

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

HOBBS OCD

FORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 2018**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.*5. Lease Serial No.
NMLC069144

6. If Indian, Allottee or Tribe Name

SUBMIT IN TRIPLICATE - Other instructions on page 27. If Unit or CA/Agreement, Name and/or No.
891000326X

1. Type of Well

☐ Oil Well ☐ Gas Well ☒ Other: INJECTION8. Well Name and No.
BIG EDDY UNIT 29 FEDERAL SWD 12. Name of Operator
BOPCO LPContact: KELLY KARDOS
E-Mail: kelly_kardos@xtoenergy.com9. API Well No.
30-015-43253-00-X13a. Address
6401 HOLIDAY HILL RD BLDG 5 SUITE 200
MIDLAND, TX 797073b. Phone No. (include area code)
Ph: 432-620-437410. Field and Pool or Exploratory Area
WILDCAT

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

Sec 29 T21S R29E SWSW 980FSL 450FWL

NM OIL CONSERVATION
ARTESIA DISTRICT

11. County or Parish, State

EDDY COUNTY, NM

MAR 05 2019

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
☐ Subsequent Report	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	Change to Original APD
	☐ 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 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 must 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 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.

XTO Permian Operating, LLC. requests permission to revise the drilling program per the attached procedure.....

SEE ATTACHED FOR
CONDITIONS OF APPROVAL*All Previous COAs still Apply, Except for the Following:*

14. I hereby certify that the foregoing is true and correct.

Electronic Submission #454089 verified by the BLM Well Information System
For BOPCO LP, sent to the Carlsbad
Committed to AFMSS for processing by MUSTAFA HAQUE on 02/11/2019 (19MH0026SE)

Name (Printed/Typed) KELLY KARDOS

Title REGULATORY COORDINATOR

Signature (Electronic Submission)

Date 02/11/2019

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By JEREMY PORTER

Title PETROLEUM ENGINEER

Date 02/12/2019

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 Carlsbad

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)

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

RNF 3-6-19

KZ

Revisions to Operator-Submitted EC Data for Sundry Notice #454089

	Operator Submitted	BLM Revised (AFMSS)
Sundry Type:	APDCH NOI	APDCH NOI
Lease:	NMLC069144	NMLC069144
Agreement:	NMNM68294X	891000326X (NMNM68294X)
Operator:	XTO PERMIAN OPERATING, LLC 6401 HOLIDAY HILL RD BLDG 5 MIDLAND, TX 79707 Ph: 432-620-4374	BOPCO LP 6401 HOLIDAY HILL RD BLDG 5 SUITE 200 MIDLAND, TX 79707 Ph: 432.683.2277
Admin Contact:	KELLY KARDOS REGULATORY COORDINATOR E-Mail: kelly_kardos@xtoenergy.com Ph: 432-620-4374	KELLY KARDOS REGULATORY COORDINATOR E-Mail: kelly_kardos@xtoenergy.com Ph: 432-620-4374
Tech Contact:	KELLY KARDOS REGULATORY COORDINATOR E-Mail: kelly_kardos@xtoenergy.com Ph: 432-620-4374	KELLY KARDOS REGULATORY COORDINATOR E-Mail: kelly_kardos@xtoenergy.com Ph: 432-620-4374
Location: State: County:	NM EDDY	NM EDDY
Field/Pool:	DEVONIAN; SWD	WILDCAT
Well/Facility:	BIG EDDY UNIT 29 FEDERAL SWD 1 Sec 29 T21S R29E Mer NMP SWSW 980FSL 450FWL	BIG EDDY UNIT 29 FEDERAL SWD 1 Sec 29 T21S R29E SWSW 980FSL 450FWL

DRILLING PLAN: BLM COMPLIANCE
(Supplement to BLM 3160-3)

XTO Energy Inc.
BEU 29 Federal 1 SWD
Projected TD: 14860' MD / 14040' TVD
SHL: 980' FSL & 450' FWL , Section 29, T21S, R29E
BHL: 980' FSL & 450' FWL , Section 29, T21S, R29E
Lea County, NM

1. Geologic Name of Surface Formation

A. Quaternary

2. Estimated Tops of Geological Markers & Depths of Anticipated Fresh Water, Oil or Gas:

Formation	Well Depth (TVD)	Water/Oil/Gas
Top of Fresh	203'	Water
Top of Salt	568'	Water
Base of Salt	2705'	Water
Delaware	2952'	Water
Brushy Canyon	5380'	Water/Oil/Gas
Bone Spring	6665'	Water/Oil/Gas
First Bone Spring Sand	7681'	Water/Oil/Gas
Second Bone Spring Sand	8441'	Water/Oil/Gas
Third Bone Spring Sand	9635'	Water/Oil/Gas
Wolfcamp	9980'	Water/Oil/Gas
Wolfcamp Carbonate	10132'	Water/Oil/Gas
Cisco	10849'	Water/Oil/Gas
Canyon	11171'	Water/Oil/Gas
Strawn	11461'	Water/Oil/Gas
Atoka	11699'	Water/Oil/Gas
Atoka Bank	11856'	Water/Oil/Gas
Morrow	12186'	Water/Oil/Gas
Morrow Clastics	12423'	Water/Oil/Gas
Barnett	12953'	Water/Oil/Gas
Mississippian Lime	13416'	Water/Oil/Gas
Woodford	13888'	Water/Oil/Gas
Siluro-Devonian	14022'	Disposal
Fusselman	14238'	Disposal
TD	14860'	
Montoya	14872'	
Simpson	15243'	

*** Hydrocarbons @ Brushy Canyon

*** Groundwater depth 40' (per NM State Engineers Office).

No other formations are expected to yield oil, gas or fresh water in measurable volumes. The surface fresh water sands will be protected by setting 18-5/8 inch casing @ 390' (178' above the salt) and circulating cement back to surface. The salt will be isolated by setting 13-3/8 inch casing at 2830' and circulating cement to surface. 9-5/8 inch casing will be set into the Wolfcamp at 10230'. An 8-3/4 inch hole will be drilled to 14040' and a 7 inch liner will be set and cemented back up into the 9-5/8 inch casing shoe. A 6 inch hole will be drilled to TD at 14860' for an openhole completion.

