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### Jones, Brad A., EMNRD

From:

 ${\it Kim\_Champlin@xtoenergy.com}$ 

Sent: To: Monday, March 29, 2010 11:30 AM Jones, Brad A., EMNRD

Subject:

BGT Closures

Hi Brad,

XTO Energy is taking the necessary steps to P&A some wells in the next several months. All of these wells had pit applications submitted to your office. Can you please review/approve the closure plan part of the application? If you have any questions or require further information feel free to contact me. Thank you.

Kutz Federal Gas Com A #1	30-045-26069	Sec. 08M-T28N-R10W	11/25/2008
Abrams Gas Com C #1	30-045-07880	Sec. 25F-T29N-R10W	12/5/2008
Thomas#1	30-045-09722	Sec. 09A-T30N-R11W	12/12/2008
Berger A #1	30-045-13035	Sec. 21J-T26N-R11W	1/9/2009
Byrd Frost #1	30-045-25533	Sec. 16D-T26N-R08W	1/16/2009

Kim Champlin
XTO Energy Inc.
EH&S Administrative Coordinator
San Juan Division
(505) 333-3100 office
(505) 330-8357 cell
(505) 333-3280 fax
kim\_champlin@xtoenergy.com

State of New Mexico    District I   1625 N. French Dr., Hobbs, NM 88240   Energy Minerals and Natural Resources   District III   1301 W. Grand Avenue, Artesia, NM 88210   Department   District III   1000 Rio Brazos Road, Aztec, NM 87410   Coll Conservation Division   District IV   1220 South St. Francis Dr.     Santa Fe, NM 87505   Santa Fe, N	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				
Proposed Alternative Method Permit or Closure P	lan Application			
Type of action:  Existing BGT  Closure of a pit, closed-loop system, below-grade tank, or proposed alternative method  Modification to an existing permit  Closure plan only submitted for an existing permitted or non-permitted pit, closed-loop system, below-grade tank, or proposed alternative method				
- · · · · · · · · · · · · · · · · · · ·	no below our de taub ou altamative nearest			
Instructions: Please submit one application (Form C-144) per individual pit, closed-loop syste Please be advised that approval of this request does not relieve the operator of liability should operations result in	_			
environment. Nor does approval relieve the operator of its responsibility to comply with any other applicable go				
I. Occurrence VTO Fearery Inc.	5290			
Operator:         XTO Energy, Inc.         OGRID #:           Address:         #382 County Road 3100, Aztec, NM 87410				
Facility or well name:Berger A #1				
API Number: 30-045-23035 OCD Permit Number:				
U/L or Qtr/Qtr J Section 21 Township 26N Range 11W County				
Center of Proposed Design: Latitude 36.468126 Longitude 108.012989				
Surface Owner:   Federal  State  Private  Tribal Trust or Indian Allotment	14AB. [1927 Z 1965			
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 mil ☐ LLDPE ☐ HDPE ☐ PVC ☐ Otl	ner			
☐ String-Reinforced				
Liner Seams: Welded Factory Other Volume: bbl	Dimensions: L x W x D			
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 whi intent)   Drying Pad Above Ground Steel Tanks Haul-off Bins Other Lined Unlined Liner type: Thickness mil LLDPE HDPE PVC Liner Seams: Welded Factory Other	ch require prior approval of a permit or notice of			
4.				
Below-grade tank: Subsection I of 19.15.17.11 NMAC				
Volume: 120 bbl Type of fluid: Produced Water				
Tank Construction material: Steel	<u> </u>			
Secondary containment with leak detection  Visible sidewalls, liner, 6-inch lift and automatic ov				
Visible sidewalls and liner Visible sidewalls only Other Visible sidewalls vaulted autom	atic high-level shut off no liner			

Liner type: Thickness \_

Alternative Method:

