

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

NM OIL CONSERVATION

ALBUQUERQUE DISTRICT

JAN 13 2015

FORM APPROVED
OMB NO. 1004-0135
Expires: July 31, 2010**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.

RECEIVED

SUBMIT IN TRIPLICATE - Other instructions on reverse side.

1. Type of Well <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other		5. Lease Serial No. NMNM90534
2. Name of Operator DEVON ENERGY PRODUCTION CO LP		6. If Indian, Allottee or Tribe Name
Contact: TRINA C COUCH Email: trina.couch@devn.com		7. If Unit or CA/Agreement, Name and/or No.
3a. Address 333 WEST SHERIDAN AVE OKLAHOMA CITY, OK 73102	3b. Phone No. (include area code) Ph: 405-228-7203	8. Well Name and No. BETELGEUSE 19 FEDERAL 7H
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Sec 20 T19S R31E NWSW 2350FSL 0265FWL 32.645089 N Lat, 103.889132 W Lon		9. API Well No. 30-015-42032-00-X1
		10. Field and Pool, or Exploratory HACKBERRY
		11. County or Parish, and State EDDY COUNTY, NM

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

TYPE OF SUBMISSION	TYPE OF ACTION			
<input checked="" 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"/> Fracture Treat	<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 checked="" type="checkbox"/> Other
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	Change to Original APD
	<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 recompleat 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 performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

Devon Energy Production Company, L.P. respectfully requests changing the 20" surface setting depth from the approved 350 ft to 450 ft, so that casing may be set below the Rustler top at an estimated 400 ft.

Also, we request to change the 9-5/8" intermediate 2 setting depth approved at 3,950 ft on the APD to 4,075 ft to ensure a firmer casing shoe.

Please see attachment for procedure, thank you

**SEE ATTACHED FOR
CONDITIONS OF APPROVAL**

Accepted for record

RWD NMCCD 1/14/2015

14. I hereby certify that the foregoing is true and correct.	
Electronic Submission #287082 verified by the BLM Well Information System For DEVON ENERGY PRODUCTION CO LP, sent to the Carlsbad Committed to AFMSS for processing by JENNIFER MASON on 01/07/2015 (15JAM0176SE)	
Name (Printed/Typed) TRINA C COUCH	Title REGULATORY ANALYST
Signature (Electronic Submission)	Date 01/07/2015
THIS SPACE FOR FEDERAL OR STATE OFFICE USE	
Approved By	Title
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.	

**** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ****

Betelgeuse 19 Fed 7H – Sundry Request

AAA 1-6-2015: Adjust 20" Surface and 9-5/8' Intermediate 2 Setting Depths; add option for a 7" x 5.5" Combination Production String

Sundry Request:

Devon Energy Production Company, L.P. respectfully requests the following:

- Changing the 20" Surface setting depth from the approved 350 ft to 450 ft, so that casing may be set below the Rustler top at an estimated 400 ft.
- Changing the 9-5/8" Intermediate 2 setting depth approved at 3,950 ft on the APD to 4,075 ft to ensure a firmer casing shoe.

Devon Energy Production Company, L.P. respectfully requests to run a tapered production string of 7" x 5.5" casing to a total depth of 12,760 ft measured depth as long as hole conditions permits. If lost circulation is encountered we will stay as originally planned to run a 5-1/2" production longstring. Casing design requirements are below as well as the cement design for both the 7" x 5-1/2" tapered production string and the 5-1/2" production longstring.

Casing Program Changes: 7" x 5.5" Tapered Production String

Hole Size	Hole Interval	OD Csg	Casing Interval	Weight	Collar	Grade
26	0 - 450	20"	0-450	94	BTC	J-55
17-1/2"	450 - 2405	13-3/8"	0 - 2405	68	BTC	J-55
12-1/4"	2405 - 4075	9-5/8"	0 - 4075	40	LTC	J-55
8-3/4"	4075 - 7395	7"	0 - 7395	29#	BTC	P-110
8-3/4"	7395 - 12760	5-1/2"	7395 - 12760	17#	BTC	P-110

Original Option: 5.5 Production Longstring

Hole Size	Hole Interval	OD Csg	Casing Interval	Weight	Collar	Grade
8-3/4"	0 - 12760	5-1/2"	0 - 12760	17#	BTC	P-110

Note: only new casing will be utilized

MAXIMUM LATERAL TVD 7,952

Design Factors: 7" x 5.5" Tapered Production String

Casing Size	Collapse Design Factor	Burst Design Factor	Tension Design Factor
20", 94#, J-55, BTC	2.47	10.02	33.14
13-3/8", 68, #, J-55, BTC	1.56	2.76	6.97
9-5/8", 40#, J-55, LTC	1.35	2.07	3.19
7" 29# P-110 BTC	2.46	3.24	4.33
5-1/2" 17# P-110 BTC	2.01	2.86	5.99

