

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD Artesia

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. NMNM89052
2. Name of Operator DEVON ENERGY PRODUCTION CO. LP Contact: TRINA C COUCH Email: trina.couch@dev.com		6. If Indian, Allottee or Tribe Name
3a. Address DEVON ENERGY PRODUCTION CO. LP 333 WEST STREET OKLAHOMA CITY, OK 73102-5015	3b. Phone No. (include area code) 405-226-0131	7. If Unit or CA/Agreement, Name and/or No.
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Sec 25 T2S R30E 1030FNL 330FEL		8. Well Name and No. APACHE 25 FED 19H
10. Field and Pool, or Exploratory MEDANOS; BONE SPRING		9. API Well No. 30-015-40828
11. County or Parish, and State EDDY COUNTY 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.)

With regards to the Apache 25 Fed 19H (API 30-015-40828), Devon Energy Production Company, L.P. respectfully requests to cancel the casing design change sundry that was approved on July 23, 2013 and return to the original APD casing design plan, which was approved on October 10, 2012. In addition to this request, Devon is submitting a Contingency Casing Design Plan, if conditions while drilling this well dictate.

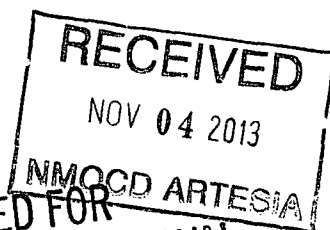
Attached are both the primary and contingency plans.

Thank you.

Accepted for record

NMOCD TES 11/4/2013

SEE ATTACHED FOR
CONDITIONS OF APPROVAL



14. I hereby certify that the foregoing is true and correct. Electronic Submission #221611 verified by the BLM Well Information System For DEVON ENERGY PRODUCTION CO. LP, sent to the Carlsbad Committed to AFMSS for processing by JOHNNY DICKERSON on 10/22/2013 ()	
Name (Printed/Typed) TRINA C COUCH	Title REGULATORY ASSOCIATE
Signature (Electronic Submission)	Date 09/30/2013
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	

APPROVED

OCT 26 2013

BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD 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.

**** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ****

APACHE 25 FED 19H- APD DRILLING PLAN (Primary Casing Plan)
JSP 9.27.13

Casing Program

<u>Hole Size</u>	<u>Hole Interval</u>	<u>OD Csg</u>	<u>Casing Interval</u>	<u>Weight</u>	<u>Collar</u>	<u>Grade</u>
17-1/2"	0 - 520	13-3/8"	0 - 520	48#	STC	H-40
12-1/4"	520 - 3870	9-5/8"	0 - 3870	40#	LTC	J-55
8-3/4"	3870 - 10,300	5-1/2"	0 - 10,300	17#	LTC	P-110
8-3/4"	10,300 - 15,451	5-1/2"	10,300 - 15,451	17#	BTC	P-110

MAX TVD: 10,980 FT

Design Factors

<u>Casing Size</u>	<u>Collapse Design Factor</u>	<u>Burst Design Factor</u>	<u>Tension Design Factor</u>
13-3/8" 48# H-40 LTC	3.1	6.9	11.4
9-5/8" 40# J-55 LTC	1.3	2.0	3.4
5-1/2" 17# P-110 LTC	1.8	2.3	2.1
5-1/2" 17# P-110 BTC	1.7	2.1	6.0

Mud Program

<u>Depth</u>	<u>Mud Wt.</u>	<u>Visc.</u>	<u>Fluid Loss</u>	<u>Type System</u>
0 - 520	8.4 - 9.0	30 - 34	N/C	FW
520 - 3870	9.8 - 10.0	28 - 32	N/C	Brine
3870 - 11,350	8.6 - 9.2	28 - 32	N/C	FW/CB
11,350 - 15,451	9.2 - 9.6	28 - 32	N/C	CB

Pressure Control Equipment

The BOP system used to drill the intermediate hole will consist of a 13-5/8" 3M Triple Ram and Annular preventer. The BOP system will be tested as per BLM Onshore Oil and Gas Order No. 2 as a **3M system** prior to drilling out the surface casing shoe.

The BOP system used to drill the production hole will consist of a 13-5/8" 3M Triple Ram and Annular preventer. The BOP system will be tested as per BLM Onshore Oil and Gas Order No. 2 as a **3M system** prior to drilling out the intermediate casing shoe.

