District I 1625 N French Dr., Hobbs, NM 88240 <u>District II</u> 1301 W. Grand Avenue, Artesia, NM 88210 District III 1000 Rio Brazos Road, Aztec, NM 87410 District IV 1220 S St. Francis Dr., Santa Fe, NM 87505

State of New Mexico Energy Minerals and Natural Resources Department Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505

For temporary pits, closed-loop systems, and below-grade tanks, submit to the appropriate NMOCD District Office.

For permanent pits and exceptions submit to the Santa Fe Environmental Bureau office and provide a copy to the appropriate NMOCD District Office.

Pit, Closed-Loop System, Below-Grade Tank, or
Proposed Alternative Method Permit or Closure Plan Application
Type of action: X Permit of a pit, closed-loop system, below-grade tank, or proposed alternative method Closure of a pit, closed-loop system, below-grade tank, or proposed alternative method Modification to an existing permit Closure plan only submitted for an existing permitted or non-permitted pit, closed-loop system, below-grade tank, or proposed alternative method
Instructions: Please submit one application (Form C-144) per individual pit, closed-loop system, below-grade tank or alternative request
Please be advised that approval of this request does not relieve the operator of liability should operations result in pollution of surface water, ground water or the environment. Nor does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rules, regulations or ordinances.
1. Operator: XTO Energy, Inc. OGRID #: 5380
Address: #382 County Road 3100, Aztec, NM 87410
Facility or well name: Breech C #144F
API Number: 30-039-31070 OCD Permit Number:
U/L or Qtr/Qtr G Section 12 Township 26N Range 6W County: Rio Arriba
Center of Proposed Design: Latitude 36.50430 Longitude 107.41678 NAD: □1927 ☒ 1983
Surface Owner: K Federal State Private Tribal Trust or Indian Allotment
2. Pit: Subsection F or G of 19.15.17.11 NMAC
Temporary: \(\infty\) Drilling \(\sum\) Workover
Permanent ☐ Emergency ☐ Cavitation ☐ P&A
<u> </u>
∐ Lined ☐ Unlined Liner type: Thickness 20 mil ☑ LLDPE ☐ HDPE ☐ PVC ☐ Other
✓ String-Reinforced Lines Scorner M Welded M Featons □ Other
Liner Seams: Welded Factory Other Volume: bbl Dimensions: L 200 x W 80 x D 8-12
3. X Closed-loop System: Subsection H of 19.15.17.11 NMAC
Type of Operation: P&A X Drilling a new well Workover or Drilling (Applies to activities which require prior approval of a permit or notice of intent). To be used during completion operations.

Liner Seams: Welded Factory Other	37			13.16
4. Below-grade tank: Subsection I of 19.15.17.11 NMAC		ONG	ONS. DIV	516
Volume:bbl Type of fluid:	100	Š	- 0/1/	
Tank Construction material:	/	~25°	7757354	
☐ Secondary containment with leak detection ☐ Visible sidewalls, liner, 6-inch lift and automatic overflow shut-o	ff	100	222324	
☐ Visible sidewalls and liner ☐ Visible sidewalls only ☐ Other			_	
Liner type: Thicknessmil				

Alternative Method:

Submittal of an exception request is required. Exceptions must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

☐ Drying Pad ☐ Above Ground Steel Tanks ☐ Haul-off Bins ☐ Other _

☐ Lined ☐ Unlined Liner type: Thickness _____ mil ☐ LLDPE ☐ HDPE ☐ PVC ☐ Other

Fencing: Subsection D of 19.15.17.11 NMAC (Applies to permanent pits, temporary pits, and below-grade tanks) Chain link, six feet in height, two strands of barbed wire at top (Required if located within 1000 feet of a permanent residence, school, institution or church) Solution Four foot height, four strands of barbed wire evenly spaced between one and four feet	hospital,				
Alternate. Please specify					
Netting: Subsection E of 19.15.17.11 NMAC (Applies to permanent pits and permanent open top tanks) Screen Netting Other Monthly inspections (If netting or screening is not physically feasible)					
 Signs: Subsection C of 19.15.17.11 NMAC □ 12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers ☑ Signed in compliance with 19.15.3.103 NMAC 					
Administrative Approvals and Exceptions: Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17 NMAC for guidance. Please check a box if one or more of the following is requested, if not leave blank: Administrative approval(s): Requests must be submitted to the appropriate division district or the Santa Fe Environmental Bureau office for consideration of approval. Fencing- Hogwire Exception(s): Requests must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.					
10. Siting Criteria (regarding permitting): 19.15.17.10 NMAC Instructions: The applicant must demonstrate compliance for each siting criteria below in the application. Recommendations of accept material are provided below. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau office for consideration of applicant must attach justification for request. Please refer to 19.15.17.10 NMAC for guidance. Siting criteria does not apply to drying above-grade tanks associated with a closed-loop system.	priate district pproval.				
Ground water is less than 50 feet below the bottom of the temporary pit, permanent pit, or below-grade tank. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☐ No				
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No				
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. (Applies to temporary, emergency, or cavitation pits and below-grade tanks) - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☐ No ☐ NA				
Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. (Applies to permanent puts) - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☐ No ☐ NA				
Within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, in existence at the time of initial application. - NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site	Yes No				
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality; Written approval obtained from the municipality	☐ Yes ☐ No				
Within 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No				
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	☐ Yes ☐ No				
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	☐ Yes ☐ No				
Within a 100-year floodplain FEMA map	☐ Yes ☐ No				

Temporary Pits, Emergency Pits, and Below-grade Tanks Permit Application Attachment Checklist: Subsection B of 19.15.17.9 NMAC Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are
 attached. Hydrogeologic Report (Below-grade Tanks) - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC Hydrogeologic Data (Temporary and Emergency Pits) - based upon the requirements of Paragraph (2) of Subsection B of 19.15.17.9 NMAC Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC
Previously Approved Design (attach copy of design) API Number: or Permit Number:
Closed-loop Systems Permit Application Attachment Checklist: Subsection B of 19.15.17.9 NMAC Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached. Geologic and Hydrogeologic Data (only for on-site closure) - based upon the requirements of Paragraph (3) of Subsection B of 19.15.17.9 Siting Criteria Compliance Demonstrations (only for on-site closure) - based upon the appropriate requirements of 19.15.17.10 NMAC Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC
Previously Approved Design (attach copy of design) API Number:
Previously Approved Operating and Maintenance Plan API Number:(Applies only to closed-loop system that use
above ground steel tanks or haul-off bins and propose to implement waste removal for closure)
Permanent Pits Permit Application Checklist: Subsection B of 19.15.17.9 NMAC Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached. Hydrogeologic Report - based upon the requirements of Paragraph (1) of Subsection B of 19.15.17.9 NMAC Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC Climatological Factors Assessment Certified Engineering Design Plans - based upon the appropriate requirements of 19.15.17.11 NMAC Dike Protection and Structural Integrity Design - based upon the appropriate requirements of 19.15.17.11 NMAC Leak Detection Design - based upon the appropriate requirements of 19.15.17.11 NMAC Liner Specifications and Compatibility Assessment - based upon the appropriate requirements of 19.15.17.11 NMAC Quality Control/Quality Assurance Construction and Installation Plan Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC Freeboard and Overtopping Prevention Plan - based upon the appropriate requirements of 19.15.17.11 NMAC Nuisance or Hazardous Odors, including H ₂ S, Prevention Plan Emergency Response Plan Oil Field Waste Stream Characterization Monitoring and Inspection Plan Erosion Control Plan Closure Plan - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC
Proposed Closure: 19.15.17.13 NMAC Instructions: Please complete the applicable boxes, Boxes 14 through 18, in regards to the proposed closure plan.
Type:
Waste Excavation and Removal Closure Plan Checklist: (19.15.17.13 NMAC) Instructions: Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached. Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings) Soil Backfill and Cover Design Specifications - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC Re-vegetation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