3. Casing Design

Hole Size	Depth	OD Csg	Weight	Collar	Grade	New/Used	SF Burst	SF Collapse	SF Tension
24"	0' - 390' 2830'	18-5/8"	87.5	BTC	J-55	New	2.56	3.61	38.95
17-1/2"	0' - 2830' 2945'	13-3/8"	68	BTC	J-55	New	1.19	1.30	5.92
12-1/4"	0' - 10230'	9-5/8"	53.5	LTC	L-80	New	1.60	1.28	1.91
8-1/2"	9830' - 14040'	7"	32	BTC	P-110	New	2.33	1.34	4.29
6"	14040' - 14860'	Open hole							

WELLHEAD:

Temporary Wellhead

- 18-5/8" SOW bottom x 21-1/4" 2M top flange.
- A. Starting Head: 13-5/8" 5M top flange x 13-3/8" SOW bottom
- B. Tubing Head: 13-5/8" 5M bottom flange x 11" 10M top flange
- Wellhead will be installed by manufacturer's representatives.
 - Manufacturer will monitor welding process to ensure appropriate temperature of seal.
 - Manufacturer will witness installation of test plug for initial test.
 - Operator will test the 9-5/8" casing to 70% of casing burst before drilling out.

4. Cement Program

Surface Casing: 18-5/8", 87.5# New J-55, BTC casing to be set at +/- 390'

Lead: 0 sxs Poz/C (mixed at 13.5 ppg, 1.77 ft3/sx, 9.46 gal/sx water)
Tail: 710 sxs Class C + 2% CaCl (mixed at 14.8 ppg, 1.36 ft3/sx, 6.61 gal/sx water)
Compressives: 12-hr = 900 psi 24 hr = 1500 psi

1st Intermediate Casing: 13-3/8", 68# New J-55, BTC casing to be set at +/- 2830'

Lead: 1820 sxs Poz/C (mixed at 12.8 ppg, 1.923 ft3/sx, 10.45 gal/sx water)
Tail: 310 sxs Class C + 2% CaCl (mixed at 14.8 ppg, 1.33 ft3/sx, 6.42 gal/sx water)
Compressives: 12-hr = 900 psi 24 hr = 1500 psi

2nd Intermediate Casing: 9-5/8", 53.5# New L-80, LTC casing to be set at +/- 10230'

Lead: 1760 sxs Poz-C + 2% CaCl (mixed at 12.9 ppg, 1.9 ft3/sx, 9.99 gal/sx water)
Tail: 1270 sxs Class C + 2% CaCl (mixed at 14.4 ppg, 1.25 ft3/sx, 5.49 gal/sx water)
Compressives: 12-hr = 900 psi 24 hr = 1500 psi

Production Casing: 7", 32# New P-110, BTC casing to be set at +/- 14040'

Lead: 0 sxs Poz/C (mixed at 11 ppg, 2.811 ft3/sx, 17.4 gal/sx water)
Tail: 480 sxs Class C (mixed at 13.2 ppg, 1.468 ft3/sx, 7.46 gal/sx water)
Compressives: 12-hr = 1375 psi 24 hr = 2285 psi

5. Pressure Control Equipment

The blow out preventer equipment (BOP) on surface casing/temporary wellhead will consist of a 21-1/4" minimum 2M Annular. MASP should not exceed 878 psi.

Once WH is installed on 13-3/8 inch casing, the blow out preventer equipment (BOP) for this well consists of a 13-5/8" minimum 5M Annular and a 13-5/8" minimum 5M Double Ram BOP. MASP should not exceed 4942 psi. In any instance where 10M BOP is required by BLM, XTO requests variance to utilize 5M annular with 10M ram preventers (a common BOP configuration, which allows use of 10M rams in unlikely event that pressures exceed 5M).

All BOP testing will be done by an independent service company. Annular pressure tests will be limited to 50% of the working pressure. When nipping up on the 13-5/8" 5M bradenhead and flange, the BOP test will be limited to 5000 psi. When nipping up on the 9-5/8", the BOP will be tested to a minimum of 5000 psi. All BOP tests will include a low pressure test as per BLM regulations. The 5M BOP diagrams are attached. Blind rams will be functioned tested each trip, pipe rams will be functioned tested each day.

A variance is requested to allow use of a flex hose as the choke line from the BOP to the Choke Manifold. If this hose is used, a copy of the manufacturer's certification and pressure test chart will be kept on the rig. Attached is an example of a certification and pressure test chart. The manufacturer does not require anchors.

6. Proposed Mud Circulation System

INTERVAL	Hole Size	Mud Type	MW (ppg)	Viscosity (sec/qt)	Fluid Loss (cc)
0' - 390'	24"	FW/Native	8.4-9.0	29-40	NC
390' - 2830'	17-1/2"	Brine	9.8-10.3	29-32	NC
2830' - 10230'	12-1/4"	Cut Brine	9.3-9.7	29-32	NC
10230' - 14040'	8-1/2"	Cut Brine / Polymer	10.5-11.0	29-40	NC - 20
14040' - 14860'	6"	FW	8.4-8.8	29-32	NC

The necessary mud products for weight addition and fluid loss control will be on location at all times.

Spud with fresh water/native mud. Drill out from under 18-5/8" surface casing with fully saturated brine. A 9.8-10.3 ppg brine mud will be used while drilling through the salt formation. Use fibrous materials as needed to control seepage and lost circulation. Pump viscous sweeps as needed for hole cleaning. Pump speed will be recorded on a daily drilling report after mudding up. A Pason or Totco will be used to detect changes in loss or gain of mud volume. A mud test will be performed every 24 hours to determine: density, viscosity, strength, filtration and pH as necessary. Use available solids controls equipment to help keep mud weight down after mud up. Rig up solids control equipment to operate as a closed loop system.

7. Auxiliary Well Control and Monitoring Equipment

- A. A Kelly cock will be in the drill string at all times.
- B. A full opening drill pipe stabbing valve having appropriate connections will be on the rig floor at all times.
- C. H2S monitors will be on location when drilling below the 13-3/8" casing.

8. Logging, Coring and Testing Program

Mud Logger: Mud Logging Unit (2 man) below 13-3/8" casing (1st intermediate string).