The pipe rams will be operated and checked as per Onshore Order No 2. 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 **3,000 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.

Cementing Program (cement volumes based on at least 25% excess)

13-3/8" Surface (Excess: 150%)

Mix and pump 710 sks

HalCem – C

1% Calcium Chloride - Flake (Accelerator)

0.125 lbm/sk Poly-E-Flake (Lost Circulation Additive)

Fluid Weight	14.80 lbm/gal
Slurry Yield:	1.33 ft ³ /sk
Total Mixing Fluid:	6.34 Gal/sk
Top of Fluid:	0 ft
Calculated Fill:	520 ft
Volume:	167.1 bbl
Calculated Sacks:	708.2 sks
Proposed Sacks:	710 sks

9-5/8" Intermediate (Excess: 75%)

Lead with 810 sks

EconoCem – HLC

5 % Salt (Salt)

0.125 lbm/sk Poly-E-Flake (Lost Circulation Additive)

Fluid Weight	12.90 lbm/gal
Slurry Yield:	1.85 ft ³ /sk
Total Mixing Fluid:	9.81 Gal/sk
Top of Fluid:	0 ft
Calculated Fill:	2875 ft
Volume:	264.27 bbl
Calculated Sacks:	803 sks
Proposed Sacks:	810 sks

Tail-in with 430 sks

HalCem – C

0.125 lbm/sk Poly-E-Flake (Lost Circulation Additive)

Fluid Weight	14.80 lbm/gal
Slurry Yield:	1.33 ft ³ /sk
Total Mixing Fluid:	6.32 Gal/sk
Top of Fluid:	2870 ft
Calculated Fill:	1000ft
Volume:	100.65 bbl
Calculated Sacks:	426.5 sks
Proposed Sacks:	430 sks

5-1/2" Production Casing (Excess: 25%)

Stage 1

Lead with 600 sks

TUNED LIGHT (TM) SYSTEM

2 lbm/sk Kol-Seal (Lost Circulation Additive)

0.125 lbm/sk Poly-E-Flake (Lost Circulation Additive)

0.2 lbm/sk HR-800 (Retarder)

Fluid Weight	10.40 lbm/gal
Slurry Yield:	2.91 ft ³ /sk
Total Mixing Fluid:	15.24 Gal/sk
Top of Fluid:	5000 ft
Calculated Fill:	5447 ft
Volume:	306.32 bbl
Calculated Sacks:	591.02 sks
Proposed Sacks:	600 sks

Tail-in with 1330 sks

VERSACEM (TM) SYSTEM

0.5 % Halad(R)-344 (Low Fluid Loss Control)

0.4 % CFR-3 (Dispersant)

1 lbm/sk Salt (Salt)

0.2 % HR-601 (Retarder)

Fluid Weight	14.50 lbm/gal
Slurry Yield:	1.22 ft ³ /sk
Total Mixing Fluid:	5.38 Gal/sk
Top of Fluid:	10447 ft
Calculated Fill:	5092 ft
Volume:	288.45 bbl
Calculated Sacks:	1326.39 sks
Proposed	

Sacks:

1330 sks

DV TOOL at 5,500 ft

See COA

Stage 2

Lead with 470 sks

TUNED LIGHT (TM) SYSTEM

2 lbm/sk Kol-Seal (Lost Circulation Additive)
0.125 lbm/sk Poly-E-Flake (Lost Circulation Additive)
0.2 lbm/sk HR-800 (Retarder)

Fluid Weight	10.40 lbm/gal
Slurry Yield:	2.91 ft ³ /sk
Total Mixing Fluid:	15.24 Gal/sk
Top of Fluid:	0 ft
Calculated Fill:	5000 ft
Volume:	243.27 bbl
Calculated Sacks:	469.38 sks
Proposed Sacks:	470 sks

Tail-in with 120 sks

HALCEM (TM) SYSTEM

0.125 lbm/sk Poly-E-Flake (Lost Circulation Additive)

Fluid Weight	14.80 lbm/gal
Slurry Yield:	1.33 ft ³ /sk
Total Mixing Fluid:	6.32 Gal/sk
Top of Fluid:	5000 ft
Calculated Fill:	500 ft
Volume:	28.12 bbl
Calculated Sacks:	119.15 sks
Proposed Sacks:	120 sks

TOC for All Strings:

Surface:	0
Intermediate:	0
Production Casing:	0

ACTUAL CEMENT VOLUMES WILL BE ADJUSTED BASED ON FLUID CALIPER AND CALIPER LOG DATA.