	Closed-loop Systems That Utilize Above Ground the facility or facilities for the disposal of liquids		
Disposal Facility Name:	Envirotech	Disposal Facility Permit Number:	NM01-0011
Disposal Facility Name:	IEI	Disposal Facility Permit Number:	NM01-0010B
	1-loop system operations and associated activities de the information below) \(\overline{\mathbb{X}} \) No	occur on or in areas that will not be used for	or future service and operations?
☐ Soil Backfill and Cover ☐ Re-vegetation Plan - bas	hich will not be used for future service and operate Design Specifications based upon the appropriated upon the appropriate requirements of Subsection based upon the appropriate requirements of Subsection	te requirements of Subsection H of 19.15.1 in I of 19.15.17.13 NMAC	17.13 NMAC
Instructions: Each siting crite provided below. Requests rega considered an exception which	esite closure methods only): 19.15.17.10 NMAC eria requires a demonstration of compliance in the arding changes to certain siting criteria may requ a must be submitted to the Santa Fe Environment o are required. Please refer to 19.15.17.10 NMAC	e closure plan. Recommendations of acc ire administrative approval from the appr tal Bureau office for consideration of app	ropriate district office or may be
	et below the bottom of the buried waste. Engineer - iWATERS database search; USGS; Da	ata obtained from nearby wells	☐ Yes ☒ No ☐ NA
	d 100 feet below the bottom of the buried waste Engineer - iWATERS database search; USGS; Da	ata obtained from nearby wells	☐ Yes 🖾 No ☐ NA
	feet below the bottom of the buried waste. Engineer - iWATERS database search; USGS; Da	ata obtained from nearby wells	
lake (measured from the ordina	sly flowing watercourse, or 200 feet of any other sury high-water mark). al inspection (certification) of the proposed site	ignificant watercourse or lakebed, sinkhole	e, or playa Yes X No
	ent residence, school, hospital, institution, or churchification) of the proposed site; Aerial photo; Satelli		ation. Yes No
watering purposes, or within 10	private, domestic fresh water well or spring that le 000 horizontal feet of any other fresh water well or Engineer - iWATERS database; Visual inspection	spring, in existence at the time of initial a	
adopted pursuant to NMSA 193	boundaries or within a defined municipal fresh wa 78, Section 3-27-3, as amended. r verification from the municipality; Written appro	•	ordinance Yes X No
Within 500 feet of a wetland US Fish and Wildlife V	Vetland Identification map; Topographic map; Vis	ual inspection (certification) of the propose	☐ Yes ☒ No
Within the area overlying a sub - Written confirmation o	surface mine. r verification or map from the NM EMNRD-Minin	ng and Mineral Division	☐ Yes 🏿 No
Within an unstable area. - Engineering measures in Society; Topographic in	incorporated into the design; NM Bureau of Geolo	gy & Mineral Resources; USGS; NM Geo	ological Yes 🛛 No
Within a 100-year floodplain FEMA map			☐ Yes ☒ No
by a check mark in the box, th Siting Criteria Complian Proof of Surface Owner Construction/Design Pla Construction/Design Pla Protocols and Procedure Confirmation Sampling Waste Material Sampling Disposal Facility Name a Soil Cover Design - base Re-vegetation Plan - base	ist: (19.15.17.13 NMAC) Instructions: Each of a the documents are attached. ce Demonstrations - based upon the appropriate requirements in of Burial Trench (if applicable) based upon the nof Temporary Pit (for in-place burial of a drying is - based upon the appropriate requirements of 19. Plan (if applicable) - based upon the appropriate requirements of and Permit Number (for liquids, drilling fluids and it upon the appropriate requirements of Subsection and upon the appropriate requirements of Subsection and upon the appropriate requirements of Subsection and upon the appropriate requirements of Subsection based upon the appropriate	equirements of 19.15.17.10 NMAC of Subsection F of 19.15.17.13 NMAC appropriate requirements of 19.15.17.11 N pad) - based upon the appropriate requirer 15.17.13 NMAC equirements of Subsection F of 19.15.17.13 of Subsection F of 19.15.17.13 NMAC I drill cuttings or in case on-site closure standard of 19.15.17.13 NMAC on I of 19.15.17.13 NMAC	NMAC ements of 19.15.17.11 NMAC 3 NMAC

Operator Application Certification: I hereby certify that the information submitted with this application is true	e, accurate and complete to the best of my knowledge and belief.
Name (Print): Malia Villers	Title: Permitting Tech.
Signature: Main Willens	Date: 6/9/1
e-mail address: malia_villers@xtoenergy.com	Telephone: (505) 333-3100
OCD Approval: Permit Application (including closure plan) Closure OCD Representative Signature: Title:	OCD Permit Number:
	prior to implementing any closure activities and submitting the closure report. ys of the completion of the closure activities. Please do not complete this the closure activities have been completed.
	Closure Completion Date:
22. Closure Method: Waste Excavation and Removal On-Site Closure Method If different from approved plan, please explain.	Alternative Closure Method
two facilities were utilized. Disposal Facility Name: Disposal Facility Name: Were the closed-loop system operations and associated activities performe ☐ Yes (If yes, please demonstrate compliance to the items below) ☐ Required for impacted areas which will not be used for future service and ☐ Site Reclamation (Photo Documentation) ☐ Soil Backfilling and Cover Installation ☐ Re-vegetation Application Rates and Seeding Technique	ds, drilling fluids and drill cuttings were disposed. Use attachment if more than Disposal Facility Permit Number: Disposal Facility Permit Number: d on or in areas that will not be used for future service and operations? No operations.
mark in the box, that the documents are attached. Proof of Closure Notice (surface owner and division) Proof of Deed Notice (required for on-site closure) Plot Plan (for on-site closures and temporary pits) Confirmation Sampling Analytical Results (if applicable) Waste Material Sampling Analytical Results (required for on-site closures) Disposal Facility Name and Permit Number Soil Backfilling and Cover Installation Re-vegetation Application Rates and Seeding Technique Site Reclamation (Photo Documentation)	wing items must be attached to the closure report. Please indicate, by a check osure) Longitude NAD:
25. Operator Closure Certification:	
	osure report is true, accurate and complete to the best of my knowledge and equirements and conditions specified in the approved closure plan.
Name (Print):	Title:
Signature:	Date:
e-mail address:	Telephone:



Pit Permit Siting Criteria Information Sheet

Client:	XTO Energy	
Project:	Pit Permits	
Revised:	3/31/2011	
Prepared by:	Dustin Held	

