

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Carlsbad Field Office

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.
NMLC064894A

6. If Indian, Allottee or Tribe Name

SUBMIT IN TRIPLICATE - Other instructions on page 27. If Unit or CA/Agreement, Name and/or No.
891000303X1. Type of Well
☐ Oil Well ☐ Gas Well ☒ Other: UNKNOWN OTH8. Well Name and No.
PLU PIERCE CANYON 17 FED SWD 12. Name of Operator
BOPCO LP
Contact: KELLY KARDOS
E-Mail: kelly_kardos@xtoenergy.com9. API Well No.
30-015-43310-00-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
SALT WATER DISPOSAL (SWD)4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
Sec 17 T25S R30E SESW 1200FSL 2450FWL11. County 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			
<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"/> Hydraulic Fracturing	<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 A
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	PD

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 requests to substitute the following surface casing, in lieu of the 16" surface casing that was approved in the original APD. Note that setting depth is not expected to change, just the casing used for this interval. All of the other casing strings will meet or exceed the originally approved casing configuration.

Proposed casing:

18-5/8" 87.5# J-55 BTC (set at ~825', as the 16" was originally permitted)
Tension safety factor: 7.93 (buoyed weight of casing + 100 kips overpull)
Burst safety factor: 1.72 (assuming MASP from next hole section of 1180 psi)
Collapse safety factor: 1.46 (assuming full evacuation and setting MW of 9.2 ppg on backside)

Accepted for record - NMOCD

SEE ATTACHED FOR
CONDITIONS OF APPROVAL
BLM OIL CONSERVATION
ARTESIA DISTRICT
JAN 16 2018

RECEIVED

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

Electronic Submission #392405 verified by the BLM Well Information System

For BOPCO LP, sent to the Carlsbad

Committed to AFMSS for processing by PRISCILLA PEREZ on 11/09/2017 (18PP0226SE)

Name (Printed/Typed) KELLY KARDOS

Title REGULATORY COORDINATOR

Signature (Electronic Submission)

Date 10/18/2017

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By ZOTA STEVENS

Title PETROLEUM ENGINEER

Date 01/11/2018

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 ****

Additional data for EC transaction #392405 that would not fit on the form

32. Additional remarks, continued

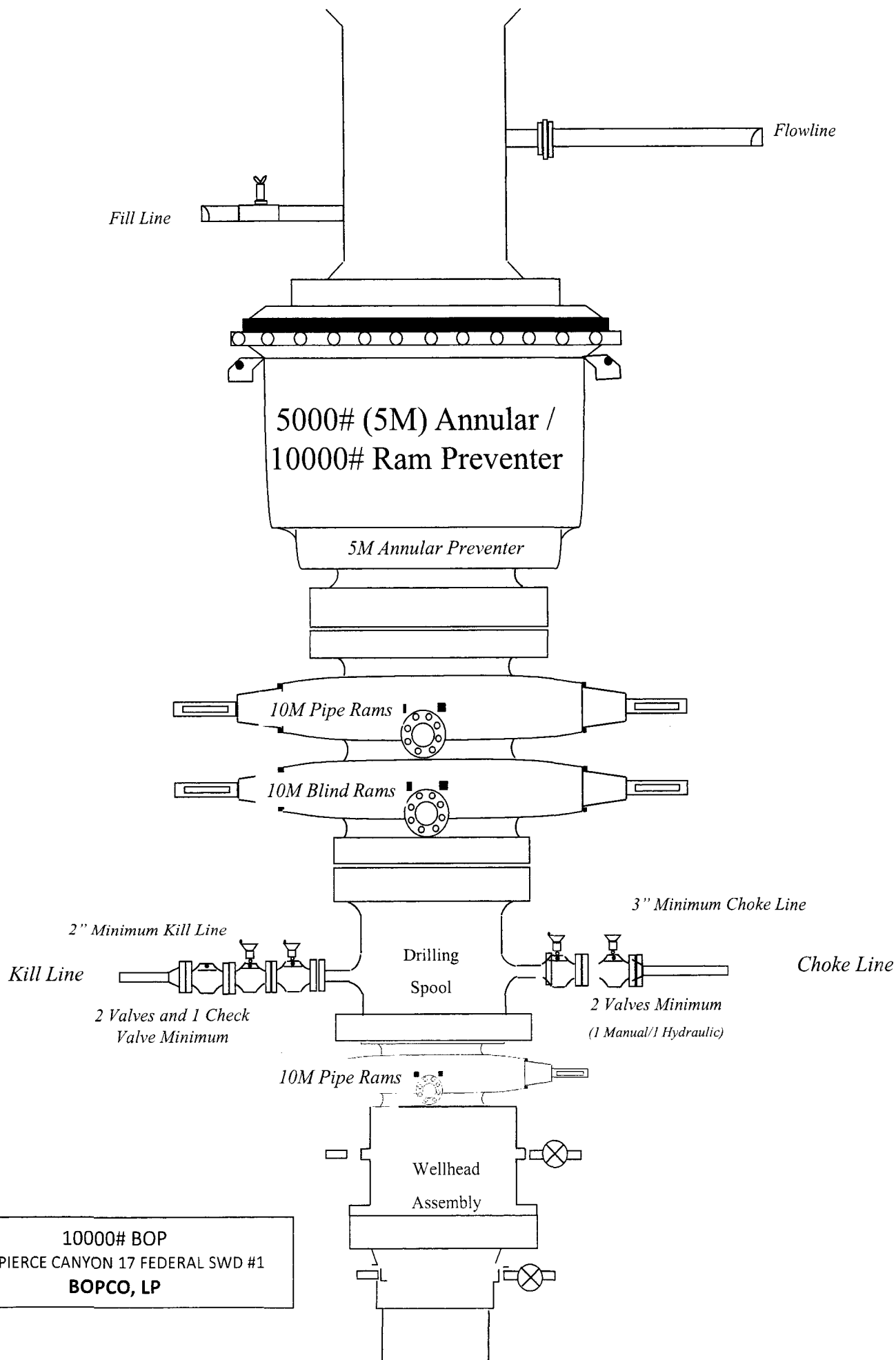
As a result of changing casing/hole size (from 20" casing in 26" hole, to 18-5/8" casing in 24" hole), cement volumes will change as well. Proposed cement details outlined below:

