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### Jones, Brad A., EMNRD

From:

Kim\_Champlin@xtoenergy.com

Sent:

Thursday, March 12, 2009 4:09 PM

To:

Jones, Brad A., EMNRD

Cc:

Mike\_Hartsell@xtoenergy.com; Martin\_Nee@xtoenergy.com

Subject:

Below Grade Pit Tank

### Brad,

Per our earlier conversation, XTO would like to close a below grade pit tank for operational reasons. I have submitted a modification C-144 for this tank to your office and would now like you to review and approve the closure plan only so we may proceed with closing this tank. We would like to begin closing by the end of the month if possible. The location is Evensen #3 (30-045-06387). It was submitted to your office by FedEx sometime between February 13 and February 27, 2009. This would have been one of the last boxes, if not the last box that was sent by XTO. If you need anything further feel free to contact me. Thank you for your help in this matter.

Kim Champlin Sr. Environmental Representative XTO Energy San Juan Division (505) 333-3207 Office (505)330-8357 Cell (505) 333-3280 Fax

This inbound email has been scanned by the MessageLabs Email Security System.

District I 1625 N. French Dr., Hobbs, NM 88240 District II		ч	. Er
1301 W. Grand Avenue, Artesia, NM 88210			
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District III 1000 Rio Brazos Road, Aztec, NM 87410	iM	-	
District IV	: 4	£	-
1220 S. St. Francis Dr., Santa Fe, NM 87505			
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### State of New Mexico nergy 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

<del></del>	
Type of action: Existing BGT	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,
	or proposed alternative method
Instructions: Please submit	one application (Form C-144) per individual pit, closed-loop system, below-grade tank or alternative request
advised that approval of this rec	uest does not relieve the operator of liability should operations result in pollution of surface water, ground water or the

Please be advised that 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: Evensen # 3
API Number:         30-045-06387         OCD Permit Number:
U/L or Qtr/Qtr G Section 19 Township 27N Range 10W County: San Juan
Center of Proposed Design:         Latitude36.563100
Surface Owner:  Federal  State  Private Tribal Trust or Indian Allotment
Pit: Subsection F or G of 19.15.17.11 NMAC   Temporary: Drilling Workover   Permanent Emergency Cavitation P&A   Lined Unlined Liner type: Thicknessmil LLDPE HDPE PVC Other
Liner Seams:  Welded Factory Other Volume: bbl Dimensions: L x W x D
3. Closed-loop System: Subsection H of 19.15.17.11 NMAC  Type of Operation: P&A Drilling a new well Workover or Drilling (Applies to activities which require prior approval of a permit or notice of intent)  Drying Pad Above Ground Steel Tanks Haul-off Bins Other  Lined Unlined Liner type: Thicknessmil LLDPE HDPE PVC Other  Liner Seams: Welded Factory Other
4.    Below-grade tank: Subsection I of 19.15.17.11 NMAC  Volume: 120
Submittal of an exception request is required. Exceptions must be submitted to the Santa Fe Environmental 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, hinstitution or church)	nospital,
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	·
7.  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)	
8.  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 of consideration of approval.  Exception(s): Requests must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.	office for
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 pits)  - 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   Previously Approved Design (attach copy of design)   API Number:   or Permit Number:
от тольной дерения обружения обружения образования в тольной дерения образования дерения образования дерения образования дерения образования дерения образования дерения образования дерения дерения образования дерения дерен
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 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  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 <sub>2</sub> 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: □ Drilling □ Workover □ Emergency □ Cavitation □ P&A □ Permanent Pit ☑ Below-grade Tank □ Closed-loop System □ Alternative  Proposed Closure Method: ☑ Waste Excavation and Removal □ Waste Removal (Closed-loop systems only) □ On-site Closure Method (Only for temporary pits and closed-loop systems) □ In-place Burial □ On-site Trench Burial □ Alternative Closure Method (Exceptions must be submitted to the Santa Fe Environmental Bureau for consideration)
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

Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only: (19.15.17.13.1 Instructions: Please indentify the facility or facilities for the disposal of liquids, drilling fluids and drill cuttings. Use attachment if facilities are required.	
Disposal Facility Name: Disposal Facility Permit Number:	
Disposal Facility Name: Disposal Facility Permit Number:	
Will any of the proposed closed-loop system operations and associated activities occur on or in areas that <i>will not</i> be used for future ser   Yes (If yes, please provide the information below)  No	vice 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 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	C
Siting Criteria (regarding on-site closure methods only): 19.15.17.10 NMAC Instructions: Each siting criteria requires a demonstration of compliance in the closure plan. Recommendations of acceptable sour provided below. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate dist considered an exception which must be submitted to the Santa Fe Environmental Bureau office for consideration of approval. Justidemonstrations of equivalency are required. Please refer to 19.15.17.10 NMAC for guidance.	rict 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 ☐ NA
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	☐ Yes ☐ No ☐ NA
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.  - 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; 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
On-Site Closure Plan Checklist: (19.15.17.13 NMAC) Instructions: Each of the following items must be attached to the closure plan 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 NMAC  Proof of Surface Owner Notice - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC  Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate requirements of 19.15.17.11 NMAC  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 NMAC  Waste Material Sampling Plan - 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 or in case on-site closure standards cann 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 G of 19.15.17.13 NMAC	15.17.11 NMAC

·		
Operator Application Certification:  I hereby certify that the information submitted with this application is true, a	ccurate and complete to t	the best of my knowledge and belief.
Name (Print): Kim Champlin	Title:	Environmental Representative
Signature: Nim Champlin	Date:	02/11/2009
e-mail address:kim_champlin@xtoenergy.com	Telephone:	(505) 333-3100
20.  OCD Approval: ☐ Permit Application (including closure plan) ☑ Closu	re Plan (only) OCI	O Conditions (see attachment)
OCD Representative Signature:		Approval Date: 3/12/05
Title: Fremmental Engineer		nber:
Closure Report (required within 60 days of closure completion): Subsectinstructions: Operators are required to obtain an approved closure plan properties report is required to be submitted to the division within 60 days section of the form until an approved closure plan has been obtained and the	rior to implementing any s of the completion of the	closure activities and submitting the closure report. c closure activities. Please do not complete this
	☐ Closure Com	npletion Date:
Closure Method:  Waste Excavation and Removal On-Site Closure Method Al If different from approved plan, please explain.	ternative Closure Method	d  Waste Removal (Closed-loop systems only)
23. Closure Report Regarding Waste Removal Closure For Closed-loop Syst Instructions: Please indentify the facility or facilities for where the liquids, two facilities were utilized.		
Disposal Facility Name:	Disposal Facility F	Permit Number:
Disposal Facility Name:	Disposal Facility F	Permit Number:
Were the closed-loop system operations and associated activities performed of Yes (If yes, please demonstrate compliance to the items below)		t be used for future service and operations?
Required for impacted areas which will not be used for future service and open Site Reclamation (Photo Documentation)  Soil Backfilling and Cover Installation  Re-vegetation Application Rates and Seeding Technique	erations:	
24. Closure Report Attachment Checklist: Instructions: Each of the following mark in the box, that the documents are attached.	ng items must be attache	d to the closure report. Please indicate, by a check
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 closu Disposal Facility Name and Permit Number Soil Backfilling and Cover Installation Re-vegetation Application Rates and Seeding Technique Site Reclamation (Photo Documentation)	ire) ongitude	NAD: □1927 □ 1983
Operator Closure Certification:		
I hereby certify that the information and attachments submitted with this clos belief. I also certify that the closure complies with all applicable closure requ		
Name (Print):		
Signature:	Date:	
e-mail address:	Telenhone:	

### NEW MEXICO OIL CONSERVATION COMMISSION WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102 Supersedes C-128 Effective 1-1-65

All distances must be from the outer boundaries of the Section.