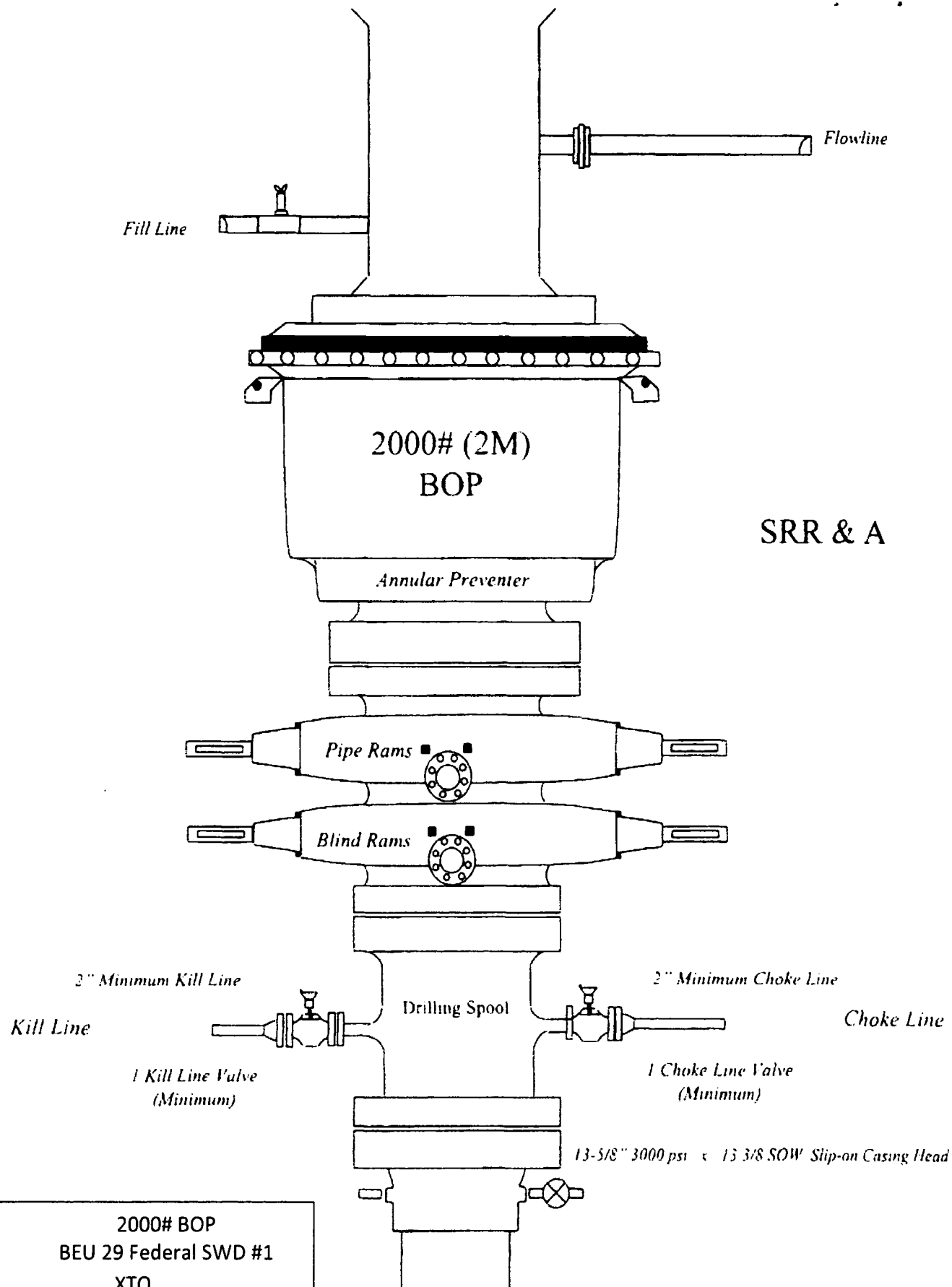
Open hole logging and rotary side wall cores will be conducted in intermediate and production hole sections. Logs that may be run include Triple

9. Abnormal Pressures and Temperatures / Potential Hazards

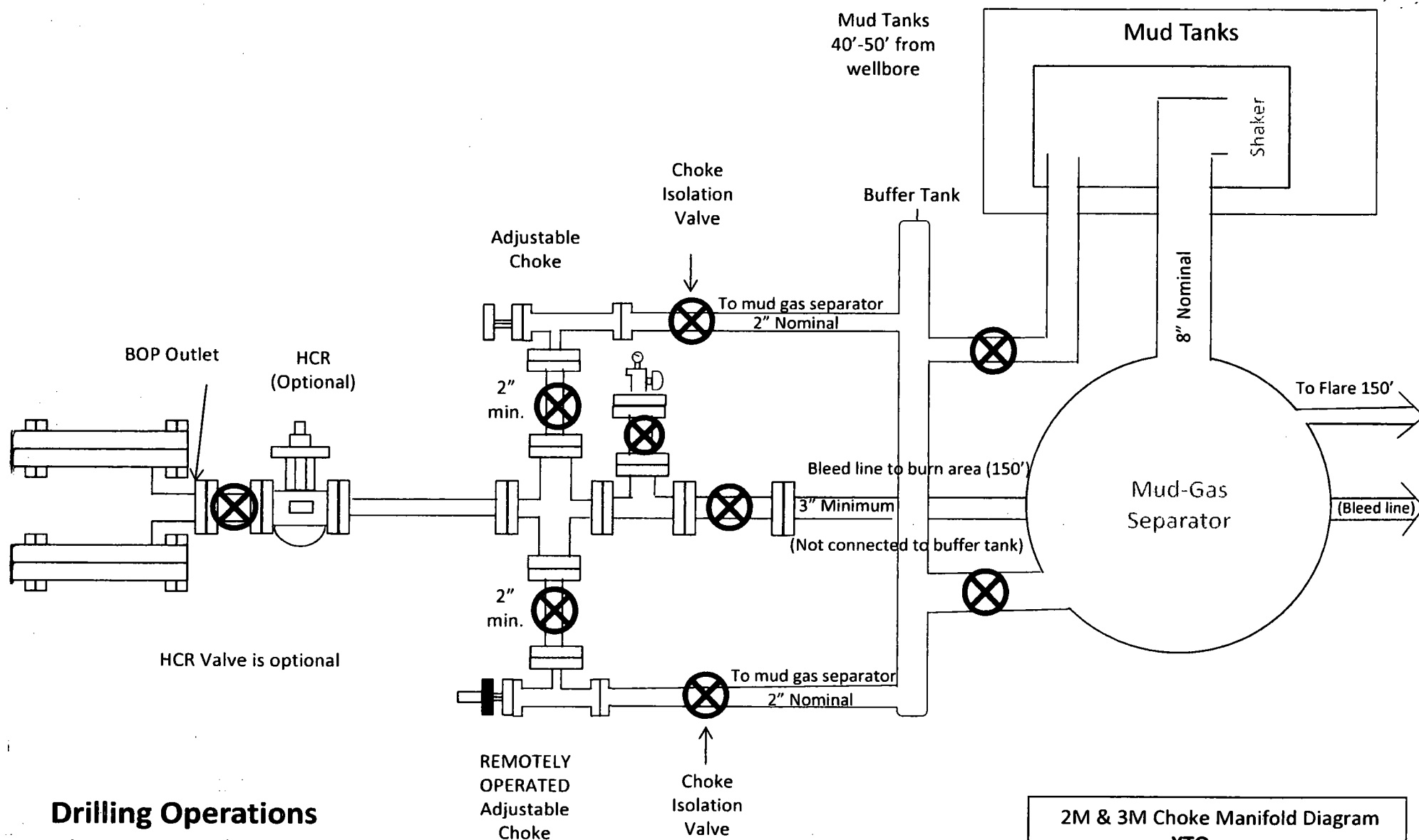
None Anticipated. BHT of 190-220F is anticipated. No H2S is expected but monitors will be in place to detect any H2S occurrences. Should these circumstances be encountered the operator and drilling contractor are prepared to take all necessary steps to ensure safety of all personnel and environment. Lost circulation is possible, and will be managed by additions of small amounts of LCM in the drilling fluid. The maximum anticipated bottom hole pressure for this well is 6645 psi.