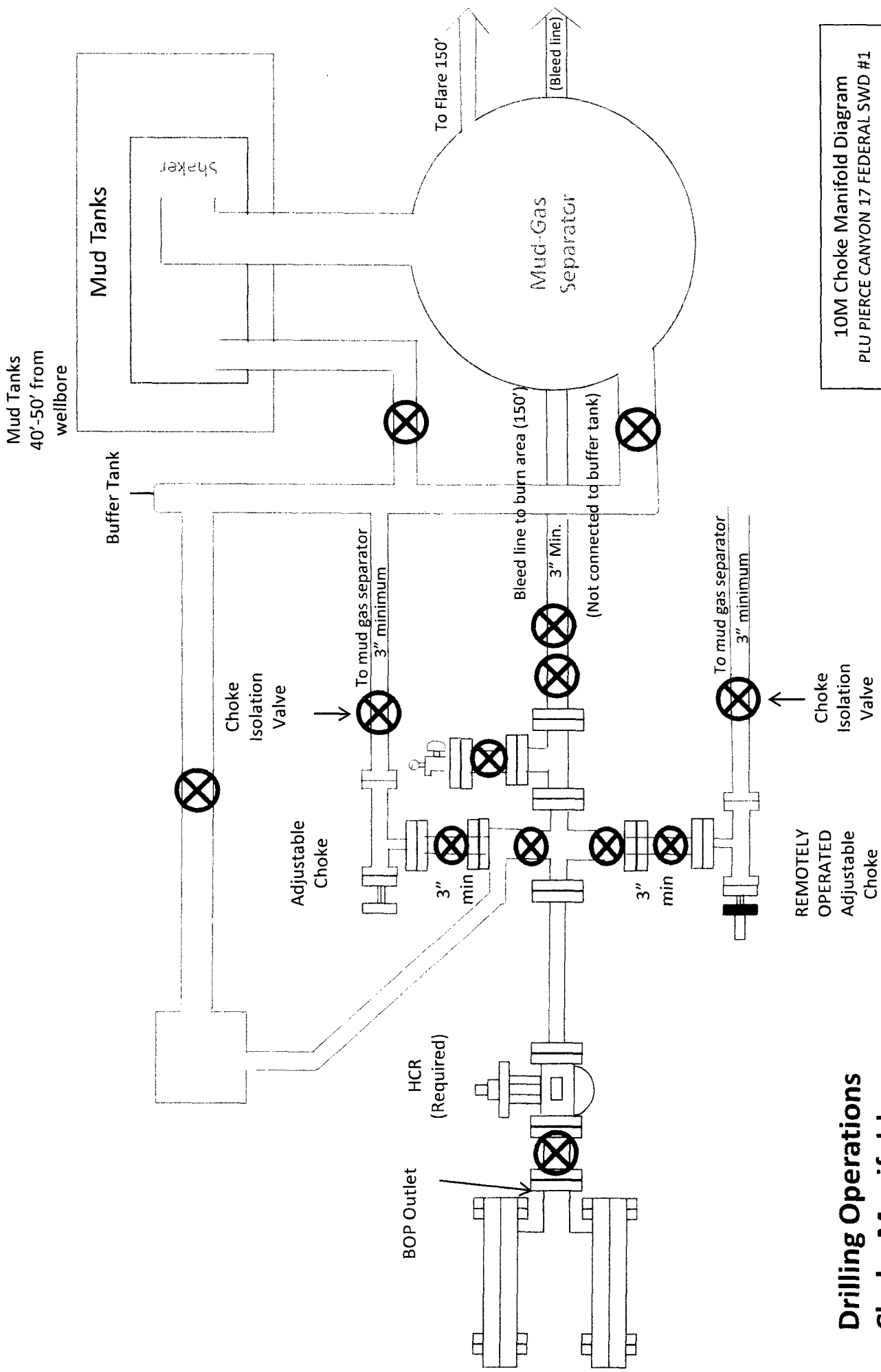
Lead from 325" to surface: 660 sxs EconoCem-HLC + 5pps salt (mixed at 12.9 ppg, 1.88 ft³/sx, 9.99 gal/sx water)