Sup
COF

APACHE 25 FED 19H- APD DRILLING PLAN (Contingency Casing Plan)

JSP 9.27.13

Casing Program

<u>Hole Size</u>	<u>Hole Interval</u>	<u>OD Csg</u>	<u>Casing Interval</u>	<u>Weight</u>	<u>Collar</u>	<u>Grade</u>
17-1/2"	0 - 520	13-3/8"	0 - 520	48#	STC	H-40
12-1/4"	520 - 3870	9-5/8"	0 - 3870	40#	LTC	J-55
8-3/4"	3870 - 11,350	7"	0 - 11,350	29#	BTC	P-110
6-1/8"	11,350 - 15,451	4-1/2"	10,240 - 15,451	13.5#	BTC	P-110

MAX TVD: 10,980 FT

Design Factors

<u>Casing Size</u>	<u>Collapse Design Factor</u>	<u>Burst Design Factor</u>	<u>Tension Design Factor</u>
13-3/8" 48# H-40 LTC	3.1	6.9	11.4
9-5/8" 40# J-55 LTC	1.3	2.0	3.4
7" 29# P-110 BTC	1.6	2.1	2.9
4-1/2" 13.5# P-110 BTC	1.9	2.2	6.3

Mud Program

<u>Depth</u>	<u>Mud Wt.</u>	<u>Visc.</u>	<u>Fluid Loss</u>	<u>Type System</u>
0 - 520	8.4 - 9.0	30 - 34	N/C	FW
520 - 3870	9.8 - 10.0	28 - 32	N/C	Brine
3870 - 11,350	8.6 - 9.2	28 - 32	N/C	FW/CB
11,350 - 15,451	9.2 - 9.6	28 - 32	N/C	CB

Pressure Control Equipment

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The pipe rams will be operated and checked as per Onshore Order No. 2. 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 **3,000 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.

Cementing Program (cement volumes based on at least 25% excess)

13-3/8" Surface (Excess: 150%)

Mix and pump 710 sks

HalCem - C

1% Calcium Chloride - Flake (Accelerator)

0.125 lbm/sk Poly-E-Flake (Lost Circulation Additive)

Fluid Weight	14.80 lbm/gal
Slurry Yield:	1.34 ft ³ /sk
Total Mixing Fluid:	6.34 Gal/sk
Top of Fluid:	0 ft
Calculated Fill:	520 ft
Volume:	167.1 bbl
Calculated Sacks:	702.3 sks
Proposed Sacks:	710 sks

9-5/8" Intermediate (Excess: 75%)

Lead with 810 sks

EconoCem - HLC

5 % Salt (Salt)

0.125 lbm/sk Poly-E-Flake (Lost Circulation Additive)

Fluid Weight	12.90 lbm/gal
Slurry Yield:	1.85 ft ³ /sk
Total Mixing Fluid:	9.81 Gal/sk
Top of Fluid:	0 ft
Calculated Fill:	2875 ft
Volume:	264.27 bbl
Calculated Sacks:	803 sks
Proposed Sacks:	810 sks

Tail-in with 430 sks

HalCem - C

0.125 lbm/sk Poly-E-Flake (Lost Circulation Additive)

Fluid Weight	14.80 lbm/gal
Slurry Yield:	1.33 ft ³ /sk
Total Mixing Fluid:	6.32 Gal/sk
Top of Fluid:	2870 ft
Calculated Fill:	1000ft
Volume:	100.65 bbl
Calculated Sacks:	426.5 sks
Proposed Sacks:	430 sks

7" Production Casing (Excess: 50%)

Stage 1

Lead with 440 sks

TUNED LIGHT (TM) SYSTEM

2 lbm/sk Kol-Seal (Lost Circulation Additive)

0.125 lbm/sk Poly-E-Flake (Lost Circulation Additive)

0.2 lbm/sk HR-800 (Retarder)

Fluid Weight	10.40 lbm/gal
Slurry Yield:	2.91 ft ³ /sk
Total Mixing Fluid:	15.24 Gal/sk
Top of Fluid:	5500 ft
Calculated Fill:	5582 ft
Volume:	224.19 bbl
Calculated Sacks:	432.55 sks
Proposed Sacks:	440 sks

