# Received by WCD:S/16/2024 2:17:11 PM

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

Well Name	Well Number	US Well Number	Lease Number	Case Number	Operator
FULLY LOADED	832H		NMNM105213	NMNM143418	DEVON
FULLY LOADED	831H		NMNM105213	NMNM143418	DEVON
FULLY LOADED	821H		NMNM105213	NMNM143418	DEVON
FULLY LOADED	833H		NMNM105213	NMNM143418	DEVON

#### **Notice of Intent**

Sundry ID: 2788907

Type of Submission: Notice of Intent

Date Sundry Submitted: 05/08/2024

Type of Action: Variance

Sundry Print Repor

Time Sundry Submitted: 06:15

Date proposed operation will begin: 05/08/2024

**Procedure Description:** Devon Energy Production Co., L.P. (Devon) respectfully requests a variance to break test and for offline cement on intermediate strings that are set in formations shallower than the Wolfcamp. Prior to commencing offline cementing operations, the well will be monitored for any abnormal pressures and confirmed to be static. A dual manifold system (equipped with chokes) for the returns will also be utilized as a redundancy. All equipment used for offline cementing will have a minimum 5M rating to match intermediate sections' 5M BOPE requirements. Please see attachment. FULLY LOADED 12-13 FED COM 833H APD ID: 10400088425 FULLY LOADED 12-13 FED COM 832H APD ID: 10400088424 FULLY LOADED 12-13 FED COM 821H APD ID: 10400088423 FULLY LOADED 12-13 FED COM 831H APD ID: 10400088423 FULLY LOADED 12-13 FED COM 831H APD ID: 10400088423 FULLY LOADED 12-13 FED COM 831H APD ID: 10400088423 FULLY LOADED 12-13 FED COM 831H APD ID: 10400088423 FULLY LOADED 12-13 FED COM 831H APD ID: 10400088423 FULLY LOADED 12-13 FED COM 831H APD ID: 10400088423 FULLY LOADED 12-13 FED COM 831H APD ID: 10400088423 FULLY LOADED 12-13 FED COM 831H APD ID: 10400088423 FULLY LOADED 12-13 FED COM 831H APD ID: 10400088423 FULLY LOADED 12-13 FED COM 831H APD ID: 10400088423 FULLY LOADED 12-13 FED COM 831H APD ID: 10400088423 FULLY LOADED 12-13 FED COM 831H APD ID: 10400088423 FULLY LOADED 12-13 FED COM 831H APD ID: 10400088423 FULLY LOADED 12-13 FED COM 831H APD ID: 10400088414

**NOI Attachments** 

#### **Procedure Description**

break\_test\_variance\_BOP\_1\_15\_24\_20240508061522.pdf

#### **Conditions of Approval**

#### **Specialist Review**

Fully\_Loaded\_12\_13\_Fed\_Com\_Batch\_Sundry\_ID\_2788907\_20240515132559.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: SHAYDA OMOUMI Name: DEVON ENERGY PRODUCTION COMPANY LP Title: Regulatory Compliance Associate 3 Street Address: 333 W SHERIDAN AVE City: OKLAHOMA CITY State: OK Phone: (405) 235-3611 Email address: SHAYDA.OMOUMI@DVN.COM

#### Field

Representative Name: Street Address:

City:

Phone:

Email address:

State:

Zip:

### **BLM Point of Contact**

BLM POC Name: LONG VO BLM POC Phone: 5759885402 Disposition: Approved Signature: Long Vo

BLM POC Title: Petroleum Engineer BLM POC Email Address: LVO@BLM.GOV Disposition Date: 05/15/2024

Signed on: MAY 08, 2024 06:15 AM

#### Received by OCD: 5/16/2024 2:17:11 PM

eceiveu by OCD. 5/10/20.			Tuge 5 0j
Form 3160-5 (June 2019)	UNITED STAT DEPARTMENT OF THE BUREAU OF LAND MA	E INTERIOR	FORM APPROVED OMB No. 1004-0137 Expires: October 31, 2021 5. Lease Serial No.
Do not use t		PORTS ON WELLS s to drill or to re-enter an (APD) for such proposals.	6. If Indian, Allottee or Tribe Name
SUBM	IT IN TRIPLICATE - Other ins	7. If Unit of CA/Agreement, Name and/or No.	
1. Type of Well	Gas Well Other		8. Well Name and No.
2. Name of Operator			9. API Well No.
3a. Address		3b. Phone No. <i>(include area code)</i>	10. Field and Pool or Exploratory Area
4. Location of Well (Footage, Se	c., T.,R.,M., or Survey Description	) )	11. Country or Parish, State
12	. CHECK THE APPROPRIATE	BOX(ES) TO INDICATE NATURE (	DF NOTICE, REPORT OR OTHER DATA
TYPE OF SUBMISSION		TYPE	E OF ACTION
Notice of Intent	Acidize	Deepen [ Hydraulic Fracturing [	Production (Start/Resume)       Water Shut-Off         Reclamation       Well Integrity
Subsequent Report	Casing Repair Change Plans	New Construction	Recomplete Other
Final Abandonment Notic		= .	Water Disposal
the proposal is to deepen dire the Bond under which the we completion of the involved o	ectionally or recomplete horizond ork will be perfonned or provide perations. If the operation results ent Notices must be filed only aff	ally, give subsurface locations and me- the Bond No. on file with BLM/BIA. I s in a multiple completion or recomple	tarting date of any proposed work and approximate duration thereof. If asured and true vertical depths of all pertinent markers and zones. Attack Required subsequent reports must be filed within 30 days following tion in a new interval, a Form 3160-4 must be filed once testing has been tion, have been completed and the operator has detennined that the site

14. Thereby certify that the foregoing is true and correct. Name ( <i>Printed/Typed</i> )		
	Title	
Simpler		
Signature	Date	
THE SPACE FOR FEDE	RAL OR STATE O	FICE USE
Approved by		
	Title	Date
Conditions of approval, if any, are attached. Approval of this notice does not warrant 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.		
Title 18 U.S.C Section 1001 and Title 43 U.S.C Section 1212, make it a crime for any any false, fictitious or fraudulent statements or representations as to any matter within		llfully to make to any department or agency of the United States

(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**

#### **Batch Well Data**

FULLY LOADED 12-13 FED COM 831H, US Well Number: null, Case Number: NMNM143418, Lease Number: NMNM105213, Operator:DEVON ENERGY PRODUCTION COMPANY LP

FULLY LOADED 12-13 FED COM 821H, US Well Number: null, Case Number: NMNM143418, Lease Number: NMNM105213, Operator:DEVON ENERGY PRODUCTION COMPANY LP

FULLY LOADED 12-13 FED COM 832H, US Well Number: null, Case Number: NMNM143418, Lease Number: NMNM105213, Operator:DEVON ENERGY PRODUCTION COMPANY LP

FULLY LOADED 12-13 FED COM 833H, US Well Number: null, Case Number: NMNM143418, Lease Number: NMNM105213, Operator:DEVON ENERGY PRODUCTION COMPANY LP

#### Section 2 - Blowout Preventer Testing Procedure

#### Variance Request

Devon Energy requests to only test BOP connection breaks after drilling out of surface casing and while skidding between wells which conforms to API Standard 53 and industry standards. This test will include the Top Pipe Rams, HCR, Kill Line Check Valve, QDC (quick disconnect to wellhead) and Shell of the 10M BOPE to 5M for 10 minutes. If a break to the flex hose that runs to the choke manifold is required due to repositioning from a skid, the HCR will remain open during the shell test to include that additional break. The variance only pertains to intermediate hole-sections and no deeper than the Bone Springs Formation where 5M BOP tests are required. The initial BOP test will follow 43 CFR 3172, and subsequent tests following a skid will only test connections that are broken. The annular preventer will be tested to 100% working pressure. This variance will meet or exceed 43 CFR 3172 per the following: Devon Energy will perform a full BOP test per 43 CFR 3172 before drilling out of the intermediate casing string(s) and starting the production hole, before starting any hole section that requires a 10M test, before the expiration of the allotted 14-days for 5M intermediate batch drilling or when the drilling rig is fully mobilized to a new well pad, whichever is sooner. We will utilize a 200' TVD tolerance between intermediate shoes as the cutoff for a full BOP test. The BLM will be contacted 4hrs prior to a BOPE test. The BLM will be notified if and when a well control event is encountered. Break test will be a 14 day interval and not a 30 day full BOPE test interval. If in the event break testing is not utilized, then a full BOPE test would be conducted.

