Dir 16 Di 13 Di 10 District IV 1220 S. St. Francis Dr., Santa Fe, NM 87505	State of New Mexico als and Natural Resources Department servation Division [] 1220 South St, Francis Dr. Santa Fe, TM \$75657 4 39	Form C-144 July 21, 2008 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 T	<u>ank, or</u>
Proposed Alternati	ve Method Permit or Closure P	lan Application
Existing BGT Closure of a Diffication	it, closed-loop system, below-grade tank, or pit, closed-loop system, below-grade tank, or to an existing permit only submitted for an existing permitted or prnative method	or proposed alternative method
Instructions: Please submit one application (F		em, below-grade tank or alternative request
Please be advised that approval of this request does not relieve environment. Nor does approval relieve the operator of its res	e the operator of liability should operations result in	n pollution of surface water, ground water or the
I. Operator: <u>XTO Energy, Inc.</u>	OGRID #·	5380
Address: #382 County Road 3100, Aztec, NM 874		
Facility or well name:UTE INDIAN A # 43		
API Number:		
U/L or Qtr/Qtr C Section <u>01</u> Township		
Center of Proposed Design: Latitude <u>36.93398</u> L		
Surface Owner: Federal State Private Triba		
 2. Pit: Subsection F or G of 19.15.17.11 NMAC Temporary: Drilling Workover Permanent Emergency Cavitation P&A Lined Unlined Liner type: Thickness String-Reinforced Liner Seams: Welded Factory Other 		
3.		
□ Closed-loop System: Subsection H of 19.15.17.11 Type of Operation: □ P&A □ Drilling a new well □ intent) □ Drying Pad □ Above Ground Steel Tanks □ Ha □ Lined □ Unlined Liner type: Thickness	Workover or Drilling (Applies to activities wh ul-off Bins D Other	
4.		
Below-grade tank: Subsection I of 19.15.17.11 N		
	Produced Water	
Tank Construction material:Steel		
Secondary containment with leak detection Vis		
□ Visible sidewalls and liner □ Visible sidewalls or		
Liner type: Thickness mil	HDPE PVC Other	
5. <u>Alternative Method</u> : Submittal of an exception request is required. Exceptio	ns must be submitted to the Santa Fe Environme	ental Bureau office for consideration of approval.

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, hospital, institution or church)

Four foot height, four strands of barbed wire evenly spaced between one and four feet

Alternate. Please specify Four foot height, steel mesh field fence (hogwire) with pipe top railing

Netting: Subsection E of 19.15.17.11 NMAC (Applies to permanent pits and permanent open top tanks)

Screen Netting Other Expanded metal or solid vaulted top

Monthly inspections (If netting or screening is not physically feasible)

Signs: Subsection C of 19.15.17.11 NMAC

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10.

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.

Exception(s): Requests must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

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 acceptable source material are provided below. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau office for consideration of approval. Applicant must attach justification for request. Please refer to 19.15.17.10 NMAC for guidance. Siting criteria does not apply to drying pads or above-grade tanks associated with a closed-loop system.

 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 pits) Visual inspection (certification) of the proposed site; Aerial photo; Satellite image 	Yes No
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

11. <u>Temporary Pits, Emergency Pits, and Below-grade Tanks Permit Application Attachment Checklist</u> : 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. Image: Mydrogeologic Report (Below-grade Tanks) - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC Image: Hydrogeologic Data (Temporary and Emergency Pits) - based upon the requirements of Paragraph (2) of Subsection B of 19.15.17.9 NMAC Image: Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC Image: Design Plan - based upon the appropriate requirements of 19.15.17.10 NMAC Image: Design Plan - based upon the appropriate requirements of 19.15.17.12 NMAC Image: Design Plan - based upon the appropriate requirements of 19.15.17.12 NMAC Image: Design Plan - based upon the appropriate requirements of 19.15.17.12 NMAC Image: Design Plan - based upon the appropriate requirements of 19.15.17.12 NMAC Image: Design Plan - based upon the appropriate requirements of 19.15.17.12 NMAC Image: Design Plan - based upon the appropriate requirements of 19.15.17.12 NMAC Image: Design Plan - based upon the appropriate requirements of 19.15.17.12 NMAC Image: Design Plan - based upon the appropriate requirements of 19.15.17.12 NMAC Image: Design Plan - based upon the appropriate requirements of 19.15.17.12 NMAC Image: Design Plan - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC Image: Design Plan - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC
Previously Approved Design (attach copy of design) API Number: or Permit Number:
12. 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 Previously Approved Design (attach copy of design) API Number:
13.
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 Quality Control/Quality Assurance Construction and Installation Plan Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.11 NMAC Remergency Response Plan Oil Field Waste Stream Characterization Monitoring and Inspection Plan Erosion Control Plan Closure Plan - based upon the appropriate requirements of 19.15.17.9 NMAC and 19.15.17.13 NMAC
14. 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: Drilling Workover Emergency Cavitation P&A Permanent Pit Below-grade Tank Closed-loop System
Type: Diffining Work over Entergency Converted in the property of t
 ^{15.} 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 Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC Site Reclamation Plan - ba