10. Anticipated Starting Date and Duration of Operations

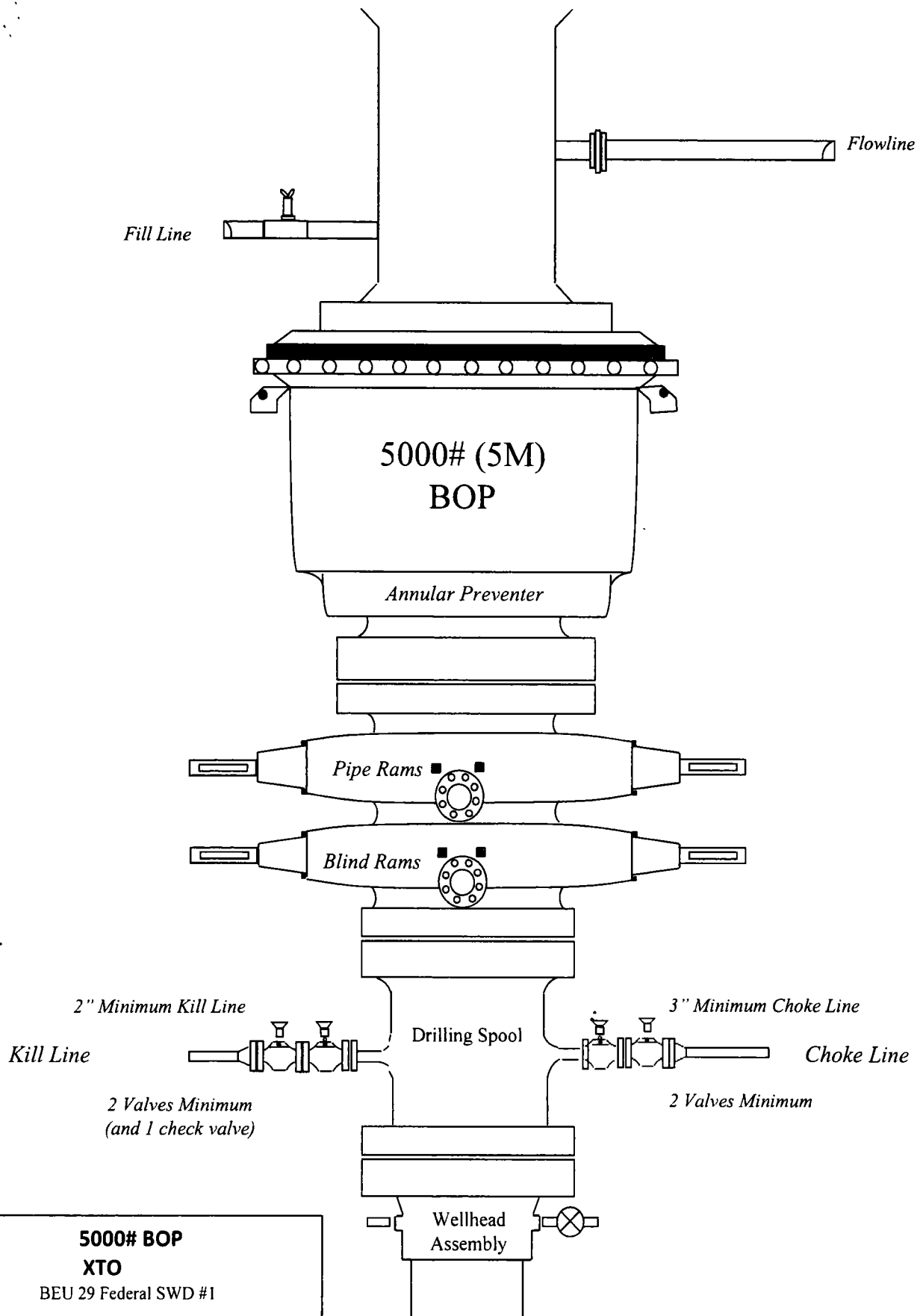
Road and location construction will begin after Santa Fe and BLM have approved the APD. Anticipated spud date will be as soon after Santa Fe and BLM approval and as soon as a rig will be available. Move in operations and drilling is expected to take 50-75 days. If production casing is run, an additional 30 days will be needed to complete well and construct surface facilities and/or lay flow lines in order to commence injection.