Tail-in with 110 sks

VERSACEM (TM) SYSTEM

0.3 % Halad(R)-9 (Low Fluid Loss Control)

0.2 % HR-800 (Retarder)

1 lbm/sk Kol-Seal (Lost Circulation Additive)

Fluid Weight	14.40 lbm/gal
Slurry Yield:	1.25 ft ³ /sk
Total Mixing Fluid:	5.69 Gal/sk
Top of Fluid:	10350 ft
Calculated Fill:	1000 ft
Volume:	23.42 bbl
Calculated Sacks:	195.30 sks
Proposed Sacks:	200 sks

DV TOOL at 5,500 ft

See COF

Stage 2

Lead with 420 sks
 TUNED LIGHT (TM) SYSTEM
 0.2 lbm/sk HR-800 (Retarder)

Fluid Weight	11 lbm/gal
Slurry Yield:	2.24 ft ³ /sk
Total Mixing Fluid:	10.41 Gal/sk
Top of Fluid:	0 ft
Calculated Fill:	5000 ft
Volume:	154.62 bbl
Calculated Sacks:	387.56 sks
Proposed Sacks:	390 sks

Tail-in with 130 sks
 HALCEM (TM) SYSTEM

Fluid Weight	14.80 lbm/gal
Slurry Yield:	1.33 ft ³ /sk
Total Mixing Fluid:	6.34 Gal/sk
Top of Fluid:	5000 ft
Calculated Fill:	500 ft
Volume:	20.1 bbl
Calculated Sacks:	85.04 sks
Proposed Sacks:	90 sks

4 ½" Production Liner (Excess: 25%)

Stage 1

Lead with 530 sks
 VERSACEM(TM) SYSTEM
 0.5 % Halad(R)-344 (Low Fluid Loss Control)
 0.4 % CFR-3 (Dispersant)
 1 lbm/sks Salt (Salt)
 0.2 % HR-601 (Retarder)

Fluid Weight	14.50 lbm/gal
Slurry Yield:	1.22 ft ³ /sk
Total Mixing Fluid:	5.38 Gal/sk
Top of Fluid:	10397 ft
Calculated Fill:	5142 ft
Volume:	105.82 bbl
Calculated Sacks:	486.6 sks
Proposed Sacks:	<u>490 sks</u>

TOC for All Strings:

Surface:	0
Intermediate:	0
Production Casing:	0
Production Liner:	10,397'

ACTUAL CEMENT VOLUMES WILL BE ADJUSTED BASED ON FLUID CALIPER AND CALIPER LOG DATA.



Apache 25 Fed 19H

Prejean, John <John.Prejean@dnv.com> Mon, Oct 28, 2013 at 10:08 AM
To: "jamason@blm.gov" <jamason@blm.gov>
Cc: "Couch, Trina" <Trina.Couch@dnv.com>

Jennifer,

Attached is the 5K BOPE schematic for H&P 212 that we discussed changing the requirements from 3K to 5K after drill-out of the intermediate casing string. The entire BOPE system will be tested to 5,000psi and charted on a 10K chart.

Also, below is a Contingency (2 Stage) Cement Program for the 9 5/8" casing string, that we discussed. The DV/ECP would be set a minimum of 50' below the 13 3/8" casing shoe.

Stage 1

Lead Cement

ECONOCEM (TM) SYSTEM Fluid Weight 12.90
lbm/gal

5 % Salt (Salt) Slurry Yield:
1.85 ft³/sk

0.125 lbm/sk Poly-E-Flake (Lost Circulation Additive) Total Mixing Fluid: 9.81 Gal/sk

194bbbls Mix Water Volume:

Fluid: 600 ft Top of

Fill: 2770 ft Calculated

Volume: 270.40 bbl
Sacks: 822.41 sks Calculated

Sacks: 830 sks Proposed

Tail Cement

HALCEM (TM) SYSTEM
14.80 lbm/gal

0.125 lbm/sk Poly-E-Flake (Lost Circulation Additive)

6.32 Gal/sk

33bbls

Fluid: 3370 ft

Fill: 500 ft

Volume: 51.84 bbl

Sacks: 219.67 sks

Sacks: 220 sks

Multiple Stage Cementer

Stage 2

Tail Cement

HALCEM (TM) SYSTEM
14.80 lbm/gal

Yield: 1.33 ft³/sk

6.34 Gal/sk

Fluid: 0 ft

Fill: 600 ft

Volume: 42.68 bbl

Fluid Weight

Slurry Yield: 1.33 ft³/sk

Total Mixing Fluid:

Mix Water Volume:

Top of

Calculated

Calculated

Proposed

600 ft (MD)

Fluid Weight

Slurry

Total Mixing Fluid:

Mix Water Volume: 29bbls

Top of

Calculated

Calculated

Sacks: 180.71 sks

Proposed

Sacks: 190 sks

Please let me know if you have any questions.