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^{16.} Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bir Instructions: Please indentify the facility or facilities for the disposal of liquids, drilling fluids and drill cuttin	<u>is Only</u> : (19.15.17.13.D NMAC) ngs. Use attachment if more than two
facilities are required.	
	mber:
	mber:
Will any of the proposed closed-loop system operations and associated activities occur on or in areas that will no Yes (If yes, please provide the information below) No	ot be used for future service and operations?
Required for impacted areas which will not be used for future service and operations: Soil Backfill and Cover Design Specifications based upon the appropriate requirements of Subsection Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC	
^{17.} <u>Siting Criteria (regarding on-site closure methods only)</u> : 19.15.17.10 NMAC Instructions: Each siting criteria requires a demonstration of compliance in the closure plan. Recommenda provided below. Requests regarding changes to certain siting criteria may require administrative approval fr considered an exception which must be submitted to the Santa Fe Environmental Bureau office for considered demonstrations of equivalency are required. Please refer to 19.15.17.10 NMAC for guidance.	om the appropriate district office or may be
Ground water is less than 50 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☐ No ☐ NA
Ground water is between 50 and 100 feet below the bottom of the buried waste - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	Yes No
Ground water is more than 100 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	G Yes No
 Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse or laket lake (measured from the ordinary high-water mark). Topographic map; Visual inspection (certification) of the proposed site 	bed, sinkhole, or playa 🗌 Yes 🗌 No
 Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of ir Visual inspection (certification) of the proposed site; Aerial photo; Satellite image 	nitial application. 🗌 Yes 🗋 No
Within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, in existence at the tim - NM Office of the State Engineer - iWATERS database; Visual inspection (certification) of the proposed	e of initial application.
 Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a adopted pursuant to NMSA 1978, Section 3-27-3, as amended. Written confirmation or verification from the municipality; Written approval obtained from the municipality 	
Within 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) o	f the proposed site
 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; USC Society; Topographic map 	GS; NM Geological 🔲 Yes 🗌 No
Within a 100-year floodplain. - FEMA map	🗌 Yes 🗌 No
 18. On-Site Closure Plan Checklist: (19.15.17.13 NMAC) Instructions: Each of the following items must be an by a check mark in the box, that the documents are attached. Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NM Proof of Surface Owner Notice - based upon the appropriate requirements of Subsection F of 19.15.17.12 Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate requirements of 19.15.17.13 Construction/Design Plan of Temporary Pit (for in-place burial of a drying pad) - 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 Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings or in case on-sitt Soil Cover Design - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC Re-vegetation Plan - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC 	MAC 3 NMAC 9.15.17.11 NMAC riate requirements of 19.15.17.11 NMAC f 19.15.17.13 NMAC NMAC

Site Reclamation Plan - based upon the appropriate requirements of Subsection For 19.13.17.13 NMAC

19. Operator Application Certification:		
I hereby certify that the information submitted with this application is tru	e, accurate and complete to the	he best of my knowledge and belief.
Name (Print): Kim Champlin	Title:	Environmental Representative
		11/25/08
e-mail address: kim_champlin@xtoenergy.com	Telephone:	(505) 333-3100
20.		
OCD Approval: Permit Application (including closure plan)	osure Plan (only) 🔲 OCD	Conditions (see attachment)
OCD Representative Signature:		Approval Date:
Tale	OCD Bormit Num	ber:
Title:	OCD Fermit Num	ber:
^{21.} Closure Report (required within 60 days of closure completion): Sub Instructions: Operators are required to obtain an approved closure pla The closure report is required to be submitted to the division within 60 d section of the form until an approved closure plan has been obtained an	n prior to implementing any lays of the completion of the ad the closure activities have	closure activities and submitting the closure report. closure activities. Please do not complete this been completed.
		pletion Date:
 22. Closure Method: Waste Excavation and Removal On-Site Closure Method If different from approved plan, please explain. 	Alternative Closure Method	Waste Removal (Closed-loop systems only)
^{23.} <u>Closure Report Regarding Waste Removal Closure For Closed-loop Sinstructions: Please indentify the facility or facilities for where the lique two facilities were utilized.</u>	ids, drilling fluids and drill c	cuttings were disposed. Use attachment if more than
Disposal Facility Name:		ermit Number:
Disposal Facility Name:		ermit Number:
Were the closed-loop system operations and associated activities perform Yes (If yes, please demonstrate compliance to the items below)		be used for future service and operations?
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	l operations:	
24.		
Closure Report Attachment Checklist: Instructions: Each of the followark 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 of Disposal Facility Name and Permit Number Soil Backfilling and Cover Installation Re-vegetation Application Rates and Seeding Technique Site Reclamation (Photo Documentation)	losure)	
On-site Closure Location: Latitude	Longitude	NAD: 1927 1983
 25. Operator Closure Certification: I hereby certify that the information and attachments submitted with this belief. I also certify that the closure complies with all applicable closure 	requirements and conditions s	specified in the approved closure plan.
Name (Print):	Title:	
Signature:	Date:	
e-mail address:	Telephone:	