1 310 300	information Sneet	Prepared by:	Dustin Held
API#:	NA]	USPLSS:	T26N, R6W, S12G
Name:	Breech C #144F	Lat/Long:	36.50430, -107.41678
Depth to groundwater:	> 100 feet	Geologic formation:	San Jose Formation
Distance to closest continuously flowing watercourse:	23.6 miles NW to San Juan River		
Distance to closest significant watercourse, lakebed, playa lake, or sinkhole:	344 feet E to 2nd order tributary of Albert Lake; 2,000 feet E to Albert Canyon; 3,650 feet S-SE to Albert Lake		
		Soil Type:	Entisols
Permanent residence, school, hospital, institution or church within 300'	NO		
		Annual Precipitation:	8.21" - Farmington; 10.41" Otis; 8.71" Bloomfield
Domestic fresh water well or spring within 500'	NO	Precipitation Notes:	no significant precipitation events on record
Any other fresh water well or spring within 1000'	NO		
Within incorporated municipal boundaries	NO	Attached Documents:	Hydrogeologic Report Figure 1: Topographic Map Figure 2: Aerial Photo
Within defined municipal fresh water well field	NO		Figure 3: Mines, Mills and Quarries Map Figure 4: Water Well and Surface Water Features Figure 5: Municipal Boundaries Map Figure 6: FEMA Flood Zone Map iWaters Data
Wetland within 500'	NO	Mining Activity:	None identified in the vicinity
Within unstable area	NO		
Within 100 year flood plain	NO .		
Additional Notes:			

DISTRICT 1 1625 N French Dr., Robbs, N.M. 68840

State of New Mexico Energy, Minerals & Natural Resources Department

Form C-102 Revised October 12, 2005

DISTRICT E 1301 V. Grand Avenue, Artesia, N.M. 88210

DISTRICT III 1000 Rio Brazos Rd., Astec, N.M. 87410 OIL CONSERVATION DIVISION 1220 South St. Francis Dr. Santa Fe, NM 87506 Submit to Appropriate District Office State Lease - 4 Copies Fee Lease - 3 Copies

Certificate Number

10201

☐ AMENDED REPORT

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe. NM 87505

		· · · · · · · · · · · · · · · · · · ·	WEIT T		N AND A	CREAGE DE	DICA	TION PI	.AT	
¹ API	Number			^a Pool Code				Pool Nam	0	
*Property C	ode		<u> </u>	····	Propert	y Name			• 1	ell Number
		BREECH C 144F								144F
OGRID N	o.				*Operato			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		Elevation
	1				XTO E	NERGY 				6663' —————
					10 Surface	e Location				
L or lot no. G	Section 12	Township 26N	Range 6W	Lot Idn	Feet from the 1722'	North/South 11 NORTH	ne Fee	t from the 1975'	East/West line EAST	County RIO ARRIB
			11 Bott	om Hole	Location	If Different	From	Surface		
L or lot no.	Section	Township	Range	Lot Idn	Feet from the			t from the	East/West line	County
	<u> </u>		1		•• -					<u> </u>
Dedicated Acre	55		Joint or	Infill	24 Consolidation	1 Code	n Or	der No.		
								•		
NO ALLOW	ABLE W					ION UNTIL A				ONSOLIDATI
					***************************************	BEEN APPROV	ED BY			
		N 89'32'			1.70' (M) ¢0' (R)			17 OP	ERATOR CER	TIFICATION
ND 3.25" BC BLM 1957	i	55 22	•	02,0.		FND 3.2 BLM 11	5" BC " 957	/ hereby	certify that the informa nd complete to the best	ition contained her
	,	,		1				belief, an	d that this organization	oither owns a
				1	1				interest or unleased mis	
	•	ł		ı	Ż				uding the proposed bott o drill this well at this	
	ı			ł				contract (with an owner or a con	npulsory pooling or
	ĺ							heretojore	entered by the division	· .
	I			1						
		 -		-	`	·		Signatu	T-8	Date
					<u></u>	1975'			W	·····
	ı		LONG. 1	50430° N 07.41676° W	,		2. (R)	Printed 18 SI	JRVEYOR CE	PTFICATIO
				NAD 1983) 50428' N			5335.20' (i	riffy that the well local	
	1		LONG 1	07.41618' W			55 53		from field notes of act	
	1		DATUM (NAD 1927)			က်		r my supervision, and to the best of my belie	
			 '	1,2						
	. }						щ	Date of S	1AY 15, 200	8
				1			28		and Seal of Professio	nal Surveyor:
	į						2,13			
	-			1	1		0 2	1 de	PRK	isself
	!			1			7			. 🔨
			·	-	- i		\dashv			
					ı		İ			1.
									•	j j
	'			F .	ł		}			,
	1									,
	1			•	ľ			_	M/// PL 400"	1
	1			Į.				U	AVID RUSSE	

LATITUDE 36 50430°N LONGITUDE 107 41678°W DATUM NAD 83

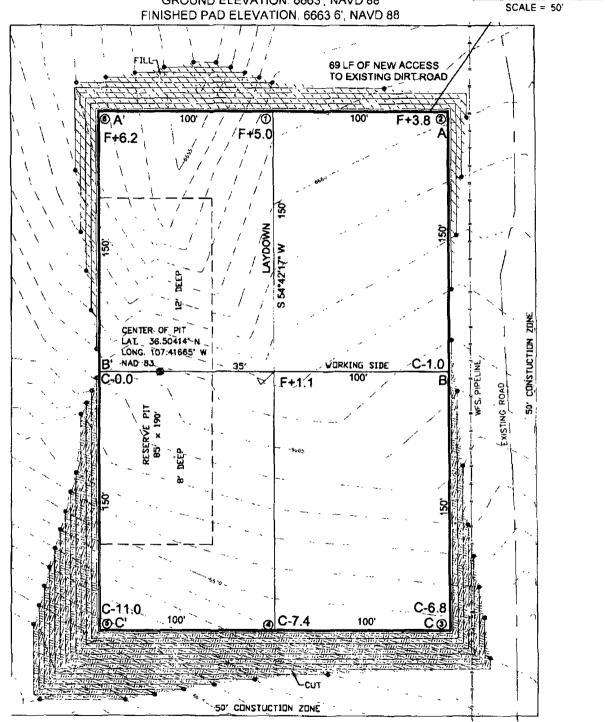
XTO ENERGY

BREECH C #144F 1722' FNL & 1975' FEL

LOCATED IN THE SW/4 NE/4 OF SECTION 12. T26N, R6W, NMPM,

RIO ARRIBA COUNTY, NEW MEXICO GROUND ELEVATION: 6663', NAVD 88





1 FOOT CONTOUR INTERVAL SHOWN

SCALE: 1" = 50'

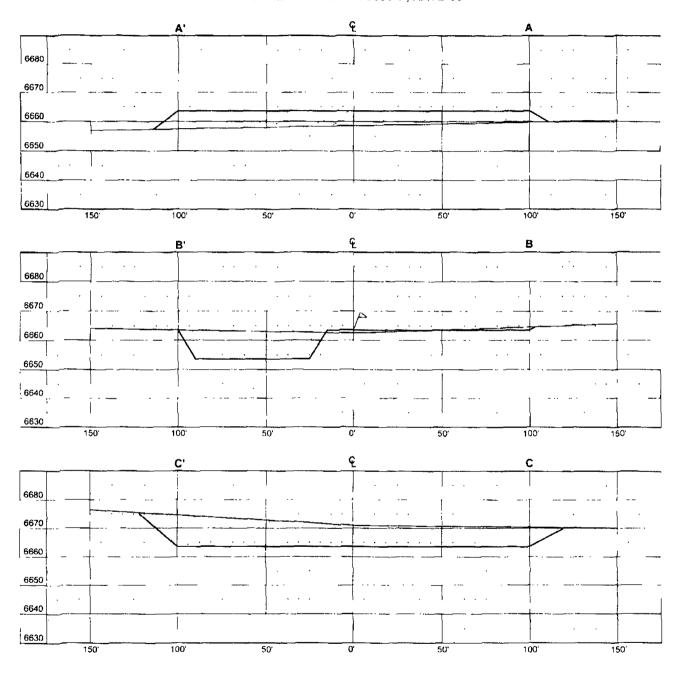
JOB No.: XTO024_REV1 DATE: 05/27/08



Russell Surveying 1409 W. Aztec Blvd. #2 Aztec, New Mexico 87410 (505) 334-8637

XTO ENERGY

BREECH C #144F 1722' FNL & 1975' FEL LOCATED IN THE SW/4 NE/4 OF SECTION 12, T26N, R6W, N M.P.M., RIO ARRIBA COUNTY, NEW MEXICO GROUND ELEVATION, 6663', NAVD 88 FINISHED PAD ELEVATION, 6663.61, NAVD 88