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

mil HDPE PVC Other

•			
6.  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)  The 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 office for			
consideration of approval.  Exception(s): Requests must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.			
10.			
Siting Criteria (regarding permitting): 19.15.17.10 NMAC	-4-11 · ·		
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 appro	priate 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			
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.	☐ Yes ⊠ No ☐ NA		
<ul> <li>(Applies to temporary, emergency, or cavitation pits and below-grade tanks)</li> <li>Visual inspection (certification) of the proposed site; Aerial photo; Satellite image</li> </ul>	I NA		
Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.	☐ Yes ☐ No 図 NA		
(Applies to permanent pits) - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	NA NA		
Within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock	☐ Yes ⊠ No		
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			
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			
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.	☐ Yes ⊠ No		
<ul> <li>Engineering measures incorporated into the design; NM Bureau of Geology &amp; Mineral Resources; USGS; NM Geological Society; Topographic map</li> </ul>			
Within a 100-year floodplain FEMA map	☐ Yes ⊠ No		

<ul> <li>attached.</li> <li>Hydrogeologic Report (Below-grade Tanks) - based up</li> <li>Hydrogeologic Data (Temporary and Emergency Pits)</li> <li>Siting Criteria Compliance Demonstrations - based upo</li> <li>Design Plan - based upon the appropriate requirements</li> <li>Operating and Maintenance Plan - based upon the appr</li> </ul>	on the requirements of Paragon the requirements of Paragon the requirement on the appropriate requirement of 19.15.17.11 NMAC oppriate requirements of 19.1 applicable) - based upon the	graph (4) of Subsection B of 19.15.17.9 NMAC atts of Paragraph (2) of Subsection B of 19.15.17.9 NMAC ants of 19.15.17.10 NMAC ants of 19.15.17.10 NMAC ants of 19.15.17.10 NMAC appropriate requirements of Subsection C of 19.15.17.9 NMAC	.C
12. Closed-loop Systems Permit Application Attachment Che	aldista Culossation D - 610	IS 170 NIMAC	
	osure) - based upon the requirensite closure) - based upon the requirensite closure) - based upon s of 19.15.17.11 NMAC	indicate, by a check mark in the box, that the documents are irements of Paragraph (3) of Subsection B of 19.15.17.9 the appropriate requirements of 19.15.17.10 NMAC	
		ne appropriate requirements of Subsection C of 19.15.17.9 NM	AC
Previously Approved Design (attach copy of design)	API Number:		
		(Applies only to closed-loop system that use	
above ground steel tanks or haul-off bins and propose to imp	lement waste removal for cl	osure)	
attached.  Hydrogeologic Report - based upon the requirements of Siting Criteria Compliance Demonstrations - based upon the Climatological Factors Assessment  Certified Engineering Design Plans - based upon the a Dike Protection and Structural Integrity Design - based Leak Detection Design - based upon the appropriate relationship Liner Specifications and Compatibility Assessment - based upon the Appropriate relationship Liner Specifications and Compatibility Assessment - based upon the Appropriate relation and I operating and Maintenance Plan - based upon the Appropriate or Hazardous Odors, including H2S, Prevent Emergency Response Plan oil Field Waste Stream Characterization Monitoring and Inspection Plan Erosion Control Plan Closure Plan - based upon the Appropriate requirement	of Paragraph (1) of Subsection the appropriate requirements of 1 dupon the appropriate requirements of 19.15.17.11 massed upon the appropriate requirements of 19.15.17.11 massed upon the appropriate renstallation Plan ropriate requirements of 19.	ents of 19.15.17.10 NMAC  19.15:17.11 NMAC frements of 19.15.17.11 NMAC NMAC equirements of 19.15.17.11 NMAC  15.17.12 NMAC nents of 19.15.17.11 NMAC	
	tion P&A Permaner  val  p systems only)  ly for temporary pits and clo  On-site Trench Burial	nt Pit 🛛 Below-grade Tank 🗌 Closed-loop System	
15.	(19.15.17.13 NMAC) Instructed the documents are attacked requirements of 19.15.17.12 on the appropriate requirements, drilling fluids and drilling upon the appropriate requirements of Subsection I of 19	uctions: Each of the following items must be attached to the ched.  3 NMAC ents of Subsection F of 19.15.17.13 NMAC attings) ements of Subsection H of 19.15.17.13 NMAC 9.15.17.13 NMAC	

Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Instructions: Please indentify the facility or facilities for the disposal of liquids, 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 of Yes (If yes, please provide the information below) No		ice 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 I of 19.15.17.13 NMAC  Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC				
Siting Criteria (regarding on-site closure methods only): 19.15.17.10 NMAC Instructions: Each siting criteria requires a demonstration of compliance in the provided below. Requests regarding changes to certain siting criteria may require considered an exception which must be submitted to the Santa Fe Environmental demonstrations of equivalency are required. Please refer to 19.15.17.10 NMAC.	e administrative approval from the appropriate distr I Bureau office for consideration of approval. Justi,	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; Database search;	a obtained from nearby wells	Yes No		
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	a 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; Database search;	a obtained from nearby wells	☐ Yes ☐ No ☐ NA		
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other sig lake (measured from the ordinary high-water mark).  - Topographic map; Visual inspection (certification) of the proposed site	nificant watercourse or lakebed, sinkhole, or playa	☐ Yes ☐ No		
Within 300 feet from a permanent residence, school, hospital, institution, or church - Visual inspection (certification) of the proposed site; Aerial photo; Satellite		☐ Yes ☐ No		
Within 500 horizontal feet of a private, domestic fresh water well or spring that les watering purposes, or within 1000 horizontal feet of any other fresh water well or s  - NM Office of the State Engineer - iWATERS database; Visual inspection (	pring, in existence at the time of initial application.	Yes No		
Within incorporated municipal boundaries or within a defined municipal fresh water adopted pursuant to NMSA 1978, Section 3-27-3, as amended.  - Written confirmation or verification from the municipality; Written approve		☐ Yes ☐ No		
Within 500 feet of a wetland US Fish and Wildlife Wetland Identification map; Topographic map; Visua	al 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 Geolog Society; Topographic map	y & Mineral Resources; USGS; NM Geological	☐ 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 by a check mark in the box, that the documents are attached.  Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate of a drying protocols and Procedures - based upon the appropriate requirements of Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Disposal Facility Name and Permit Number (for liquids, drilling fluids and Confirmation Plan - based upon the appropriate requirements of Subsection Re-vegetation Plan - based upon the appropriate requirements of Subsection Site Reclamation Plan - based upon the appropriate requirements of Subsection	uirements of 19.15.17.10 NMAC Subsection F of 19.15.17.13 NMAC oppropriate requirements of 19.15.17.11 NMAC ad) - based upon the appropriate requirements of 19.15.17.13 NMAC uirements of Subsection F of 19.15.17.13 NMAC Subsection F of 19.15.17.13 NMAC rill cuttings or in case on-site closure standards cannot H of 19.15.17.13 NMAC I of 19.15.17.13 NMAC	15.17.11 NMAC		