NEMICE) 1825 II. Friedb Dr., Huldes, ALL. 18200 State of New Mexico rate & Natural Resources Department Forms C-102 Energy, Min Revised Jane 10, 2003 OIL CONSERVATION DIVISION Submit to Appropriate District Office 1220 South St. Francis Dr. Santa Fa, Mil 87505 State Loose - 4 Copies 8852467 1 Fee Loose - 3 Copies method av 1220 Sauth St. Francis Br., Sante Fis, Mil 87506 AMENDED REPORT WELL LOCATION AND ACREAGE DEDICATION PLAT API Bunka Ped Code He Dome Paradox 867100 Property Code courty Mas UTE INDIANS A 43 PAGED ID. ·Courses Items (Develop) LC DOC XTO ENERGY INC. 6065 * Surface Location till or het an. Let N of them the Sec. Fost from the Eat/Nut In SAN JUAN C 14-W 31-N 1 3 1170 NORTH 1370 WEST "Bottom Hale Location If Different From Surface UL OF ISI NO. Lot 15 Fail ten the North And Inc Fund them the Cart Victoria ---County Jubit or lade diadar His ALL (028.14 NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION State Parcel 10 3 1/4" AC 1005 BLM N 89-09-44 E 2049.1" (C) 17 OPERATOR CERTIFICATION I handly calling that the internation cantained family to two and acception to the basis of the basisfage and basis LOT 4 LOT 3 LOT 2 LOT 1 LAT: 36,93400" N. (NAD 83) LONG 108.26466" W. (NAD 83) 1370' LAT 3556'02.5" H (100 27) LAT: 105'15'58.4" W. (100 27) B ନ୍ତ୍ milie 8-18 LOT 5 Ing (UnDhand 10 CR. COM AC SURVEYOR CERTIFICATION My dust the cull brouthen always on this piret from their actus of actual variage made by ma LOT 6 rition, and Br A of my build in its from and LOT 7

		Pit Permit	Client:	XTO Energy			
Lodestar Services, Inc.			Project:	Pit Permits			
PO Box 4465, Durange		Siting Criteria	Revised:	11/20/2008			
V		Information Sheet	Prepared by:	Daniel Newman			
API#:		3004534326	USPLSS:	T31N,R14W,01C			
Name:	UT	E INDIAN A#43	Lat/Long:	36.93398 / -108.26475			
Depth to groundwater:	and a second	>100'	Geologic formation:	Menefee Formation			
Distance to closest continuously flowing watercourse:	4.4 mile	s west of the La Plata River					
Distance to closest Ignificant watercourse, Iakebed, playa lake, or sinkhole:	323	' NW to Craig Arroyo					
Survivo.		en and the second secon	Soil Type:	Entisols			
Permanent residence, school, hospital, institution or church within 300'		No					
			Annual Precipitation:	8.21" Farmington FAA Airport			
Domestic fresh water well or spring within 500'		No	Precipitation Notes:	3.82" largest daily rainfall on record			
Any other fresh water well or spring within 1000'	with	nin Craig Canyon					
Within incorporated municipal boundaries		No	Attached Documents:	<u>n na serie de la surge de la serie de</u>			
Within defined municipal fresh water well field		No.		Topo map, ground water data map, arie photo, mines and quarries map,			
	2015-201-0046-2-4-1046 2015-201-0046-2-4-1046			an a			
Wetland within 500'	781	No	Mining Activity:	No			
Within unstable area		No					
Within 100 year flood plain	No Fl	EMA data availble					
Additional Notes:		and the second of the last of the second	ų <u>n</u> ie iš kurina nasivosintanų	Sec. al sec			

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Ute Indians A #43 Below Grade Tank Siting Criteria and Closure Plan

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 surficial geology (Dane and Bachman, 1965). The proposed below ground tank location will be located in the northwest corner of the San Juan Basin, where the Hogback monocline ends. Thicker sequences common throughout the central basin begin to pinch out and older units of Cretaceous Age are exposed, specifically the Menefee Formation and Cliff House Sandstone (Brister and Hoffman, 2002). The resistant Cliff House sandstones form prominent cliff bands, while shales and smaller sandstones of the Menefee Formation are exposed at lower elevations. The stratigraphic section reflects deposition in a coastal plain environment and consists of gray, brownish and tank sandstone interbedded with dark, carbonaceous shales and coal beds. Also, deposits of Quaternary alluvial and aeolian sands occur prominently near the surface, especially near streams and washes.

Cretaceous and Tertiary sandstones, as well as Quaternary alluvial deposits serve as the primary aquifers in the San Juan basin (Stone et al., 1983). Within the Menefee Formation, thinner confining units that consist of shale, as well as coal and thick sandstone beds, are present. In general, the water from Cretaceous aquifers is minimal (less than 5 gpm), although moderate quantities (5 - 25 gpm) may be supplied from aquifers within the Menefee Formation (Stone et al., 1983). Aquifer depths range from very shallow depths to over 6000 feet below ground surface. Groundwater within these aquifers flows toward the nearby La Plata River, which is a tributary of the San Juan River.

The prominent soil type at the proposed site is entisols, which are basically little to no soils that do not show any profile development. Soils that are present are unaltered from their parent rock. Miles of arroyos, washes and intermittent streams exist as part of the drainage network towards the La Plata River (www.emnrd.state.nm.us). These features often cut into soil and other unconsolidated materials, contributing to sedimentation downstream. The sudden influx of water from storm events easily erodes the soils that cover the area and prohibits effective recharge to the underlying aquifers.

Dry and arid weather further prohibit active recharge. The climate of the region is arid, averaging just over 8 inches of rainfall annually. As is typical of the southwestern United States monsoonal weather patterns, most precipitation falls from August through October. The heaviest rainfall occurs in the summer in isolated, intense cloudbursts. November through June is relatively dry. Snow generally falls from December to mid-February and averages less than one-half inch in depth. However, most recharge occurs during the winter months during snowmelt periods from the upper elevations (Western Regional Climate Center <u>www.wrcc.dri.edu</u>).