Tail from setting depth (825") to 325": 600 sxs Premium Class C + 1% CaCl₂ (mixed at 14.8 ppg, 1.34 ft³/sx, 6.36 gal/sx water)

Volumes include 100% excess on lead and tail

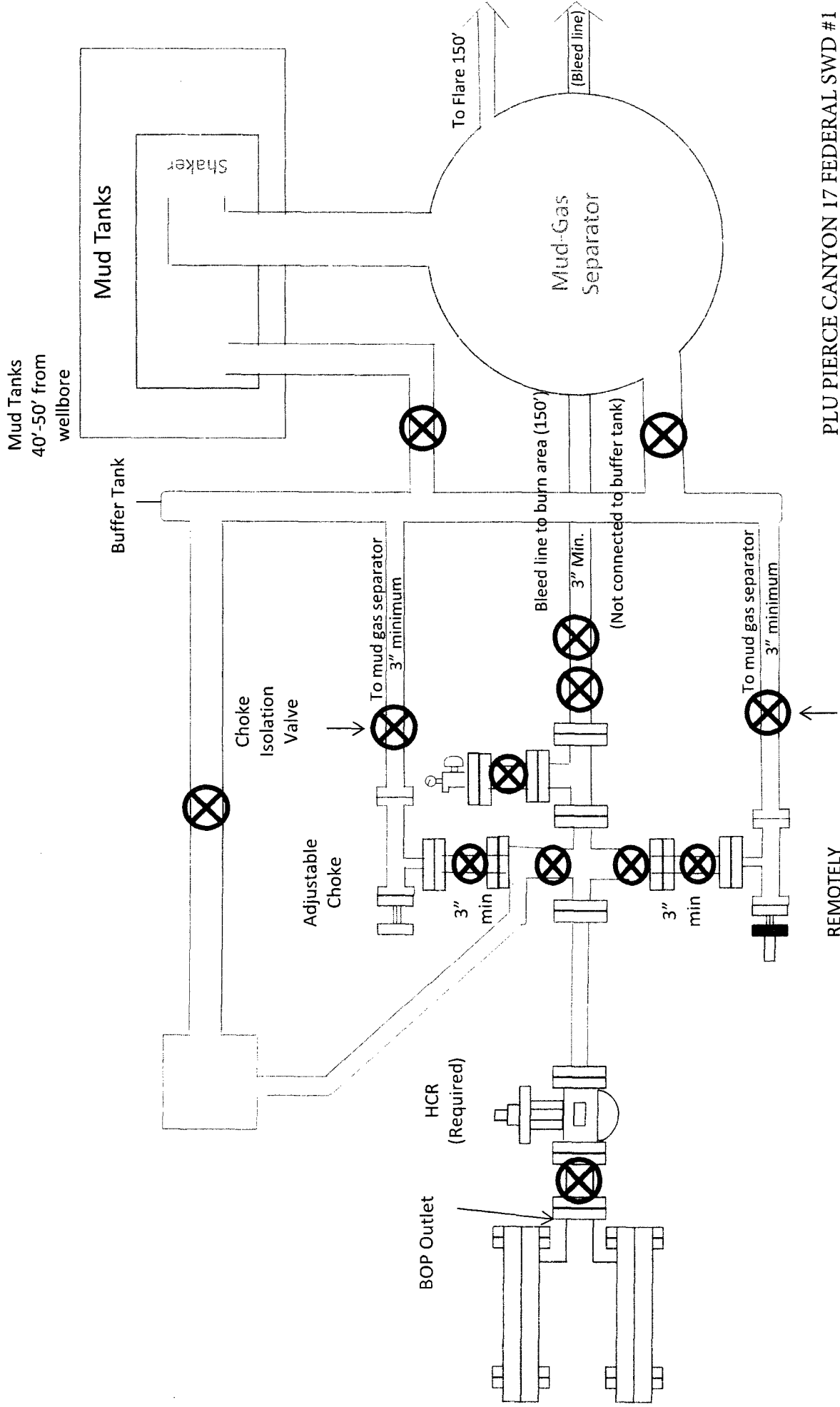
In addition, a variance is requested to utilize a 5M annular preventer on the 10M BOP stack, for any hole section in which 10M well control equipment is required. The 10M BOP stack will be configured as per attached diagram, and will have 3 ram preventers, all of which are rated to 10M. In the unlikely event that a well control event is encountered and subsequently generates surface pressures approaching 5M, the well will be shut in using the 10M-rated ram preventer(s). The associated 10M choke manifold configuration will not change. This ram/annular configuration is a common industry practice. See attached diagrams....