Regards,

John Prejean
Drilling Engineer

Permian Basin

Office: (405) 552-8048

Cell: (405) 205-0771

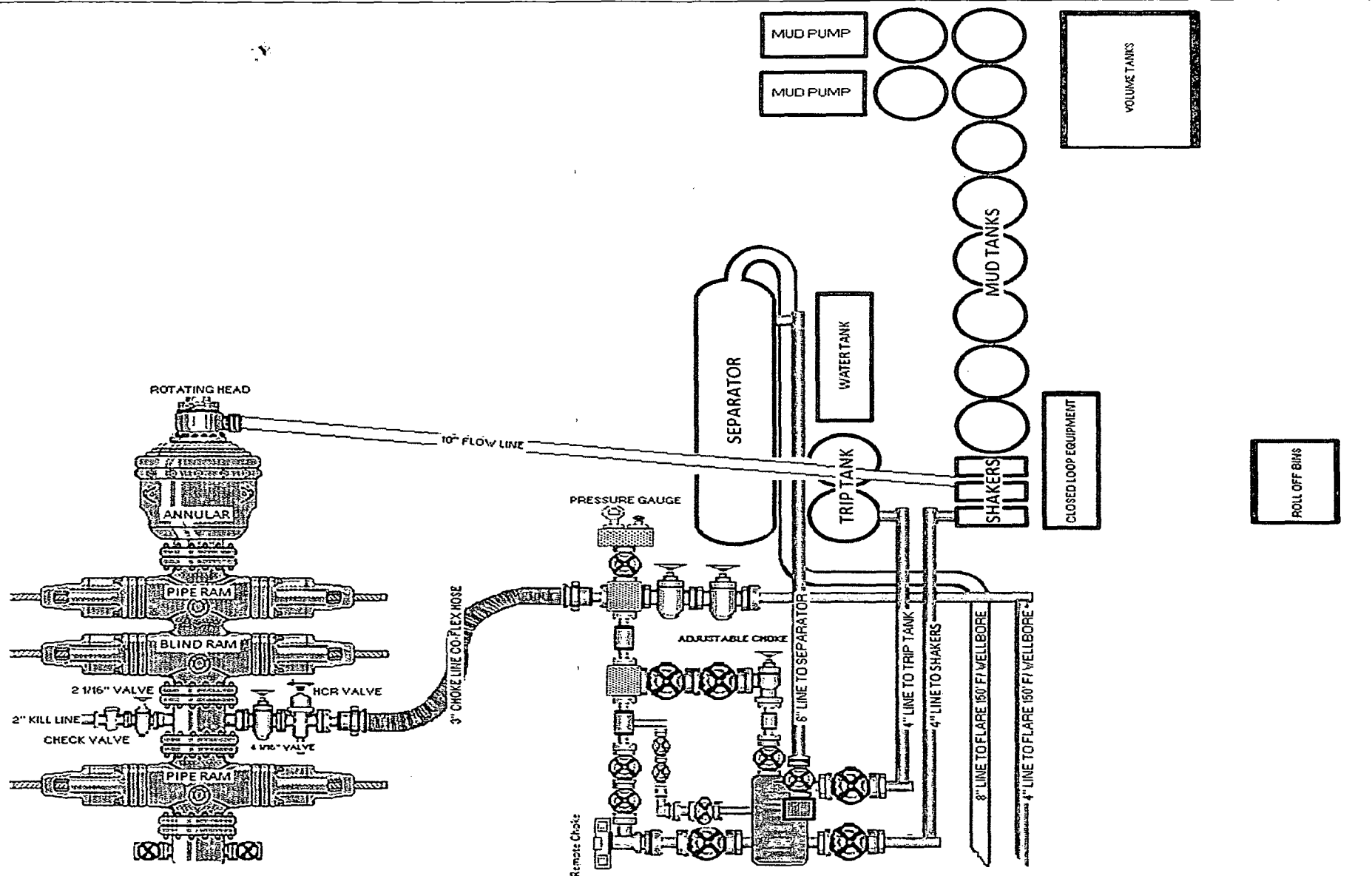
John.Prejean@dnv.com

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BOPE Schematic 5K_H&P212.pdf