19.,		
Operator Application Certification:  I hereby certify that the information submitted with this application is true, according to the control of the control	curate and complete to the be	est of my knowledge and belief.
Name (Print): Kim Champlin	·	Environmental Representative
Signature: Kim Champlin	Date:01/	/02/2009
e-mail address: kim_champlin@xtoenergy.com	Telephone:	(505) 333-3100
20.		
OCD Approval: Permit Application (including closure plan) Application	Plan (only) DOCD Cor	nditions (see attachment)
OCD Representative Signature:		Approval Date:
Title: Environment Engineer	OCD Permit Number:	
Closure Report (required within 60 days of closure completion): Subsection Instructions: Operators are required to obtain an approved closure plan price. The closure report is required to be submitted to the division within 60 days a section of the form until an approved closure plan has been obtained and the	r to implementing any clos f the completion of the clos closure activities have beer	ure activities and submitting the closure report. sure activities. Please do not complete this
·	— Closure Completi	ion Date.
22. Closure Method: Waste Excavation and Removal On-Site Closure Method Alte If different from approved plan, please explain.	rnative Closure Method	Waste Removal (Closed-loop systems only)
23. Closure Report Regarding Waste Removal Closure For Closed-loop Syste Instructions: Please indentify the facility or facilities for where the liquids, a two facilities were utilized.	ms That Utilize Above Gro rilling fluids and drill cutti	ound Steel Tanks or Haul-off Bins Only: ings were disposed. Use attachment if more than
Disposal Facility Name:	_ Disposal Facility Permi	it Number:
Disposal Facility Name:		it Number:
Were the closed-loop system operations and associated activities performed on Yes (If yes, please demonstrate compliance to the items below) No		
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	ations:	
24.		
Closure Report Attachment Checklist: Instructions: Each of the following mark in the box, that the documents are attached.  Proof of Closure Notice (surface owner and division)  Proof of Deed Notice (required for on-site closure)  Plot Plan (for on-site closures and temporary pits)  Confirmation Sampling Analytical Results (if applicable)  Waste Material Sampling Analytical Results (required for on-site closur Disposal Facility Name and Permit Number  Soil Backfilling and Cover Installation  Re-vegetation Application Rates and Seeding Technique  Site Reclamation (Photo Documentation)		the closure report. Please indicate, by a check
On-site Closure Location: Latitude Lon	gitude	NAD: 1927 1983
Operator Closure Certification:  I hereby certify that the information and attachments submitted with this closure belief. I also certify that the closure complies with all applicable closure required.		
Name (Print):	Title:	
Signature:	Date:	
e-mail address:	Telephone:	

## 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.

All distances must be from the outer boundaries of the Begtlan. Well No. Merrion & Bayless Fi1 Roll Unit Letter Township County n 27N San Juan 790 South line ound Level Elev. Producing Formation Dedicated Acreage: Pictured Cliffs 5998 160 1. Outline the acreage dedicated to the subject well by colored pencil or bachure marks on the plat below. 2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty). 3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling. etc? If answer is "yes," type of consolidation Yes No If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.). No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission. CERTIFICATION I hereby certify that the information con-Robert L. Bayless Position Co-Owner Merrion & Bayless April 5, 1978 Sec 35 I hereby certify that the well location on this plat was platted from field my supervision, and that the same knowledge and belief. 14501 April Registered | 7901 Fred Cettilicaia



### Pit Permit Siting Criteria Information Sheet

	· · · · · · · · · · · · · · · · · · ·
Client:	XTO Energy
Project:	Pit Permits
Revised:	12/5/2008
Prepared by:	Daniel Newman

PO Box 4465, Durango	. CO 81302	ording criteria	Kevisea:	12/3/2008
V		Information Sheet	Prepared by:	Daniel Newman
API#:		30045#3035	 USPLSS:	T26N,R11W,21J
Name:		BERGER A1	Lat/Long:	36.468126 / -108.012989
Depth to groundwater:		> 100'	Geologic formation:	Nacimiento Formation
Distance to closest continuously flowing watercourse:	.6.21 mile:	s south of the San Juan River		
Distance to closest significant watercourse, lakebed, playa lake, or sinkhole:	!50' south	of an unnamed arroyo		
		···	Soil Type:	Entisols & Aridisols
Permanent residence, school, hospital, institution or church within 300'		No		
			Annual Precipitation:	8.71 inches average
Domestic fresh water well or spring within 500'		No	Precipitation Notes:	no significant precipatation events
Any other fresh water well or spring within 1000'		No		
Within incorporated municipal boundaries		No	Attached Documents:	
Within defined municipal fresh water well field		No	_	Topo map, ground water data map, ariel photo, mines and quarries map, FEMA map
Wetland within 500'		No	Mining Activity:	No
Within unstable area		No		
Within 100 year flood plain		Zone X		
Additional Notes:		**		
, c	-108.006	at/long from 6.47084 / 675 to 36.468126 / - 108.012989		

### Berger A #1 Below Ground Tank 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 northernmost Bisti region of the San Juan Basin within an area dominated by irrigated fields of the Navajo Indian Irrigation Project. 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 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 www.wrcc.dri.edu).

