Jones, Brad A., EMNRD

From:

Logan_Hixon@xtoenergy.com

Sent:

Thursday, June 07, 2012 9:43 AM

To:

Jones, Brad A., EMNRD

Subject:

MN Galt J #2

Brad,

We are requesting an approved closure plan only for the MN Galt J #2 (API 30-045-20365) located in Section 6D, Township 27N, Range 10W, due to the plugging and abandoning of this well. The plan was submitted on February 6, 2009.

Thank you for your help Brad.

Thank You!
Logan Hixon
Environmental Technician
XTO Energy Inc. An ExxonMobil Subsidiary Western Division
382 CR 3100
Aztec NM 87410
Office (505)333- 3683
Cell (505) 386-8018
Logan Hixon@xtoenergy.com

State of New Mexico 1625 N. French Dr., Hobbs, NM 88240 Energy Minerals and Natural Resources District II Department 1301 W. Grand Avenue, Artesia, NM 88210 1000 Rio Brazos Road, Aztec, NM 874101 District III Oil Conservation Division 1220 South St. Francis Dr. District IV 1220 S. St. Francis Dr., Santa Fe, NM 87505 AM 11 42 Santa Fe, NM 87505

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

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

Pit, Closed-Loop System, Below-Grade Tank, or

Proposed Alternative Method Permit or Closure Plan Application							
Type of action: 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							
Instructions: Please submit one application (Form C-144) per individual pit, closed-loop system, below-grade tank or alternative request							
Please be advised that approval of this request does not relieve the operator of liability should operations result in pollution of surface water, ground water or the nvironment. Nor does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rules, regulations or ordinances.							
I. Operator: XTO Energy, Inc. OGRID #: 5380							
Address: #382 County Road 3100, Aztec, NM 87410							
Facility or well name:Galt MN J #2							
API Number: 30-045-20365 OCD Permit Number:							
U/L or Qtr/Qtr D Section 06 Township 27N Range 10W County: San Juan							
Center of Proposed Design: Latitude 36.60945 Longitude 107.9424 NAD: ☐1927 ☐ 1983							
Surface Owner: Federal State Private Tribal Trust or Indian Allotment							
2.							
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							
☐ String-Reinforced							
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 bbl Type of fluid: Produced Water							
Tank Construction material: Steel							
☐ Secondary containment with leak detection ☐ Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off							
☐ Visible sidewalls and liner ☐ Visible sidewalls only ☒ Other <u>Visible sidewalls, vaulted, automatic high-level shut off, no liner</u>							
iner type: Thicknessmil							

Alternative Method:

Please be adv environment.

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

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)								
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)								
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 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 acceptable source material are provided below. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau office for consideration of approval. Applicant must attach justification for request. Please refer to 19.15.17.10 NMAC for guidance. Siting criteria does not apply to drying pads or above-grade tanks associated with a closed-loop system.								
Ground water is less than 50 feet below the bottom of the temporary pit, permanent pit, or below-grade tank. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ⊠ No							
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☑ No							
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. (Applies to temporary, emergency, or cavitation pits and below-grade tanks) - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☒ No ☐ NA							
Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. (Applies to permanent pits) - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☐ No ☑ 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 19.15.17.12 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:
Closed-loop Systems Permit Application Attachment Checklist: Subsection B of 19.15.17.9 NMAC Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached. Geologic and Hydrogeologic Data (only for on-site closure) - based upon the requirements of Paragraph (3) of Subsection B of 19.15.17.9 Siting Criteria Compliance Demonstrations (only for on-site closure) - based upon the appropriate requirements of 19.15.17.10 NMAC Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC
Previously Approved Design (attach copy of design) API Number:
Previously Approved Operating and Maintenance Plan API Number:
above ground steet tanks or natu-off bins and propose to implement waste removal for closure)
Permanent Pits Permit Application Checklist: Subsection B of 19.15.17.9 NMAC Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached. Hydrogeologic Report - based upon the requirements of Paragraph (1) of Subsection B of 19.15.17.9 NMAC Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC Climatological Factors Assessment Certified Engineering Design Plans - based upon the appropriate requirements of 19.15.17.11 NMAC Dike Protection and Structural Integrity Design - based upon the appropriate requirements of 19.15.17.11 NMAC Leak Detection Design - based upon the appropriate requirements of 19.15.17.11 NMAC Liner Specifications and Compatibility Assessment - based upon the appropriate requirements of 19.15.17.11 NMAC Quality Control/Quality Assurance Construction and Installation Plan Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC Preeboard and Overtopping Prevention Plan - based upon the appropriate requirements of 19.15.17.11 NMAC Nuisance or Hazardous Odors, including H ₂ S, Prevention Plan Emergency Response Plan Oil Field Waste Stream Characterization Monitoring and Inspection Plan Erosion Control Plan Closure Plan - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC
Proposed Closure: 19.15.17.13 NMAC Instructions: Please complete the applicable boxes, Boxes 14 through 18, in regards to the proposed closure plan.
Type: 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 Instructions: Please indentify the facility or facilities for the disposal of liquids, facilities are required.	Steel Tanks or Haul-off Bins Only: (19.15.17.13.1 drilling fluids and drill cuttings. Use attachment if	O NMAC) more than two					
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 o ☐ Yes (If yes, please provide the information below) ☐ No							
Required for impacted areas which will not be used for future service and operation Soil Backfill and Cover Design Specifications based upon the appropriate Re-vegetation Plan - based upon the appropriate requirements of Subsection Site Reclamation Plan - based upon the appropriate requirements of Subsection	e requirements of Subsection H of 19.15.17.13 NMA 11 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 provided below. Requests regarding changes to certain siting criteria may required 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	re administrative approval from the appropriate dist il Bureau office for consideration of approval. Just	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; Da	a 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; Da	ta 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; Da	ta obtained from nearby wells	☐ Yes ☐ No ☐ NA					
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other signake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	gnificant watercourse or lakebed, sinkhole, or playa	☐ Yes ☐ No					
Within 300 feet from a permanent residence, school, hospital, institution, or churc - Visual inspection (certification) of the proposed site; Aerial photo; Satellie		☐ Yes ☐ No					
Within 500 horizontal feet of a private, domestic fresh water well or spring that lewatering purposes, or within 1000 horizontal feet of any other fresh water well or - NM Office of the State Engineer - iWATERS database; Visual inspection	spring, in existence at the time of initial application.	☐ Yes ☐ No					
Within incorporated municipal boundaries or within a defined municipal fresh wal adopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality; Written appro-		☐ Yes ☐ No					
Within 500 feet of a wetland US Fish and Wildlife Wetland Identification map; Topographic map; Visu	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-Minin	g 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 following items must be attached to the closure plan. Please indicate, 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 cannot be achieved) Soil Cover Design - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC							

