OCD-ARTESIA

Form 3160-5
(February 2005)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires: March 31, 2007

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 page 2.*

5. Lease Serial No.: NMNM-112268

6. If Indian, Allottee or Tribe Name:

7. If Unit of CA/Agreement, Name and/or No.:

1. Type of Well: ☐ Oil Well ☑ Gas Well ☐ Other

8. Well Name and No.: Habanero 17 Federal 1H

2. Name of Operator: Devon Energy Production Co., LP

9. API Well No.: 30-015-36108

3a. Address: 20 North Broadway, OKC, OK 73102

3b. Phone No. *(include area code)*: (405)-552-7802

10. Field and Pool or Exploratory Area: Black River; Wolfcamp

4. Location of Well *(Footage, Sec., T.,R.,M., or Survey Description)*: NENE 990' FNL & 660' FEL, Sec 17-T24S-R27E Lot A

11. Country or Parish, State: Eddy County, NM

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

TYPE OF SUBMISSION	TYPE OF ACTION			
☑ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Subsequent Report	☐ Casing Repair	☐ New Construction	☐ Recomplete	☑ Other Drilling Program Changes
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
☐ Final Abandonment Notice	☐ Convert to Injection	☐ Plug Back	☐ 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 recomplete 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 must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.)

Devon Energy Production Company, L.P. respectfully requests permission to change the drilling program from what was approved via sundry notice by the BLM 12/08/2010 to the attached:

RECEIVED
APR 14 2011
NMOCD ARTESIA

APPROVED
APR 13 2011
/s/ Chris Walls
BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD OFFICE

Accepted for record - NMOCD
4-18-11

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

14. I hereby certify that the foregoing is true and correct.
Name *(Printed/Typed)*: Stephanie A. Ysasaga — Title: Sr. Staff Engineering Technician

Signature — Date: 03/28/2011

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by — Title — Date

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon. — Office

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)

HABANERO 17 FED #1 SEC 17-24S-27E APD DATA

Casing Program

Hole Size	Hole Interval	OD Csg	Casing Interval	Wt	Collar	Grade
17 1/2"	0' – 250'	13 3/8"	0' – 250'	48#	STC	H-40
12 1/4"	250' - 3100'	9 5/8"	0' – 3100'	40#	BTC	J-55
8 3/4"	3100' – 9,800'	7"	0' – 9,800'	26#	BTC	ECP-110
6 1/8"	9800'- 14,181'	4 1/2"	9700'-14,181	11.6#	BTC	ECP-110

Design Parameter Factors:

Casing Size	Collapse Design Factor	Burst Design Factor	Tension Design Factor
13 3/8"	6.6	14.8	26.8
9 5/8"	1.6	2.4	4.2
7"	1.7	2.4	2.7
4 1/2"	1.4	1.7	2.5