VERT. SCALE. 1" = 30" HORZ. SCALE: 1" = 50" JOB No.: XTO024_REV1

DATE: 05/27/08



Russell Surveying 1409 W. Aztec Blvd. #2 Aztec, New Mexico 87410 (505) 334-8637



2243 Main Avenue, Suite 3 Durango, Colorado 81301 T 970.385 1096 / F 970.385.1873

Breech C #144F

Hydrogeologic Report for Siting Criteria

General Geology and Hydrology

The San Juan Basin is a typical Rocky Mountain basin with a gently dipping southern flank and a steeply dipping northern flank. Asymmetrically layered Tertiary sandstones and shales, along with Quaternary alluvial deposits, dominate the surficial geology (Dane and Bachman, 1965). The proposed pit location will be situated on the undulating surface of Ensenada Mesa near the head of Albert Canyon (Figure 1). The predominant geologic formation is the San Jose Formation, which underlies surface soils or is exposed as sandstone outcrops. The San Jose Formation occurs in both New Mexico and Colorado and its outcrop forms the land surface over much of the eastern half of the central basin.

Cretaceous and Tertiary sandstones and Quaternary alluvial deposits serve as the primary aquifers in the San Juan Basin (Stone et al., 1983). In the proposed area, the San Jose Formation was deposited in various fluvial-type environments. In general, the unit consists of an interbedded sequence of sandstone, siltstone, and shale. Groundwater is associated with alluvial and fluvial sandstone aquifers. Porous sandstones form the principal aquifers, while relatively impermeable shales and mudstones form confining units between the aquifers (Stone et al., 1983). The aquifers are found between 0 and 2700 feet deep (Stone et al., 1983). The reported or measured discharge from numerous water wells completed in the formation range from 0.15 to 61 gallons per minute (gpm) of production, with a median of 5 gpm. Most of the wells provide water for livestock and domestic purposes.

The formation is suitable for recharge from precipitation due to the sandy nature of overlying soils, which are highly permeable and absorbent. However, low annual precipitation, relatively high transpiration and evaporation rates, and deep dissection of the formation by the San Juan River and its main tributaries all tend to reduce the effective recharge to the formation. Most recharge occurs during the winter months during snowmelt periods within the upper elevations (Western Regional Climate Center, www.wrcc.dri.edu).

The predominant vegetation is sagebrush and grasses with a more restricted piñon-juniper association (Dick-Peddie, 1993).

Site-Specific Hydrology

Ensenada Mesa lies to the north of Largo Canyon. It consists of shales and sandstones of the San Jose Formation (Dane and Bachman, 1965). The site in question is located on the east end of Ensenada Mesa, south of Albert Mesa at an elevation of approximately 6,663 feet above sea level (Figures 1 and 2). The immediate surrounding area consists of shallow washes and canyons that have eroded through the sandstone into underlying shale units. The washes drain to Albert Canyon, a major tributary of Largo Canyon.



Depth to groundwater is estimated to be greater than 100 feet below ground surface (bgs). This estimation is based on data from Stone and others (1983), the USGS Groundwater Atlas of the United States, and depth to groundwater data published on the New Mexico State Engineer's iWaters Database website. Local topography and proximity to surface hydrologic features are also taken into consideration, as well as test wells drilled in the vicinity by XTO Energy, Inc (XTO).

Groundwater data available from the New Mexico State Engineer's iWaters Database for wells near the proposed site are attached. The wells are more than two miles away and may not be representative of site conditions. However, the data suggest that wells located within surrounding canyons contain shallow groundwater between 10 and 25 feet beneath ground surface. Wells that exist on top of mesas at similar elevations to Ensenada Mesa contain groundwater at 100 to 450 feet depth.

More locally, standing water and wetland vegetation are present in shallow surface depressions on top of Ensenada Mesa. The presence of these features suggests groundwater is perched just beneath the ground surface nearby. In order to verify depth to groundwater in the area, XTO drilled several test wells in 2008. An air rotary drill with a 5½ -inch drag bit was used to advance holes at several locations on Ensenada Mesa. Holes were drilled to 65 feet below ground surface and allowed to sit for one hour before being measured. If, after one hour, the hole was dry, it was advanced to 115 feet below ground surface. Once total depth was reached, XTO waited another hour before measuring for water. One such borehole was drilled approximately 4,500 feet west and 75 feet lower in elevation than the proposed pit location. Depth to water was determined to be greater than greater than 115 feet deep in the well. Based on this information, groundwater is estimated to be greater than 100 feet deep at the proposed site.

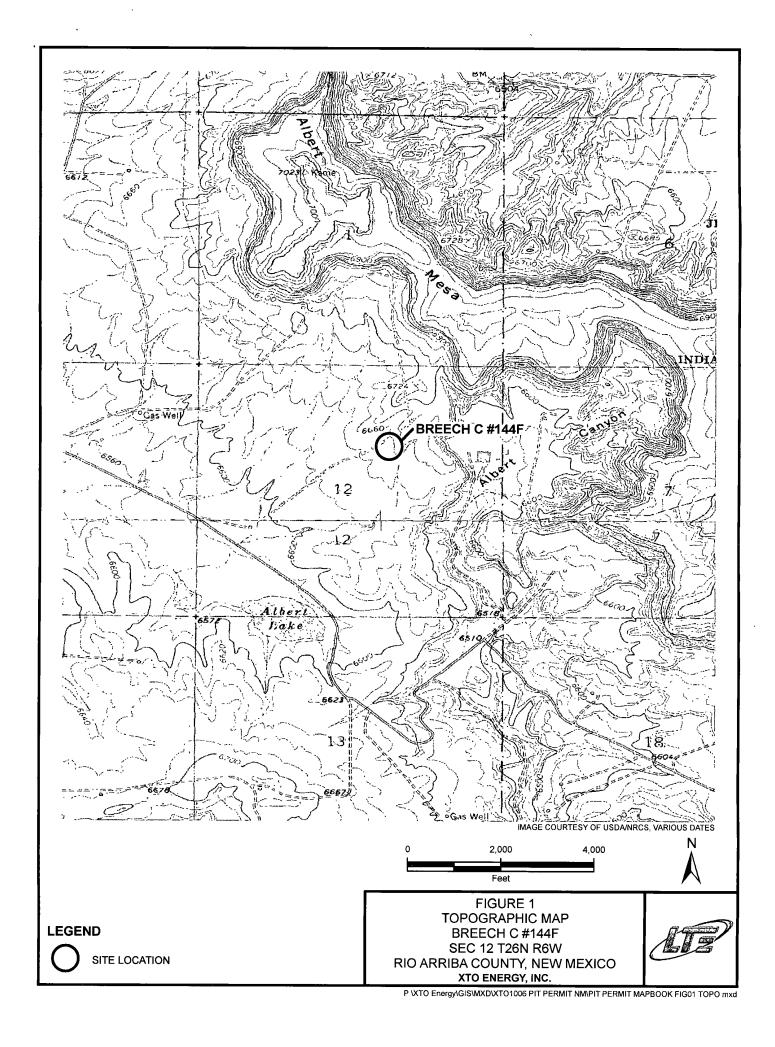
References

Dane, C.H. and Bachman, G. O., 1965, Geologic Map of New Mexico: U.S. Geological Survey, 1 sheet, scale 1:500,000.