1. Well Control Response:

1. Primary barrier remains fluid

2. In the event of an influx due to being underbalanced and after a realized gain or flow, the order of closing BOPE is as follows:

- a) Annular first
- b) If annular were to not hold, Upper pipe rams second (which were tested on the skid BOP test)
- c) If the Upper Pipe Rams were to not hold, Lower Pipe Rams would be third



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#### **Notice of Intent**

Sundry ID: 2788907

Type of Submission: Notice of Intent

Date Sundry Submitted: 05/08/2024

Date proposed operation will begin: 05/08/2024

Type of Action: Variance

Sundry Print Report<sup>26</sup> 05/15/2024

Time Sundry Submitted: 06:15

**Procedure Description:** Devon Energy Production Co., L.P. (Devon) respectfully requests a variance to break test and for offline cement on intermediate strings that are set in formations shallower than the Wolfcamp. Prior to commencing offline cementing operations, the well will be monitored for any abnormal pressures and confirmed to be static. A dual manifold system (equipped with chokes) for the returns will also be utilized as a redundancy. All equipment used for offline cementing will have a minimum 5M rating to match intermediate sections' 5M BOPE requirements. Please see attachment. FULLY LOADED 12-13 FED COM 833H APD ID: 10400088425 FULLY LOADED 12-13 FED COM 832H APD ID: 10400088424 FULLY LOADED 12-13 FED COM 821H APD ID: 10400088423 FULLY LOADED 12-13 FED COM 831H APD ID: 10400088423 FULLY LOADED 12-13 FED COM 831H APD ID: 10400088423 FULLY LOADED 12-13 FED COM 831H APD ID: 10400088423 FULLY LOADED 12-13 FED COM 831H APD ID: 10400088423 FULLY LOADED 12-13 FED COM 831H APD ID: 10400088423 FULLY LOADED 12-13 FED COM 831H APD ID: 10400088423 FULLY LOADED 12-13 FED COM 831H APD ID: 10400088423 FULLY LOADED 12-13 FED COM 831H APD ID: 10400088423 FULLY LOADED 12-13 FED COM 831H APD ID: 10400088423 FULLY LOADED 12-13 FED COM 831H APD ID: 10400088423 FULLY LOADED 12-13 FED COM 831H APD ID: 10400088423 FULLY LOADED 12-13 FED COM 831H APD ID: 10400088423 FULLY LOADED 12-13 FED COM 831H APD ID: 10400088423 FULLY LOADED 12-13 FED COM 831H APD ID: 10400088423 FULLY LOADED 12-13 FED COM 831H APD ID: 10400088423 FULLY LOADED 12-13 FED COM 831H APD ID: 10400088423 FULLY LOADED 12-13 FED COM 831H APD ID: 10400088423 FULLY LOADED 12-13 FED COM 831H APD ID: 10400088423 FULLY LOADED 12-13 FED COM 831H APD ID: 10400088414

#### **NOI Attachments**

#### **Procedure Description**

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### 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: SHAYDA OMOUMI Name: DEVON ENERGY PRODUCTION COMPANY LP Title: Regulatory Compliance Associate 3 Street Address: 333 W SHERIDAN AVE City: OKLAHOMA CITY State: OK Phone: (405) 235-3611 Email address: SHAYDA.OMOUMI@DVN.COM

State:

**Representative Name:** 

Street Address:

City:

Phone:

Email address:

Released to Imaging: 6/10/2024 3:14:47 PM

Signed on: MAY 08, 2024 06:15 AM

Zip:

## PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

APD ID:

10400088425 10400088424 10400088423 10400088414

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

#### A. PRESSURE CONTROL

#### **BOPE Break Testing Variance**

- BOPE Break Testing is ONLY permitted for 5M BOPE or less. (Annular preventer must be tested to a minimum of 70% of BOPE working pressure and shall be higher than the MASP)
- BOPE Break Testing is NOT permitted to drilling the production hole section.
- Variance only pertains to the intermediate hole-sections and no deeper than the Bone Springs formation.
- While in transfer between wells, the BOPE shall be secured by the hydraulic carrier or cradle.
- Any well control event while drilling require notification to the BLM Petroleum Engineer (575-706-2779) prior to the commencement of any BOPE Break Testing operations.
- A full BOPE test is required prior to drilling the first deep intermediate hole section. If any subsequent hole interval is deeper than the first, a full BOPE test will be required. (200' TVD tolerance between intermediate shoes is allowable).
- The BLM is to be contacted (575-361-2822 Eddy County) 4 hours prior to BOPE tests.
- As a minimum, a full BOPE test shall be performed at **21**-day intervals.
- In the event any repairs or replacement of the BOPE is required, the BOPE shall test as per 43 CFR part 3170 Subpart 3172.
- If in the event break testing is not utilized, then a full BOPE test would be conducted.

### PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

APD ID:

10400088425 10400088424 10400088423 10400088414

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 **Intermediate(s) interval**.

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

Notify the BLM 4hrs prior to cementing offline at Eddy County: 575-361-2822.

# **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** (575) 361-2822

#### Lea County Call the Hobbs Field St

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.
- <u>Wait on cement (WOC) for Potash Areas:</u> 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 <u>24</u> <u>hours</u>. WOC time will be recorded in the driller's log. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.
- 3. <u>Wait on cement (WOC) for Water Basin:</u> 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 <u>8 hours</u>. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.
- 4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
- 5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
- 6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.

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

#### Re

Received by OCD: 5/16/20	24 2:17:11 PM			Page 17 of 2
Form 3160-5 (June 2019)	UNITED STAT DEPARTMENT OF THE BUREAU OF LAND MA	INTERIOR	OM	RM APPROVED IB No. 1004-0137 es: October 31, 2021
Do not use t		PORTS ON WELLS to drill or to re-enter an APD) for such proposals.	6. If Indian, Allottee or 7	Fribe Name
SUBM	IT IN TRIPLICATE - Other ins	tructions on page 2	7. If Unit of CA/Agreem	nent, Name and/or No.
1. Type of Well     Oil Well	Gas Well Other		8. Well Name and No.	
2. Name of Operator			9. API Well No.	
3a. Address		3b. Phone No. <i>(include area code)</i>	10. Field and Pool or Ex	ploratory Area
4. Location of Well (Footage, Se	c., T.,R.,M., or Survey Descriptio	<i>n</i> )	11. Country or Parish, S	tate
12	. CHECK THE APPROPRIATE	BOX(ES) TO INDICATE NATURE (	DF NOTICE, REPORT OR OTHE	R DATA
TYPE OF SUBMISSION		TYPI	E OF ACTION	
Notice of Intent	Acidize	Deepen   Hydraulic Fracturing	Production (Start/Resume) Reclamation	Water Shut-Off Well Integrity
Subsequent Report	Casing Repair Change Plans	New Construction Plug and Abandon	Recomplete Temporarily Abandon	Other
Final Abandonment Notic	e Convert to Injectio	on Plug Back	Water Disposal	
the proposal is to deepen dire the Bond under which the we completion of the involved o	ectionally or recomplete horizont ork will be perfonned or provide perations. If the operation results ent Notices must be filed only aft	the Bond No. on file with BLM/BIA.	asured and true vertical depths of Required subsequent reports must stion in a new interval, a Form 316	all pertinent markers and zones. Attach be filed within 30 days following 0-4 must be filed once testing has been

14. I hereby certify that the foregoing is true and correct. Name ( <i>Printed/Typed</i> )			
	Title		
Signature	Date		
THE SPACE FOR FEDE	RAL OR STATE	OFICE USE	
Approved by			
	Title		Date
Conditions of approval, if any, are attached. Approval of this notice does not warrant certify that the applicant holds legal or equitable title to those rights in the subject lea which would entitle the applicant to conduct operations thereon.			
Title 18 U.S.C Section 1001 and Title 43 U.S.C Section 1212, make it a crime for any any false, fictitious or fraudulent statements or representations as to any matter within		l willfully to make to any d	lepartment or agency of the United States

#### **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**

#### **Batch Well Data**

FULLY LOADED 12-13 FED COM 831H, US Well Number: null, Case Number: NMNM143418, Lease Number: NMNM105213, Operator:DEVON ENERGY PRODUCTION COMPANY LP

FULLY LOADED 12-13 FED COM 821H, US Well Number: null, Case Number: NMNM143418, Lease Number: NMNM105213, Operator:DEVON ENERGY PRODUCTION COMPANY LP

FULLY LOADED 12-13 FED COM 832H, US Well Number: null, Case Number: NMNM143418, Lease Number: NMNM105213, Operator:DEVON ENERGY PRODUCTION COMPANY LP

FULLY LOADED 12-13 FED COM 833H, US Well Number: null, Case Number: NMNM143418, Lease Number: NMNM105213, Operator:DEVON ENERGY PRODUCTION COMPANY LP

#### Section 2 - Blowout Preventer Testing Procedure

#### Variance Request

Devon Energy requests to only test BOP connection breaks after drilling out of surface casing and while skidding between wells which conforms to API Standard 53 and industry standards. This test will include the Top Pipe Rams, HCR, Kill Line Check Valve, QDC (quick disconnect to wellhead) and Shell of the 10M BOPE to 5M for 10 minutes. If a break to the flex hose that runs to the choke manifold is required due to repositioning from a skid, the HCR will remain open during the shell test to include that additional break. The variance only pertains to intermediate hole-sections and no deeper than the Bone Springs Formation where 5M BOP tests are required. The initial BOP test will follow 43 CFR 3172, and subsequent tests following a skid will only test connections that are broken. The annular preventer will be tested to 100% working pressure. This variance will meet or exceed 43 CFR 3172 per the following: Devon Energy will perform a full BOP test per 43 CFR 3172 before drilling out of the intermediate casing string(s) and starting the production hole, before starting any hole section that requires a 10M test, before the expiration of the allotted 14-days for 5M intermediate batch drilling or when the drilling rig is fully mobilized to a new well pad, whichever is sooner. We will utilize a 200' TVD tolerance between intermediate shoes as the cutoff for a full BOP test. The BLM will be contacted 4hrs prior to a BOPE test. The BLM will be notified if and when a well control event is encountered. Break test will be a 14 day interval and not a 30 day full BOPE test interval. If in the event break testing is not utilized, then a full BOPE test would be conducted.