Operator	ı	_ecse		Well No.
HUSKY OIL COMPANY			- Evensen	3 •
Unit Letter Section	Township	Range	County	
G 19	27 NORTH	10 WEST	SAN JUAN	
Actual Foctage Location of Well:			_	
	NORTH line and		t from the EAST	line
Ground Level Elev: Producing For		Pool	1	dicated Acreage:
5900.9 GALL	·	ANGELS PEAK - GA		80 Acres
<ol> <li>Outline the acreage dedicated.</li> <li>If more than one lease is interest and royalty).</li> <li>If more than one lease of dated by communitization, to detect the acreage dedicated.</li> </ol>	dedicated to the well,	outline each and ide	ntify the ownership there	eof (both as to working
·	nswer is "yes," type of owners and tract descri	consolidation ptions which have ac interests have been c	ctually been consolidated consolidated (by commu- h interests, has been ap	nitization, unitization, proved by the Commis-
	19	JUN 1 7 1968 OIL CON. COM. DIST. 3	I hereby certitained herein best of my knowne ROGE PositionSTRI  Company  Date  I hereby certishawn on this notes of actaunder my sup is true and knowledge and	E 13, 1968  Iffy that the well location is plat was plotted from field wal surveys made by me or ervision, and that the same correct to the best of my id belief.
			Certificate No.	

### XTO Energy Client: **Pit Permit** Lodestar Services, Inc. Project: tank permitting **Siting Criteria** 12-Jan-09 Revised: O Box 4465, Durango, CO 81302 Information Prepared by: Trevor Ycas API#: 30-045-06387 **USPLSS:** 27N 10W 19 G Name: EVENSEN No.003 Lat/Long: 36.563100°, -107.933690° Geologic depth < 50' Nacimiento Formation (Tn) Depth to groundwater: formation: Distance to closest 9.6 miles N to 'San Juan River'; site elevation: continuously flowing ~10.8 miles E to 'Blanco Canyon' 1813m/5948' watercourse: main wash channel Distance to closest ~600' W or E to 'Kutz Canvon' significant watercourse, main wash channel lakebed, playa lake, or sinkhole: Soil Type: Alfisol / Entisol Permanent residence, school, hospital, NO institution or church within 300' Annual Navajo Reservoir: 11.90", Aztec: 9.77", Precipitation: Farmington (FAA): 8.21", Bloomfield: 8.71' Domestic fresh water Precipitation Historical daily max. precip.: 4.0" well or spring within NO Notes: (Bloomfield) 500 Any other fresh water well or spring within NO 1000 26N09W\_iWaters.pdf, 26N10W\_iWaters.pdf, **Attached** 26N11W\_iWaters.pdf, 27N09W\_iWaters.pdf, **Documents:** NO 27N10W\_iwaters.pdf, 27N11W\_iwaters.pdf, Within incorporated 28N09W iWaters.pdf, 28N10W\_iWaters.pdf, municipal boundaries 28N11W\_iWaters.pdf Within defined FM3500640550B\_30-30-045-06387\_gEarth-iWaters.jpg, 30-045-06387\_gEarthmunicipal fresh water NO 045-06387.jpg PLS.jpg ,30-045-06387\_topo-PLS.jpg well field NO Mining Activity: None Near Wetland within 500' NM\_NRD-MMD\_MinesMillQuarries\_30-045-06387.jpg Within unstable area NO Within 100 year flood NO plain **Additional Notes:** drains to 'San Juan River' headwaters of Kutz Canyon, W of Angel via 'Kutz Canyon' Peak & W of Harris Mesa

### **EVENSEN 3**

### **Below Ground Tank**

API#: 30-045-06387

### **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 surficial geology (Dane and Bachman, 1965). The proposed pit location will be located in the southernmost Kutz Canyon region of the San Juan Basin. The predominant geologic formation is the Nacimiento Formation of Tertiary age, which underlies surface soils and is often exposed (Dane and Bachman, 1965). Deposits of Quaternary alluvial and aeolian sands occur prominently near the surface of the area, 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). In most of the proposed area, the Nacimiento Formation lies at the surface and grades into the Animas Formation to the west. Thickness of the Nacimiento ranges from 418 to 2232 feet (Stone et al., 1983). Aquifers within the coarser and continuous sandstone bodies of the Nacimiento Formation are between 0 and 1000' deep in this section of the basin (Stone et al., 1983). Groundwater within these aquifers flows toward the San Juan River.

The prominent soil type at the proposed site are entisols and aridisols, which are defined as soils that exhibit little to no any profile development (www.emnrd.state.nm.us). Soils are basically unaltered from their parent rock. Miles of arroyos, washes and intermittent streams exist as part of the drainage network towards the San Juan River. 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. The sudden influx of water from storm events easily erodes the soils that cover the area and prohibits effective recharge to the underlying aguifers.