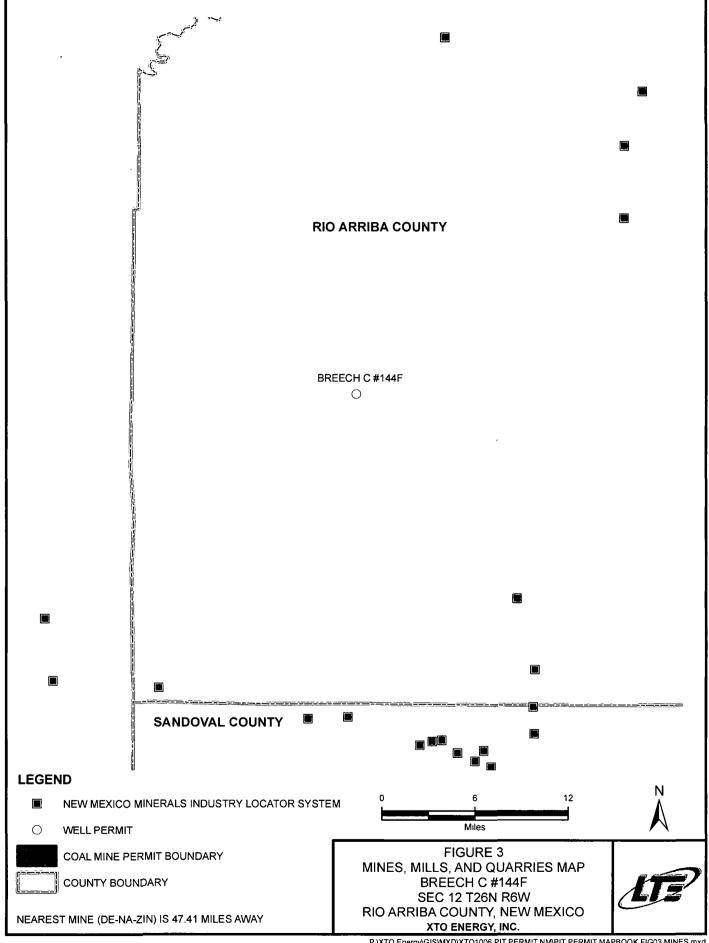
Dick-Peddie, W.A., 1993, New Mexico Vegetation – Past, Present and Future: Albuquerque, New Mexico, University of New Mexico Press, 244 p.

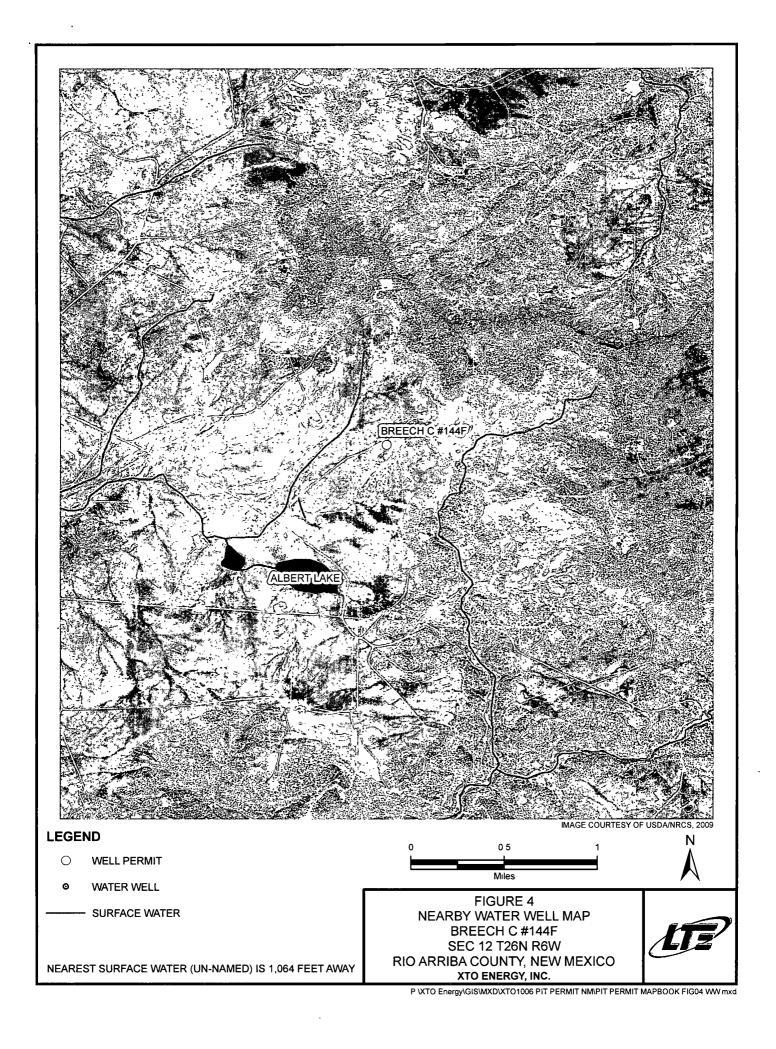
Stone, W.J., Lyford, F. P., Frenzel, P.F., Mizell, N.H. and Padgett, E.T., 1983, Hydrogeology and water resources of the San Juan Basin, New Mexico: HR-6 New Mexico Bureau of Geology and Mineral Resources Hydrology Report 6.