Operator Application Certification:							
I hereby certify that the information submitted with this application is true, accu							
Name (Print): Kim Champlin	Title: Environmental Representative						
Signature: Kim Champlin	Date:02/02/2009						
e-mail address: kim_champlin@xtoenergy.com	Telephone: (505) 333-3100						
20.							
OCD Approval: Permit Application (including closure plan) Closure I	, ,						
OCD Representative Signature:	Approval Date: 4/4/12						
Title: Farimmental Arguer	OCD Permit Number:						
Closure Report (required within 60 days of closure completion): Subsection K of 19.15.17.13 NMAC Instructions: Operators are required to obtain an approved closure plan prior to implementing any closure activities and submitting the closure report. The closure report is required to be submitted to the division within 60 days of the completion of the closure activities. Please do not complete this section of the form until an approved closure plan has been obtained and the closure activities have been completed.							
	Closure Completion Date:						
22. Closure Method: Waste Excavation and Removal ☐ On-Site Closure Method ☐ Altern If different from approved plan, please explain.	ative Closure Method						
23. <u>Closure Report Regarding Waste Removal Closure For Closed-loop System</u> <i>Instructions: Please indentify the facility or facilities for where the liquids, dri two facilities were utilized.</i>							
Disposal Facility Name:	Disposal Facility Permit Number:						
Disposal Facility Name:	Disposal Facility Permit Number:						
Were the closed-loop system operations and associated activities performed on o Yes (If yes, please demonstrate compliance to the items below) No	r in areas that will not be used for future service and operations?						
Required for impacted areas which will not be used for future service and operated Site Reclamation (Photo Documentation) Soil Backfilling and Cover Installation Re-vegetation Application Rates and Seeding Technique	ions:						
	tude NAD: 1927 1983						
25. 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 requires	report is true, accurate and complete to the best of my knowledge and nents and conditions specified in the approved closure plan.						
Name (Print):	Title:						
Signature:	Date:						
e-mail address	Telephone						

NEW MEXICO OIL CONSERVATION COMMISSION WELL LOCATION AND ACERAGE DEDICATION PLAT

All distances must be from the outer boundaries of the Section

	·	An Usign	ces musi be	from the outer oc	undaries of fi	e Section	
Operator DAN AND	**************************************	ETM COPPO	D AMTAN	Lease	CATE	· T	Well No.
Unit Letter	RICAN PETROL Section	Township	RATION	Range	GALT Cou	J	
יייי בפונפו	6		NORTH	. 10 V	i	SAN JUAN	-
Actual Footage Loca	ation of Well:		MOTORAL	10	<u> </u>	SAN OUAN	
790	feet from the	NORTH	line and	990	feet from	n the WEST	line
Ground Level Elev.	, Producing F	ormation		Pool			Dedicated Avereage: W/2
5758.0		Dakota		Basin D	akota		331.42* Acres
	acerage dedicates	d to the subje	ct well by c	olored pencil o	r hachure m	arks on the plat	below.
	n one lease is de					·	reof (both as to working
3. If more than by communitized () Yes (n one lease of di ation, unitization	, force-poolin	g. etc?		\ Ki	ULIT	owners been consolidated
				consolidation			
If answer is "no	o," list the owner	s and tract d	escriptions	which have a	tuality Colle	OIST 3	everse side of this form if
No allowable wi	Il be assigned to	the well until	all interest	s have been c	onsolida ted	(by communitiz	ation, unitization, forced- the Commission.
00MM	Standard Proc Administration No. 1, which No. 2.	ative Orde	r No. N	NU-343 for	M. N. Ga	1t 1t I hereby cei herein is true knowledge and Name G. W Position Area Company PAN AMER: Date	rtify that the information contained and complete to the best of my belief. Leaton, Jr. Engineer ICAN PETROLEUM CORP.
		Sec. 6		- +	N	this plat was p surveys made by that the same in knowledge and	ovember, 1968
	CHES EQUALS 1		FARMING'	TON, N. M.		JAME 146 Certificate No.	S P. LEESE