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

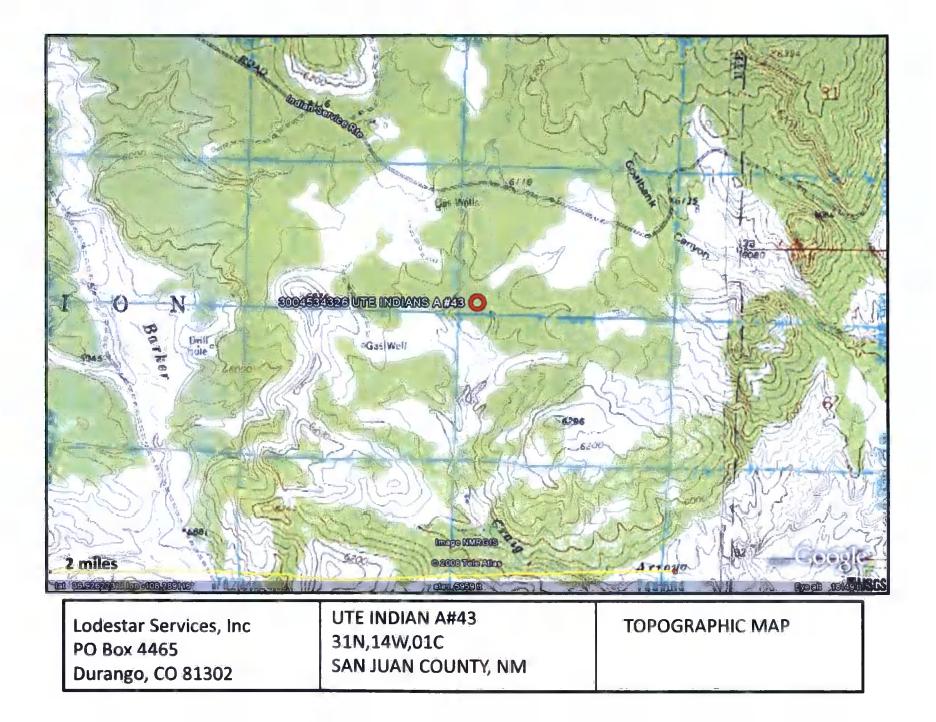
Site Specific Hydrogeology

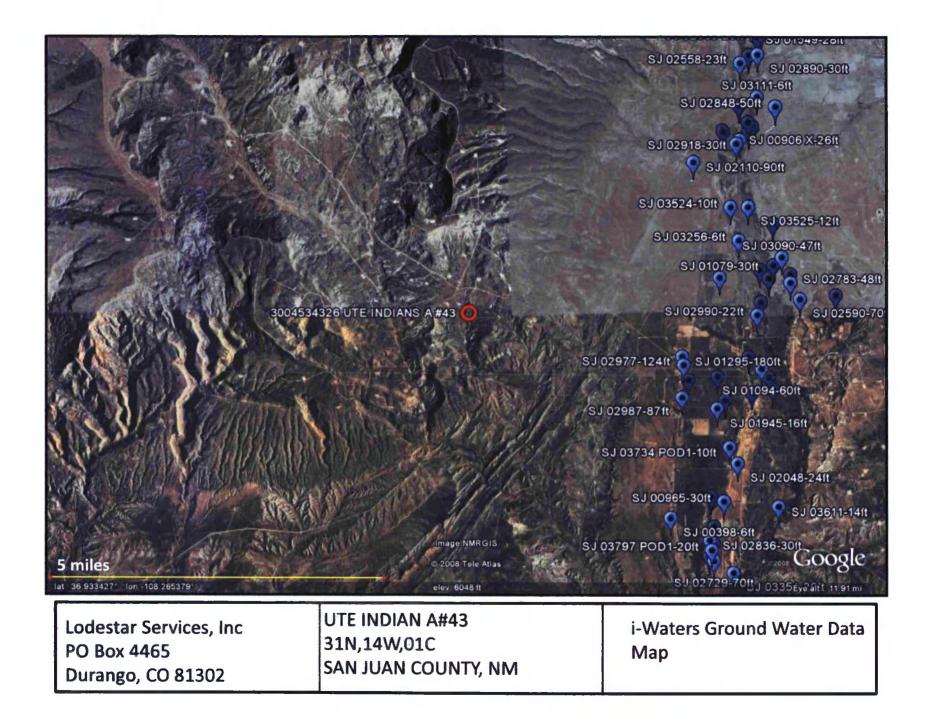
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Depth to groundwater is estimated to greater than 100 feet. This estimation is based on data from Stone and others, 1983 and depth to groundwater data published on the New Mexico State Engineer's iWaters Database website. Local topography and proximity to surface hydrologic features are also taken into consideration.

Local aquifers include sandstones within the Menefee Formation, which range from shallow depths to over 6000 feet deep in this area (Stone et al., 1983). The site in question is located on a slope approximately near outcropping sandstones that are over 500 feet higher in elevation. The slope is composed of shale and alluvium which, taken together, are expected to be at least 100 feet thick.