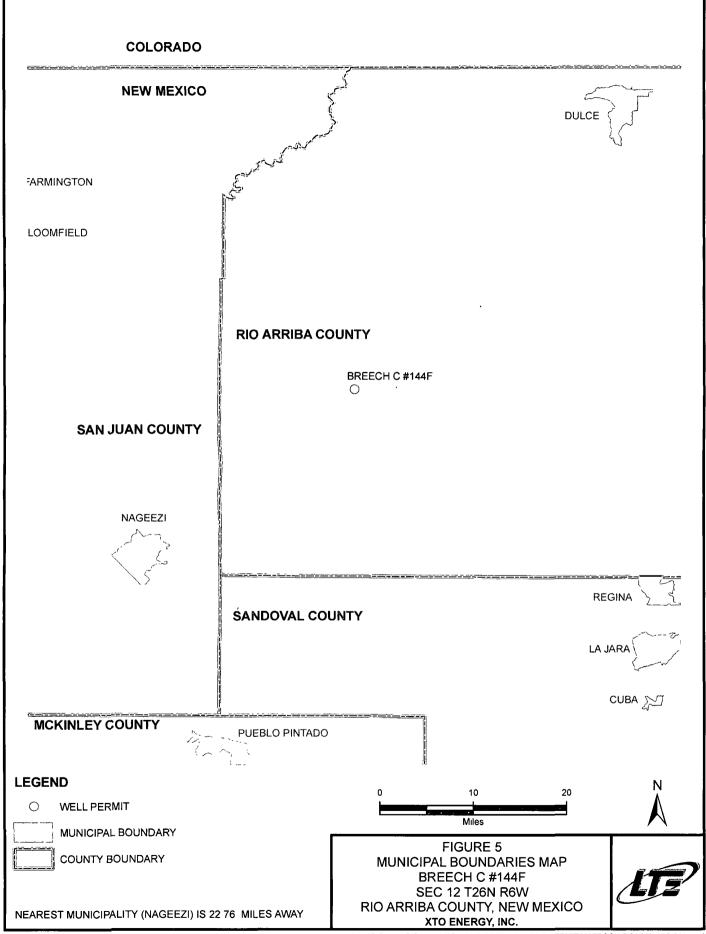
USGS, Groundwater Atlas of the United States: Arizona, Colorado, New Mexico, Utah, HA 730-C: (http://www.pubs.usgs.gov).











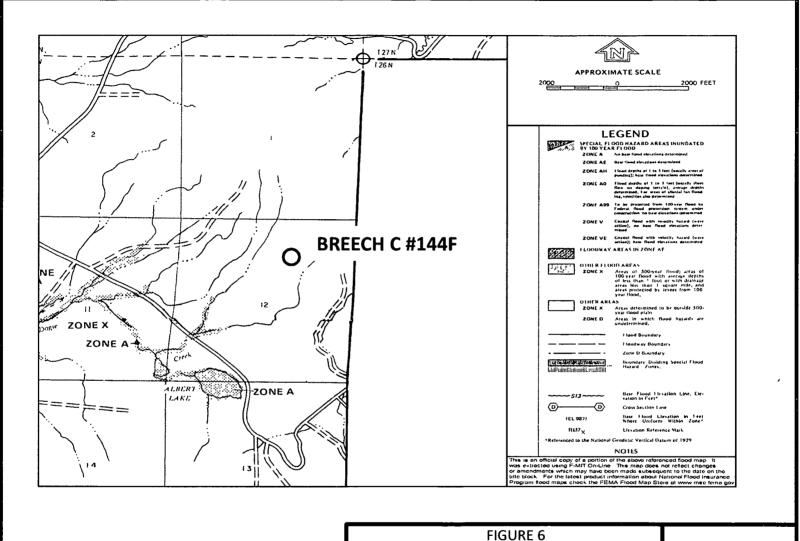


FIGURE 6
FEMA FLOOD ZONE MAP
BREECH C #144F
SEC 12 T26N R6W
RIO ARRIBA COUNTY, NEW MEXICO
XTO ENERGY, INC.





New Mexico Office of the State Engineer Water Column/Average Depth to Water

(quarters are 1=NW 2=NE 3=SW 4=SE)

		(quarte	ers a	re s	sma	allest	to larg	est)	(NAD83 UTN	1 in meters)		(In fee	et)
	Sub		Q	Q	Q						Depth I	Depth	Water
POD Number	basin Use	County	64	16	4	Sec	Tws	Rng	X	Y	Well	Water(Column
SJ 00061	DOM	I RA	3	3	3	32	27N	06W	276278	4044923*	445	301	144
SJ 00062	DOM	I RA	3	3	3	32	27N	06W	276278	4044923*	452	301	151
SJ 00213	IND	RA	4	4	1	32	27N	06W	276897	4045750*	1308	485	823
SJ 02403	DOM	I RA	3	1	3	30	27N	06W	274714	4047115*	505	300	205
SJ 03001	DOM	I RA	1	2	2	07	27N	06W	276165	4052831*	141	41	100
									Avera	age Depth to	o Water:	285	feet
										Minimun	n Depth:	41	feet
										Maximun	n Depth:	485	feet

Record Count: 5

PLSS Search:

Township: 27N Range: 06W

유근크위	(Powestle Mail C	ervicem D. MAIL FRECEIPT My Workswance Coverage Rovices) Monten conversation of the Co
31.63	Postage Certified Fee	S ORA VISTA NA VISTA
0003	Return Receipt Fee (Endorsement Required) Restricted Delivery Fee	JUN 3 2011
1870	(Endorsement Required) Total Postage & Fees	\$ Koon and
	Sent To	Linda Cornell
01	Street, Apt. No.; or PO Box No.	PO Box 156
~		McIntosh, NM 87032
	PS Form 3300, August 2	Breech (144 F)

.

[FO FORM \$1310], ARIGUST \$1010	Septioner of the control of
SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
 Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired. Print your name and address on the reverse so that we can return the card to you. Attach this card to the back of the mailpiece, or on the front if space permits. Article Addressed to: Linda Cornell	A. Signature X
	C ZOCH 8 i.e.
PO Box 156	3. Service Type
McIntosh, NM 87032	☐ Certified Mail ☐ Express Mail ☐ Registered ☐ Receipt for Morchandico ☐ Insured Mail ☐ C.O.D.
	4. Restricted Delivery? (Extra Fee)
2. Article Number (Transfer from service label) 7010 16	870 DDD3 3183 8839
PS Form 3811, February 2004 Domestic Re	turn Receipt 3-220, Cl44-F-102595-02-M-1540



June 3, 2011

Linda Cornell PO Box 156 McIntosh, NM 87032

RE: Breech C #144F Sec. 12 (G), T26N, R6W

Rio Arriba County, New Mexico

Dear Ms. Cornell,

This submittal is pursuant to Rule 19.15.17.13 requiring operators to notify surface owners of on site burial of temporary pits. XTO Energy Inc. (XTO) is hereby providing written documentation of our intention to close the temporary pit associated with the aforementioned location by means of in place burial.

Should you have any questions or require additional information please feel free to contact me at your earliest convenience (505) 333-3100.

Sincerely,

Malia Villers XTO Energy Inc.

malia Villero

An **ExxonMobil** Subsidiary

XTO Energy Inc. San Juan Basin Pit Design and Construction Plan

In accordance with Rule 19.15.17.11 NMAC the following information describes the design and construction of temporary pits on XTO Energy Inc. (XTO) locations. This is XTO's standard procedure for all temporary pits. A separate plan will be submitted for any temporary pit which does not conform to this plan.