1. Well Control Response:

1. Primary barrier remains fluid

2. In the event of an influx due to being underbalanced and after a realized gain or flow, the order of closing BOPE is as follows:

- a) Annular first
- b) If annular were to not hold, Upper pipe rams second (which were tested on the skid BOP test)
- c) If the Upper Pipe Rams were to not hold, Lower Pipe Rams would be third



#### Fully Loaded 12-13 Fed Com 832H

10 3/4	S	urface csg in a	13 1/2	inch hole.		Design	Factors			Surface	9	
Segment	#/ft	Grade		Coupling	Joint	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"	40.50		h 40	btc	29.46	7.76	0.41	383	13	0.68	14.66	
"B"				btc				0				0
	w/8.4	4#/g mud, 30min Sfc Csg Test p	osig: 1.429	Tail Cmt	does not	circ to sfc.	Totals:	383				15,512
omparison o		Minimum Required Ceme										,
Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Reg'd				Min Dis
Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE				Hole-Cp
13 1/2	0.3637	171	246	139	77	9.00	3355	5M				1.38
urst Frac Grad	dient(s) for Seg	ment(s) A, B = , b All > 0	.70, OK.									
8 5/8	<u> </u>	sing inside the	10 3/4			Design	Factors			Int 1		
Segment	#/ft	Grade	10 3/4	Coupling	Joint	Collapse	Burst	Length	B@s	a-B	a-C	Weigh
"A"	32.00	Glade	p 110	tiw	3.26	0.75	1.44	10,310	2	а-в 2.42	a-C 1.26	•
"B"	52.00		P 110	u VV	5.20	0.15	1.44	10,310 <b>0</b>	2	2.42	1.20	529,92 0
В		4#/g mud, 30min Sfc Csg Test p	ania: 2.269				Totals:	10,310				329.92
	W/8.4			ded to achieve a top of	0	ft from su		383				overlap.
Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Reg'd				Min Dis
Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE				Hole-Cp
9 7/8	0.1261	523	753	1308	-42	10.50	3689	5M				0.44
V Tool(s):			5768				sum of sx	<u>Σ CuFt</u>				Σ%exces 31
			31									
, ,	nt yld > 1.35	31	31				942	1717				51
Class 'C' tail cm Tail cmt						Design Fa		1/1/		Prod 1		
Tail cmt 5 1/2	ca	sing inside the	8 5/8	Coupling	Body	Design Fa	ctors		B@s	Prod 1 a-B		
Tail cmt 5 1/2 Segment	ca: #/ft		8 5/8	Coupling	Body 2 83	Collapse	<u>ctors</u> Burst	Length	B@s	a-B	a-C	Weigh
Tail cmt 5 1/2 Segment "A"	ca	sing inside the		Coupling btc	<b>Body</b> 2.83		ctors	<b>Length</b> 18,990	<b>B@s</b> 2			Weigh 322,83
Tail cmt 5 1/2 Segment	ca: #/ft 17.00	sing inside the Grade	<b>8 5/8</b> p 110			Collapse	<u>ctors</u> Burst 1.72	Length 18,990 0	-	a-B	a-C	Weigh 322,83 0
Tail cmt 5 1/2 Segment "A"	ca: #/ft 17.00	sing inside the Grade ##/g mud, 30min Sfc Csg Test p	<b>8 5/8</b> p 110 osig: 2,493	btc	2.83	Collapse 1.21	ctors Burst 1.72 Totals:	Length 18,990 0 18,990	-	a-B	a-C	Weigh 322,83 0 322,83
Tail cmt 5 1/2 Segment "A" "B"	ca: #/ft 17.00 w/8.4	sing inside the Grade 1#/g mud, 30min Sfc Csg Test p The cement N	8 5/8 p 110 osig: 2,493 volume(s) are inter	btc nded to achieve a top of	2.83	Collapse 1.21 ft from su	ctors Burst 1.72 Totals: Inface or a	Length 18,990 0 18,990 200	-	a-B	a-C	Weigh 322,83 0 322,83 overlap.
Tail cmt 5 1/2 Segment "A" "B" Hole	ca: #/ft 17.00 w/8.4 Annular	sing inside the Grade 4#/g mud, 30min Sfc Csg Test p The cement v 1 Stage	8 5/8 p 110 osig: 2,493 volume(s) are inter 1 Stage	btc nded to achieve a top of Min	2.83 10110 1 Stage	Collapse 1.21 ft from su Drilling	ctors Burst 1.72 Totals: Inface or a Calc	Length 18,990 0 18,990 200 Req'd	-	a-B	a-C	Weigh 322,83 0 322,83 overlap. Min Dis
Tail cmt 5 1/2 Segment "A" "B" Hole Size	ca: #/ft 17.00 w/8.4 Annular Volume	sing inside the Grade 1#/g mud, 30min Sfc Csg Test r The cement v 1 Stage Cmt Sx	8 5/8 p 110 osig: 2,493 rolume(s) are inter 1 Stage CuFt Cmt	btc Ided to achieve a top of Min Cu Ft	2.83 10110 1 Stage % Excess	Collapse 1.21 ft from su Drilling Mud Wt	ctors Burst 1.72 Totals: Inface or a	Length 18,990 0 18,990 200	-	a-B	a-C	Weigh 322,83 0 322,83 overlap. Min Dis Hole-Cp
5 1/2 Segment "A" "B" Hole	ca: #/ft 17.00 w/8.4 Annular Volume 0.1733	sing inside the Grade 4#/g mud, 30min Sfc Csg Test p The cement v 1 Stage	8 5/8 p 110 osig: 2,493 volume(s) are inter 1 Stage	btc nded to achieve a top of Min	2.83 10110 1 Stage	Collapse 1.21 ft from su Drilling	ctors Burst 1.72 Totals: Inface or a Calc	Length 18,990 0 18,990 200 Req'd	-	a-B	a-C	Weigh 322,83 0 322,83
Tail cmt 51/2 Segment "A" "B" Hole Size 7 7/8 Class 'C' tail cm	ca: #/ft 17.00 w/8.4 Annular Volume 0.1733	sing inside the Grade 1#/g mud, 30min Sfc Csg Test r The cement v 1 Stage Cmt Sx	8 5/8 p 110 osig: 2,493 rolume(s) are inter 1 Stage CuFt Cmt	btc Ided to achieve a top of Min Cu Ft	2.83 10110 1 Stage % Excess	Collapse 1.21 ft from su Drilling Mud Wt	ctors Burst 1.72 Totals: Inface or a Calc	Length 18,990 0 18,990 200 Req'd	-	a-B	a-C	Weigh 322,83 0 322,83 overlap. Min Dis Hole-Cp
Class 'C' tail cm Tail cmt 5 1/2 Segment "A" "B" Hole Size 7 7/8	ca: #/ft 17.00 w/8.4 Annular Volume 0.1733	sing inside the Grade 1#/g mud, 30min Sfc Csg Test r The cement v 1 Stage Cmt Sx	8 5/8 p 110 osig: 2,493 rolume(s) are inter 1 Stage CuFt Cmt	btc Ided to achieve a top of Min Cu Ft	2.83 10110 1 Stage % Excess	Collapse 1.21 ft from su Drilling Mud Wt	ctors Burst 1.72 Totals: Irface or a Calc MASP	Length 18,990 0 18,990 200 Req'd	2	a-B	<b>a-C</b> 2.03	Weigh 322,83 0 322,83 overlap. Min Dis Hole-Cp
Class 'C' tail om Tail cmt 5 1/2 Segment "A" "B" Hole Size 7 7/8 Class 'C' tail on #N/A	ca: #/ft 17.00 w/8.4 Annular Volume 0.1733	sing inside the Grade 1#/g mud, 30min Sfc Csg Test r The cement v 1 Stage Cmt Sx	8 5/8 p 110 osig: 2,493 rolume(s) are inter 1 Stage CuFt Cmt 1948	btc Ided to achieve a top of Min Cu Ft	2.83 10110 1 Stage % Excess	Collapse 1.21 ft from su Drilling Mud Wt 10.50	ctors Burst 1.72 Totals: Irface or a Calc MASP	Length 18,990 0 18,990 200 Req'd	2	a-B 2.88	<b>a-C</b> 2.03	Weigh 322,83 0 322,83 overlap. Min Dis Hole-Cp