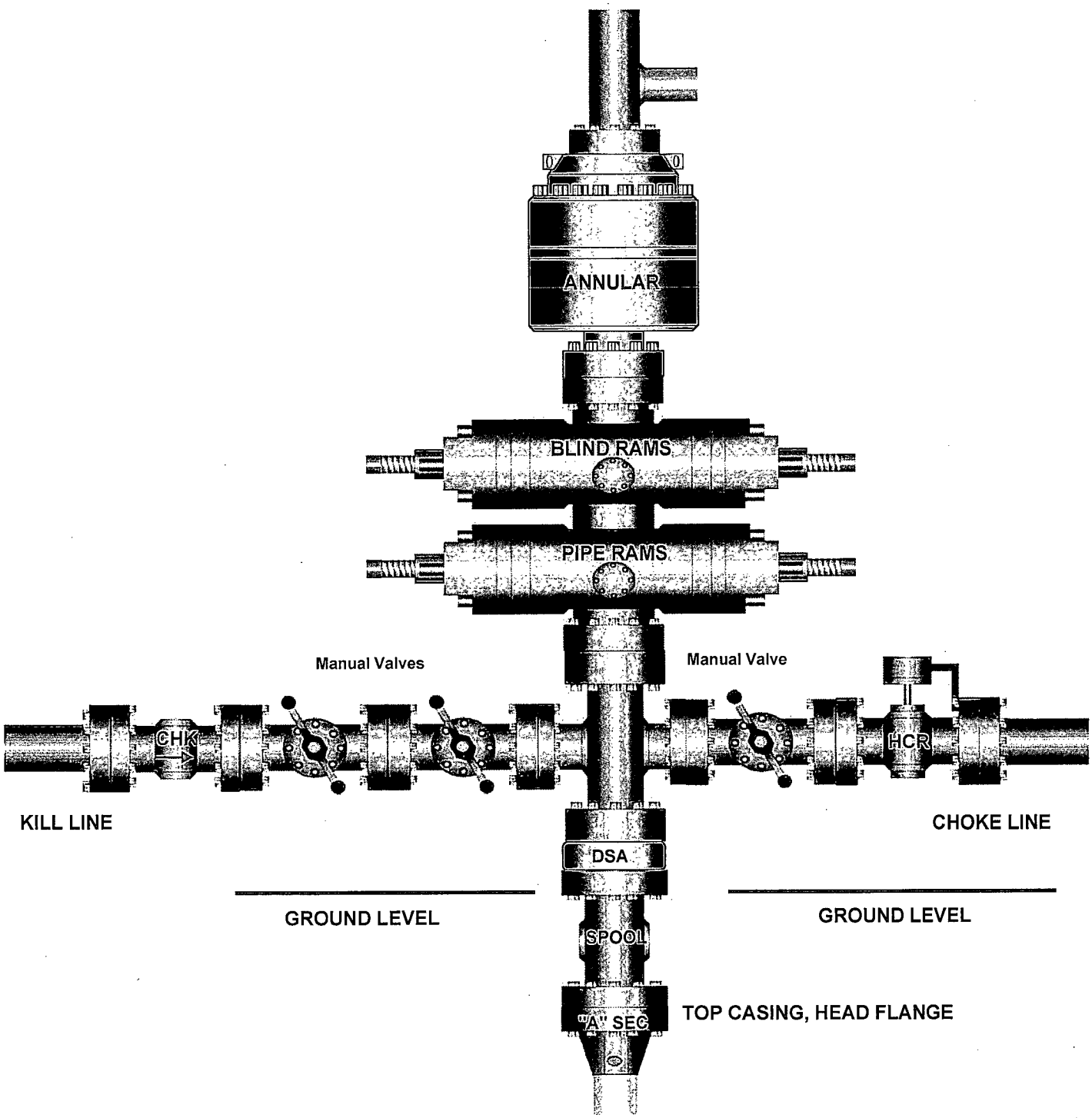
Mud Program

Depth	Mud Wt.	Visc	Fluid Loss	Type System
0' – 250'	8.4 – 8.8	32 – 34	N/C	FW/Gel
250' – 3,100'	9.7 – 10.0	28 – 30	N/C	Brine
3,100' – 9,800'	9.0 – 9.3	28-30	NC -40	Fresh
9,800' – 14,181'	10.5 – 12.5	32 – 40		Oil Base

BOP DESIGN: A 2M Annular BOP will be installed on the 13 3/8" surface casing and utilized continuously until the first intermediate depth of ~3100' is drilled. A 5M psi double ram type and 5M psi annular type and a rotating head will be installed on the 9 5/8" casing. All units will be hydraulically operated and the ram type preventer will be equipped with blind rams on top and 4 1/2" drill pipe rams on bottom. All BOP's will be tested with independent testers before drilling out the associated casing shoes. Prior to drilling out the 9 5/8" casing shoe, the BOP's and Hydril will be tested as per BLM Drilling Operations Order #2.

Pipe rams will be operated and checked each 24-hour period and each time the drill pipe is out of the hole. These functional tests will be documented on the daily driller's log. A 2" kill line and 3" choke line will be incorporated in the drilling spool below the ram-type BOP. Other accessory BOP equipment will include a Kelly cock, floor safety valve, choke lines and choke manifold having 5000 psi WP rating.