General Plan

- 1. XTO will design and construct a temporary pit to contain liquids and solids and prevent contamination of fresh water and protect public heath and environment.
- 2. Prior to constructing the pit, topsoil will be stockpiled in the construction zone for later use in restoration.
- XTO will post a well sign, in compliance with 19.15.3.103 NMAC, on the well site prior to
 construction of the temporary pit. The sign will list the Operator on record as the operator, the
 location of the well site by unit letter, section, township, range, and emergency telephone
 numbers.
- 4. XTO shall construct all new fences utilizing 48" steel mesh field-fence (hogwire) on the bottom with a single strand of barbed wire on top. T-posts shall be installed every 12 feet and corners shall be anchored utilizing a secondary T-post. Temporary pits will be fenced at all times excluding drilling or workover operations, when the front side of the fence will be temporarily removed for operational purposes.
- 5. XTO shall construct the temporary pit so that the foundation and interior slopes are firm and free of rocks, debris, sharp edges or irregularities to prevent liner failure.
- 6. XTO shall construct the pit so that the slopes are no steeper than two horizontal feet to one vertical foot.
- 7. Pit walls will be walked down by a crawler type tractor following construction.
- 8. All temporary pits will be lined with a 20-mil, string reinforced, LLDPE liner, complying with EPA SW-846 method 9090A requirements.
- 9. Geotextile will be installed beneath the liner when rocks, debris, sharp edges or irregularities cannot be avoided.
- 10. All liners will be anchored in the bottom of a compacted earth-filled trench at least 18 inches deep.
- 11. XTO will minimize liner seams and orient them up and down, not across a slope. Factory seams will be used when possible. XTO will ensure all field seams are welded by qualified personnel. Field seams will be overlapped four to six inches and will be oriented parallel to the line of maximum slope. XTO will minimize the number of field seams in corners and irregularly shaped areas.
- 12. The liner shall be protected from any fluid force or mechanical damage through the use of mud pit slides, or a manifold system.
- 13. The pit shall be protected from run-off by constructing and maintaining diversion ditches around the location or around the perimeter of the pit in some areas.
- 14. The volume of the pit shall not exceed 10 acre-feet, including freeboard.

XTO Energy Inc. San Juan Basin Maintenance and Operating Plan

In accordance with Rule 19.15.17.12 NMAC the following information describes the operation and maintenance of temporary pits on XTO Energy Inc. locations. This is XTO's standard procedure for all temporary pits. A separate plan will be submitted for any temporary pit which does not conform to this plan.

General Plan

- 1. XTO will operate and maintain a temporary pit to contain liquids and solids and prevent contamination of fresh water and protect public health and environment.
- 2. XTO will conserve drilling fluids by transmitting liquids to pits ahead of the rigs whenever possible. All drilling fluids will be disposed at Basin Disposal Inc, Permit # NM-01-005.
- 3. XTO will not discharge or store any hazardous waste in any temporary pit.
- 4. If any pit liner integrity is compromised, or if any penetration of the liner occurs above the liquid surface, then XTO shall notify the Aztec Division office by phone or email within 48 hours of the discovery and repair the damage or replace the liner.
- 5. If a leak develops below the liquid level, XTO shall remove all liquids above the damaged liner within 48 hours and repair the damage or replace the liner. XTO shall notify the Aztec Division office by phone or email within 48 hours of the discovery for leaks less than 25 barrels. XTO shall notify the Aztec Division office as required pursuant to Subsection B of 19.15.3.116 NMAC within twenty-four (24) hours of discovery of leaks greater than 25 barrels. In addition, immediate verbal notification pursuant to Subsection B, Paragraph (1), and Subparagraph (d) of 19 15 3 116 NMAC shall be reported to the division's Environmental Bureau Chief.
- 6. The liner shall be protected from any fluid force or mechanical damage through the use of mud pits slides, or a manifold system.
- 7. The pit shall be protected from run-off by constructing and maintaining diversion ditches around the location or around the perimeter of the pit in some cases.
- 8. XTO shall immediately remove any visible layer of oil from the surface of the temporary pit after cessation of a drilling or workover operation. Oil absorbent booms will be utilized to contain and remove oil from pits surface. An oil absorbent boom will be stored on-site until closure of pit.
- Only fluids generated during the drilling or workover process will be discharged into a temporary pit.
- 10. XTO will maintain the temporary pit free of miscellaneous solid waste or debris.
- 11. During drilling or workover operations, XTO will inspect the temporary pit at least once daily to ensure compliance with this plan. Inspections will be logged and logs maintained for review. XTO will file this log with the Aztec Division office upon closure of the pit.
- 12. After drilling or workover operations, XTO will inspect the temporary pit weekly so long as liquids remain in the temporary pit. A log of the inspections will be stored at XTO's office electronically and will be filed with the Aztec Division office upon closure of the pit.
- 13. XTO shall maintain at least two feet of freeboard for a temporary pit.
- 14. XTO shall remove all free liquids from a temporary pit within 30 days from the date the operator releases the drilling or workover rig.

XTO Energy Inc. San Juan Basin Closure Plan

In accordance with Rule 19.15.17.13 NMAC the following information describes the closure requirements of temporary pits on XTO Energy Inc. (XTO) locations. This is XTO's standard procedure for all temporary pits. A separate plan will be submitted for any temporary pit which does not conform to this plan.

All closure activities will include proper documentation and be available for review upon request and will be submitted to OCD within 60 days of pit closure. Closure report will be filed on C-144 and incorporate the following:

- Details on Capping and Covering, where applicable.
- Plot Plan (Pit Diagram)
- Inspection Reports
- Sampling Results
- C-105
- Copy of Deed Notice will be filed with County Clerk ____.

General Plan:

- 1. All free standing liquids will be removed at the start of the pit closure process from the pit and disposed of in a division-approved facility or recycled, reused, or reclaimed in a manner that the Aztec Division office approves.
- 2. The preferred method of closure for all temporary pits will be on-site, in-place burial, assuming that all criteria listed in sub-section (B) of 19.15.17.13 are met.
- 3. The surface owner shall be notified of XTO proposed closure plan using a means that provides proof of notice i.e., Certified mail, return receipt requested.
- 4. Within 6 months of the Rig Off status occurring XTO will ensure that temporary pits are closed, re-contoured, and reseeded.
- 5. Notice of Closure will be given to the Aztec Division office between 72 hours and one week of closure via email, or verbally. The notification of closure will include the following:
 - i. Operators Name
 - ii. Location by Unit Letter, Section, Township, and Range. Well name and API number.
- 6. Liner of temporary pit shall be removed above "mud level" after stabilization. Removal of liner will consist of manually or mechanically cutting liner at mud level and removing all remaining liner. Care will be taken to remove "ALL" of the liner i.e., edges of liner entrenched or buried. All excessive liver will be disposed of at a licensed disposal facility.
- 7. Pit contents shall be mixed with non-waste containing, earthen material in order to achieve appropriate solidification. The solidification process will be accomplished using a combination of natural drying and mechanically mixing. Pit contents will be mixed with non-waste, earthen material to a consistency that is deemed a safe and stable. The mixing ratio shall not exceed 3 parts clean soil to 1 part pit contents.
- 8. A five point composite sample will be taken of the pit using sampling tools and all samples tested per Subsection B of 19.15.17.13(B)(1)(b). In the event that the criteria are not met, all contents will be handled per Subparagraph (a) of Paragraph (1) of Subsection B of 19.15.17.13 i.e., Dig and haul. Disposal facility to be utilized should this method be required will be Envirotech, Permit No. NM01-0011 or IEI, Permit No. NM01-0010B.