Groundwater data available from the NM State Engineer's iWaters Database for wells near the proposed site are attached. A map showing the location of wells in reference to the proposed pit location is attached. Pinpoints show locations of wells and the labels for each pinpoint indicate depth to groundwater in feet. Wells are clustered near populated areas along the La Plata River east of the proposed site. These sites contain shallow groundwater, but topographic and hydrographic conditions are not representative of the site in question. Rather, the surrounding geology and topography must be used to estimate depth to groundwater. The base of the adjacent Barker Arroyo is over 250 feet lower in elevation than the proposed site. The exposed slope between the base of the arroyo and the pit location is composed of shale, and no sandstone (i.e. likely to be a water bearing unit) is identified over the extent of that elevation change. Therefore, groundwater is estimated to be over 100' deep.





New Mexico Office of the State Engineer POD Reports and Downloads WATER COLUMN REPORT 09/16/2008

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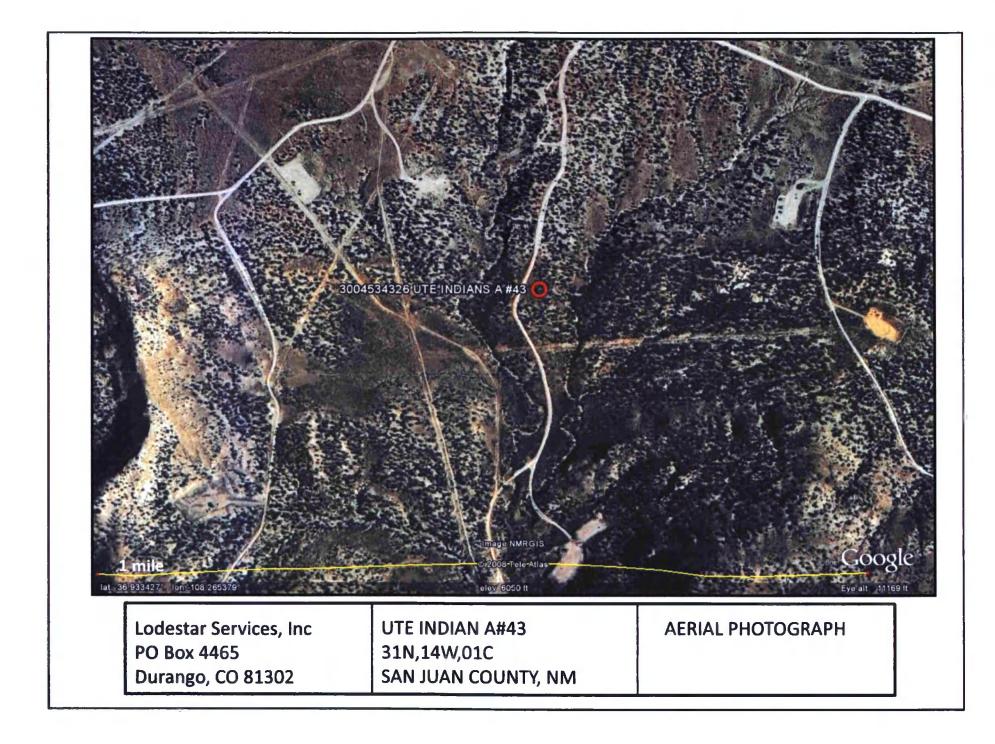
PCD Number SJ 01187 CLW226675 SJ 01187 SJ 01353	Twa 32N 32N	Rng	Sec				-						
SJ 01187				3			Zone	X	Y	Well	Water	Column	
		137				-				24	in (15	
SJ 01353		13W		3	4	1				24	9	15	
07 01400	32N	13W		4							38		
SJ 01439	32N	130		4	3					4.5	25	20	
SJ 02068	32N	13W		2						45	16	29	
SJ 01549	32N	13W		2	1					47	28	19	
SJ 02985	32N	13W		2	1	2				47	25	22	
SJ 02865	32N	13W		2	3	2				44	29	15	
SJ 02558	32N	130	15	3	2	4				41	23	16	
SJ 02934	32N	1377	15	4	1	1				34	13	16	
SJ 02890	32N	13W	15	4	1	2				55	30	2.5	
SJ 02705	32N	137	22	1	4	2				25	12	13	
SJ 02704	32N	137	22	1	4	2				25	12	13	
SJ 03111	32N	137	22	2	1	4				19	6	13	
SJ 02848	32N	137	22	2	4	3				608	50	558	
SJ 00922	32N	1371	22	3	1	4				27	12	15	
SJ 00906 X	32N	139	22	3	4					8€	26	60	
SJ 02918	32N	137	22	3	4	2				51	30	21	
SJ 00736	32N	137	22	4	1					40	15	25	
SJ 00339	32N	130	22	4	1	1				50	12	38	
SJ 00340	32N	13W	22	4	1	3				50	12	38	
SJ 02847	32N	130		4	4	1				1255		1255	
SJ 03524	32N	137		3	4	1				33	10	23	
SJ 03525	32N	130		4	3	1				71	12	59	
SJ 03256	32N	137		1	4	2				21	ē	15	
SJ 03066	32N	137		2	2	2				41	28	13	
SJ 01079	32N	13W		3	3	-				100	30	70	
SJ 01943	32N	13W		4	3					8	30	5	
SJ 03635	32N	13W		4	2	4				44	35	9	
SJ 02577	32N	13W		4	4	1				30	15	15	
SJ 03090	32N	130		3	-	1				30	47	10	
SJ 02589	32N	130		-									
SJ 02783	32N 32N	130		3	3	2				60 62	35 48	25 14	