Tail cmt Tail cmt 5 1/2 Segment "A" "B" Hole Size 7 7/8 Ilass 'C' tail cm #N/A 0	ca: #/ft 17.00 w/8.4 Annular Volume 0.1733 att yld > 1.35	sing inside the Grade 1#/g mud, 30min Sfc Csg Test p The cement v 1 Stage Cmt Sx 1204	8 5/8 p 110 osig: 2,493 rolume(s) are inter 1 Stage CuFt Cmt 1948	btc Ided to achieve a top of Min Cu Ft 1539	2.83 10110 1 Stage % Excess 27	Collapse 1.21 ft from su Drilling Mud Wt 10.50 Design	Ctors Burst 1.72 Totals: Inface or a Calc MASP	Length 18,990 0 18,990 200 Req'd BOPE	2	a-B 2.88	a-C 2.03 sing>	Weigh 322,83 0 322,83 overlap. Min Dis Hole-Cp 0.91
Tail cmt Tail cmt 5 1/2 Segment "A" "B" Hole Size 7 7/8 class 'C' tail cm #N/A 0 Segment	ca: #/ft 17.00 w/8.4 Annular Volume 0.1733 att yld > 1.35	sing inside the Grade 1#/g mud, 30min Sfc Csg Test p The cement v 1 Stage Cmt Sx 1204	8 5/8 p 110 osig: 2,493 rolume(s) are inter 1 Stage CuFt Cmt 1948	btc Ided to achieve a top of Min Cu Ft 1539 Coupling	2.83 10110 1 Stage % Excess 27	Collapse 1.21 ft from su Drilling Mud Wt 10.50 Design	Ctors Burst 1.72 Totals: Inface or a Calc MASP	Length 18,990 0 18,990 200 Req'd BOPE	2	a-B 2.88	a-C 2.03 sing>	Weigh 322,83 0 322,83 overlap. Min Dis Hole-Cp 0.91 Weigh
Tail cmt 5 1/2 Segment "A" "B" Hole Size 7 7/8 ilass 'C' tail cm #N/A 0 Segment "A"	ca: #/ft 17.00 w/8.4 Annular Volume 0.1733 nt yld > 1.35 #/ft	sing inside the Grade #/g mud, 30min Sfc Csg Test p The cement v 1 Stage Cmt Sx 1204 Grade	8 5/8 p 110 osig: 2,493 olume(s) are inter 1 Stage CuFt Cmt 1948 5 1/2 osig:	btc ided to achieve a top of Min Cu Ft 1539 Coupling 0.00 0.00	2.83 10110 1 Stage % Excess 27 #N/A	Collapse 1.21 ft from su Drilling Mud Wt 10.50 <u>Design</u> Collapse	ctors Burst 1.72 Totals: Inface or a Calc MASP Factors Burst	Length 18,990 0 18,990 200 Req'd BOPE	2	a-B 2.88	a-C 2.03 sing>	Weigh 322,83 0 322,83 0 verlap. Min Dis Hole-Cp 0.91 Weigh 0 0 0
Tail cmt Tail cmt 51/2 Segment "A" "B" Hole Size 7 7/8 Class 'C' tail cm #N/A 0 Segment "A" "B"	ca: #/ft 17.00 w/8.4 Annular Volume 0.1733 tt yld > 1.35 #/ft w/8.4	sing inside the Grade #/g mud, 30min Sfc Csg Test p The cement v 1 Stage Cmt Sx 1204 Grade #/g mud, 30min Sfc Csg Test p Cmt vol csg	8 5/8 p 110 osig: 2,493 volume(s) are inter 1 Stage CuFt Cmt 1948 5 1/2 osig: alc below includes	btc ided to achieve a top of Min Cu Ft 1539 Coupling 0.00 0.00 this csg, TOC intended	2.83 10110 1 Stage % Excess 27 #N/A	Collapse 1.21 ft from su Drilling Mud Wt 10.50 <u>Design</u> Collapse ft from su	ctors Burst 1.72 Totals: Inface or a Calc MASP Factors Burst	Length 18,990 0 18,990 200 Req'd BOPE Length 0 0 0 0 0	2	a-B 2.88	a-C 2.03 sing>	Weigh 322,83 0 322,83 overlap. Min Dis Hole-Cp 0.91 Weigh 0 0 0 0 0 0 0 0
Lass 'C' tail orr Tail cmt 5 1/2 Segment "A" "B" Hole Size 7 7/8 Lass 'C' tail orr #N/A 0 Segment "A" "B" Hole	ca: #/ft 17.00 w/8.4 Annular Volume 0.1733 nt yld > 1.35 #/ft w/8.4 Annular	sing inside the Grade ##/g mud, 30min Sfc Csg Test p The cement v 1 Stage Cmt Sx 1204 Grade ##/g mud, 30min Sfc Csg Test p Cmt vol cs 1 Stage	8 5/8 p 110 osig: 2,493 volume(s) are inter 1 Stage CuFt Cmt 1948 5 1/2 sig: alc below includes 1 Stage	btc ided to achieve a top of Min Cu Ft 1539 Coupling 0.00 0.00 this csg, TOC intended Min	2.83 10110 1 Stage % Excess 27 #N/A #N/A 1 Stage	Collapse 1.21 ft from su Drilling Mud Wt 10.50 <u>Design</u> Collapse ft from su Drilling	ctors Burst 1.72 Totals: Inface or a Calc MASP Factors Burst Totals: Inface or a Calc	Length 18,990 0 18,990 200 Req'd BOPE Length 0 0 0 0 #N/A Req'd	2	a-B 2.88	a-C 2.03 sing>	Weigh 322,83 overlap. Min Dis Hole-Cp 0.91 Weigh 0 0 0 overlap. Min Dis
Tail cmt Tail cmt 5 1/2 Segment "A" "B" Hole Size 7 7/8 Jass 'C' tail cm #N/A 0 Segment "A" "B" Hole Size	ca: #/ft 17.00 w/8.4 Annular Volume 0.1733 tt yld > 1.35 #/ft w/8.4	sing inside the Grade ##/g mud, 30min Sfc Csg Test p The cement V 1 Stage Cmt Sx 1204 Grade ##/g mud, 30min Sfc Csg Test p Cmt vol ca 1 Stage Cmt Sx	8 5/8 p 110 osig: 2,493 volume(s) are inter 1 Stage CuFt Cmt 1948 5 1/2 ssig: alc below includes 1 Stage CuFt Cmt	btc ided to achieve a top of Min Cu Ft 1539 Coupling 0.00 0.00 this csg, TOC intended Min Cu Ft	2.83 10110 1 Stage % Excess 27 #N/A #N/A 1 Stage % Excess	Collapse 1.21 ft from su Drilling Mud Wt 10.50 <u>Design</u> Collapse ft from su	ctors Burst 1.72 Totals: Inface or a Calc MASP Factors Burst	Length 18,990 0 18,990 200 Req'd BOPE Length 0 0 0 0 0	2	a-B 2.88	a-C 2.03 sing>	Weigh 322,83 0 322,83 overlap. Min Dis Hole-Cp 0.91 Weigh 0 0 0 0 0 0 0 0
Tail cmt Tail cmt 5 1/2 Segment "A" "B" Hole Size 7 7/8 Iass 'C' tail cm #N/A 0 Segment "A" "B" Hole	ca: #/ft 17.00 w/8.4 Annular Volume 0.1733 nt yld > 1.35 #/ft w/8.4 Annular	sing inside the Grade ##/g mud, 30min Sfc Csg Test p The cement v 1 Stage Cmt Sx 1204 Grade ##/g mud, 30min Sfc Csg Test p Cmt vol cs 1 Stage	8 5/8 p 110 osig: 2,493 volume(s) are inter 1 Stage CuFt Cmt 1948 5 1/2 sig: alc below includes 1 Stage	btc ided to achieve a top of Min Cu Ft 1539 Coupling 0.00 0.00 this csg, TOC intended Min Cu Ft 0	2.83 10110 1 Stage % Excess 27 #N/A #N/A 1 Stage	Collapse 1.21 ft from su Drilling Mud Wt 10.50 <u>Design</u> Collapse ft from su Drilling	ctors Burst 1.72 Totals: Inface or a Calc MASP Factors Burst	Length 18,990 0 18,990 200 Req'd BOPE Length 0 0 0 0 #N/A Req'd	2	a-B 2.88	a-C 2.03 sing>	Weigh 322,83 overlap. Min Dis Hole-Cp 0.91 Weigh 0 0 0 overlap. Min Dis