Dry and arid weather further prohibit active recharge. The climate of the region is arid, averaging 8 to 12 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 www.wrcc.dri.edu).

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

### **Site Specific Hydrogeology**

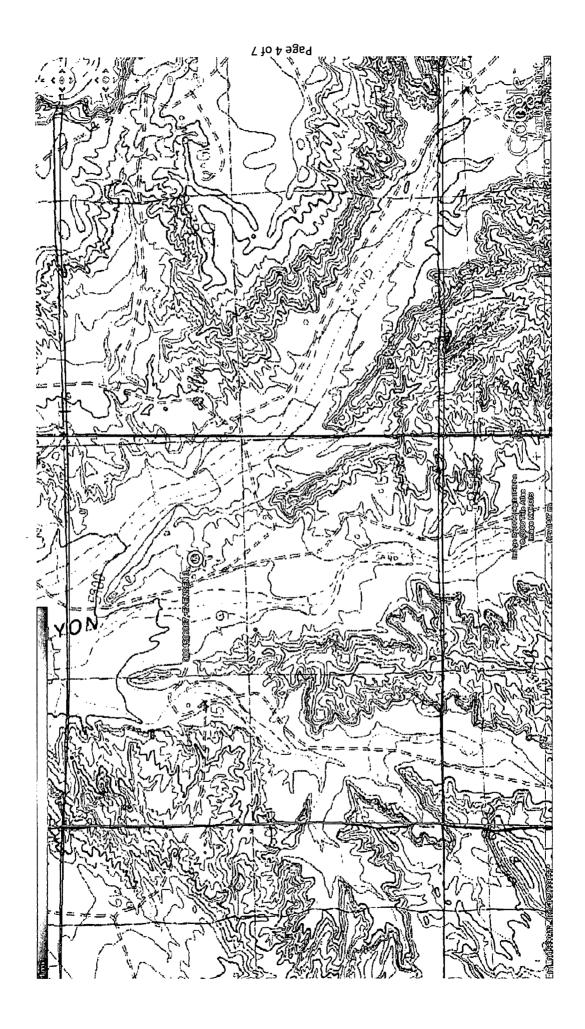
Depth to groundwater is estimated to be less than 50'. This estimation is based on data from Stone and others (1983), the USGS Groundwater Atlas of the United States and depth to groundwater data published on the New Mexico State Engineer's iWaters Database website. Local topography and proximity to surface hydrologic features are also taken into consideration.

Beds of water-yielding sandstone are present in the Nacimiento Formation, which are fluvial in origin and are interbedded with siltstone, shale and coal. Porous sandstones form the principal aquifers, while relatively impermeable shales form confining units between the aquifers (Stone et al., 1983). Local aquifers exist within the Nacimiento Formation at depth s greater than 100 feet and thicknesses of the aquifer can be up to 3500 feet (USGS, Groundwater Atlas of the US).

The site in question is located in the upper, southernmost, reaches of Kutz Canyon, where deeply eroded sandstone-capped mesas and slope-forming mudstones occur in a sparsely vegetated and arid badlands-type setting. Broad shalely hills are interspersed with occasional sandstone outcrops, and systems of dry washes and their tributaries are evident on the attached aerial image.

The pit will be located on relatively ground at an elevation of approximately 5948 feet near the head of Kutz Wash. It will be approximately 600 feet from the Kutz Canyon Wash (East Fork). Groundwater is expected to be shallow within Kutz Wash.

State iWaters data points are sparsely distributed in this region, but there is an iWaters data point approximately 3.7 miles to the north-northwest of the site. Depth to groundwater at that site is 60 feet. A map showing the location of wells in reference to the proposed pit location is attached (SJ00032).