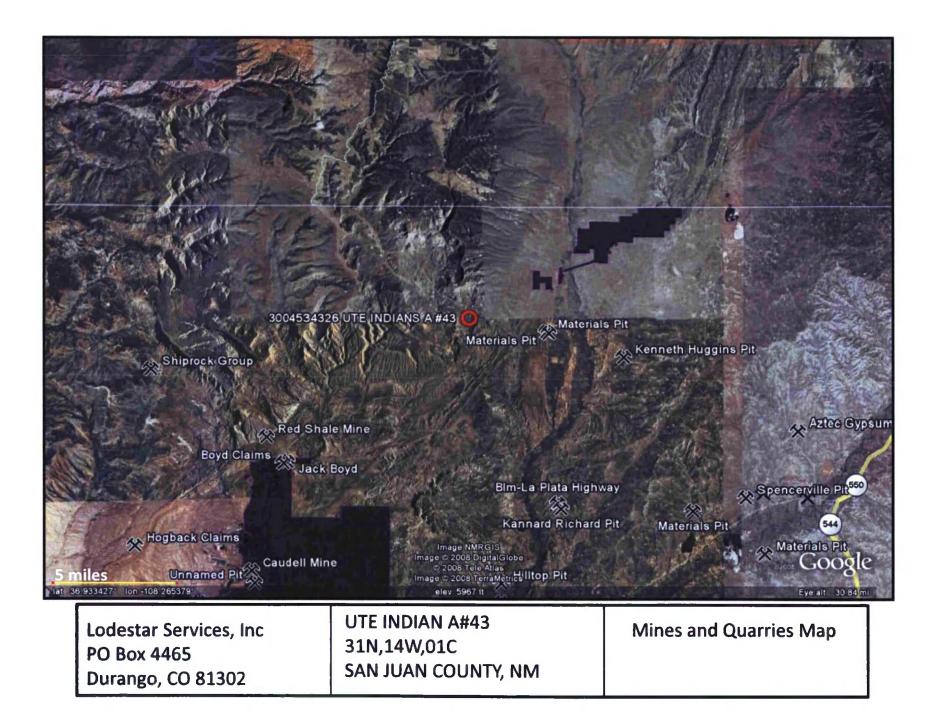
New Mexico Office of the State Engineer POD Reports and Downloads

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AVERAGE DEPTH OF WATER REPORT 10/20/2008

								(Depth	Water in	Peet)
Ban	Tws	Rng	Sec	Zone	x	Y	Wells	Min	Max	Avg
53	31N	137	02				2	19	70	45
\$3	31N	137	03				2	11	22	17
53	31N	137	0.9				4	40	180	108
53	31N	139	10				11	4	€5	22
53	31N	137	15				2	10	24	17
33	31N	137	2.1				1	e	E	E
55	3110	137	22				e	5	40	24
53	31N	130	23				1	14	14	14
53	31N	137	27				5	20	70	38
53	31N	13W	2.8				5	2	70	21
53	31N	13W	33				4	÷	56	24





XTO Energy Inc. San Juan Basin (Northwest New Mexico) General Design and Construction Plan For Below-Grade Tanks

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

General Plan

- 1. XTO will design and construct below-grade tanks to contain liquids and solids and prevent contamination of fresh water and protect public health and environment.
- 2. XTO will post a well sign, in compliance with 19.15.3.103 NMAC, on the existing well site operated by XTO where the existing below-grade tank is located. 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.
- 3. XTO is requesting approval of an alternative fencing to be used on below-grade tank locations. Below-grade tank locations will be fenced utilizing 48" steel mesh field-fence (hogwire) with pipe railing along the top. A 6' chain link fence will be utilized around the well pad if the well site is within a city limits or ¼ mile of a permanent residence, school, hospital, institution or church. Below-grade tanks located within 1000' of a permanent residence, school, hospital, institution or church will be fenced by 6' chain link fence with at least two strands of barbed wire at the top. All gates associated with below-grade tanks will remain closed and locked when responsible individuals are not on site.
- 4. XTO shall construct below-grade tanks with an expanded metal covering or solid vaulted top on the top of the below-grade tank.
- 5. XTO will ensure that below-grade tanks are constructed of materials resistant to the below-grade tank's particular contents and resistant to damage from sunlight. Tanks will be constructed of A36 carbon steel with 3/16" sides and ¼" bottom. (See attached drawing).
- 6. The below-grade tank system will have a properly constructed foundation consisting of a level base free of rocks, debris, sharp edges or irregularities to prevent punctures, cracks or indentations of the liner or tank bottom. Sand bedding (4") will be placed on top of a level foundation to ensure prevention of punctures, cracks or indentations of the liner or tank bottom.
- XTO will construct a berm and/or diversion ditch in a manner that prevents the collection of surface water run-on. Below-grade tanks will be equipped with automatic high level shut-off devices as well as manually operated shut-off valves. (See attached drawing).
- 8. XTO will construct and use below-grade tanks that do not have double walls. The below-grade tank sidewalls will be open for visual inspection for leaks. The sidewalls of the cellar will be constructed with 2" X 12" pine sidewalls and 4" X 4" pine brace posts. The below-grade tank