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

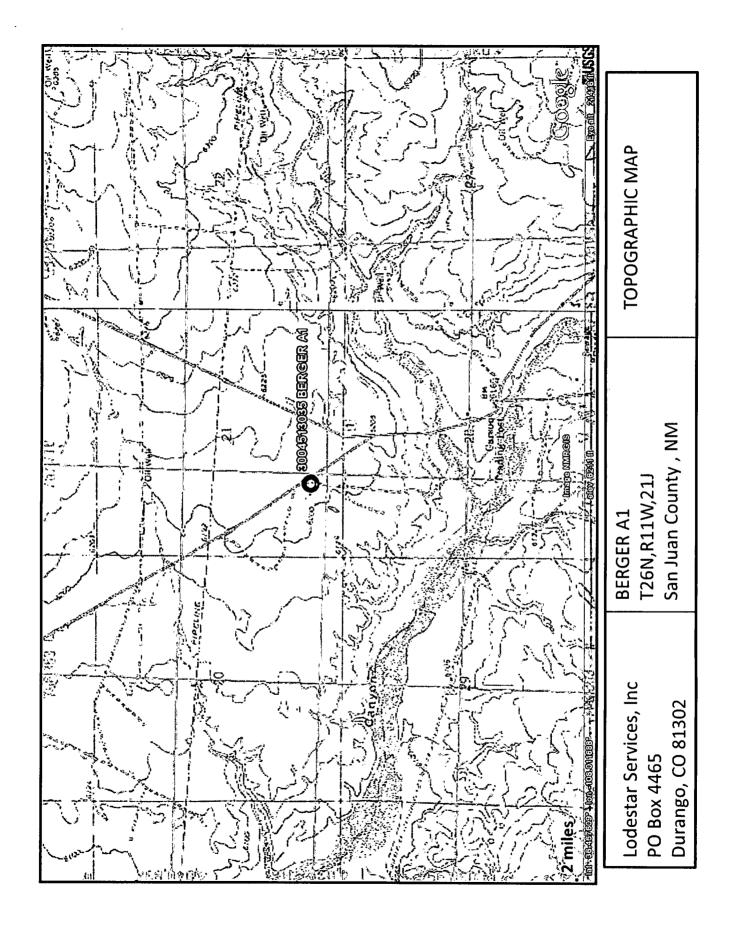
### Site Specific Hydrogeology

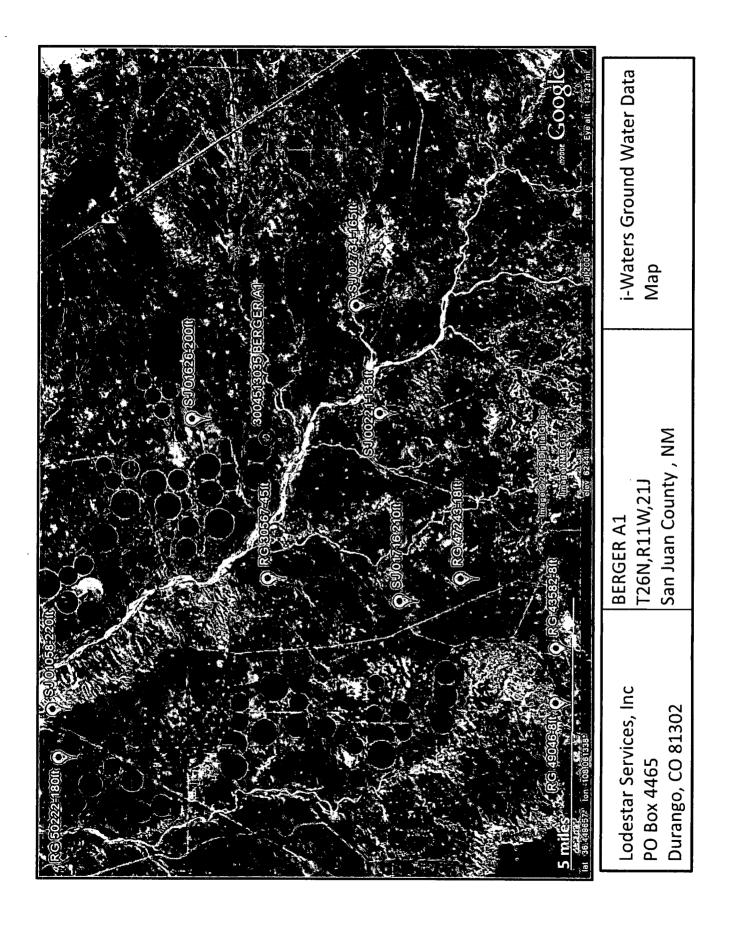
Depth to groundwater is estimated to greater than 100 feet. This estimation is based on data from Stone and others (1983), the USGS Groundwater Atlas of the United States and depth to groundwater data published on the New Mexico State Engineer's iWaters Database website. Local topography and proximity 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 4,040 feet north of Gallegos Canyon, at an elevation of approximately 6,205 feet. Broad shalely hills are interspersed with occasional sandstone outcrops, and systems of dry washes and their tributaries are evident on the attached aerial image. Groundwater is expected to be shallow within Gallegos Canyon. The floor of the Gallegos Canyon is at an elevation of approximately 6,161 feet approximately 40 feet lower in elevation.

Groundwater data available from the NM State Engineer's iWaters Database for wells near the proposed site are attached. A map showing the locations of wells in reference to the proposed pit location is also attached. Water drops show locations of wells and the labels for each water drop indicate depth to groundwater in feet. The closest well to the site is an elevation of approximately of 6,288 feet and is located 1.22 miles to the northeast this well puts groundwater at 200 feet below the surface. The observations made within this report suggest that groundwater is greater than 100 feet deep at the proposed location.