#### Fully Loaded 12-13 Fed Com 833H

"A" 40. "B" Comparison of Propr Hole Ann Size Volk 13 1/2 0.3 Surst Frac Gradient(s) 8 5/8 Segment #/ "A" 32. "B"	Wft 0.50 w/8.4#/g m nular lume 3637 ) for Segment(s casing i 2.00	1 Stage Cmt Sx 171 ) A, B = , b All > 0. inside the Grade ud, 30min Sfc Csg Test The cement v	<u>ent Volumes</u> 1 Stage CuFt Cmt 246 70, ОК. 10 3/4 р 110	Coupling btc btc Tail Cmt Min Cu Ft 139 Coupling tlw	1 Stage % Excess 77 Site plat (orp Joint	Design I Collapse 7.76 circ to sfc. Drilling Mud Wt 9.00 Design I Collapse	Burst 0.41 Totals: Calc MASP 3355	Length 383 0 383 Req'd BOPE 5M	B@s 13	a-B 0.68	a-C 14.66	Weight 15,512 0 15,512 Min Dist Hole-Cplg 1.38
"A" 40. "B" Hole Ann Size Volu 13 1/2 0.3 urst Frac Gradient(s) 8 5/8 Segment #/ "A" 32. "B" Hole Ann Size Volu 9 7/8 0.12	0.50 w/8.4#/g m possed to Minin nular lume 3637 ) for Segment(s casing i t/ft 2.00 w/8.4#/g m nular	num Required Cemu 1 Stage Cmt Sx 171 ) A, B = , b All > 0. inside the Grade uud, 30min Sfc Csg Test The cement of	рэід: 1,429 ent Volumes_ 1 Stage CuFt Cmt 246 70, ОК. 10 3/4 р 110	btc btc Tail Cmt Min Cu Ft 139 Coupling	does not 1 Stage % Excess 77 Site plot (pip) Joint	7.76 circ to sfc. Drilling Mud Wt 9.00	Totals: Calc MASP 3355	383 0 383 Req'd BOPE 5M	13 und.	0.68	14.66	15,512 0 15,512 Min Dist Hole-Cpl( 1.38
Hole Ann Size Volu 13 1/2 0.30 urst Frac Gradient(s) 8 5/8 Segment #/ "A" 32. "B" Hole Ann Size Volu 9 7/8 0.12	posed to Minim nular lume 3637 ) for Segment(s casing i k/ft 2.00 w/8.4#/g m nular	num Required Cemu 1 Stage Cmt Sx 171 ) A, B = , b All > 0. inside the Grade uud, 30min Sfc Csg Test The cement of	<u>ent Volumes</u> 1 Stage CuFt Cmt 246 70, ОК. 10 3/4 р 110	Tail Cmt Min Cu Ft 139 Coupling	1 Stage % Excess 77 Site plat (orp Joint	Drilling Mud Wt 9.00	Calc MASP 3355	0 383 Req'd BOPE 5M	und.	Int 1		0 15,512 Min Dist Hole-Cpl 1.38
Hole Ann Size Volu 13 1/2 0.30 urst Frac Gradient(s) 8 5/8 Segment ## "A" 32. "B" Hole Ann Size Volu 9 7/8 0.12	posed to Minim nular lume 3637 ) for Segment(s casing i k/ft 2.00 w/8.4#/g m nular	num Required Cemu 1 Stage Cmt Sx 171 ) A, B = , b All > 0. inside the Grade uud, 30min Sfc Csg Test The cement of	<u>ent Volumes</u> 1 Stage CuFt Cmt 246 70, ОК. 10 3/4 р 110	Min Cu Ft 139 Coupling	1 Stage % Excess 77 Site plat (orp Joint	Drilling Mud Wt 9.00	Calc MASP 3355	Req'd BOPE 5M	und.		2	Min Dist Hole-Cpl 1.38
Hole Ann Size Volu 13 1/2 0.30 urst Frac Gradient(s) 8 5/8 Segment ## "A" 32. "B" Hole Ann Size Volu 9 7/8 0.12	nular lume 3637 ) for Segment(s casing i k/ft 2.00 w/8.4#/g m nular	1 Stage Cmt Sx 171 ) A, B = , b All > 0. inside the Grade ud, 30min Sfc Csg Test The cement v	1 Stage CuFt Cmt 246 70, ок. 10 3/4 р 110	Cu Ft 139 Coupling	% Excess 77 Site plat (orp Joint	Mud Wt 9.00 Pracks S or E) a Design I	MASP 3355 Is per 0.0.1.1 Factors	BOPE 5M	und.		20	Hole-Cpl 1.38
Size         Volt           13 1/2         0.31           urst Frac Gradient(s)	lume 3637 ) for Segment(s casing i k/ft 2.00 w/8.4#/g m nular	Cmt Sx 171 ) A, B = , b All > 0. inside the Grade ud, 30min Sfc Csg Test The cement of	СиFt Стт 246 70, ОК. 10 3/4 р 110	Cu Ft 139 Coupling	% Excess 77 Site plat (orp Joint	Mud Wt 9.00 Pracks S or E) a Design I	MASP 3355 Is per 0.0.1.1 Factors	BOPE 5M	und.		20	Hole-Cpl 1.38
13 1/2         0.3           burst Frac Gradient(s)	) for Segment(s casing i k/ft 2.00 w/8.4#/g m nular	171 ) A, B = , b All > 0. inside the Grade uud, 30min Sfc Csg Test The cement of	246 70, ок. 10 3/4 р 110	139 Coupling	77 Site plat (pip Joint	9.00 e racks S or E) a <u>Design I</u>	3355 19 per 0. 0. 1. 1 Factors	<b>5M</b>	und.		26	1.38
Burst Frac Gradient(s) 8 5/8 Segment #/ "A" 32. "B" Hole Ann Size Volu 9 7/8 0.1:	) for Segment(s casing i //ft 2.00 w/8.4#/g m nular	) A, B = , b All > 0. inside the Grade ud, 30min Sfc Csg Test The cement v	70, ОК. 10 3/4 р 110	Coupling	Site plat (pip	e racks S or E) a <u>Design I</u>	is per 0.0.1.1 Factors	II.D.4.i. not fo	und.		2.6	
8 5/8 Segment ## "A" 32. "B" Hole Ann Size Volu 9 7/8 0.1:	casing i #/ft 2.00 w/8.4#/g m nular	inside the Grade nud, 30min Sfc Csg Test The cement N	10 3/4 p 110					II.D.4.i. not fo	und.		2 6	
Segment         #/           "A"         32.           "B"	#/ft 2.00 w/8.4#/g m nular	Grade uud, 30min Sfc Csg Test The cement v	p 110						<b>B</b> C		2.0	
Segment         #/           "A"         32.           "B"	#/ft 2.00 w/8.4#/g m nular	Grade uud, 30min Sfc Csg Test The cement v	p 110								20	
"A" 32. "B" Hole Ann Size Volu 9 7/8 0.1:	2.00 w/8.4#/g m nular	ud, 30min Sfc Csg Test The cement v				Collapse	Burnt				20	
"B" Hole Ann Size Volu 9 7/8 0.11	w/8.4#/g m nular	The cement v		tlw	2.26		Burst	Length	B@s	a-B	a-C	Weight
Hole Ann Size Volu 9 7/8 0.12	nular	The cement v	psig: 2,268		3.26	0.75	1.44	10,310	2	2.41	1.26	,
Size Volu 9 7/8 0.12	nular	The cement v	psig: 2,268					0				0
Size Volu 9 7/8 0.12							Totals:	10,310				329,920
Size Volu 9 7/8 0.12		4 04		led to achieve a top of	0	ft from su		383				overlap.
<b>97/8</b> 0.12	lume	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Req'd				Min Dist
		Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE				Hole-Cpl
D V Tool(s):	261	522	752	1308	-43	10.50	3700	5M				0.44
			5768				sum of sx	<u>Σ CuFt</u>				Σ%exces
oy stage % : Class 'C' tail cmt yld > :		31	31				942	1718				31
Tail cmt 5 1/2	casing	inside the	8 5/8			Design Fac	ctors			Prod 1	٣	
	ŧ/ft	Grade		Coupling	Body	Collapse	Burst	Length	B@s	a-B	a-C	Weight
	7.00		p 110	btc	2.82	1.21	1.72	19,083	2	2.88	2.02	324,411
"B"								0				0
"C"								0				0
"D"				0				0				0
	w/8.4#/g m	ud, 30min Sfc Csg Test					Totals:	19,083				324,411
				led to achieve a top of	10110	ft from su		200				overlap.
	nular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Req'd				Min Dist
	lume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE				Hole-Cpl
	733	1207	1952	1555	26	10.50						0.91
Class 'C' tail cmt yld > :	1.35											
#N/A		 										
0		Quesda	5 1/2	<u> </u>	#11/A	Design I				hoose Casi	U	14/-1-1
	#/ft	Grade		Coupling	#N/A	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"				0.00				0				0
"B"	<i>i</i>			0.00			m · 1	0				0
	w/8.4#/g m	ud, 30min Sfc Csg Test				6 L	Totals:	0				0
				his csg, TOC intended	#N/A	ft from su		#N/A				overlap.
	nular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Req'd				Min Dis
	lume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE				Hole-Cpl
0		#N/A	#N/A	0	#N/A							
N/A			Capitan Reef es	t top XXXX.								