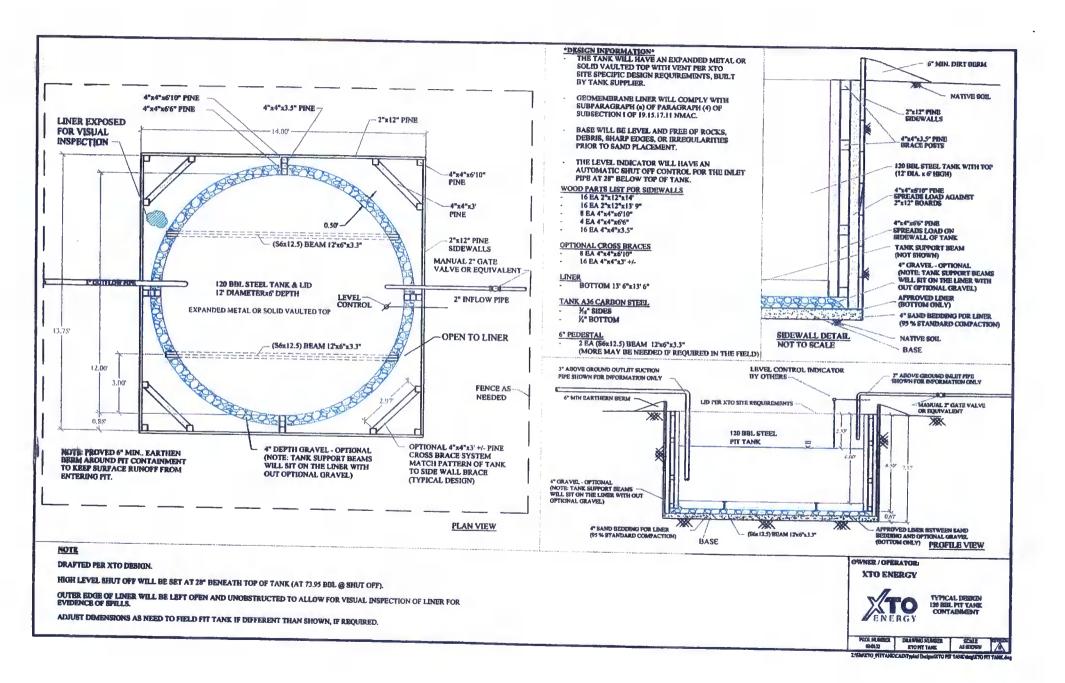
XTO Energy Inc. San Juan Basin (Northwest New Mexico) General Design and Construction Plan For Below-Grade Tanks Page 2

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bottom will be elevated a minimum of 6" above the underlying ground surface and the belowgrade tank will be underlain with a geomembrane liner to divert leaked liquid to a location that can be visually inspected. (See attached drawing).

- 9. XTO will equip below-grade tanks designed in this manner with a properly functioning automatic high-level shut-off control device and manual controls to prevent overflows. (See attached drawing).
- 10. XTO will demonstrate to the OCD that the geomembrane liner complies with the specifications of Subparagraph (a) of Paragraph (4) of Subsection I of 19.15.17.11 NMAC and obtain approval from OCD prior to the installation of the design. The geomembrane liner shall have a hydraulic conductivity no greater than 1 x 10-9 cm/sec. The geomembrane liner shall be composed of an impervious, synthetic material that is resistant to petroleum hydrocarbons, salts and acidics and alkaline solutions. The liner material shall be resistant to ultraviolet light. Liner compatibility shall comply with EPA SW-846 method 9090A. (See attached drawing).

11. The general specifications for design and construction are attached.



XTO Energy Inc. San Juan Basin (Northwest New Mexico) General Maintenance and Operating Plan For Below-Grade Tanks

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

General Plan

- 1. XTO will operate and maintain below-grade tanks to contain liquids and solids, maintain the integrity of the liner and secondary containment system, prevent contamination of fresh water and protect public health and the environment. Fluid levels will be monitored weekly and high levels will be removed as necessary. Monthly inspections will be conducted to monitor integrity of below-grade tank systems and below-grade tanks will be equipped with automatic high-level shut-off devices.
- 2. XTO will not allow below-grade tanks to overflow and will use berms and/or diversion ditch to prevent surface run on to enter the below-grade tank. Below-grade tanks will be equipped with automatic high-level shut-off control devices as well as manually operated shut-off valves. See attached drawing for vault design and placement of diversion berms and shut-off devices.
- 3. XTO will continuously remove any visible or measurable layer of oil from the fluid surface of below-grade tanks in order to prevent significant accumulation of oil.
 - 4. XTO will inspect the below-grade tank monthly and maintain written records for five years. Monthly inspections will consist of documenting the following: (see attached template),
 - Well Name API # Sec., Twn., Rng. XTO Inspector's name Inspection date and time Visible tears in liner Visible tears in liner Visible signs of tank overflow Collection of surface run on Visible layer of oil Visible signs of tank leak Estimated freeboard
- 5. XTO will maintain adequate freeboard to prevent over topping of the below-grade tank. High level shut-off devices control the freeboard at an average of 28" beneath the top of the tank.
- 6. XTO will not discharge into or store any hazardous waste in any below-grade tank.
- 7. If a below-grade tank develops a leak, or if any penetration of a below-grade tank occurs below the liquids surface, XTO will remove all liquids above the damage or leak line within 48 hours,

XTO Energy Inc. San Juan Basin (Northwest New Mexico) General Maintenance and Operating Plan For Below-Grade Tanks Page 2

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notify the appropriate division district office within 48 hours of the discovery and repair the damage or replace the below-grade tank. If an existing below-grade tank does not meet current requirements of Paragraphs 1-4 of Subsection I of 19.15.17.11 NMAC the tank will be modified or retrofitted to comply. If compliance can not be achieved XTO will implement the approved closure plan.