13-5/8" x 5,000 psi BOP Stack



Proposal No: 690850075B

Devon Energy Corp
Habanero 17 Fed #1

Sec. 17-24S-27E
Eddy County, New Mexico
March 24, 2011

Well Proposal

Prepared for:
Pat Brown
Drilling Engineer
Oklahoma City, Oklahoma
Bus Phone: (405) 228-8511

Prepared by:
John Parks
Region Technical Rep.
Oklahoma City, Oklahoma

THE BLUE WELLBORE℠
Makes better wells

Service Point:
Artesia
Bus Phone: (505) 746-3140
Fax: (505) 746-2293

Service Representatives:
Michael Sarabia
Field Supervisor
Artesia, New Mexico

Operator Name:	Devon Energy Corp
Well Name:	Habanero 17 Fed #1
Job Description:	Surface Casing
Date:	March 24, 2011

Proposal No: 690850075B

JOB AT A GLANCE

Depth (TVD)	250 ft
Depth (MD)	250 ft
Hole Size	17.5 in
Casing Size/Weight	13 3/8 in, 48 lbs/ft
Pump Via	13 3/8" O.D. (12.715" .I.D) 48
Total Mix Water Required	1,873 gals
Spacer	
Fresh Water	10 bbls
Density	8.3 ppg
Cement Slurry	
Class C	295 sacks
Density	14.8 ppg
Yield	1.35 cf/sack
Displacement	
Mud	39 bbls
Density	8.8 ppg

Operator Name:	Devon Energy Corp
Well Name:	Habanero 17 Fed #1
Job Description:	Surface Casing
Date:	March 24, 2011

Proposal No: 690850075B

WELL DATA

ANNULAR GEOMETRY

ANNULAR I.D. (in)	DEPTH(ft)	
	MEASURED	TRUE VERTICAL
17.500 HOLE	250	250

SUSPENDED PIPES

DIAMETER (in)		WEIGHT (lbs/ft)	DEPTH(ft)	
O.D.	I.D.		MEASURED	TRUE VERTICAL
13.375	12.715	48	250	250

Mud Density	8.80 ppg
Est. Static Temp.	80 ° F
Est. Circ. Temp.	80 ° F

VOLUME CALCULATIONS

250 ft x 0.6946 cf/ft with 125 % excess = 390.7 cf

TOTAL SLURRY VOLUME = 390.7 cf

= 70 bbls

STIMULATION o CEMENTING o COMPLETION SERVICES o SERVICE TOOLS o COILED TUBING o PRODUCTION CHEMICALS
CASING AND TUBING RUNNING SERVICES o PIPELINE SERVICES o WELL CONTROL o CHEMICAL SERVICES

Operator Name:	Devon Energy Corp
Well Name:	Habanero 17 Fed #1
Job Description:	Surface Casing
Date:	March 24, 2011

Proposal No: 690850075B

FLUID SPECIFICATIONS

Spacer — 10.0 bbls Fresh Water @ 8.34 ppg

FLUID	VOLUME CU-FT		VOLUME FACTOR	AMOUNT AND TYPE OF CEMENT
Cement Slurry	391	/	1.35	= 295 sacks Class C Cement + 0.125 lbs/sack Cello Flake + 2% bwoc Calcium Chloride + 56.3% Fresh Water

Displacement — 39.3 bbls Mud @ 8.8 ppg

CEMENT PROPERTIES

	SLURRY NO.1
Slurry Weight (ppg)	14.80
Slurry Yield (cf/sack)	1.35
Amount of Mix Water (gps)	6.35
Estimated Pumping Time - 70 BC (HH:MM)	2:30
COMPRESSIVE STRENGTH	
8 hrs @ 80 ° F (psi)	500
12 hrs @ 80 ° F (psi)	1150
24 hrs @ 80 ° F (psi)	2100
72 hrs @ 80 ° F (psi)	2700

Operator Name:	Devon Energy Corp
Well Name:	Habanero 17 Fed #1
Job Description:	Intermediate Casing
Date:	March 24, 2011