Township: 28N Range: 09W Sections:	NAD27 X: Y: Zone: Cone: Search Radius:	County: Suffix: Suffix:	Owner Name: (First) (Last) Owner Size (Non-Domestic Onestic On	POD / Surface Data Report   Avg Depth to Water Report   Water Column Report	Clear Form iWATERS Menu Help
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# WATER COLUMN REPORT 08/06/2008

	(quarter	s are	11	MZ	2=1X	E E	quarters are 1=NW 2=NE 3=SW 4=SE)						
	(quarter	s are	bi	gge	st	ţ	quarters are biggest to smallest)			Depth	Depth	Water (in feet)	in feet)
POD Number		Rng	Sec	ש	ם ה		Zone	×	×	Well	Water	Column	
SJ 03746 POD1		M60	20	Н	2 3					190	40	150	
SJ 00018	28N	09W 20 3 1 4	20	٣	1 4					135	71	64	
SJ 02800		M60	24 4 2 3	4	2 3					200			

Record Count: 3

8/6/2008 3:10 PM

/ Sections:	Zone: Search Radius:	Number: Suffix:	(Last) ONon-Domestic ODomestic @All	POD / Surface Data Report Avg Depth to Water Report Water Column Report	n iWATERS Menu Help
Township: 27N Range: 111W	NAD27 X: Y:	County: Basin:	Owner Name: (First) (La	POD / Surface Data Report	Clear Form

# WATER COLUMN REPORT 08/06/2008

	(quarters are 1=NW 2=NE 3=SW 4=SE)	s are	Z=T	W 2=N	医 3=(	SW 4=SE)							
	(quarters are biggest to smallest)	s are	big	gest	to si	mallest)			Depth	Depth	Water (in feet)	(in fee	t)
POD Number	Tws	Rng	Sec	9.9	Ž	Zone	×	×	Well	Well Water	Column		
		27N 11W 07 2 2	07	2 2					650				
SJ 00077	27N	27N 11W 26 2 1 3	56	2 1 3					1102	550	552		

Record Count: 2

8/6/2008 12:43 PM

Township: 27N Range: 10W  NAD27 X: Y:  County: Basin: Last  Owner Name: (First)  POD / Surface Data Report Av  Clear Form
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# WATER COLUMN REPORT 08/06/2008

<b>b</b> )	<b>uarter</b> :	are:	1=1X	W 2=	NE 33	(quarters are 1=NW 2=NE 3=SW 4=SE)							
b)	uarter	are:	big	gest	ţ	smallest)			Depth	Depth	Water (in feet)	(in	feet)
POD Number	Tws	Rng	Sec	ם ה	יט	Zone	×	×	Well	Water Co	Column		
	27N	10W	80	2 2	m				235	09	175		
sJ 00033	27N	10W	80	2 2	m				204				
	_ 27N	10W	80	2 2	2	27N 10W 08 2 2 3			235	170	65		

Record Count: 3

8/6/2008 12:44 PM

New Mexico Office of the State Engineer POD Reports and Downloads

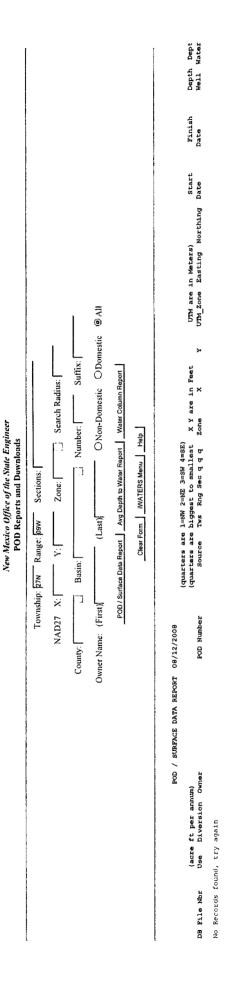
Sections:	Zone: Search Radius:	Number: Suffix:	ONon-Domestic ODomestic @All	Avg Depth to Water Report   Water Column Report	iWATERS Menu Help
Township: 27N Range: 10W	NAD27 X:	County: Basin:	Owner Name: (First) (Last)	POD / Surface Data Report   Avg	Clear Form

AVERAGE DEPTH OF WATER REPORT 08/06/2008

Bsn Tws Rng Sec Zone X Y Wells Min Max Avg SJ 27N 10W 08 2 60 170 115

Record Count: 2

8/6/2008 12:41 PM



8/12/2008 8:26 PM

New Mexico Office of the State Engineer POD Reports and Downloads

Township: 26N Range: 11W Sections:	NAD27 X: Zone: Zone: Zone: Zone: Zone: Zone: Zone: Zone: Zone	Suffix:   Suffix:	Name: (First) Clast) ONon-Domestic ODomestic OAll	POD / Surface Data Report	Clear Form   iWATERS Menu   Help
Tow	NAD27	County:	Owner Name: (First)	2	

