

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

OCD Hobbs

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.*

**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. NMNM92781
2. Name of Operator DEVON ENERGY PRODUCTION CO Contact: DAVID H COOK Email: david.cook@dvn.com		6. If Indian, Allottee or Tribe Name
3a. Address 333 WEST SHERIDAN AVE OKLAHOMA CITY, OK 73102	3b. Phone No. (include area code) Ph: 405-552-7848	7. If Unit or CA/Agreement, Name and/or No. NMNM94480X
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Sec 17 T22S R34E SESE 225FSL 870FEL		8. Well Name and No. GAUCHO UNIT 23H
		9. API Well No. 30-025-42814-00-X1
		10. Field and Pool, or Exploratory WC-025 G06 S223421L
		11. County or Parish, and State LEA COUNTY, NM

HOBBS OCD  
DEC 21 2015

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 Change to Original A PD
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or 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 Co., LP respectfully requests to add 5-1/2" long string production casing option, change the intermediate casing to a mixed string and add a two-stage option on the intermediate cement.

Please see attached revised Drill Plan. Note: all changes are highlighted in yellow.

**SEE ATTACHED FOR  
CONDITIONS OF APPROVAL**

14. I hereby certify that the foregoing is true and correct. <b>Electronic Submission #324875 verified by the BLM Well Information System For DEVON ENERGY PRODUCTION CO LP, sent to the Hobbs Committed to AFMSS for processing by DEBORAH MCKINNEY on 12/10/2015 (16DLM0233SE)</b>	
Name (Printed/Typed) DAVID H COOK	Title REGULATORY SPECIALIST
Signature (Electronic Submission)	Date 11/30/2015

**THIS SPACE FOR FEDERAL OR STATE OFFICE USE**

Approved By <u>CHARLES NIMMER</u>	Title <u>PETROLEUM ENGINEER</u>	Date <u>12/11/2015</u>
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 Hobbs		

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 \*\***

JAN 06 2016

*Handwritten initials*



Devon Energy, Gaucho Unit 23H

2. Casing Program

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn	SF Collapse	SF Burst	SF Tension
	From	To							
17.5"	0	1,750'	13.375"	54.5	H-40 J-55	BTC	1.44	3.49	9.53
12.25"	0	4,300'	9.625"	40	J-55	BTC	1.37	1.24	1.87
12.25"	4,300'	5,150'	9.625"	40	HCK-55	BTC	1.580	1.47	4.50
<b>Option 1</b>									
8.75"	0	10,720'	7"	29	P-110	BTC	1.68	2.05	2.92
8.75"	10,720'	15,778'	5.5"	17	P-110	BTC	1.57	1.95	2.96
<b>Option 2</b>									
8.75"	0	11620	7"	29	P-110	BTC	1.68	2.05	2.92
<del>8.75"</del> 6.125"	10,720'	15,778'	4.5"	13.5	P-110	BTC	1.95	2.27	2.91
<b>Option 3</b>									
8.75"	0	15,778'	5.5"	17	P-110	BTC	1.57	1.95	2.96
BLM Minimum Safety Factor							1.125	1.00	1.6 Dry 1.8 Wet

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h  
Must have table for contingency casing

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Does casing meet API specifications? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	N
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary.	
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3 <sup>rd</sup> string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2 <sup>nd</sup> string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

Devon Energy, Gaucho Unit 23H

3. Cementing Program

Casing	# Sk	Wt. lb/gal	H <sub>2</sub> O gal/sk	Yld ft <sup>3</sup> /sack	500# Comp. Strength (hours)	Slurry Description
13-3/8" Surface	1020	13.5	9.07	1.72	12	Lead: Class C Cement + 4% Bentonite Gel + 0.125 lbs/sack Poly-E-Flake
	550	14.8	6.32	1.33	6	Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake
9-5/8" Inter.	1030	12.9	9.81	1.85	17	Lead: (65:35) Class C Cement: Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sack Poly-E-Flake
	430	14.8	6.32	1.33	6	Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake
9-5/8" Inter. Two Stage Option	240	12.9	9.81	1.85	17	1 <sup>st</sup> Stage Lead: (65:35) Class C Cement: Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sack Poly-E-Flake
	220	14.8	6.32	1.33	6	1 <sup>st</sup> Stage Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake
	DV Tool = 3850ft					
	800	12.9	9.81	1.85	17	2 <sup>nd</sup> Stage Lead: (65:35) Class C Cement: Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sack Poly-E-Flake
	210	14.8	6.32	1.33	6	2 <sup>nd</sup> Stage Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake
7" Int	330	11	14.81	2.55	14	Lead: Tuned Light® Cement + 0.125 lb/sk Pol-E-Flake
	400	14.5	5.31	1.2	25	Tail: (50:50) Class H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite
4-1/2" Liner	650	14.5	5.31	1.2	25	Tail: (50:50) Class H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite
7 x 5-1/2" Production	360	10.4	16.8	3.17	25	Lead: Tuned Light® Cement + 0.125 lb/sk Pol-E-Flake
	1340	14.5	5.31	1.2	25	Tail: (50:50) Class H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite
5-1/2" Prod	830	11.9	12.89	2.31	n/a	Lead: (50:50) Class H Cement: Poz (Fly Ash) + 10% BWOC Bentonite + 1 lb/sk of Kol-Seal + 0.3% BWOC HR-601 + 0.5lb/sk D-Air 5000
	1340	14.5	5.31	1.2	25	Tail: (50:50) Class H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite