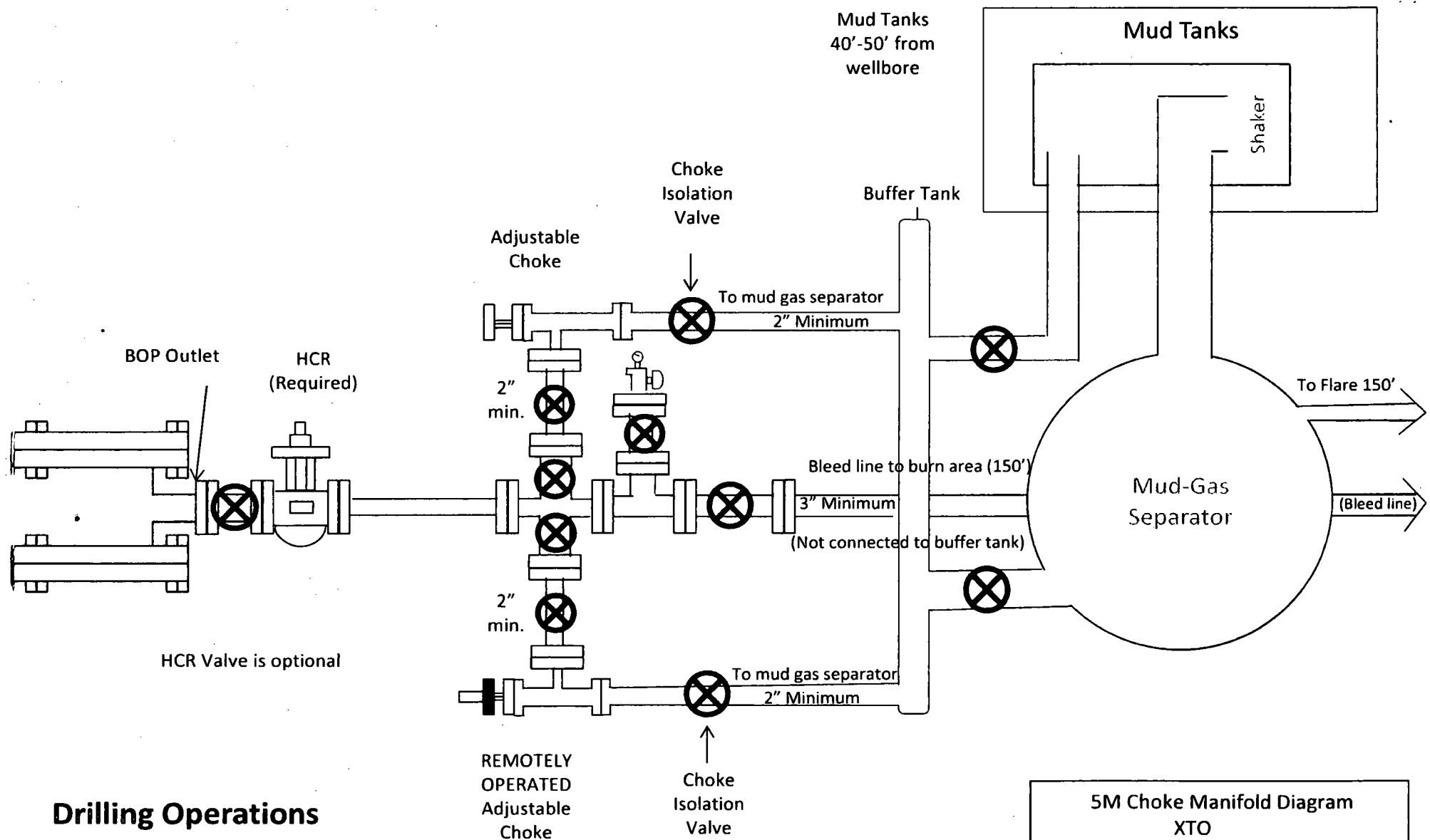


SRR & A



**2M & 3M Choke Manifold Diagram
XTO
BEU 29 Federal SWD #1**

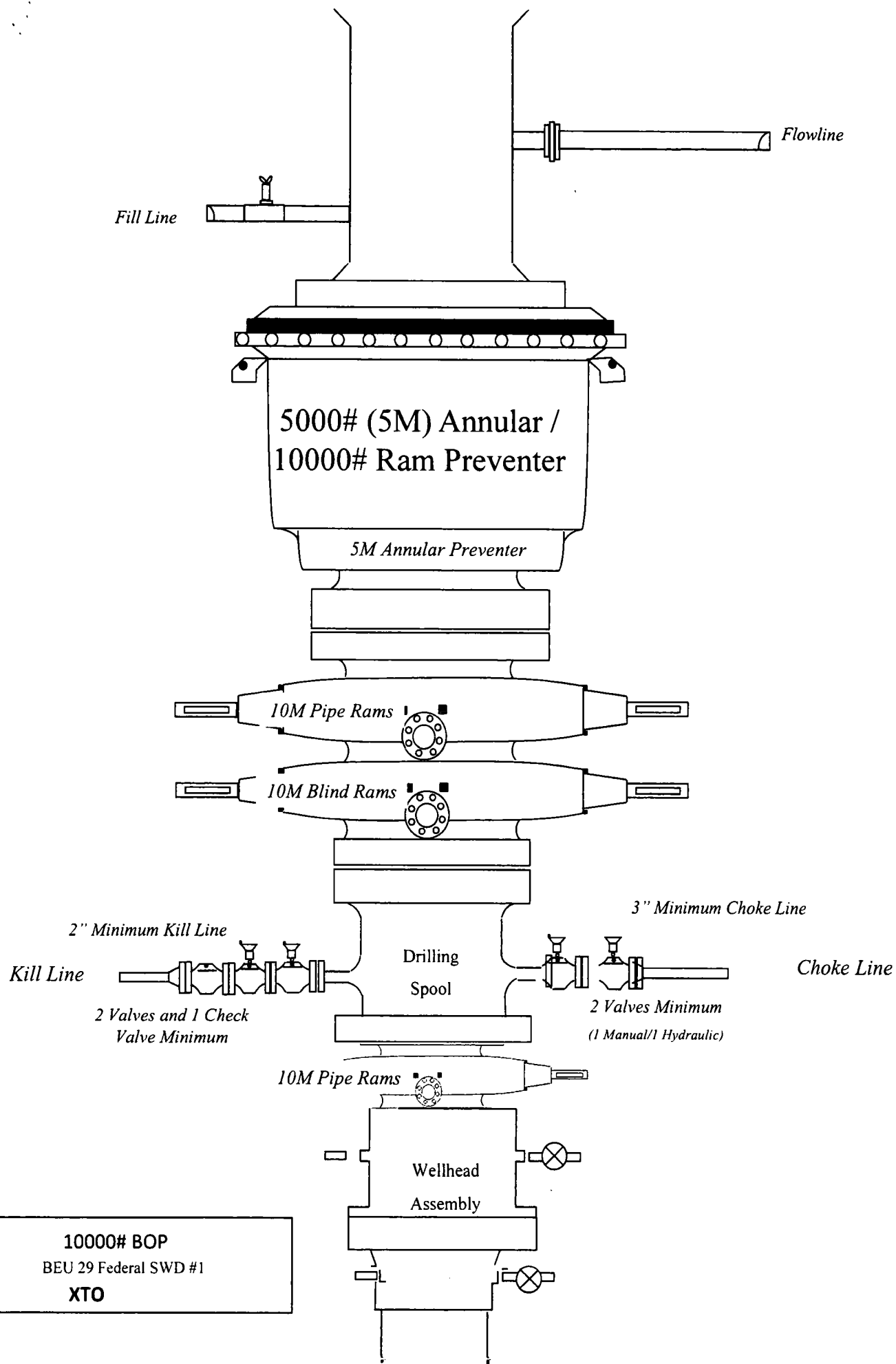


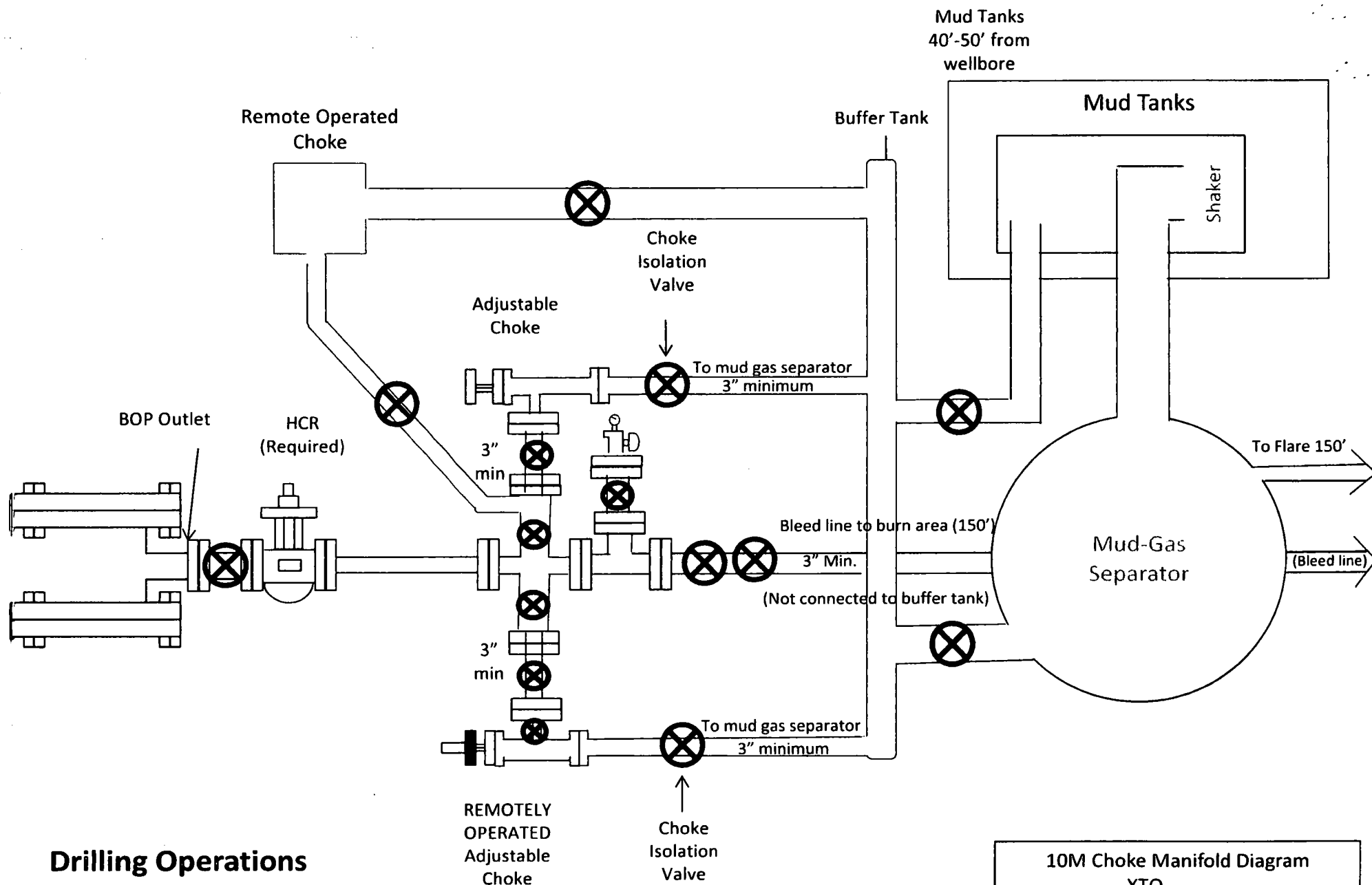


Drilling Operations
Choke Manifold
5M Service

5M Choke Manifold Diagram
XTO

BEU 29 Federal SWD #1

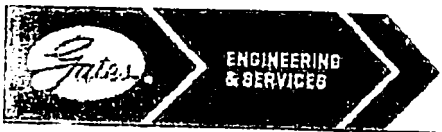




**Drilling Operations
Choke Manifold