Original Option: 5.5 Production Longstring

Casing Size	Collapse Design Factor	Burst Design Factor	Tension Design Factor
5-1/2" 17# P-110 BTC	2.01	2.86	2.52

CEMENTING TABLE:

String	Number of sx	Weight lbs/gal	Water Volume g/sx	Yield cf/sx	Stage; Lead/Tail	Slurry Description
20 " Surface	600	13.5	9.14	1.73	Lead	Prem Plus C Cement + 0.125 lbs/sack Cello Flake + 4% bwoc Bentonite + 1% bwoc Calcium Chloride + 81.1% Fresh Water
	300	14.8	6.35	1.35	Tail	Class C + 2% bwoc Calcium Chloride + 0.125 lbs/sack Cello Flake + 56.3% Fresh Water
13-3/8" Intermediate 1	1565	12.8	8.23	1.66	Lead	(60:40) Poz (Fly Ash):Prem Plus C + 5% bwow Sodium Chloride + 0.125 lbs/sack Cello Flake + 3 lbs/sack LCM-1 + 0.25% bwoc FL-52 + 1.5% bwoc Sodium Metasilicate + 83.7% Fresh Water
	450	13.8	6.42	1.38	Tail	(60:40) Poz (Fly Ash):Prem Plus C + 5% bwow Sodium Chloride + 0.125lbs/sack Cello Flake + 0.5% bwoc Sodium Metasilicate + 0.5% bwoc BA-10A + 4% bwoc MPA-5 + 65.3% Fresh Water
9-5/8' Intermediate 2 Single Stage	685	12.6	8.81	1.73	Lead	(60:40) Poz (Fly Ash):Prem Plus C + 5% bwow Sodium Chloride + 0.2% bwoc R-3 + 0.125 lbs/sack Cello Flake + 3 lbs/sack LCM-1 + 0.25% bwoc FL-52 + 1% bwoc Sodium Metasilicate + 89.6% Fresh Water
	400	13.8	6.41	1.38	Tail	(60:40) Poz (Fly Ash):Prem Plus C + 5% bwow Sodium Chloride + 0.125 lbs/sack Cello Flake + 0.5% bwoc Sodium Metasilicate + 0.5% bwoc BA-10A + 4% bwoc MPA-5 + 65.2% Fresh Water
9-5/8" Intermediate 2 Stage	265	12.8	8.02	1.66	1 st Lead	(60:40) Poz (Fly Ash):Prem Plus C + 5% bwow Sodium Chloride + 0.2% bwoc R-3 + 0.25 lbs/sack Cello Flake + 5 lbs/sack LCM-1 + 0.25% bwoc FL-52 + 1.5% bwoc Sodium Metasilicate + 81.6% Fresh Water
	300	13.8	6.41	1.38	1 st Tail	(60:40) Poz (Fly Ash):Prem Plus C + 5% bwow Sodium Chloride + 0.25 lbs/sack Cello Flake + 0.1% bwoc Sodium Metasilicate + 0.5% bwoc BA-10A + 4% bwoc MPA-5 + 65.1% Fresh Water
	DVT @ 2455'					
	345	12.8	8.02	1.66	2 nd Lead	(60:40) Poz (Fly Ash):Prem Plus C + 5% bwow Sodium Chloride + 0.25 lbs/sack Cello Flake + 5 lbs/sack LCM-1 + 0.25% bwoc FL-52 + 1.5% bwoc Sodium Metasilicate + 81.6% Fresh Water
	200	13.8	6.42	1.38	2 nd Tail	(60:40) Poz (Fly Ash):Prem Plus C + 5% bwow Sodium Chloride + 0.25 lbs/sack Cello Flake + 0.5% bwoc Sodium Metasilicate + 0.5% bwoc BA-10A + 4% bwoc MPA-5 + 65.3% Fresh Water
7" x 5-1/2" Production Casing Single Stage	360	11.8	13.16	2.3	1 st Lead	(50:50) Poz (Fly Ash):Class H + 0.5% bwoc FL-52 + 0.3% bwoc ASA-301 + 10% bwoc Bentonite + 0.35% bwoc R-21 + 130.7% Fresh Water
	185	12.5	11.01	2.01	2 nd Lead	(35:65) Poz (Fly Ash):Prem Plus H + 3% bwow Sodium Chloride + 0.2% bwoc R-3 + 0.125 lbs/sack Cello Flake + 0.7% bwoc FL-52 + 0.3% bwoc ASA-301 + 6% bwoc Bentonite + 105.5% Fresh Water
	1400	14.2	5.77	1.28	Tail	(50:50) Poz (Fly Ash):Class H + 5% bwow Sodium Chloride + 0.3% bwoc CD-32 + 0.5% bwoc FL-25 + 0.4% bwoc FL-52 + 0.5% bwoc Sodium Metasilicate + 57.3% Fresh Water