#### Fully Loaded 12-13 Fed Com 821H

	surf	ace csg in a	13 1/2	inch hole.		Design	Factors			Surfac	2	
Segment	#/ft	Grade		Coupling	Joint	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"	40.50		h 40	btc	29.46	7.76	0.41	383	13	0.68	14.66	•
"B"				btc				0				0
	w/8.4#/g	mud, 30min Sfc Csg Test	psig: 1.429	Tail Cmt	does not	circ to sfc.	Totals:	383				15,512
omparison o		nimum Required Cem					rotaioi					,.
Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Reg'd				Min Dis
Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE				Hole-Cp
13 1/2	0.3637	171	246	139	77	9.00	3355	5M				1.38
urst Frac Grad	dient(s) for Segme	nt(s) A, B = , b All > (	0.70, ОК.			e racks S or E)	as per 0.0.1.					
8 5/8	casin	g inside the	10 3/4			Design	Factors		-	Int 1		
Segment	#/ft	Grade		Coupling	Joint	Collapse	Burst	Length	B@s	a-B	a-C	Weigh
"A"	32.00		р 110	tlw	3.26	0.75	1.48	10,310	2	2.49	1.26	329,92
"B"								0				Ó
	w/8.4#/g	mud, 30min Sfc Csg Test	psig: 2,268				Totals:	10,310				329,92
	,			nded to achieve a top of	0	ft from su		383				overlap.
Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Rea'd				Min Dis
Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE				Hole-Cp
9 7/8	0.1261	521	750	1308	-43	10.50	3593	5M				0.44
	0.1201	521		1300	-40	10.50		-				Σ%exces
O V Tool(s):			5768				sum of sx 941	<u>Σ CuFt</u> 1716				
by stage % : Class 'C' tail cm		31	31				941	1716				31
Tail cmt	casin	g inside the	85/8			Design Fa	ctors			Prod 1		
5 1/2		g inside the Grade	8 5/8	Coupling	Body	Design Fa		l ength	BØs			Weigh
5 1/2 Segment	#/ft	g inside the Grade		Coupling	Body	Collapse	Burst	Length	B@s	a-B	a-C	
5 1/2 Segment "A"		•	<b>8 5/8</b> p 110	Coupling btc	<b>Body</b> 2.91			18,778	<b>B@s</b> 2			319,22
5 1/2 Segment	<b>#/ft</b> 17.00	Grade	p 110			Collapse	<b>Burst</b> 1.77	18,778 <b>0</b>	<u> </u>	a-B	a-C	319,22 0
5 1/2 Segment "A"	<b>#/ft</b> 17.00	Grade mud, 30min Sfc Csg Test	p 110 psig: 2,429	btc	2.91	Collapse 1.24	Burst 1.77 Totals:	18,778 <b>0</b> 18,778	<u> </u>	a-B	a-C	319,22 <b>0</b> 319,22
5 1/2 Segment "A" "B"	<b>#/ft</b> 17.00 w/8.4#/g	Grade mud, 30min Sfc Csg Test The cement	p 110 <sub>psig:</sub> 2,429 volume(s) are inter	btc nded to achieve a top of	2.91	Collapse 1.24 ft from su	Burst 1.77 Totals: Irface or a	18,778 0 18,778 200	<u> </u>	a-B	a-C	319,22 0 319,22 overlap.
5 1/2 Segment "A" "B" Hole	#/ft 17.00 w/8.4#/g Annular	Grade mud, 30min Sfc Csg Test The cement 1 Stage	p 110 psig: 2,429 volume(s) are inter 1 Stage	btc nded to achieve a top of Min	2.91 10110 1 Stage	Collapse 1.24 ft from su Drilling	Burst 1.77 Totals: Irface or a Calc	18,778 0 18,778 200 Req'd	<u> </u>	a-B	a-C	319,22 0 319,22 overlap. Min Dis
5 1/2 Segment "A" "B" Hole Size	#/ft 17.00 w/8.4#/g Annular Volume	Grade mud, 30min Sfc Csg Test The cement 1 Stage Cmt Sx	p 110 psig: 2,429 volume(s) are inter 1 Stage CuFt Cmt	btc nded to achieve a top of Min Cu Ft	2.91 10110 1 Stage % Excess	Collapse 1.24 ft from su Drilling Mud Wt	Burst 1.77 Totals: Irface or a	18,778 0 18,778 200	<u> </u>	a-B	a-C	319,22 0 319,22 overlap. Min Dis Hole-Cp
5 1/2 Segment "A" "B" Hole Size 7 7/8	#/ft 17.00 w/8.4#/g Annular Volume 0.1733	Grade mud, 30min Sfc Csg Test The cement 1 Stage	p 110 psig: 2,429 volume(s) are inter 1 Stage	btc nded to achieve a top of Min	2.91 10110 1 Stage	Collapse 1.24 ft from su Drilling	Burst 1.77 Totals: Irface or a Calc	18,778 0 18,778 200 Req'd	<u> </u>	a-B	a-C	<b>0</b> 319,22
5 1/2 Segment "A" "B" Hole Size	#/ft 17.00 w/8.4#/g Annular Volume 0.1733	Grade mud, 30min Sfc Csg Test The cement 1 Stage Cmt Sx	p 110 psig: 2,429 volume(s) are inter 1 Stage CuFt Cmt	btc nded to achieve a top of Min Cu Ft	2.91 10110 1 Stage % Excess	Collapse 1.24 ft from su Drilling Mud Wt	Burst 1.77 Totals: Irface or a Calc	18,778 0 18,778 200 Req'd	<u> </u>	a-B	a-C	319,22 0 319,22 overlap. Min Dis Hole-Cpl
5 1/2 Segment "A" "B" Hole Size 7 7/8 Class 'C' tail cm #N/A	#/ft 17.00 w/8.4#/g Annular Volume 0.1733	Grade mud, 30min Sfc Csg Test The cement 1 Stage Cmt Sx	p 110 psig: 2,429 volume(s) are inter 1 Stage CuFt Cmt 1951	btc nded to achieve a top of Min Cu Ft	2.91 10110 1 Stage % Excess	Collapse 1.24 ft from su Drilling Mud Wt 10.50	Burst 1.77 Totals: urface or a Calc MASP	18,778 0 18,778 200 Req'd	2	<b>a-B</b> 2.96	<b>a-C</b> 2.08	319,22 0 319,22 overlap. Min Dis Hole-Cp
5 1/2 Segment "A" "B" Hole Size 7 7/8 Class 'C' tail cm #N/A 0	#/ft 17.00 w/8.4#/g Annular Volume 0.1733 ht yld > 1.35	Grade mud, 30min Sfc Csg Test The cement 1 Stage Cmt Sx 1206	p 110 psig: 2,429 volume(s) are inter 1 Stage CuFt Cmt	btc Inded to achieve a top of Min Cu Ft 1503	2.91 10110 1 Stage % Excess 30	Collapse 1.24 ft from su Drilling Mud Wt 10.50 Design	Burst 1.77 Totals: Inface or a Calc MASP Factors	18,778 0 18,778 200 Req'd BOPE	2	a-B 2.96	a-C 2.08 sing>	319,22 0 319,22 overlap. Min Dis Hole-Cp 0.91
5 1/2 Segment "A" "B" Hole Size 7 7/8 class 'C' tail cm #N/A 0 Segment	#/ft 17.00 w/8.4#/g Annular Volume 0.1733	Grade mud, 30min Sfc Csg Test The cement 1 Stage Cmt Sx	p 110 psig: 2,429 volume(s) are inter 1 Stage CuFt Cmt 1951	btc Inded to achieve a top of Min Cu Ft 1503 Coupling	2.91 10110 1 Stage % Excess	Collapse 1.24 ft from su Drilling Mud Wt 10.50	Burst 1.77 Totals: urface or a Calc MASP	18,778 0 18,778 200 Req'd BOPE	2	a-B 2.96	<b>a-C</b> 2.08	319,22 0 319,22 overlap. Min Dis Hole-Cp 0.91 Weigh
5 1/2 Segment "A" "B" Hole Size 7 7/8 lass 'C' tail cm #N/A 0 Segment "A"	#/ft 17.00 w/8.4#/g Annular Volume 0.1733 ht yld > 1.35	Grade mud, 30min Sfc Csg Test The cement 1 Stage Cmt Sx 1206	p 110 psig: 2,429 volume(s) are inter 1 Stage CuFt Cmt 1951	btc Inded to achieve a top of Min Cu Ft 1503 Coupling 0.00	2.91 10110 1 Stage % Excess 30	Collapse 1.24 ft from su Drilling Mud Wt 10.50 Design	Burst 1.77 Totals: Inface or a Calc MASP Factors	18,778 0 18,778 200 Req'd BOPE Length 0	2	a-B 2.96	a-C 2.08 sing>	319,22 0 319,22 overlap. Min Dis Hole-Cp 0.91 Weigh
5 1/2 Segment "A" "B" Hole Size 7 7/8 lass 'C' tail cm #N/A 0 Segment	#/ft 17.00 w/8.4#/g Annular Volume 0.1733 nt yld > 1.35 #/ft	Grade mud, 30min Sfc Csg Test The cement 1 Stage Cmt Sx 1206	p 110 psig: 2,429 volume(s) are inter 1 Stage CuFt Cmt 1951 5 1/2	btc Inded to achieve a top of Min Cu Ft 1503 Coupling	2.91 10110 1 Stage % Excess 30	Collapse 1.24 ft from su Drilling Mud Wt 10.50 Design	Burst 1.77 Totals: Inface or a Calc MASP Factors	18,778 0 18,778 200 Req'd BOPE	2	a-B 2.96	a-C 2.08 sing>	319,22 0 319,22 overlap. Min Dis Hole-Cp 0.91 Weigh
5 1/2 Segment "A" "B" Hole Size 7 7/8 Class 'C' tail cm #N/A 0 Segment "A"	#/ft 17.00 w/8.4#/g Annular Volume 0.1733 nt yld > 1.35 #/ft	Grade mud, 30min Sfc Csg Test The cement 1 Stage Cmt Sx 1206 Grade mud, 30min Sfc Csg Test	p 110 psig: 2,429 volume(s) are inter 1 Stage CuFt Cmt 1951 5 1/2	btc Inded to achieve a top of Min Cu Ft 1503 Coupling 0.00	2.91 10110 1 Stage % Excess 30	Collapse 1.24 ft from su Drilling Mud Wt 10.50 Design	Burst 1.77 Totals: urface or a Calc MASP Factors Burst Totals:	18,778 0 18,778 200 Req'd BOPE	2	a-B 2.96	a-C 2.08 sing>	319,22 0 319,22 overlap. Min Dis Hole-Cp 0.91 Weigh 0
5 1/2 Segment "A" "B" Hole Size 7 7/8 Class 'C' tail cm #N/A 0 Segment "A"	#/ft 17.00 w/8.4#/g Annular Volume 0.1733 nt yld > 1.35 #/ft	Grade mud, 30min Sfc Csg Test The cement 1 Stage Cmt Sx 1206 Grade mud, 30min Sfc Csg Test	p 110 psig: 2,429 volume(s) are inter 1 Stage CuFt Cmt 1951 5 1/2	btc nded to achieve a top of Min Cu Ft 1503 Coupling 0.00 0.00	2.91 10110 1 Stage % Excess 30 #N/A	Collapse 1.24 ft from su Drilling Mud Wt 10.50 <u>Design</u> Collapse	Burst 1.77 Totals: urface or a Calc MASP Factors Burst Totals:	18,778 0 18,778 200 Req'd BOPE Length 0 0	2	a-B 2.96	a-C 2.08 sing>	319,22 0 319,22 overlap. Min Dis Hole-Cp 0.91 Weigh 0 0 0 0 0 0 0 0
5 1/2 Segment "A" "B" Hole Size 7 7/8 Class 'C' tail on #N/A 0 Segment "A" "B"	#/ft 17.00 w/8.4#/g Annular Volume 0.1733 nt yld > 1.35 #/ft w/8.4#/g	Grade mud, 30min Sfc Csg Test The cement 1 Stage Cmt Sx 1206 Grade mud, 30min Sfc Csg Test Cmt vol c	p 110 psig: 2,429 volume(s) are inter 1 Stage CuFt Cmt 1951 5 1/2 psig: alc below includes	btc inded to achieve a top of Min Cu Ft 1503 Coupling 0.00 0.00 this csg, TOC intended	2.91 10110 1 Stage % Excess 30 #N/A	Collapse 1.24 ft from su Drilling Mud Wt 10.50 <u>Design I</u> Collapse ft from su	Burst 1.77 Totals: urface or a Calc MASP Factors Burst Totals: urface or a	18,778 0 18,778 200 Req'd BOPE Length 0 0 0 #N/A	2	a-B 2.96	a-C 2.08 sing>	319,22 overlap. Min Dis Hole-Cp 0.91 Weigh 0 0 0 overlap. Min Dis
5 1/2 Segment "A" "B" Hole Size 7 7/8 Constant #N/A 0 Segment "A" "B" Hole Size	#/ft 17.00 w/8.4#/g Annular Volume 0.1733 nt yld > 1.35 #/ft w/8.4#/g Annular	Grade mud, 30min Sfc Csg Test The cement 1 Stage Cmt Sx 1206 Grade mud, 30min Sfc Csg Test Cmt vol c 1 Stage Cmt Sx	p 110 psig: 2,429 volume(s) are inter 1 Stage CuFt Cmt 1951 5 1/2 psig: alc below includes 1 Stage CuFt Cmt	btc Inded to achieve a top of Min Cu Ft 1503 Coupling 0.00 0.00 0.00 this csg, TOC intended Min Cu Ft	2.91 10110 1 Stage % Excess 30 #N/A 1 Stage % Excess	Collapse 1.24 ft from su Drilling Mud Wt 10.50 <u>Design</u> Collapse ft from su Drilling	Burst 1.77 Totals: urface or a Calc MASP Factors Burst Totals: urface or a Calc	18,778 0 18,778 200 Req'd BOPE Length 0 0 0 #N/A Req'd	2	a-B 2.96	a-C 2.08 sing>	319,22 0 319,22 overlap. Min Dis Hole-Cp 0.91 Weigh 0 0 0
5 1/2 Segment "A" "B" Hole Size 7 7/8 lass 'C' tail or #N/A 0 Segment "A" "B" Hole	#/ft 17.00 w/8.4#/g Annular Volume 0.1733 nt yld > 1.35 #/ft w/8.4#/g Annular	Grade mud, 30min Sfc Csg Test The cement 1 Stage Cmt Sx 1206 Grade mud, 30min Sfc Csg Test Cmt vol c 1 Stage	p 110 psig: 2,429 volume(s) are inter 1 Stage CuFt Cmt 1951 5 1/2 psig: alc below includes 1 Stage	btc Inded to achieve a top of Min Cu Ft 1503 Coupling 0.00 0.00 this csg, TOC intended Min Cu Ft 0	2.91 10110 1 Stage % Excess 30 #N/A #N/A 1 Stage	Collapse 1.24 ft from su Drilling Mud Wt 10.50 <u>Design</u> Collapse ft from su Drilling	Burst 1.77 Totals: urface or a Calc MASP Factors Burst Totals: urface or a Calc	18,778 0 18,778 200 Req'd BOPE Length 0 0 0 #N/A Req'd	2	a-B 2.96	a-C 2.08 sing>	319,22 0 319,22 overlap. Min Dis Hole-Cp 0.91 Weight 0 0 0 0 0 0 0 0 0 0 0 0 0