Proposal No: 690850075B

JOB AT A GLANCE

Depth (TVD)	3,100 ft
Depth (MD)	3,100 ft
Hole Size	12.25 in
Casing Size/Weight	9 5/8in, 40 lbs/ft
Pump Via	9 5/8" O.D. (8.835" .I.D) 40
Total Mix Water Required	11,312 gals
Spacer	
Fresh Water	20 bbls
Density	8.3 ppg
Lead Slurry	
35:65:6 Poz:Class C	835 sacks
Density	12.5 ppg
Yield	2.04 cf/sack
Tail Slurry	
60:40 Poz:Class C (MPA)	300 sacks
Density	13.8 ppg
Yield	1.37 cf/sack
Displacement	
Mud	232 bbls
Density	10.0 ppg

STIMULATION o CEMENTING o COMPLETION SERVICES o SERVICE TOOLS o COILED TUBING o PRODUCTION CHEMICALS o
CASING AND TUBING RUNNING SERVICES o PIPELINE SERVICES o WELL CONTROL o CHEMICAL SERVICES

Operator Name: Devon Energy Corp
Well Name: Habanero 17 Fed #1
Job Description: Intermediate Casing
Date: March 24, 2011

Proposal No: 690850075B

WELL DATA

ANNULAR GEOMETRY

ANNULAR I.D. (in)	DEPTH(ft)	
	MEASURED	TRUE VERTICAL
12.715 CASING	250	250
12.250 HOLE	3,100	3,100

SUSPENDED PIPES

DIAMETER (in)		WEIGHT (lbs/ft)	DEPTH(ft)	
O.D.	I.D.		MEASURED	TRUE VERTICAL
9.625	8.835	40	3,100	3,100

Float Collar set @	3,060 ft
Mud Density	10.00 ppg
Est. Static Temp.	108 ° F
Est. Circ. Temp.	95 ° F

VOLUME CALCULATIONS

250 ft	x	0.3765 cf/ft	with	0 %	excess	=	94.1 cf
2,289 ft	x	0.3132 cf/ft	with	125 %	excess	=	1613.3 cf
561 ft	x	0.3132 cf/ft	with	125 %	excess	=	395.0 cf
40 ft	x	0.4257 cf/ft	with	0 %	excess	=	17.0 cf (inside pipe)
			TOTAL SLURRY VOLUME			=	2119.5 cf
						=	378 bbls

STIMULATION o CEMENTING o COMPLETION SERVICES o SERVICE TOOLS o COILED TUBING o PRODUCTION CHEMICALS
CASING AND TUBING RUNNING SERVICES o PIPELINE SERVICES o WELL CONTROL o CHEMICAL SERVICES

Operator Name:	Devon Energy Corp
Well Name:	Habanero 17 Fed #1
Job Description:	Intermediate Casing
Date:	March 24, 2011

Proposal No: 690850075B

FLUID SPECIFICATIONS

Spacer — 20.0 bbls Fresh Water @ 8.34 ppg

FLUID	VOLUME CU-FT		VOLUME FACTOR	AMOUNT AND TYPE OF CEMENT
Lead Slurry	1707	/	2.04	= 835 sacks (35:65) Poz (Fly Ash):Class C Cement + 5% bwow Sodium Chloride + 0.125 lbs/sack Cello Flake + 6% bwoc Bentonite + 0.4% bwoc FL-52A + 107.7% Fresh Water
Tail Slurry	412	/	1.37	= 300 sacks (60:40) Poz (Fly Ash):Class C Cement + 5% bwow Sodium Chloride + 0.125 lbs/sack Cello Flake + 0.1% bwoc Sodium Metasilicate + 4% bwoc MPA-5 + 65.4% Fresh Water

Displacement — 232.0 bbls Mud @ 10 ppg

CEMENT PROPERTIES

	SLURRY NO.1	SLURRY NO.2
Slurry Weight (ppg)	12.50	13.80
Slurry Yield (cf/sack)	2.04	1.37
Amount of Mix Water (gps)	11.24	6.43
Estimated Pumping Time - 70 BC (HH:MM)	5:00	3:30
COMPRESSIVE STRENGTH		
8 hrs @ 107 ° F (psi)		
12 hrs @ 107 ° F (psi)		800
17 hrs @ 107 ° F (psi)	325	1549
24 hrs @ 107 ° F (psi)	500	
	637	2400

ACTUAL CEMENT VOLUME MAY VARY BASED ON FLUID CALIPER.