327K



Note: All valve and lines on choke manifold are 3" unless otherwise noted.

devon

13 5/8" 5K BOPE & Closed Loop Equipment Schematic

Rig:	H&P 212	Rev:	0
Drawn By:	Garrett Glaze	Review Date:	
Date:	07/22/2013	Checked By:	
Scale: Drawing is not to scale		Check Date:	

**PECOS DISTRICT
CONDITIONS OF APPROVAL**

OPERATOR'S NAME:	DEVON ENERGY
LEASE NO.:	NM89052
WELL NAME & NO.:	19H-APACHE 25 FED
SURFACE HOLE FOOTAGE:	1030'/N. & 330'/E.
BOTTOM HOLE FOOTAGE:	660'/N. & 330'/W.
LOCATION:	Section 25, T. 22 S., R. 30 E., NMPM
COUNTY:	Eddy County, New Mexico
API:	30-015-40828

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. **Due to recent H2S encounters in the salt formation, it is recommended that monitoring equipment be onsite for potential Hydrogen Sulfide prior to drilling out the surface shoe. If Hydrogen Sulfide is encountered, please report measurements and formations to the BLM.**
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. 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.).

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. IF OPERATOR DOES NOT HAVE THE WELL SPECIFIC CEMENT DETAILS ONSITE PRIOR TO PUMPING THE CEMENT FOR EACH CASING STRING, THE WOC WILL BE 30 HOURS. 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.

R-111-P Potash/WIPP HIGH CAVE/KARST

**Possible water and brine flows in the Rustler, Salado and Castile formations.
Possible lost circulation within the Rustler, Delaware and Bone Spring.**

1. The 13-3/8 inch surface casing shall be set at approximately **520** feet (a minimum of 25 feet into the Rustler Anhydrite and 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.
2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:
- ☒ Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst and potash.**

Contingency intermediate cement:

Operator has proposed DV tool at depth of 570'. 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 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 cave/karst and potash. Additional cement may be required – excess calculates to 20%.**

Contingency production casing and cement:

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

Operator has proposed DV tool at depth of 5500'. 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 circulation on the next stage.

b. Second stage above DV tool:

☒ Cement to surface. If cement does not circulate, contact the appropriate BLM office.

4. The minimum required fill of cement behind the **4-1/2** inch production Liner is:

☒ Cement as proposed by operator. Operator shall provide method of verification.

Production casing and cement without contingency:

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

Operator has proposed DV tool at depth of 5500'. Operator is to submit sundry if DV tool depth varies by more than 100' from approved depth.

c. 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.

d. Second stage above DV tool:

☒ Cement to surface. If cement does not circulate, contact the appropriate BLM office. **Additional cement may be required – excess calculates to 7%.**

6. 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.

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

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 **3000 (3M) 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 **5000 (5M) psi. 5M 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.**
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. 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 plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time.
 - 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.

F. WIPP Requirements

The proposed well is located within 330' of the WIPP Land Withdrawal Area boundary. As a result, Devon Energy Production Company, L. P. is required to submit daily drilling reports, logs and deviation survey information to the Bureau of Land Management and the Department of Energy per requirements of the Joint Powers Agreement until a total vertical depth of 7,000 feet is reached. These reports will have at a minimum the rate of penetration and a clearly marked section showing the deviation for each 500 foot interval. Operator may be required to do more frequent deviation surveys based on the daily information submitted and may be required to take other corrective measures. Information from this well will be included in the Quarterly Drilling Report. Information will also be provided to the New Mexico Oil Conservation Division after drilling activities have been completed. Upon completion of the well, the operator shall submit a complete directional survey. Any future entry into the well for purposes of completing additional drilling will require supplemental information.

Devon Energy Production Company, L. P. can email the required information to Mr. Melvin Balderrama at Melvin.Balderama@wipp.ws or Mr. J. Neatherlin at Jimmy.Neatherlin@wipp.ws fax to his attention at 575-234-6062.

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