DV tool depth(s) will be adjusted based on hole conditions and cement volumes will be adjusted proportionally. DV tool will be set a minimum of 50 feet below previous casing and a minimum of 200 feet above current shoe. Lab reports with the 500 psi compressive strength time for the cement will be onsite for review.

**Devon Energy, Gaucho Unit 23H**

Casing String	TOC	% Excess
13-3/8" Surface	0'	100%
9-5/8" Intermediate	0'	75%
9-5/8" Intermediate – Two Stage	1 <sup>st</sup> Stage = 3850' / 2 <sup>nd</sup> Stage = 0'	0%
7" Intermediate	4650'	25%
4-1/2" Production Liner	10720'	25%
7 x 5-1/2" Production Casing	4650'	25%
5-1/2" Production Casing	4650'	25%

**4. Pressure Control Equipment**

N	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.
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BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	✓	Tested to:
12-1/4"	13-5/8"	5M	Annular	x	50% of working pressure
			Blind Ram		
			Pipe Ram		
			Double Ram	x	
			Other*		
8-3/4"	13-5/8"	5M	Annular	x	50% testing pressure
			Blind Ram		
			Pipe Ram		
			Double Ram	x	
			Other*		
			Annular	x	
			Blind Ram		
			Pipe Ram		
			Double Ram	x	
			Other*		

\*Specify if additional ram is utilized.

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

## Devon Energy, Gaucho Unit 23H

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

Y	<p>Formation integrity test will be performed per Onshore Order #2.</p> <p>On Exploratory wells or 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. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.</p>
Y	<p>A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.</p>
Y	<p>Are anchors required by manufacturer?</p>
Y	<p>A multibowl wellhead may be used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested.</p> <p>Devon may use a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be 5000 (5M) psi.</p> <ul style="list-style-type: none"> <li>• Wellhead will be installed by wellhead representatives.</li> <li>• If the welding is performed by a third party, the wellhead representative will monitor the temperature to verify that it does not exceed the maximum temperature of the seal.</li> <li>• Wellhead representative will install the test plug for the initial BOP test.</li> <li>• The wellhead company will install a solid steel body pack-off to completely isolate the lower head after cementing intermediate casing. After installation of the pack-off, the pack-off and the lower flange will be tested to 5M, as shown on the attached schematic. Everything above the pack-off will not have been altered whatsoever from the initial nipple up. Therefore the BOP components will not be retested at that time.</li> <li>• If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head will be cut and top out operations will be conducted.</li> <li>• Devon will pressure test all seals above and below the mandrel (but still above the casing) to full working pressure rating.</li> <li>• Devon will test the casing to 0.22 psi/ft or 1500 psi, whichever is greater, as per Onshore Order #2.</li> </ul> <p>After running the 13-3/8" surface casing, a 13-5/8" BOP/BOPE system with a minimum rating of 5M will be installed on the Uni-head wellhead system and will undergo a 250 psi low pressure test followed by a 5,000 psi high pressure test. The 5,000 psi high and 250 psi low test will cover testing requirements a maximum of 30 days, as per Onshore Order #2. If the well is not complete within 30 days of this BOP test, another full BOP test will be conducted, as per Onshore Order #2.</p>

**Devon Energy, Gaucho Unit 23H**

After running the 9-5/8' intermediate casing with a mandrel hanger, the 13-5/8" BOP/BOPE system with a minimum rating of 5M will already be installed on the wellhead

The pipe rams will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These tests will be logged in the daily driller's log. A 2" kill line and 3" choke line will be incorporated into the drilling spool below the ram BOP. In addition to the rams and annular preventer, additional BOP accessories include a kelly cock, floor safety valve, choke lines, and choke manifold rated at 5,000 psi WP.