# WATER COLUMN REPORT 08/11/2008

	(quarter	s are	ii d	Ě	2=NE	(quarters are 1=NW 2=NE 3=SW 4=SE)	ត្ន						
	(quarter	s are	bi	gge	st t	o smalles	<b>∵</b>			Depth	Water (in feet)	(in fe	et)
POD Number	Tws	Rng	Sea	ט	ם ה	Tws Rng Sec q q q Zone X	×	<b>5</b> 4	Well	Water	Column		
	26N	11W	16	4	~				255	200	55		
SJ 02734	26N	11W	35	4	3 2				275	165	110		

Record Count: 2

8/11/2008 9:51 AM

Township: 26N Range: 10W Sections:	NAD27 X: Zone: Zone: Zone:	County: Suffix: Suffix:	Owner Name: (First) (Last) (Domestic @All	POD / Surface Data Report Avg Depth to Water Report Water Column Report	Clear Form iWATERS Menu Help
		Count	Owner		

## WATER COLUMN REPORT 08/08/2008

	(quarter	s are	L=NW 2=NE	(quarters are $1=NW$ $2=NE$ $3=SW$ $4=SE$ )							
	(quarter	s are 1	oiggest to	(quarters are biggest to smallest)			Depth	h Depth W	Water (in feet)	(in fe	et)
POD Number	Tws	Rng Se	€C Q Q Q	Zone	×	×	Well	Water	Column		
SJ 00193		10W 13	26N 10W 13 4 2				2287	200	1787		
SJ 00194	26N	10W 25 4 1	5 4 1				2105	200	1605		

Record Count: 2

8/8/2008 2:57 PM

New Mexico Office of the State Engineer POD Reports and Downloads

Township: 26N Range: 09W Sections:	NAD27 X: Zone: Zone: Search Radius:	County: Suffix: Suffix:	Owner Name: (First) (Last) (Last) Owner Name: (First) Ohon-Domestic Ohon-Stick Ohon-Domestic Ohon-Stick Ohon-S	POD / Surface Data Report   Avg Depth to Water Report   Water Column Report	Clear Form WATERS Menu Help
		County:	Owner N		

## WATER COLUMN REPORT 08/08/2008

	(quarter	s are	1     N	Σ Σ	LEE.	3=SW 4=SE)						
	(quarter	s are	big	gest	다	smallest)			Depth	Water	in feet)	
POD Number	Tws	Rng	Sec	ה ה	ס	Zone	×		Water	Column		
	26N	M60	01	2 2	ς,							
SJ 02962	26N	M60	01	3 2	m	26N 09W 01 3 2 3		1500				
	26N	M60	11	2 2	m			75	40	35		
	26N	M60	12	3 3	~			348	175	173		
1	26N	M60	16	4 2				202	65	137		
	26N	M60	56	2 4	2			946	230	716		
	26N	M60	56	4 2	Ţ			490	215	275		
i i	26N	M60	56	4 2	m			479	234	245		

Record Count: 8

8/8/2008 1:59 PM

Township: 28N Range: 11W Sections:	NAD27 X: Y: Zone: Zone: Search Radius:	County:   Basin:   Suffix:	Owner Name: (First) (Last) (Last) Owner Non-Domestic Obomestic © All	POD / Surface Data Report	Clear Form   iWATERS Menu   Help
Ţ	NAD	County:	Owner Name:	-1	

## WATER COLUMN REPORT 08/06/2008

:SW 4=SE)		Zone X Y Well Water Column	80 35 45	
quarters are 1=NW 2=NE 3=SW 4=SE)	(quarters are biggest to smallest)		28N 11W 07 3 4 3	N 11W 07 344
(quarte	(quarte	POD Number Tws	<b>SJ 03193</b> 28N	<b>SJ 02916</b> 28N