STIMULATION o CEMENTING o COMPLETION SERVICES o SERVICE TOOLS o COILED TUBING o PRODUCTION CHEMICALS
CASING AND TUBING RUNNING SERVICES o PIPELINE SERVICES o WELL CONTROL o CHEMICAL SERVICES

Operator Name:	Devon Energy Corp
Well Name:	Habanero 17 Fed #1
Job Description:	2nd Intermediate Casing
Date:	March 24, 2011

Proposal No: 690850075B

JOB AT A GLANCE

Depth (TVD)		9,800 ft
Depth (MD)		9,800 ft
Hole Size		8.75 in
Casing Size/Weight		7 in, 26 lbs/ft
Pump Via	7" O.D. (6.276" .I.D) 26	
Total Mix Water Required		13,366 gals
Stage No: 1	**Float Collar set @**	9,760 ft
Spacer		
Fresh Water		10 bbls
Density		8.3 ppg
Spacer		
Surebond III		1,000 gals
Density		9.4 ppg
Spacer		
Fresh Water		10 bbls
Density		8.3 ppg
Lead Slurry		
35:65:6 Poz:Class H:Gel		505 sacks
Density		12.5 ppg
Yield		1.96 cf/sack
Tail Slurry		
Super C Modified		450 sacks
Density		13.3 ppg
Yield		1.56 cf/sack
Displacement		
Displacement Fluid		373 bbls

STIMULATION o CEMENTING o COMPLETION SERVICES o SERVICE TOOLS o COILED TUBING o PRODUCTION CHEMICALS o
CASING AND TUBING RUNNING SERVICES o PIPELINE SERVICES o WELL CONTROL o CHEMICAL SERVICES

JOB AT A GLANCE (Continued)

Stage No: 2 **Stage Collar set @** 4,200 ft

Spacer	
Fresh Water	20 bbls
Density	8.3 ppg
Lead Slurry	
35:65:6 Poz:Class C:Gel	285 sacks
Density	12.5 ppg
Yield	2.04 cf/sack
Tail Slurry	
60:40 Poz:Class C (MPA)	200 sacks
Density	13.8 ppg
Yield	1.38 cf/sack
Displacement	
Displacement Fluid	318 bbls

Operator Name: Devon Energy Corp
Well Name: Habanero 17 Fed #1
Job Description: 2nd Intermediate Casing
Date: March 24, 2011

Proposal No: 690850075B

WELL DATA

ANNULAR GEOMETRY

ANNULAR I.D. (in)	DEPTH(ft)	
	MEASURED	TRUE VERTICAL
8.835 CASING	3,100	3,100
8.750 HOLE	9,800	9,800

SUSPENDED PIPES

DIAMETER (in)		WEIGHT (lbs/ft)	DEPTH(ft)	
O.D.	I.D.		MEASURED	TRUE VERTICAL
7.000	6.276	26	9,800	9,800

STAGE: 1

Float Collar set @	9,760 ft
Mud Density	9.30 ppg
Est. Static Temp.	178 ° F
Est. Circ. Temp.	142 ° F

VOLUME CALCULATIONS

3,300 ft	x	0.1503 cf/ft	with	100 %	excess	=	992.2 cf
2,300 ft	x	0.1503 cf/ft	with	100 %	excess	=	691.5 cf
40 ft	x	0.2148 cf/ft	with	0 %	excess	=	8.6 cf (inside pipe)
			TOTAL SLURRY VOLUME			=	1692.3 cf
						=	302 bbls

STAGE: 2

Stage Collar set @	4,200 ft
Mud Density	9.30 ppg
Est. Static Temp.	114 ° F
Est. Circ. Temp.	100 ° F

VOLUME CALCULATIONS

500 ft	x	0.3354 cf/ft	with	0 %	excess	=	167.7 cf
661 ft	x	0.3132 cf/ft	with	100 %	excess	=	413.9 cf
439 ft	x	0.3132 cf/ft	with	100 %	excess	=	275.1 cf
			TOTAL SLURRY VOLUME			=	856.7 cf
						=	153 bbls