Devon requests a variance to use a flexible line with flanged ends between the BOP and the choke manifold (choke line). The line will be kept as straight as possible with minimal turns

See attached schematic.

**5. Mud Program**

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
0	1,750'	FW Gel	8.6-8.8	28-34	N/C
1,750'	5,150'	Saturated Brine	10.0-10.2	28-34	N/C
5,150'	15,778'	Cut Brine	8.5-9.3	28-34	N/C

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

What will be used to monitor the loss or gain of fluid?	PVT/Pason/Visual Monitoring
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**6. Logging and Testing Procedures**

Logging, Coring and Testing.	
x	Will run GR/CNL from TD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
	No Logs are planned based on well control or offset log information.
	Drill stem test? If yes, explain
	Coring? If yes, explain

Additional logs planned	Interval
Resistivity	Int. shoe to KOP
Density	Int. shoe to KOP
X CBL	Production casing
X Mud log	Intermediate shoe to TD
PEX	

**7. Drilling Conditions**

Condition	Specify what type and where?
BH Pressure at deepest TVD	5975 psi
Abnormal Temperature	No

Mitigation measure for abnormal conditions. Describe. Lost circulation material/sweeps/mud scavengers.

Hydrogen Sulfide (H2S) monitors will be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.	
N	H2S is present
Y	H2S Plan attached

**8. Other facets of operation**

Is this a walking operation? No.

Will be pre-setting casing? No.

Attachments

Directional Plan

Other, describe

**PECOS DISTRICT  
CONDITIONS OF APPROVAL**

OPERATOR'S NAME:	Devon Energy Production Co.
LEASE NO.:	NMNM92781
WELL NAME & NO.:	23H-Gaicho Unit
SURFACE HOLE FOOTAGE:	225'/S & 870'/E
BOTTOM HOLE FOOTAGE:	330'/N & 660'/E
LOCATION:	Section 17, T. 22 S., R. 34 E., NMPM
COUNTY:	Lea County, New Mexico

**A. 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.

**Wait on cement (WOC) for Water Basin:**

After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. **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. Have well specific cement details onsite prior to pumping the cement for each casing string.

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

**Risks:**

Medium Cave/ Karst Occurrence

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

Possibility of lost circulation in the Rustler, in the Capitan Reef, in the Red Beds, in the Salado and in the Delaware.

Abnormal Pressures may be encountered within the 3<sup>rd</sup> Bone Spring Sandstone

Within or near the San Simone Swale, where there is large scale collapse of the Salado and Rustler formations.

1. The 13 3/8 inch surface casing shall be set at approximately 1750 feet **(in an anhydrite bed below the Magenta Dolomite, which is a Member of the Rustler, and if salt is encountered, set casing at least 25 feet above the salt)** and cemented to the surface.
  - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
  - b. **Wait on cement (WOC) time for a primary cement job 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.

**Special Capitan Reef requirements:**

**If lost circulation (50% or greater) occurs below the Base of the Salt, the operator shall do the following:**

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

**Formation below the 13 3/8 inch shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.**

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

**Operator has proposed DV tool at depth of 3850'. Operator is to submit sundry if DV tool depth varies by more than 100' from approved depth.**

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 approved top of cement 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. **If cement does not circulate to surface on the intermediate casing, the cement on the production casing must come to surface.**

**Formation below the 9 5/8 inch shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.**

**Option 1:**

3. The minimum required fill of cement behind the 7 X 5 1/2 inch production casing is:

- Cement should tie-back at least 1050 feet into previous casing string **to cover casing at least 50 feet above the Capitan Reef top.** Operator shall provide method of verification.

**Option 2:**

4. The minimum required fill of cement behind the 7 inch production casing is:

- Cement should tie-back at least 1050 feet into previous casing string. Operator shall provide method of verification. **Additional cement may be required since excess was calculated to 25% by BLM standards.**

5. The minimum required fill of cement behind the 4 1/2 inch production liner is:

- Cement tie-back with production casing as proposed by operator is sufficient. **Additional cement shall be required since excess was calculated to not be adequate by 43% by BLM standards (AKA -43%).**

**Option 3:**

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

- Cement should tie-back at least 1050 feet into previous casing string **to cover casing at least 50 feet above the Capitan Reef top.** Operator shall provide method of verification. **Additional cement may be required since excess was calculated to 25% by BLM standards.**

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.

**CLN 121115**