10M Service**

**10M Choke Manifold Diagram
XTO**

BEU 29 Federal SWD #1



GATES E & S NORTH AMERICA, INC
DU-TEX
134 44TH STREET
CORPUS CHRISTI, TEXAS 78405

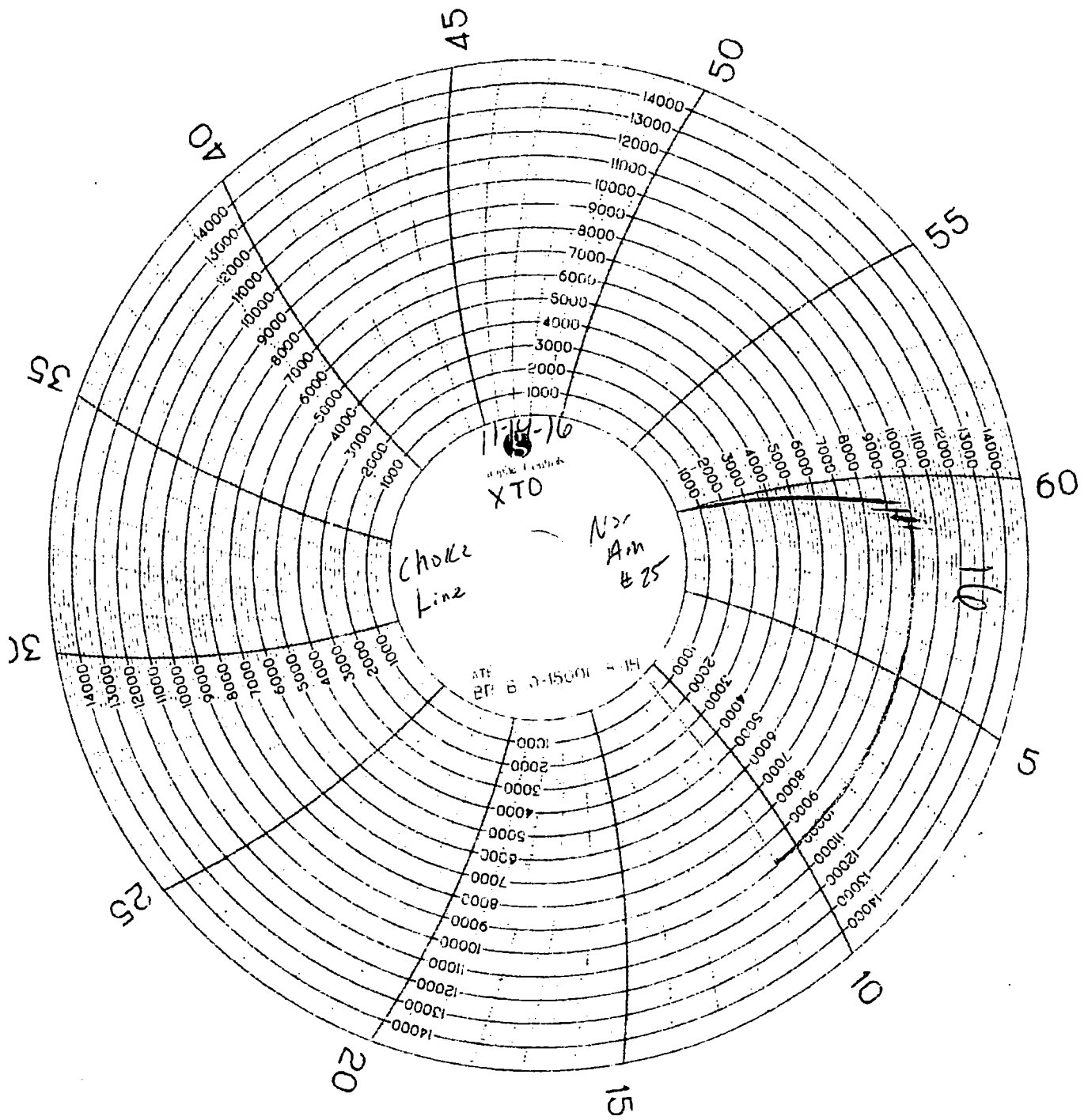
PHONE: 361-887-9807
FAX: 361-887-0812
EMAIL: crpe&s@gates.com
WEB: www.gates.com

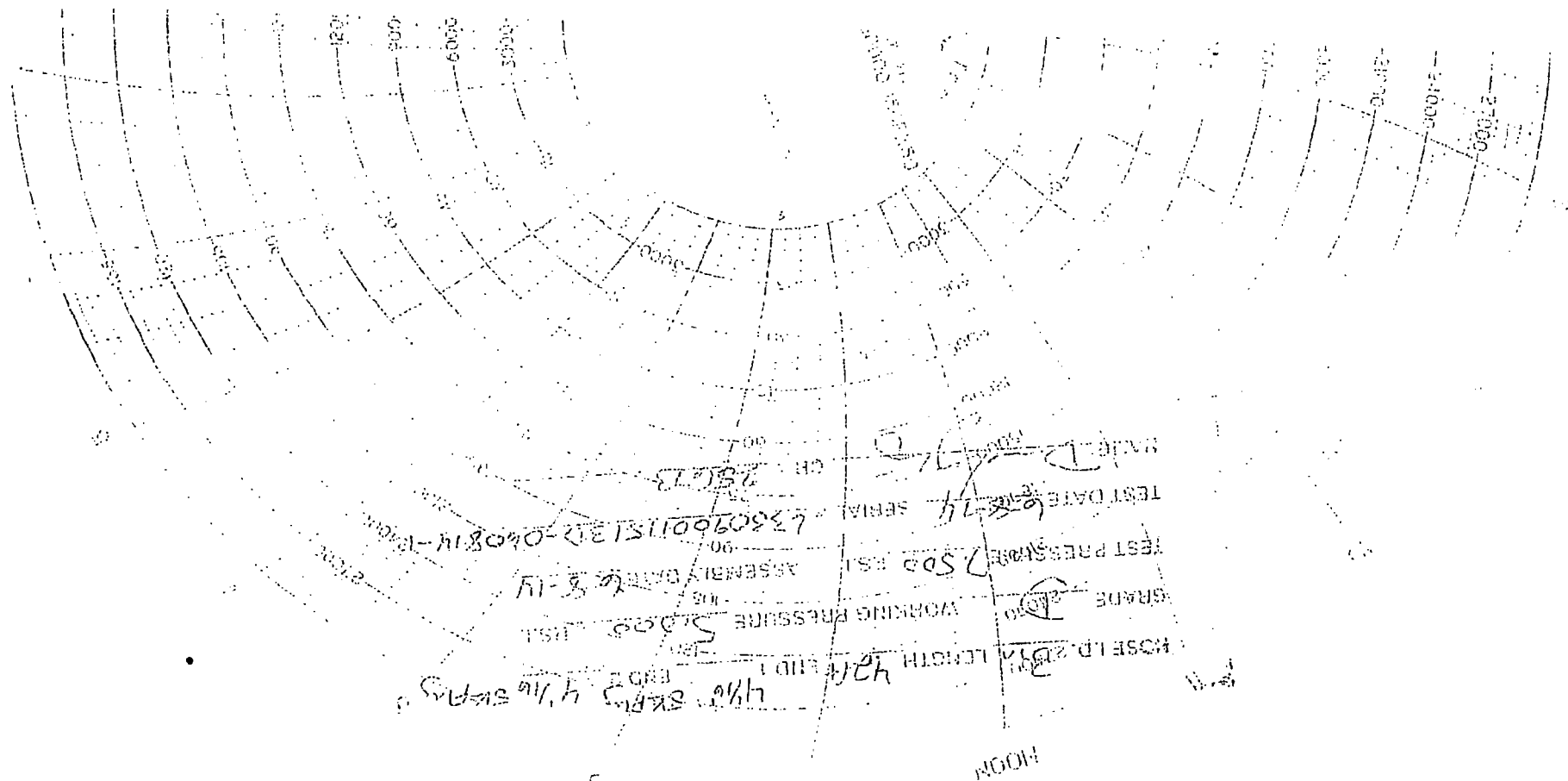
GRADE D PRESSURE TEST CERTIFICATE

Customer :	AUSTIN DISTRIBUTING	Test Date:	6/8/2014
Customer Ref. :	PENDING	Hose Serial No.:	D-060814-1
Invoice No. :	201709	Created By:	NORIYA
Product Description:	FD3.042.0R41/16.5KFLGE/E 1E		
End Fitting 1 :	4 1/16 in.5K FLG	End Fitting 2 :	4 1/16 in.5K FLG
Gates Part No. :	4774-6001	Assembly Code :	L33090011513D-060814-1
Working Pressure :	5,000 PSI	Test Pressure :	7,500 PSI