Record Count: 2

8/6/2008 12:29 PM

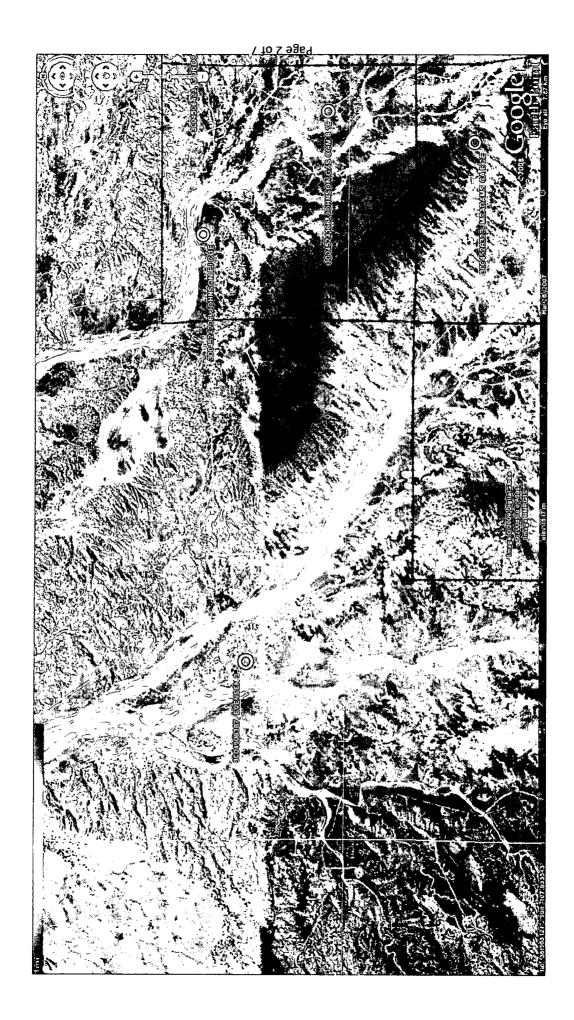
NAD27 X:   Y:   Zone:   Search Radius:	Sounty: Suffix: Suffix:	wner Name: (First) CLast) Onestic ODomestic Odomestic Odomestic Odomestic	POD / Surface Data Report Avg Depth to Water Report Water Column Report	Clear Form WATERS Menu Help
_	County:	Owner Nam		
	Y: Zone:	NAD27 X: Y: Zone: Search Radius Basin: Number:	NAD27 X:         Y:         Zone:           Basin:         Nu           Ime: (First)         (Last)	D27 X:

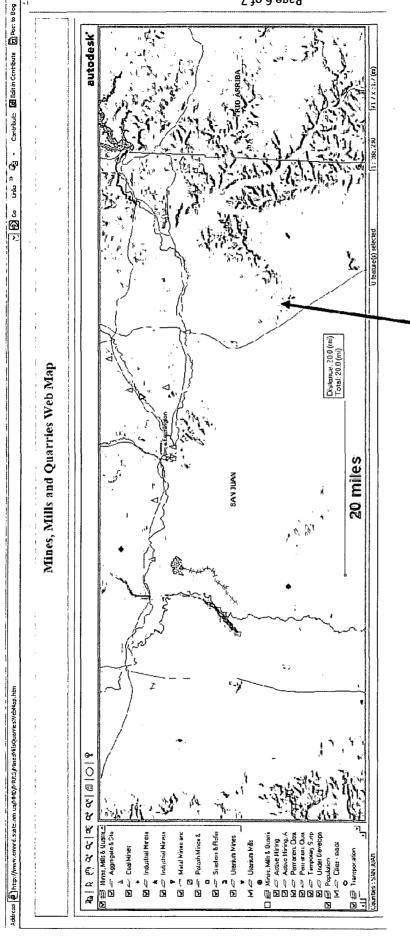
## WATER COLUMN REPORT 08/08/2008

Water (in feet) Column Depth Water Depth Well × (quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are biggest to smallest) Tws Rng Sec q q q Zone POD Number