Operator Name:	Devon Energy Corp
Well Name:	Habanero 17 Fed #1
Job Description:	2nd Intermediate Casing
Date:	March 24, 2011

Proposal No: 690850075B

FLUID SPECIFICATIONS

STAGE NO. 1

Spacer	10.0 bbls Fresh Water @ 8.34 ppg
Spacer	1,000.0 gals Surebond III @ 9.35 ppg
Spacer	10.0 bbls Fresh Water @ 8.34 ppg

FLUID	VOLUME CU-FT		VOLUME FACTOR	AMOUNT AND TYPE OF CEMENT
Lead Slurry	992	/	1.96	= 505 sacks (35:65) Poz (Fly Ash):Class H Cement + 1% bwow Sodium Chloride + 0.125 lbs/sack Cello Flake + 6% bwoc Bentonite + 0.4% bwoc FL-52A + 103.2% Fresh Water
Tail Slurry	700	/	1.56	= 450 sacks (15:61:11) Poz (Fly Ash):Class C Cement:CSE-2 + 1% bwow Potassium Chloride + 0.75% bwoc EC-1 + 0.125 lbs/sack Cello Flake + 0.4% bwoc CD-32 + 2 lbs/sack LCM-1 + 0.6% bwoc FL-25 + 0.6% bwoc FL-52A + 73.3% Fresh Water
Displacement				373.4 bbls Displacement Fluid

CEMENT PROPERTIES

	SLURRY NO.1	SLURRY NO.2
Slurry Weight (ppg)	12.50	13.30
Slurry Yield (cf/sack)	1.96	1.56
Amount of Mix Water (gps)	10.76	7.65
Estimated Pumping Time - 70 BC (HH:MM)	5:30	4:30
Free Water (mls) @ ° F @ 90 ° Angle		0.0
Fluid Loss (cc/30min) at 1000 psi and ° F		50.0
COMPRESSIVE STRENGTH		
12 hrs @ 167 ° F (psi)	350	900
24 hrs @ 167 ° F (psi)	700	2100
72 hrs @ 167 ° F (psi)	1000	2600

STIMULATION o CEMENTING o COMPLETION SERVICES o SERVICE TOOLS o COILED TUBING o PRODUCTION CHEMICALS
CASING AND TUBING RUNNING SERVICES o PIPELINE SERVICES o WELL CONTROL o CHEMICAL SERVICES

Operator Name: Devon Energy Corp
Well Name: Habanero 17 Fed #1
Job Description: Liner
Date: March 24, 2011

Proposal No: 690850075B

WELL DATA

ANNULAR GEOMETRY

ANNULAR I.D. (in)	DEPTH(ft)	
	MEASURED	TRUE VERTICAL
6.276 CASING	9,800	9,800
6.125 HOLE	14,200	10,500

SUSPENDED PIPES

DIAMETER (in)		WEIGHT (lbs/ft)	DEPTH(ft)	
O.D.	I.D.		MEASURED	TRUE VERTICAL
4.000	3.428	11.6	14,200	10,500

Casing 4.0 (in) OD, 3.428 (in) ID, 11.6 (lbs/ft) set @	9,500 ft
Casing 4.0 (in) OD, 3.428 (in) ID, 11.6 (lbs/ft) set @	14,200 ft
Depth to Top of Liner	9,500 ft
Float Collar set @	14,160 ft
Mud Density	11.00 ppg
Mud Type	Oil Based
Est. Static Temp.	164 ° F
Est. Circ. Temp.	164 ° F

VOLUME CALCULATIONS

200 ft	x	0.2148 cf/ft	with	0 % excess	=	43 cf
300 ft	x	0.1276 cf/ft	with	0 % excess	=	38 cf
4,400 ft	x	0.1173 cf/ft	with	50 % excess	=	775 cf
40 ft	x	0.0641 cf/ft	with	0 % excess	=	3 cf (inside pipe)
				TOTAL SLURRY VOLUME	=	858 cf
					=	153 bbls