Gates E & S North America, Inc. certifies that the following hose assembly has been tested to the Gates Oilfield Roughneck Agreement/Specification requirements and passed the 15 minute hydrostatic test per API Spec 7K/Q1, Fifth Edition, June 2010, Test pressure 9.6.7 and per Table 9 to 7,500 psi in accordance with this product number. Hose burst pressure 9.6.7.2 exceeds the minimum of 2.5 times the working pressure per Table 9.

Quality:	QUALITY	Technical Supervisor:	PRODUCTION
Date:	6/8/2014	Date:	6/8/2014
Signature:		Signature:	





BEU 29 Fed 1 SWD*Proposed SWD Schematic (Jan 9, 2019)*

County: Lea
 SHL: 980' FSL, 450' FWL
 Sec 29, T 21S, R 29E

BHL: 980' FSL, 450' FWL
 Sec 29, T 21S, R 29E



AFE # 1702848
 XTO ID # N/A
 API # N/A
 Elevation GL 3301.6', KB 3331.6' (30' AGL)
 Rig: TBD (RKB 30')

Geology	Casing & Cement	Wellhead	Hole Size	General Notes
<i>TVD Formation</i>		(Tech Data Sheet)		
203' Top Fresh Water	<i>Tail (100% OH excess)</i> 850 sx 14.8ppg Class C Top of Tail @ 0'	390' MD	24"	
	18-5/8" 87.5# J-65 BTC			
568' Top Salt	<i>Lead (150% OH excess)</i> 1875 sx 12.8ppg Poz/C Top of Lead @ 0	2830' MD	17-1/2"	
2,705' Base Salt	<i>Tail (100% OH excess)</i> 685 sx 14.8ppg Class C Top of Tail @ 2230'			
	13-3/8" 68# HCL-80 BTC			
2,952' Delaware	<i>Lead (100% OH excess)</i> 1755 sx 11.5ppg Poz/H Top of Lead @ 2230'	9830' MD	12-1/4"	
6,665' Bone Spring	<i>Tail (100% OH excess)</i> 400 sx 14.8ppg Poz/H Top of Tail @ 9530'			
9,980' Wolfcamp				
10,169' Wolfcamp Carbonate				
	9-5/8" 53.5# P-110 BTC	10230' MD		
11,461' Strawn	<i>Tail (40% OH excess)</i> 620 sx 14.5ppg Poz/H Top of Tail @ 9830'	14040' MD	8-1/2"	
11,699' Atoka				
12,186' Morrow				
13,416' Mississippian Lm				
13,888' Woodford				
14,022' Devonian	7" 32# P-110 BTC			
14,238' Fusselman	Open hole completion		6"	
14,860' TVD at BHL		14,880' MD 14,860' TVD		
14,872' Montoya				
Approvals				
Prepared by: _____		Peer Reviewed by: _____		
		Date		
Reviewed by: _____		Approved by: _____		

PECOS DISTRICT

DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	XTO PERMIAN OPERATING, LLC
LEASE NO.:	NMLC069144
WELL NAME & NO.:	Big Eddy Unit 29 Federal SWD 1
SURFACE HOLE FOOTAGE:	980' FSL & 450' FWL
BOTTOM HOLE FOOTAGE:	980' FSL & 450' FWL
LOCATION:	Section 29, T. 21 S., R 29 E., NMPM
COUNTY:	Eddy County, New Mexico

Potash	☒ None	☐ Secretary	☐ R-111-P
Cave/Karst Potential	☐ Low	☒ Medium	☐ High
Variance	☐ None	☒ Flex Hose	☐ Other
Wellhead	☒ Conventional	☐ Multibowl	
Other	☐ 4 String Area	☐ Capitan Reef	☐ WIPP

All previous COAs still apply, except for the following:

A. CASING

1. The **18 5/8** inch surface casing shall be set at approximately **420** 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 will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
 - 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 intermediate casing, which shall be set at **2945** feet, 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 or potash.**

❖ In Medium/High Cave/Karst Areas if cement does not circulate to surface on the first two casing strings , the cement on the 3rd casing string must come to surface.

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

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

4. The minimum required fill of cement behind the **7** inch liner is:

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

B. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).
2. 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.
3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **first** intermediate casing shoe shall be **3000 (3M)** psi.
4. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **second** intermediate casing shoe shall be **10,000 (10M)** psi. **Variance is approved to use a 5M Annular which shall be tested to 5000 psi.**

JJP2122019

GENERAL REQUIREMENTS

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

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

☒ Chaves and Roosevelt Counties

Call the Roswell Field Office, 2909 West Second St., Roswell NM 88201.

During office hours call (575) 627-0272.

After office hours call (575)

☒ Eddy County

Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,

(575) 361-2822

☒ Lea County

Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575)

393-3612

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.
2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log.
3. 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.

4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

5. 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.
6. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: 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.
7. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.

- b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.
 - d. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
 - e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
- a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead 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. 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.
 - c. 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 (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
 - d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

- e. The results of the test shall be reported to the appropriate BLM office.
- f. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
- g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.
- h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

D. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

E. WELL COMPLETION

A NOI sundry with the completion procedure for this well shall be submitted and approved prior to commencing completion work. The procedure will be reviewed to verify that the completion proposal will allow the operator to:

- 1. Properly evaluate the injection zone utilizing open hole logs, swab testing and/or any other method to confirm that hydrocarbons cannot be produced in paying quantities. This evaluation shall be reviewed by the BLM prior to injection commencing.**
- 2. Restrict the injection fluid to the approved formation.**

If off-lease water will be disposed in this well, the operator shall provide proof of right-of-way approval.