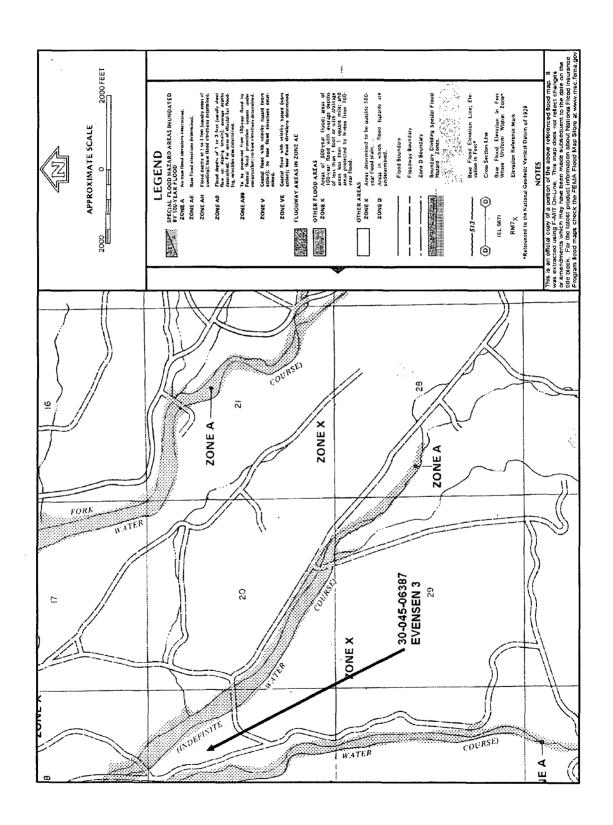
No Records found, try again

8/8/2008 12:46 PM





30-045-06387; 30-045-24206; 30-045-24166; 30-045-06423; 30-045-24101; 30-045-26323; 30-045-06295; 30-045-06243; 30-045-06324; 30-045-06222;



### 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.

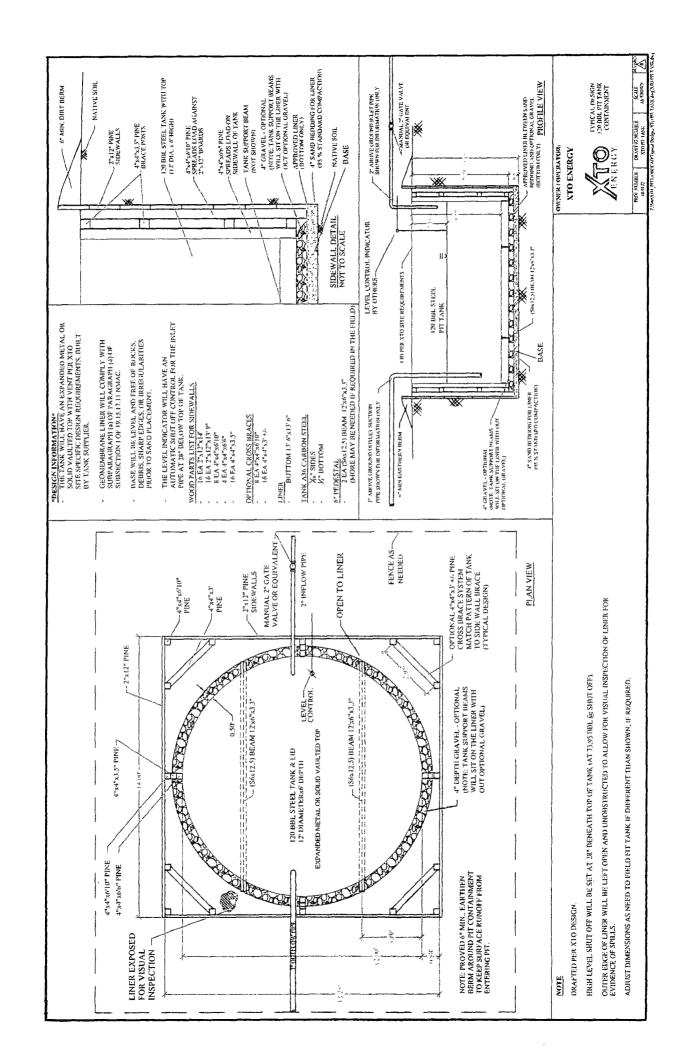
### **General Plan**

- 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 ½ 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 \( \frac{1}{2} \) 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.
- 7. 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

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

- 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 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

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.

		MONTH	1LY BELO	MONTHLY BELOW GRADE TANK INSPECTION FORM	INSPECTIO	N FORM		
Well Name:					API No.:			
	•				-			
Legals	Sec		Township:		Range:			
XTO Inspector's	Inspection	ع	Any visible liner	Any visible signs of	Collection of surface	Visible layer		Freeboard
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	Provide Detailed Description:	otion:					
Misc:								

### 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.
- 2. 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.
- 10. 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 division-approved 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

- 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.