Well Name:					API No.:			
Legals	Sec:		Township:					
XTO Inspector's	Inspection	Inspection	Any visible liner	Any visible signs of	Collection of surface		Any visible signs	Freeboar
Name	Date	Time	tears (Y/N)	tank overflows (Y/N)	run on (Y/N)	of oil (Y/N)	of a tank leak (Y/N)	Est. (ft)
		·						
·								
Notes:	Provide De	tailed Descri	ption:					
Misc:			<u> </u>					

XTO Energy Inc. San Juan Basin (Northwest New Mexico) General Closure Plan For Below-Grade Tanks

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

General Plan

- 1. XTO will close below-grade tanks within the time periods provided in 19.15.17.13 NMAC, or by an earlier date that the division requires because of imminent danger to fresh water, public health or the environment.
- XTO will close a below-grade tank that does not meet the requirements of Paragraphs (1) through (4) of Subsection I of 19.15.17.11 NMAC or is not included in Paragraph (5) of Subsection I of 19.15.17.11 NMAC within five years after June 16, 2008, if not retrofitted to comply with Paragraphs (1) through (4) of Subsection I of 19.15.17.11 NMAC.
- 3. XTO will close a permitted below-grade tank within 60 days of cessation of the below-grade tank's operation or as required by the transitional provisions of Subsection B of 19.15.17.17 NMAC in accordance with a closure plan that the appropriate division district office approves. The closure report will be filed on form C-144.
- 4. XTO will remove liquids and sludge from below-grade tanks prior to implementing a closure method and will dispose of the liquids and sludge in a division-approved facility. Approved facilities and waste streams include:

Envirotech Permit No. NM01-0011 and IEI Permit No. NM 01-0010B Soil contaminated by exempt petroleum hydrocarbons Produced sand, pit sludge and contaminated bottoms from storage of exempt wastes

Basin Disposal Permit No. NM01-005 Produced water

- 5. XTO will remove the below-grade tank and dispose of it in a division approved facility or recycle, reuse, or reclaim it in a manner that the appropriate division district office has approved prior to removal. Any associated liners will be removed, properly cleaned and disposed of per 19.15.9.712 NMAC at San Juan County Landfill. Documentation of the final disposition will be included in the closure report.
- 6. XTO will remove any on-site equipment associated with a below-grade tank unless the equipment is required for some other purpose.
- 7. XTO will test the soils beneath the below-grade tank to determine whether a release has occurred. At a minimum 5 point composite sample will be collected along with individual grab samples from any area that is wet, discolored or showing other evidence of a release. Samples will be

XTO Energy Inc. San Juan Basin (Northwest New Mexico) General Closure Plan For Below-Grade Tanks Page 2

analyzed for BTEX, TPH and chlorides to demonstrate that the benzene concentration, as determined by EPA SW-846 methods 8021B or 8260B or EPA method that the division approves, does not exceed 0.2 mg/kg; total BTEX concentration, as determined by EPA SW-846 methods 8021B or 8260B or other EPA method that the division approves, does not exceed 50 mg/kg; the TPH concentration, as determined by EPA method 418.1 or other EPA method that the division approves, does not exceed 100mg/kg; and the chloride concentration, as determined by EPA method 300.1 or other EPA method that the division approves, does not exceed 250 mg/kg, or the background concentration, whichever is greater. XTO will notify the division of its results on form C-141.

- 8. If XTO or the division determines that a release has occurred, XTO will comply with 19.15.3.116 NMAC and 19.15.1.19NMAC as appropriate.
- 9. If the sampling program demonstrates that a release has not occurred or that any release does not exceed the concentrations specified in Paragraph (4) of Subsection E of 19.15.17.13 NMAC, XTO will backfill the excavation with compacted, non-waste containing, earthen material; construct a division prescribed soil cover; recontour and re-vegetate the site.
- Notice of Closure operations will be given to the Aztec Division District III office between 72 hours and one week prior to the start of closure activities via email or verbally. The notification will include the following:
 - i. Operator's name
 - ii. Well Name and API Number
 - iii. Location by Unit Letter, Section, Township, and Range

The surface owner shall also be notified prior to the implementation of any closure operations of below-grade tanks as per the approved closure plan using certified mail, return receipt requested.

- 11. Re-contouring of location will match fit, shape, line, form and texture of the surrounding area. Re-shaping will include drainage control, prevent ponding, and prevent erosion. 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.
- 12. A minimum of 4 feet of cover shall be achieved and the cover shall include 1 foot of suitable material to establish vegetation at the site, or the background thickness of topsoil, whichever is greater. Soil cover will be constructed to the site's existing grade and ponding of water and erosion of the cover material will be prevented with drainage control, natural drainages and silt traps where needed.
- 13. XTO will 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 divisionapproved methods. BLM or 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.

XTO Energy Inc. San Juan Basin (Northwest New Mexico) General Closure Plan For Below-Grade Tanks Page 3

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

- i. Proof of closure notice to division and surface owner;
- ii. Details on capping and covering, where applicable;
- iii. Inspection reports;
- iv. Confirmation sampling analytical results;
- v. Disposal facility name(s) and permit number(s);
- vi. Soil backfilling and cover installation;
- vii. Re-vegetation application rates and seeding techniques, (or approved alternative to re-vegetation requirements if applicable);
- viii. Photo documentation of the site reclamation.