TOC for all Strings:

Surface, Intermediate 1, and Intermediate 2 @ 0' (circulate cement to surface)

Production @ 2455' (Cement top will tie-back 50' above Capitan Reef at 2505')

Notes:

- Cement volumes Production based on at least 25% excess
- Actual cement volumes will be adjusted based on fluid caliper and caliper log data
- If lost circulation is encountered while drilling the production wellbore, the 5.5" original production longstring will be used with a DV tool installed a minimum of 50' below the previous casing shoe and of 200' above the current shoe. If the DV tool has to be moved, the cement volumes will be adjusted proportionately.

PECOS DISTRICT
CONDITIONS OF APPROVAL

NM OIL CONSERVATION
ARTESIA DISTRICT
JAN 13 2015

RECEIVED

OPERATOR'S NAME:	Devon Energy Production Company, LP
LEASE NO.:	NMNM-90534
WELL NAME & NO.:	Betelgeuse 19 Federal 7H
SURFACE HOLE FOOTAGE:	2350' FSL & 0265' FWL
BOTTOM HOLE FOOTAGE:	1750' FSL & 0340' FWL Sec. 19, T. 19 S., R 31 E.
LOCATION:	Section 20, T. 19 S., R 31 E., NMPM
COUNTY:	Eddy County, New Mexico
API:	30-015-42032

The original COAs still stand with the following drilling modifications:

I. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

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

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

☒ Eddy County

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

1. A Hydrogen Sulfide (H₂S) Drilling Plan shall be activated 500 feet prior to drilling into the Yates formation. **As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM. Operator has stated that they will have monitoring equipment in place prior to drilling out of the surface shoe.**
2. 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. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a “Major” violation.**
3. 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 is located, this does not include the dog house or stairway area.

4. 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.

B. CASING

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.

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

Wait on cement (WOC) time prior to drilling out for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater for all casing strings. DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. See individual casing strings for details regarding lead cement slurry requirements.

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

Medium Cave/Karst

Capitan Reef

Possibility of water flows in the Artesia Group, Salado, and Delaware.

Possibility of lost circulation in the Artesia Group, Capitan Reef, and Delaware.

1. The **20** inch surface casing shall be set at approximately **450** feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface. **If salt is encountered, set casing at least 25 feet above the salt.**
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
 - b. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.**
 - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
 - d. If cement falls back, remedial cementing will be done prior to drilling out that string.
2. The minimum required fill of cement behind the **13-3/8** inch 1st intermediate casing is:
 - ☒ Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to Cave/Karst.**
3. The minimum required fill of cement behind the **9-5/8** inch 2nd intermediate casing, which shall be set at approximately **4075** feet, is:

Option #1 (Single Stage):

- ☒ Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to Capitan Reef.**

Option #2:

Operator has proposed DV tool at depth of 2455', but will adjust cement proportionately if moved. DV tool shall be set a minimum of 50' below previous shoe and a minimum of 200' above current shoe. Operator shall submit sundry if DV tool depth cannot be set in this range. If an ECP is used, it is to be set a minimum of 50' below the shoe to provide cement across the shoe. If it cannot be set below the shoe, a CBL shall be run to verify cement coverage.

a. First stage to DV tool:

- ☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job. Operator should have plans as to how they will achieve circulation on the next stage.

b. Second stage above DV tool:

- ☒ Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to Capitan Reef. Excess calculates to 3% - Additional cement may be required.**

Centralizers required on horizontal leg, must be type for horizontal service and a minimum of one every other joint.

4. Production Casing

Option #1:

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

- ☒ Cement should tie-back at least 50' above the Capitan Reef. Operator shall provide method of verification.

Option #2:

The minimum required fill of cement behind the **7 X5-1/2** inch production casing is:

- ☒ Cement should tie-back at least 50' above the Capitan Reef. Operator shall provide method of verification.

5. 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.

C. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. Variance approved to use flex line from BOP to choke manifold. 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.** If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).
3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 (2M)** psi.
 - a. **For surface casing only:** If the BOP/BOPE is to be tested against casing, the wait on cement (WOC) time for that casing is to be met (see WOC statement at start of casing section). Independent service company required.
4. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9-5/8** intermediate casing shoe shall be **3000 (3M)** psi.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

- b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (18 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).
- c. 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.
- d. The results of the test shall be reported to the appropriate BLM office.
- e. 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.**
- f. 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.

D. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

E. 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.

JAM 010715