Operator Name:	Devon Energy Corp
Well Name:	Habanero 17 Fed #1
Job Description:	Liner
Date:	March 24, 2011

Proposal No: 690850075B

FLUID SPECIFICATIONS

Spacer	50.0 bbls MCS-3 + 2 gal/bbl US-40 + 16.5 lbs/bbl Bentonite + 183 lbs/bbl Barite, Bulk @ 12 ppg
Spacer	300.0 bbls Water Based Mud @ 11 ppg
Spacer	40.0 bbls Turbo Flow III @ 12 ppg

FLUID	VOLUME CU-FT		VOLUME FACTOR	AMOUNT AND TYPE OF CEMENT
Cement Slurry	858	/	1.26	= 680 sacks (50:50) Poz (Fly Ash):Class H Cement + 3% bwow Sodium Chloride + 0.2% bwoc CD-32 + 0.5% bwoc FL-25 + 0.5% bwoc Sodium Metasilicate + 0.5% bwoc FL-52A + 56.6% Fresh Water
Displacement				161.6 bbls Displacement Fluid

CEMENT PROPERTIES

	SLURRY NO.1
Slurry Weight (ppg)	14.20
Slurry Yield (cf/sack)	1.26
Amount of Mix Water (gps)	5.70
Estimated Pumping Time - 70 BC (HH:MM)	4:00
Free Water (mls) @ 166 ° F @ 90 ° Angle	0.0
Fluid Loss (cc/30min) at 1000 psi and 166 ° F	50.0
COMPRESSIVE STRENGTH	
12 hrs @ 166 ° F (psi)	250
24 hrs @ 166 ° F (psi)	1400
72 hrs @ 166 ° F (psi)	1900

CEMENT VOLUMES WILL VARY BASED ON CALIPER.

TEST SPACER SYSTEM WITH OIL BASED MUD.

BATCH MIX SPACER SYSTEM.

CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**Devon Energy Production Company, LP**
LEASE NO.:	**NMNM112268**
WELL NAME & NO.:	**Habanero 17 Federal #1**
SURFACE HOLE FOOTAGE:	**990' FNL & 660' FEL**
BOTTOM HOLE FOOTAGE	**990' FNL & 660' FWL**
LOCATION:	**Section 17, T. 24 S., R 27 E., NMPM**
COUNTY:	**Eddy County, New Mexico**

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified a minimum of 4 hours in advance for a representative to witness:

a. Spudding well
b. Setting and/or Cementing of all casing strings
c. BOPE tests

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

1. **Although Hydrogen Sulfide has not been reported in this section, it is always a possible hazard. It has been reported in the Township to the north. If Hydrogen Sulfide is encountered, please report measured amounts 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 are 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 and cement program require submitting a sundry and receiving approval prior to work. Failure to obtain approval prior to work will result in an Incident of Non-Compliance being issued.

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
Possible lost circulation in the Delaware Formation.
Possible high pressure gas in the Wolfcamp formation.

1. The **13-3/8** inch surface casing shall be set at **approximately 250 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 ceent 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.**

Formation below the 9-5/8" 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 next hole segment. Report results to BLM office.

3. The minimum required fill of cement behind the 7 inch second intermediate casing is:

a. First stage to DV tool, cement shall:

☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job.

b. Second stage above DV tool, cement shall:

☒ Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification..

Formation below the 7" 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 and the mud weight for the bottom of the hole. Report results to BLM office.

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

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

☒ Cement should tie-back at least 100 feet into previous casing string. Operator shall provide method of verification. **Approved for 100' overlap.**

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 with Serial #45523 from BOP to choke manifold. Check condition of 3" 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. Anchor requirements to be onsite for review. 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 **13-3/8** inch 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 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 or where the float does not hold, the minimum wait time before cut-off is eight hours after bumping the plug or when the cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. BOP/BOPE testing can begin after the above conditions are satisfied.

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 results of the test shall be reported to the appropriate BLM office.

d. 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.**

e. 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.

f. 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 Onshore Order No. 2.

D. 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.

E. DRILL STEM TEST

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

F. 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. **CRW 041311**