Components	Test Method	Limit (mg/Kg)
Benzene	EPA SW-846 8021B or 8260B	0.2
BTEX	EPA SW-846 8021B or 8260B	50
TPH	EPA SW-846 418.1	2500
GRO/DRO	EPA SW-846 8015M	500
Chlorides	EPA 300.1	500 or background

- 9. Upon completion of solidification and testing, the pit area will be backfield with compacted, non-waste containing, earthen material. A minimum of four feet of cover shall be achieved and the cover shall include one foot of suitable material to establish vegetation at the site, or the background thickness of topsoil, whichever is greater.
- 10. Re-contouring of location will match fit, shape, line, form and texture of the surrounding area. Re-shaping will include drainage control, ponding prevention, and erosion prevention. Natural drainages will be unimpeded and water bars and/or silt traps will be placed in areas where needed to prevent erosion on a large scale. Final re-contour shall have a uniform appearance with smooth surface, fitting the natural landscape.
- 11. Notification will be sent to OCD when the reclaimed area is seeded.
- 12. XTO shall seed the disturbed areas the first growing season after the operator closes the pit. Seeding will be accomplished via drilling on the contour whenever practical or by other division-approved methods. BLM of Forest Service stipulated seed mixes will be used on Federal Lands. Vegetative cover will equal 70% of the native perennial vegetative cover (un-impacted) consisting of at least three native plant species, including at least one grass, but not including noxious weeds, and maintain that cover through two successive growing seasons. Repeat seeding or planting will be continued until successful vegetative growth occurs.
- 13. The temporary pit will be located with a steel marker, no less than four inches in diameter, cemented in a hole three feet deep in the center of the onsite burial upon the abandonment of all the wells on the pad. The marker will be flush with the ground to allow access of the active well pad and for safety concerns. The marker will include a threaded collar to be used for future abandonment. The top of the marker will contain a welded steel 12" square plate that indicates the onsite burial of the temporary pit. The plate will be easily removable and a four foot tall riser will be threaded into the top of the collar marker and welded around the base with the operator's information at the time all wells on the pad are abandoned. The operator's information will include the following: Operators Name, Lease Name, Well Name and Number, Unit Number, Section, Township, Range and an indicator that the marker is an onsite burial location.

XTO Energy Inc. San Juan Basin Closed-Loop System Design and Construction Plan

In accordance with Rule 19.15.17.11 NMAC the following information describes the design and construction of closed-loop systems on XTO Energy Inc. (XTO) locations. This is XTO's standard procedure for all closed-loop systems. A separate plan will be submitted for any closed-loop system which does not conform to this plan.

General Plan

Our closed-loop system will not entail a drying pad, temporary pit, below grade tank or sump. It will entail an above ground tank suitable for holding the cuttings and fluids for rig operations. The tank will be of sufficient volume to maintain a safe free board between disposal of the liquids and solids from rig operations.

- 1. Fencing is not required for an above ground closed-loop system.
- 2. It will be signed in compliance with 19.15.3.103 NMAC.

XTO Energy Inc. San Juan Basin Closed-Loop Systems Maintenance and Operating Plan

In accordance with Rule 19.15.17.11 NMAC the following information describes the operation and maintenance of closed-loop systems on XTO Energy Inc. (XTO) locations. This is XTO's standard procedure for all closed-loop systems. A separate plan will be submitted for any closed-loop system which does not conform to this plan.

General Plan

The closed-loop tank will be operated and maintained; to contain liquids and solids, to aid in the prevention of contamination of fresh water sources, in order to protect public health and the environment. To attain the goal the following steps will be followed:

- 1. The liquids will be vacuumed out and disposed of at the Basin Disposal, Inc. facility (Permit Number NM01-005). An alternative if available for liquids disposal, will be to move the liquids forward to a XTO temporary pit constructed in accordance with all specifications in NMAC Rule 19.15.17 for a well yet to be drilled. All specifications, limitations, and rules within the New Mexico Administrative Code regulating this transfer of liquids will be strictly adhered to. As a third alternative, if Basin Disposal turns away the fluids because of capacity reasons, and the second transfer option is not available, XTO may elect to haul fluids to IEI (Permit Number NM01-0010B) for final disposition.
- 2. Solids in the closed-loop tank will be vacuumed out and disposed of at Envirotech (Permit Number NM01-0011) or IEI (Permit Number NM01-0010B) on a periodic basis to prevent over topping.
- No hazardous waste, miscellaneous solids, waste, or debris will be discharged into, or stored in the tank. Only fluids or cutting used or generated by rig operations will be placed or stored in the tank
- The division district office will be notified within 48 hours of the discovery of compromised integrity of the closed-loop tank. Upon discovery of the compromised tank, repairs will be enacted immediately.
- 5. All of the above operations will inspected and a log will be signed and dated daily during rig operations.

XTO Energy Inc. San Juan Basin Closed-Loop System Closure Plan

In accordance with Rule 19.15.17.11 NMAC the following information describes the closure requirements of closed-loop systems on XTO Energy Inc. (XTO) locations. This is XTO's standard procedure for all closed-loop systems. A separate plan will be submitted for any closed-loop system which does not conform to this plan.

General Plan

XTO will close a drying pad used for a closed-loop system within six months from the date that XTO released the drilling or workover rig. XTO will not the date of the drilling or workover rig's release on form C-105 or C-103, riled with the division, upon the well's or workover's completion.

The closed-loop tank will be closed in accordance with 19.15.17.13 NMAC. This will be done by transporting cuttings and all remaining sludges to Envirotech (Permit Number NM01-0011) or IEI (Permit Number NM01-0010B) immediately following rig operations.

All remaining liquids will be transported and disposed of at the Basin Disposal, Inc facility (Permit Number NM 01-005). As an alternative (in the event Basin Disposal refused liquids because of capacity considerations, and if proper inventory space is available for liquids transfer while meeting free board requirements), the liquids will be moved forward to a XTO temporary pit constructed in accordance with all specifications in NMAC Rule 19.15.17 for a well yet to be drilled. All specifications, limitations, and rules within the New Mexico Administrative Codes regulating this transfer of liquids will be strictly adhered to. As a third alternative, if Basin Disposal turns away the fluids because of capacity reasons, and the second transfer option is not available, XTO may elect to haul the fluids to IEI (Permit Number 01-0010B) for final disposition.

The tanks will be removed from the location as part of the rig move. At the time of well abandonment the site will be reclaimed and re-vegetated to pre-existing conditions when possible.

XTO Energy Inc. San Juan Basin Closed-Loop System Closure Plan

In accordance with Rule 19.15.17.11 NMAC the following information describes the closure requirements of closed-loop systems on XTO Energy Inc. (XTO) locations. This is XTO's standard procedure for all closed-loop systems. A separate plan will be submitted for any closed-loop system which does not conform to this plan.

General Plan

XTO will close a drying pad used for a closed-loop system within six months from the date that XTO released the drilling or workover rig. XTO will not the date of the drilling or workover rig's release on form C-105 or C-103, riled with the division, upon the well's or workover's completion.

The closed-loop tank will be closed in accordance with 19.15.17.13 NMAC. This will be done by transporting cuttings and all remaining sludges to Envirotech (Permit Number NM01-0011) or IEI (Permit Number NM01-0010B) immediately following rig operations.

All remaining liquids will be transported and disposed of at the Basin Disposal, Inc facility (Permit Number NM 01-005). As an alternative (in the event Basin Disposal refused liquids because of capacity considerations, and if proper inventory space is available for liquids transfer while meeting free board requirements), the liquids will be moved forward to a XTO temporary pit constructed in accordance with all specifications in NMAC Rule 19.15.17 for a well yet to be drilled. All specifications, limitations, and rules within the New Mexico Administrative Codes regulating this transfer of liquids will be strictly adhered to. As a third alternative, if Basin Disposal turns away the fluids because of capacity reasons, and the second transfer option is not available, XTO may elect to haul the fluids to IEI (Permit Number 01-0010B) for final disposition.

The tanks will be removed from the location as part of the rig move. At the time of well abandonment the site will be reclaimed and re-vegetated to pre-existing conditions when possible.