#### Fully Loaded 12-13 Fed Com 831H

10 3/4		surface csg in a	13 1/2	inch hole.		Design	Factors			Surface	2	
Segment	#/ft	Grade		Coupling	Joint	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"	40.50		h 40	btc	29.46	7.76	0.41	383	13	0.68	14.66	-
"B"				btc				0				0
	w/	8.4#/g mud, 30min Sfc Csg Test	psig: 1.429	Tail Cmt	does not	circ to sfc.	Totals:	383				15,512
omparison o		to Minimum Required Ceme										- , -
Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Req'd				Min Dis
Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE				Hole-Cp
13 1/2	0.3637	171	246	139	77	9.00	3355	5M				1.38
urst Frac Grad	dient(s) for S	egment(s) A, B = , b All > C	).70, OK.									
8 5/8		casing inside the	10 3/4			Desian	Factors		-	Int 1		••=•=•
Segment	#/ft	Grade	10 3/4	Coupling	Joint	Collapse	Burst	Length	B@s	a-B	a-C	Weigh
"A"	32.00	Graue	p 110	tlw	3.26	0.75	1.44	10.310	2 2	а-в 2.42	1.26	-
"B"	52.00		P 110	u VV	0.20	0.75	1.44	10,310 <b>0</b>	2	2.42	1.20	529,920 <b>0</b>
B		9 Att/a mud 20min Sta Car Tart	ncia: 2.268				Totals:	10,310				329.92
	w/	8.4#/g mud, 30min Sfc Csg Test		ided to achieve a top of	0	ft from su		<b>383</b>				overlap.
Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Reg'd				Min Dis
Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE				Hole-Cp
9 7/8	0.1261	518	746	1308	-43	10.50	3689	5M				0.44
V Tool(s):			5768				sum of sx	<u>Σ CuFt</u> 1717				Σ%exces
by stage % :		30	32				940					31
Class 'C' tail cm	nt yld > 1.35						040	17.17				
Tail cmt		cosing incide the	9 c /0			Dosign Fa				Prod 1		
Tail cmt 5 1/2		casing inside the	8 5/8	Coupling	Body	Design Fa	ctors		BØs	Prod 1		
Tail cmt 5 1/2 Segment		casing inside the Grade		Coupling	Body	Collapse	<u>ctors</u> Burst	Length	B@s	a-B	a-C	Weigh
Tail cmt 5 1/2 Segment "A"			<b>8 5/8</b> p 110	Coupling btc	<b>Body</b> 2.83		ctors	Length 19,109	<b>B@s</b> 2		a-C	Weigh 324,85
Tail cmt 5 1/2 Segment	#/ft 17.00	Grade	p 110			Collapse	<u>ctors</u> Burst 1.72	Length 19,109 0	-	a-B	a-C	Weigh 324,85 0
Tail cmt 5 1/2 Segment "A"	#/ft 17.00	Grade '8.4#/g mud, 30min Sfc Csg Test	p 110 psig: 2,493	btc	2.83	Collapse 1.21	ctors Burst 1.72 Totals:	Length 19,109 0 19,109	-	a-B	a-C	Weigh 324,85 0 324,85
Tail cmt 5 1/2 Segment "A" "B"	#/ft 17.00 w/	Grade 8.4#/g mud, 30min Sfc Csg Test The cement	p 110 <sub>psig:</sub> 2,493 volume(s) are inter	btc	2.83	Collapse 1.21 ft from su	ctors Burst 1.72 Totals: Irface or a	Length 19,109 0 19,109 200	-	a-B	a-C	Weigh 324,85 0 324,85 overlap.
Tail cmt 5 1/2 Segment "A" "B" Hole	#/ft 17.00 w/	Grade 8.4#/g mud, 30min Sfc Csg Test The cement 1 Stage	p 110 <sub>psig:</sub> 2,493 volume(s) are inten 1 Stage	btc nded to achieve a top of Min	2.83 10110 1 Stage	Collapse 1.21 ft from su Drilling	ctors Burst 1.72 Totals: Inface or a Calc	Length 19,109 0 19,109 200 Req'd	-	a-B	a-C	Weigh 324,85 0 324,85 overlap. Min Dis
Tail cmt 5 1/2 Segment "A" "B" Hole Size	#/ft 17.00 w/ Annular Volume	Grade 8.4#/g mud, 30min Sfc Csg Test The cement 1 Stage Cmt Sx	p 110 psig: 2,493 volume(s) are inter 1 Stage CuFt Cmt	btc Inded to achieve a top of Min Cu Ft	2.83 10110 1 Stage % Excess	Collapse 1.21 ft from su Drilling Mud Wt	ctors Burst 1.72 Totals: Irface or a	Length 19,109 0 19,109 200	-	a-B	a-C	Weigh 324,85 0 324,85 overlap. Min Dis Hole-Cp
5 1/2 Segment "A" "B" Hole	#/ft 17.00 w/ Annular Volume 0.1733	Grade 8.4#/g mud, 30min Sfc Csg Test The cement 1 Stage	p 110 <sub>psig:</sub> 2,493 volume(s) are inten 1 Stage	btc nded to achieve a top of Min	2.83 10110 1 Stage	Collapse 1.21 ft from su Drilling	ctors Burst 1.72 Totals: Inface or a Calc	Length 19,109 0 19,109 200 Req'd	-	a-B	a-C	Weigh 324,853 0 324,853
Tail cmt 51/2 Segment "A" "B" Hole Size 7 7/8 Class 'C' tail cm	#/ft 17.00 w/ Annular Volume 0.1733	Grade 8.4#/g mud, 30min Sfc Csg Test The cement 1 Stage Cmt Sx	p 110 psig: 2,493 volume(s) are inter 1 Stage CuFt Cmt	btc Inded to achieve a top of Min Cu Ft	2.83 10110 1 Stage % Excess	Collapse 1.21 ft from su Drilling Mud Wt	ctors Burst 1.72 Totals: Inface or a Calc	Length 19,109 0 19,109 200 Req'd	-	a-B	a-C	Weigh 324,85 0 324,85 overlap. Min Dis Hole-Cp
Tail cmt 5 1/2 Segment "A" "B" Hole Size 7 7/8 Class 'C' tail cm	#/ft 17.00 w/ Annular Volume 0.1733	Grade 8.4#/g mud, 30min Sfc Csg Test The cement 1 Stage Cmt Sx	p 110 psig: 2,493 volume(s) are inter 1 Stage CuFt Cmt 1948	btc Inded to achieve a top of Min Cu Ft	2.83 10110 1 Stage % Excess	Collapse 1.21 ft from su Drilling Mud Wt 10.50	ctors Burst 1.72 Totals: Irface or a Calc MASP	Length 19,109 0 19,109 200 Req'd	2	<b>a-B</b> 2.88	<b>a-C</b> 2.03	Weigh 324,85 0 324,85 overlap. Min Dis Hole-Cpl
Tail cmt 5 1/2 Segment "A" "B" Hole Size 7 7/8 Class 'C' tail cm #N/A 0	#/ft 17.00 w/ Annular Volume 0.1733 at yld > 1.35	Grade 8.4#/g mud, 30min Sfc Csg Test The cement of 1 Stage Cmt Sx 1204	p 110 psig: 2,493 volume(s) are inter 1 Stage CuFt Cmt	btc Ided to achieve a top of Min Cu Ft 1560	2.83 10110 1 Stage % Excess 25	Collapse 1.21 ft from su Drilling Mud Wt 10.50 Design	Ctors Burst 1.72 Totals: Inface or a Calc MASP	Length 19,109 0 19,109 200 Req'd BOPE	2	a-B 2.88	<b>a-C</b> 2.03	Weigh 324,85 0 324,85 overlap. Min Dis Hole-Cp 0.91
Tail cmt 5 1/2 Segment "A" "B" Hole Size 7 7/8 class 'C' tail cm #N/A 0 Segment	#/ft 17.00 w/ Annular Volume 0.1733	Grade 8.4#/g mud, 30min Sfc Csg Test The cement 1 Stage Cmt Sx	p 110 psig: 2,493 volume(s) are inter 1 Stage CuFt Cmt 1948	btc Ided to achieve a top of Min Cu Ft 1560 Coupling	2.83 10110 1 Stage % Excess	Collapse 1.21 ft from su Drilling Mud Wt 10.50	ctors Burst 1.72 Totals: Irface or a Calc MASP	Length 19,109 0 19,109 200 Req'd BOPE	2	a-B 2.88	<b>a-C</b> 2.03	Weigh 324,85 0 324,85 overlap. Min Dis Hole-Cp 0.91 Weigh
