Section <b>14</b>	Township <b>19 S</b>	Range <b>32 E</b>	Lot	Ft. from N/S <b>803' FSL</b>	Ft. from E/W <b>1567' FEL</b>	Latitude <b>32.655307°</b>	Longitude <b>-103.733392°</b>	County <b>LEA</b>
<b>Bottom Hole Location</b>									
UL <b>A</b>	Section <b>11</b>	Township <b>19 S</b>	Range <b>32 E</b>	Lot	Ft. from N/S <b>100' FNL</b>	Ft. from E/W <b>330' FEL</b>	Latitude <b>32.681853°</b>	Longitude <b>-103.729431°</b>	County <b>LEA</b>
Dedicated Acres <b>640.00</b>		Infill or Defining Well <b>Infill</b>		Defining Well API		Overlapping Spacing Unit (Y/N) <b>No</b>		Consolidation Code	
Order Numbers. <b>R-23615</b>					Well setbacks are under Common Ownership: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
<b>Kick Off Point (KOP)</b>									
UL <b>O</b>	Section <b>14</b>	Township <b>19 S</b>	Range <b>32 E</b>	Lot	Ft. from N/S <b>803' FSL</b>	Ft. from E/W <b>1567' FEL</b>	Latitude <b>32.655307°</b>	Longitude <b>-103.733392°</b>	County <b>LEA</b>
<b>First Take Point (FTP)</b>									
UL <b>P</b>	Section <b>14</b>	Township <b>19 S</b>	Range <b>32 E</b>	Lot	Ft. from N/S <b>100' FSL</b>	Ft. from E/W <b>330' FEL</b>	Latitude <b>32.653361°</b>	Longitude <b>-103.729370°</b>	County <b>LEA</b>
<b>Last Take Point (LTP)</b>									
UL <b>A</b>	Section <b>11</b>	Township <b>19 S</b>	Range <b>32 E</b>	Lot	Ft. from N/S <b>100' FNL</b>	Ft. from E/W <b>330' FEL</b>	Latitude <b>32.681853°</b>	Longitude <b>-103.729431°</b>	County <b>LEA</b>
Unitized Area or Area of Uniform Interest				Spacing Unit Type <input checked="" type="checkbox"/> Horizontal <input type="checkbox"/> Vertical			Ground Floor Elevation: <b>3627'</b>		
<b>OPERATOR CERTIFICATIONS</b>  <i>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and, if the well is a vertical or directional well, 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 a working interest or unleased mineral interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</i>  <i>If this well is a horizontal well, I further certify that this organization has received the consent of at least one lessee or owner of a working interest or unleased mineral interest in each tract (in the target pool or formation) in which any part of the well's completed interval will be located or obtained a compulsory pooling order from the division.</i>   <div style="text-align: right;">12/10/2024</div>					<b>SURVEYOR CERTIFICATIONS</b>  <i>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.</i>   <div style="text-align: right;"></div>				
Signature <b>Meghan Twele</b>					Signature and Seal of Professional Surveyor <b>23203</b> <b>OCTOBER 11, 2024</b>				
Printed Name <b>mtwele@outlook.com</b>					Certificate Number		Date of Survey		
Email Address									

Note: 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.



WELL NAME: GRAYLING 14 FED COM #606H  
ELEVATION: 3627'

<b>NAD 83 (SHL/KOP) 803' FSL &amp; 1567' FEL</b>
LATITUDE = 32.655307°
LONGITUDE = -103.733392°
<b>NAD 27 (SHL/KOP)</b>
LATITUDE = 32.655186°
LONGITUDE = -103.732893°
<b>STATE PLANE NAD 83 (N.M. EAST)</b>
N: 602653.45' E: 725978.71'
<b>STATE PLANE NAD 27 (N.M. EAST)</b>
N: 602590.48' E: 684799.14'

<b>NAD 83 (FTP/PPP#1) 100' FSL &amp; 330' FEL</b>
LATITUDE = 32.653361°
LONGITUDE = -103.729370°
<b>NAD 27 (FTP/PPP#1)</b>
LATITUDE = 32.653240°
LONGITUDE = -103.728871°
<b>STATE PLANE NAD 83 (N.M. EAST)</b>
N: 601952.19' E: 727220.64'
<b>STATE PLANE NAD 27 (N.M. EAST)</b>
N: 601889.22' E: 686041.04'

APPROXIMATE WELL BORE DISTANCE FROM FTP TO LTP	
NM0025497	3862.83'
NM105821017	1321.47'
NM0063530	5181.70'
<b>TOTAL</b>	<b>10366.00'</b>

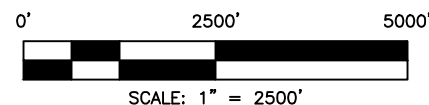
<b>NAD 83 (PPP#2) 1321' FNL &amp; 330' FEL</b>
LATITUDE = 32.663978°
LONGITUDE = -103.729395°
<b>NAD 27 (PPP#2)</b>
LATITUDE = 32.663857°
LONGITUDE = -103.728895°
<b>STATE PLANE NAD 83 (N.M. EAST)</b>
N: 605814.90' E: 727191.07'
<b>STATE PLANE NAD 27 (N.M. EAST)</b>
N: 605751.83' E: 686011.58'

<b>NAD 83 (LTP/BHL) 100' FNL &amp; 330' FEL</b>
LATITUDE = 32.681853°
LONGITUDE = -103.729431°
<b>NAD 27 (LTP/BHL)</b>
LATITUDE = 32.681732°
LONGITUDE = -103.728931°
<b>STATE PLANE NAD 83 (N.M. EAST)</b>
N: 612317.88' E: 727142.80'
<b>STATE PLANE NAD 27 (N.M. EAST)</b>
N: 612254.65' E: 685963.49'

- FOUND MONUMENT  
 CALC. CORNER  
 SHL/ KOP/ FTP / PPP/ LTP / BHL  
 HORIZONTAL SPACING UNIT  
 STATE OIL & GAS LEASE  
 BLM OIL & GAS LEASE

## NOTES

- ALL COORDINATES, BEARINGS, AND DISTANCES CONTAINED HEREIN ARE GRID, BASED UPON THE NEW MEXICO STATE PLANE COORDINATES SYSTEM, NORTH AMERICAN DATUM 83, NEW MEXICO EAST (3001).
- THIS DOCUMENT IS BASED UPON AN ON THE GROUND SURVEY PERFORMED DURING OCTOBER, 2024. CERTIFICATION OF THIS DOCUMENT IS ONLY TO THE LOCATION OF THIS EASEMENT IN RELATION TO RECORDED MONUMENT OF DEEDS PROVIDED BY THE CLIENT.
- ELEVATIONS MSL, DERIVED FROM G.N.S.S. OBSERVATION AND DERIVED FROM SAID ON-THE-GROUND SURVEY.



Sante Fe Main Office  
Phone: (505) 476-3441

General Information  
Phone: (505) 629-6116

Online Phone Directory  
<https://www.emnrd.nm.gov/ocd/contact-us>

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

CONDITIONS

Action 414726

CONDITIONS

Operator: Avant Operating, LLC 1515 Wynkoop Street Denver, CO 80202	OGRID: 330396
	Action Number: 414726
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
pkautz	If cement is not circulated to surface during cementing operations, a Cement Bond Log (CBL) is required.	12/23/2024
pkautz	Cement is required to circulate on both surface and intermediate1 strings of casing.	12/23/2024