10M Choke Manifold Diagram
 PLU PIERCE CANYON 17 FEDERAL SWD #1
 BOPCO, LP

**Drilling Operations
 Choke Manifold
 10M Service**



Drilling Operations Choke Manifold 10M Service

10M Choke Manifold
DiagramXTO Energy, Inc..

PLU PIERCE CANYON 17 FEDERAL SWD #1

PECOS DISTRICT

DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	BOPCO LP
LEASE NO.:	LC064894A
WELL NAME & NO.:	1-PLU Pierce Canyon 17 Federal SWD
SURFACE HOLE FOOTAGE:	1200'/S & 2450'/W
BOTTOM HOLE FOOTAGE:	'S & 'E
LOCATION:	Sec. 17, T. 25 S., R. 30 E.
COUNTY:	Eddy County, New Mexico

COA

All pervious COAs still apply expect the following:

H2S	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Potash	<input checked="" type="radio"/> None	<input type="radio"/> Secretary	<input type="radio"/> R-111-P
Cave Karst Potential	<input checked="" type="radio"/> Low	<input type="radio"/> Medium	<input type="radio"/> High
Variance	<input type="radio"/> None	<input checked="" type="radio"/> Flex Hose	<input type="radio"/> Other
Wellhead	<input checked="" type="radio"/> Conventional	<input type="radio"/> Multibowl	<input type="radio"/> Both
Other	<input type="checkbox"/> 4 String Area	<input type="checkbox"/> Capitan Reef	<input type="checkbox"/> WIPP

A. Hydrogen Sulfide

A Hydrogen Sulfide (H2S) Drilling Plan shall be activated 500 feet prior to drilling into the **Delaware** formation. As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.

B. CASING

1. The **18 5/8 inch** surface casing shall be set at approximately **825** 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 1st intermediate casing is: Cement to surface. If cement does not circulate see B.1.a, c-d above. **Additional cement maybe required. Excess calculates to 0%.**

Operator shall filled 1/3rd of 2nd intermediate casing and production casing with fluid while drilling to maintain collapse safety factor.

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

Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

- a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.
 - b. Second stage above DV tool: Cement should tie-back at least 500 feet into previous casing string. Operator shall provide method of verification.
4. The minimum required fill of cement behind the **7** inch production casing is:
 - Cement should tie-back 200' into the previous casing. Operator shall provide method of verification. **Additional cement maybe required. Excess calculates to 6%.**

C. 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 **13-3/8** 1st intermediate casing shoe shall be **5000 (5M)** psi.
4. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9-5/8** 2nd intermediate casing shoe shall be **10,000 (10M)** psi.