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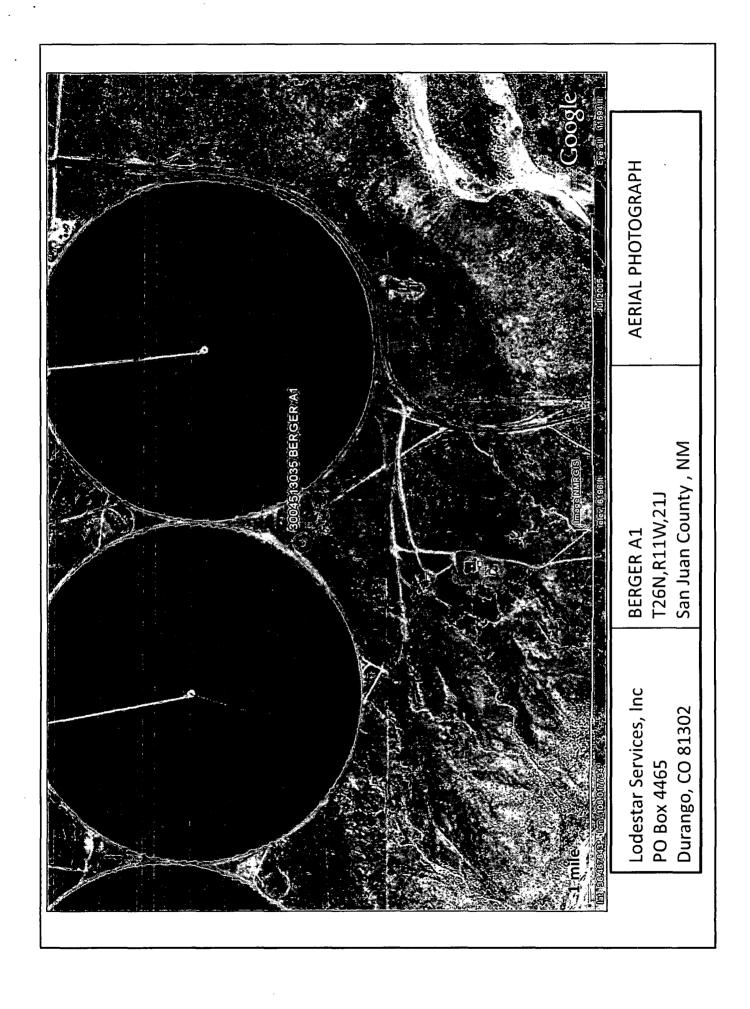
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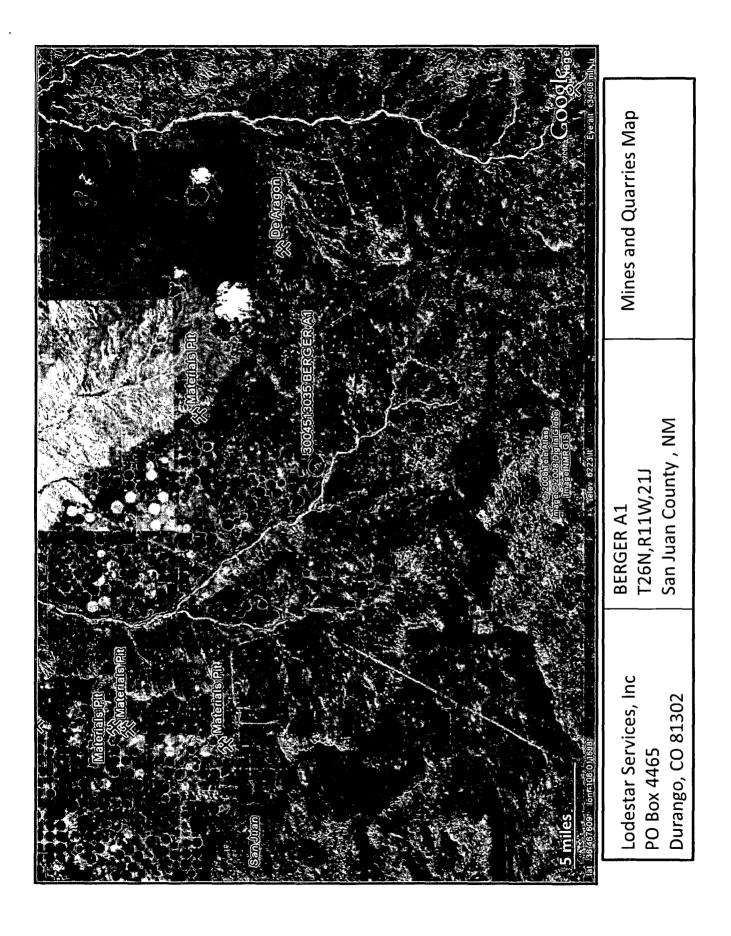