Tail cmt 5 1/2 Segment "A" "B" Hole Size 7 7/8 class 'C' tail cm #N/A 0 Segment "A"	#/ft 17.00 w/ Annular Volume 0.1733 at yld > 1.35	Grade 8.4#/g mud, 30min Sfc Csg Test The cement of 1 Stage Cmt Sx 1204	p 110 psig: 2,493 volume(s) are inter 1 Stage CuFt Cmt 1948	btc Ided to achieve a top of Min Cu Ft 1560 Coupling 0.00	2.83 10110 1 Stage % Excess 25	Collapse 1.21 ft from su Drilling Mud Wt 10.50 Design	Ctors Burst 1.72 Totals: Inface or a Calc MASP	Length 19,109 0 19,109 200 Req'd BOPE	2	a-B 2.88	<b>a-C</b> 2.03	Weigh 324,85 0 324,85 overlap. Min Dis Hole-Cp 0.91 Weigh 0
Tail cmt 5 1/2 Segment "A" "B" Hole Size 7 7/8 ilass 'C' tail cm #N/A 0 Segment	#/ft 17.00 w/ Annular Volume 0.1733 it yld > 1.35 #/ft	Grade 8.4#/g mud, 30min Sfc Csg Test The cement y 1 Stage Cmt Sx 1204 Grade	p 110 psig: 2,493 volume(s) are inter 1 Stage CuFt Cmt 1948 5 1/2	btc Ided to achieve a top of Min Cu Ft 1560 Coupling	2.83 10110 1 Stage % Excess 25	Collapse 1.21 ft from su Drilling Mud Wt 10.50 Design	ctors Burst 1.72 Totals: urface or a Calc MASP Factors Burst	Length 19,109 0 19,109 200 Req'd BOPE	2	a-B 2.88	<b>a-C</b> 2.03	Weigh 324,85 0 324,85 0 verlap. Min Dis Hole-Cp 0.91 Weigh 0 0 0
Tail cmt 5 1/2 Segment "A" "B" Hole Size 7 7/8 class 'C' tail cm #N/A 0 Segment "A"	#/ft 17.00 w/ Annular Volume 0.1733 it yld > 1.35 #/ft	Grade 8.4#/g mud, 30min Sfc Csg Test 1 Stage Cmt Sx 1204 Grade 8.4#/g mud, 30min Sfc Csg Test	p 110 psig: 2,493 volume(s) are inter 1 Stage CuFt Cmt 1948 5 1/2	btc ided to achieve a top of Min Cu Ft 1560 Coupling 0.00 0.00	2.83 10110 1 Stage % Excess 25 #N/A	Collapse 1.21 ft from su Drilling Mud Wt 10.50 <u>Design</u> Collapse	ctors Burst 1.72 Totals: urface or a Calc MASP Factors Burst	Length 19,109 0 19,109 200 Req'd BOPE	2	a-B 2.88	<b>a-C</b> 2.03	Weigh 324,85 0 324,85 0 verlap. Min Dis Hole-Cp 0.91 Weigh 0 0
Tail cmt 51/2 Segment "A" "B" Hole Size 77/8 Class 'C' tail cm #N/A 0 Segment "A" "B"	#/ft 17.00 w/ Annular Volume 0.1733 nt yld > 1.35 #/ft w/	Grade 8.4#/g mud, 30min Sfc Csg Test The cement 1 Stage Cmt Sx 1204 Grade 8.4#/g mud, 30min Sfc Csg Test Cmt vol c:	p 110 psig: 2,493 volume(s) are inter 1 Stage CuFt Cmt 1948 5 1/2 psig: alc below includes	btc ided to achieve a top of Min Cu Ft 1560 Coupling 0.00 0.00 this csg, TOC intended	2.83 10110 1 Stage % Excess 25 #N/A	Collapse 1.21 ft from su Drilling Mud Wt 10.50 <u>Design</u> Collapse	ctors Burst 1.72 Totals: Inface or a Calc MASP Factors Burst	Length 19,109 0 19,109 200 Req'd BOPE Length 0 0 0 0 #N/A	2	a-B 2.88	<b>a-C</b> 2.03	Weigh 324,85 0 324,85 overlap. Min Dis Hole-Cp 0.91 Weigh 0 0 0 0 0 0 0 0
Tail cmt 5 1/2 Segment "A" "B" Hole Size 7 7/8 Class 'C' tail cm #N/A 0 Segment "A" "B" Hole	#/ft 17.00 w/ Annular Volume 0.1733 nt yld > 1.35 #/ft w/ Annular	Grade 8.4#/g mud, 30min Sfc Csg Test The cement of 1 Stage Cmt Sx 1204 Grade 8.4#/g mud, 30min Sfc Csg Test Cmt vol c: 1 Stage	p 110 psig: 2,493 volume(s) are inter 1 Stage CuFt Cmt 1948 5 1/2 psig: alc below includes 1 Stage	btc ided to achieve a top of Min Cu Ft 1560 Coupling 0.00 0.00 this csg, TOC intended Min	2.83 10110 1 Stage % Excess 25 #N/A #N/A 1 Stage	Collapse 1.21 ft from su Drilling Mud Wt 10.50 <u>Design</u> Collapse ft from su Drilling	ctors Burst 1.72 Totals: Inface or a Calc MASP Factors Burst Totals: Inface or a Calc	Length 19,109 0 19,109 200 Req'd BOPE Length 0 0 0 0 #N/A Req'd	2	a-B 2.88	<b>a-C</b> 2.03	Weigh 324,85 0 324,85 overlap. Min Dis Hole-Cp 0.91 Weigh 0 0 0 0 overlap. Min Dis
Tail cmt 5 1/2 Segment "A" "B" Hole Size 7 7/8 class 'C' tail cm #N/A 0 Segment "A" "B" Hole Size	#/ft 17.00 w/ Annular Volume 0.1733 nt yld > 1.35 #/ft w/	Grade 8.4#/g mud, 30min Sfc Csg Test The cement of Stage Cmt Sx 1204 Grade 8.4#/g mud, 30min Sfc Csg Test Cmt vol c: 1 Stage Cmt Sx	p 110 psig: 2,493 volume(s) are inter 1 Stage CuFt Cmt 1948 5 1/2 psig: alc below includes 1 Stage CuFt Cmt	btc ided to achieve a top of Min Cu Ft 1560 Coupling 0.00 0.00 this csg, TOC intended Min Cu Ft	2.83 10110 1 Stage % Excess 25 #N/A #N/A 1 Stage % Excess	Collapse 1.21 ft from su Drilling Mud Wt 10.50 <u>Design</u> Collapse	ctors Burst 1.72 Totals: Inface or a Calc MASP Factors Burst	Length 19,109 0 19,109 200 Req'd BOPE Length 0 0 0 0 #N/A	2	a-B 2.88	<b>a-C</b> 2.03	Weigh 324,85 0 324,85 overlap. Min Dis Hole-Cp 0.91 Weigh 0 0 0 0 0 0 0 0
Tail cmt 5 1/2 Segment "A" "B" Hole Size 7 7/8 Iass 'C' tail cm #N/A 0 Segment "A" "B" Hole	#/ft 17.00 w/ Annular Volume 0.1733 nt yld > 1.35 #/ft w/ Annular	Grade 8.4#/g mud, 30min Sfc Csg Test The cement of 1 Stage Cmt Sx 1204 Grade 8.4#/g mud, 30min Sfc Csg Test Cmt vol c: 1 Stage	p 110 psig: 2,493 volume(s) are inter 1 Stage CuFt Cmt 1948 5 1/2 psig: alc below includes 1 Stage	btc Inded to achieve a top of Min Cu Ft 1560 Coupling 0.00 0.00 this csg, TOC intended Min Cu Ft 0	2.83 10110 1 Stage % Excess 25 #N/A #N/A 1 Stage	Collapse 1.21 ft from su Drilling Mud Wt 10.50 <u>Design</u> Collapse ft from su Drilling	ctors Burst 1.72 Totals: Inface or a Calc MASP Factors Burst Totals: Inface or a Calc	Length 19,109 0 19,109 200 Req'd BOPE Length 0 0 0 0 #N/A Req'd	2	a-B 2.88	<b>a-C</b> 2.03	Weigh 324,85 0 324,85 overlap. Min Dis Hole-Cp 0.91 Weigh 0 0 0 0 overlap. Min Dis

District I 1625 N. French Dr., Hobbs, NM 88240 Phone:(575) 393-6161 Fax:(575) 393-0720 District II

811 S. First St., Artesia, NM 88210 Phone:(575) 748-1283 Fax:(575) 748-9720 District III

1000 Rio Brazos Rd., Aztec, NM 87410 Phone:(505) 334-6178 Fax:(505) 334-6170

District IV

1220 S. St Francis Dr., Santa Fe, NM 87505 Phone: (505) 476-3470 Fax: (505) 476-3462

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

CONDITIONS

Operator:	OGRID:
DEVON ENERGY PRODUCTION COMPANY, LP	6137
333 West Sheridan Ave.	Action Number:
Oklahoma City, OK 73102	345252
	Action Type:
	[C-103] NOI Change of Plans (C-103A)

#### CONDITIONS

Created By		Condition
		Date
ward.rikala	All original COA's still apply.	6/10/2024

Action 345252