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)

☒ Eddy County

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

1. 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.
 - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
 - b. When the operator proposes to set surface casing with Spudder Rig
 - Notify the BLM when moving in and removing the Spudder Rig.
 - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
 - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.
2. 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.
3. 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.

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. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
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. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
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

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. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. 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.
3. 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. 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.
 - e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
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, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).
- c. The tests shall be done by an independent service company utilizing a test plug. The results of the test shall be reported to the appropriate BLM office.
- 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. 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. This test shall be performed prior to the test at full stack pressure.
- g. 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.

Waste Minimization Plan (WMP)

In the interest of resource development, submission of additional well gas capture development plan information is deferred but may be required by the BLM Authorized Officer at a later date.

ZS 11118

253017N SUNDRY PLU PIERCE CANYON 17 FED SWD 1 30025 NMLC064894A XTO
ENERGY 12-55 392405 01112018 ZS

Medium

18 5/8 Segment	surface csg in a #/ft	24 Grade	inch hole. Coupling	Joint	<u>Design Factors</u>		SURFACE		
"A"	87.50	J 55	BUTT	18.41	Collapse	Burst	Length	Weight	
"B"					1.6	1.16	825	72,188	
							0	0	
w/8.4#/g mud, 30min Sfc Csg Test psig: 1,215			Tail Cmt	does not	circ to sfc.	Totals:	825	72,188	
<u>Comparison of Proposed to Minimum Required Cement Volumes</u>									
Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Req'd	Min Dist
Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE	Hole-Cplg
24	1.2496	1260	2045	1186	72	9.20	1131	2M	12.00

13 3/8	casing inside the	18 5/8					<u>Design Factors</u>		INTERMEDIATE	
Segment	#/ft	Grade		Coupling	Joint	Collapse	Burst	Length	Weight	
"A"	68.00	HCL 80		U F Joint	4.28	1.5	0.89	3,650	248,200	
"B"								0	0	
w/8.4#/g mud, 30min Sfc Csg Test psig:							Totals:	3,650	248,200	
The cement volume(s) are intended to achieve a top of					0	ft from surface or a		825	overlap.	
Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Req'd	Min Dist	
Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE	Hole-Cplg	
14 3/4	0.2109	730	1240	1246	0	10.20	3120	5M	0.65	

Burst Frac Gradient(s) for Segment(s): A, B, C, D = 1.38, b, c, d

9 5/8 Segment	casing inside the #/ft	13 3/8 Grade	Coupling	Joint	Design Factors		INTERMEDIATE		
"A"	53.50	P 110	LT&C	2.33	Collapse	Burst	Length	Weight	
"B"					1.41	0.93	11,407	610,275	
							0	0	
w/8.4#/g mud, 30min Sfc Csg Test psig: 2,510						Totals:	11,407	610,275	
The cement volume(s) are intended to achieve a top of				3450	ft from surface or a		200	overlap.	
Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Req'd	Min Dist
Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE	Hole-Cplg
12 1/4	0.3132	look ↘	0	2514		9.50	7712	10M	0.81
Setting Depths for D V Tool(s):			5500				sum of sx	Σ CuFt	Σ%excess
% excess cmt by stage:		51	72				2060	3933	56

Class 'H' tail cmt yld > 1.20

MASP is within 10% of 5000psig, need exrta equip?

Burst Frac Gradient(s) for Segment(s): A, B, C, D =

ALT. COLLAPSE SF=1.5*.93=1.4

0.96, b, c, d All > 0.70, OK.

Tail cmt

7	casing inside the		9 5/8	A Buoyant		Design Factors		PRODUCTION	
Segment	#/ft	Grade		Coupling	Joint	Collapse	Burst	Length	Weight
"A"	29.00	HCP 110		LT&C	2.00	0.86	0.96	16,470	477,630
"B"								0	0
w/8.4#/g mud, 30min Sfc Csg Test psig: 667							Totals:	16,470	477,630
The cement volume(s) are intended to achieve a top of					11207	ft from surface or a		200	overlap.
Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Req'd	Min Dist
Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE	Hole-Cplg
8 1/2	0.1268	580	719	677	6	12.50			0.42

Class 'H' tail cmt yld > 1.20

Capitan Reef est top XXXX.

MASP is within 10% of 5000psig, need exrta equip?

Burst Frac
Gradient(s)

ALT. COLLAPSE SF= 1.5*.89=1.29