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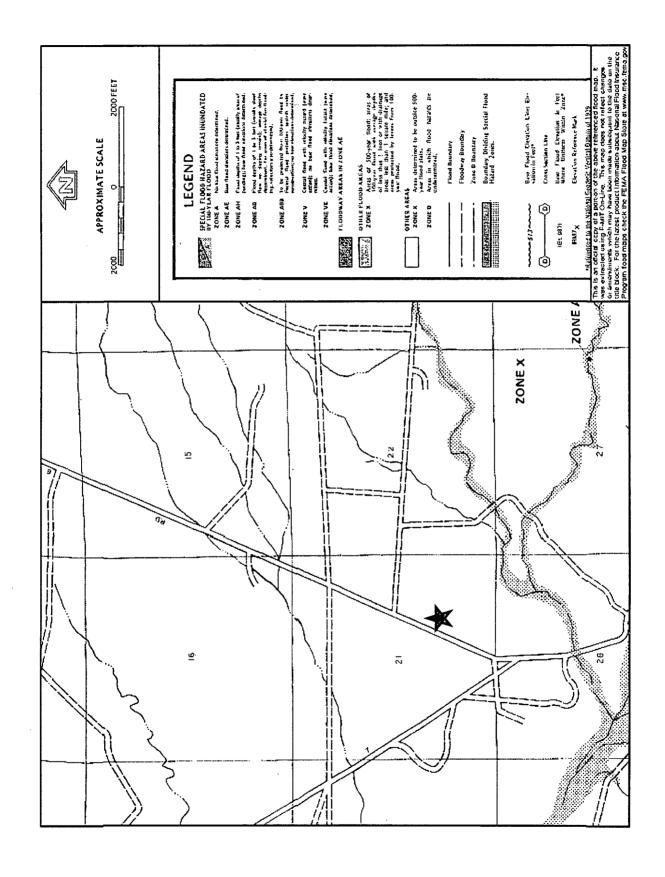
# New Mexico Office of the State Engineer POD Reports and Downloads

# AVERAGE DEPTH OF WATER REPORT 11/04/2008

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## 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.

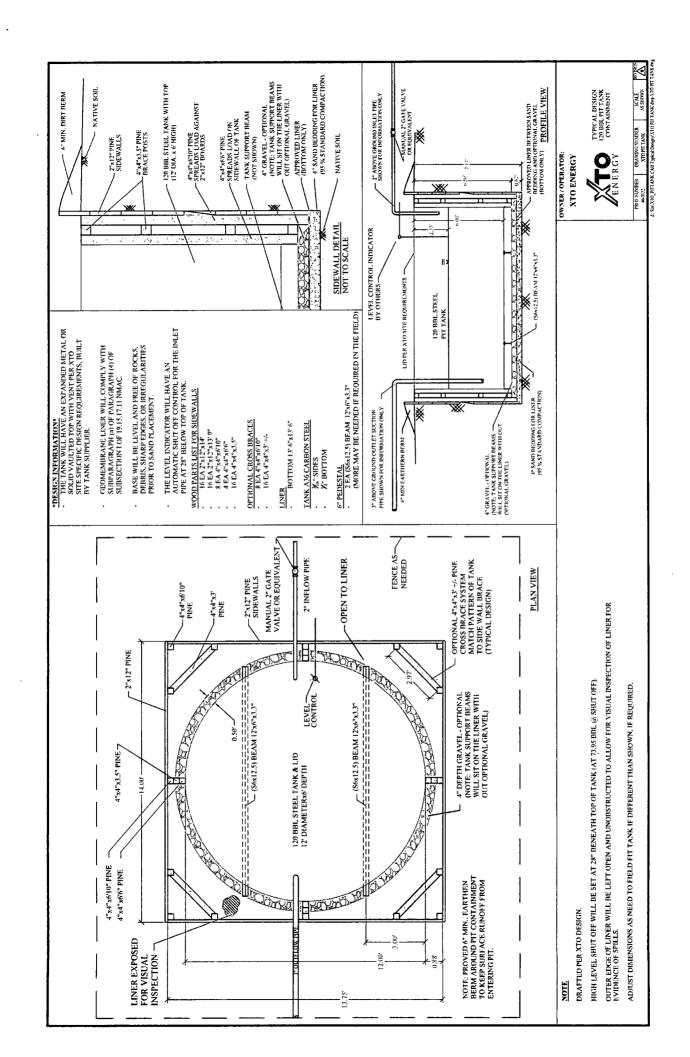
### General Plan

- 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 1/4" 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 below-grade 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 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	ILY BELO	MONTHLY BELOW GRADE TANK INSPECTION FORM	INSPECTION	N FORM		
Well Name:					API No.:			
Legals	Sec:		Township:		Range:			
XTO Inspector's	Inspection	Inspection	Any visible liner	Any visible signs of	Collection of surface	Visible laver	Anv visible sians	Freeboard
Name	Date		tears (Y/N)	tank overflows (Y/N)	run on (Y/N)	of oil (Y/N)	of a tank leak (Y/N)	Est. (ft)
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