Lodestar Services, Inc. PO Box 4465, Durango, CO 81302

Pit Permit Siting Criteria Information Sheet

Client:	XTO Energy
Project:	Pit Permits
Revised:	1/27/2009
Prepared by:	Daniel Newman

V	information sheet	Prepared by:	Daniel Newman				
API#:	30-045-20365	USPLSS:	T27N,R10W,06D				
Name:	Galt MN J # 2	Lat/Long:	36.60945 / -107.9424				
Depth to groundwater:	between 50 and 100 feet	Geologic formation: Nacimiento Formation					
Distance to closest continuously flowing watercourse:	6.69 miles south of the San Juan River						
Distance to closest significant watercourse, lakebed, playa lake, or sinkhole:	700 feet northeast of an unnamed arroyo						
		Soil Type:	Entisols & Aridsoils				
Permanent residence, school, hospital, institution or church within 300'	No						
		Annual Precipitation:	Bloomfield 8.71", Farmington 8.21", Otis				
Domestic fresh water well or spring within 500'	No	Precipitation Notes:	10.41"average Historical daily max: Bloomfield 4.19"				
Any other fresh water well or spring within 1000'	No						
Within incorporated municipal boundaries	No	Attached Documents:	<u> </u>				
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	FEMA Zone 'X'						
Additional Notes:							

Galt MN J # 2 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 southern Kutz Canyon region of San Juan County. 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 aridsoils, 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 and prohibits effective recharge to the underlying aquifers.

Dry and arid weather further prohibit active recharge. The climate of the region is arid, averaging 8 to 12 inches of rain fall annually. As is typical of the southwestern United States monsoonal weather patterns, most precipitation fall 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 pinion-juniper association (Dick-Peddie, 1993). However, vegetation is very sparse and discontinuous.

Site Specific Hydrogeology

Depth to groundwater is estimated to be between 50 and 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).

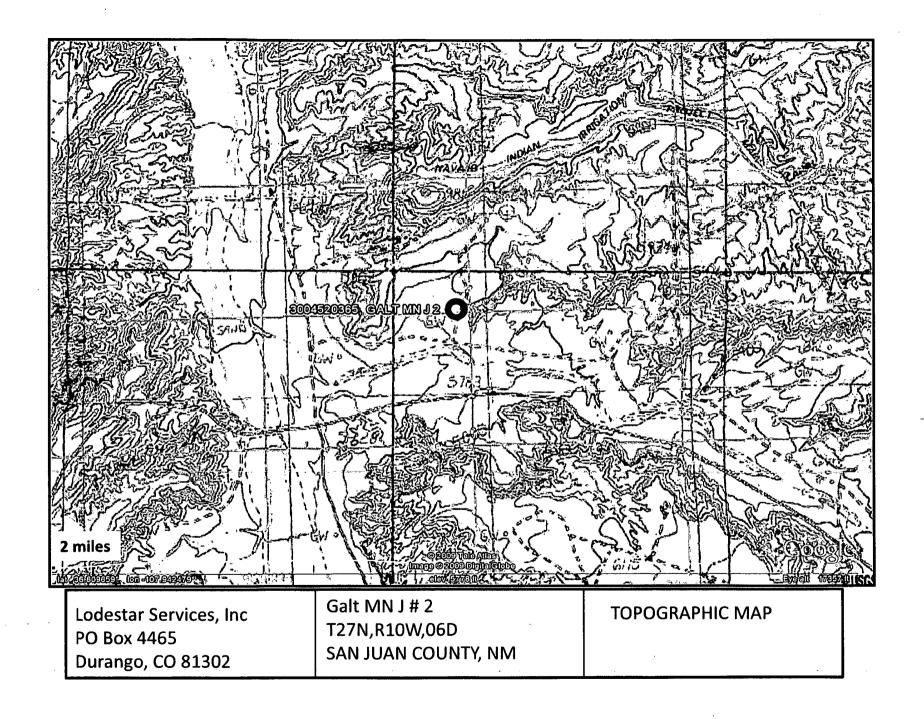
The site in question is located near Kutz Canyon, where deeply eroded sandstone-capped mesas and slope-forming mudstone occur in a sparsely vegetated and arid badlands-type setting. Broad shaley hills are interspersed with occasional sandstone outcrops, and systems of dry washes and their tributaries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

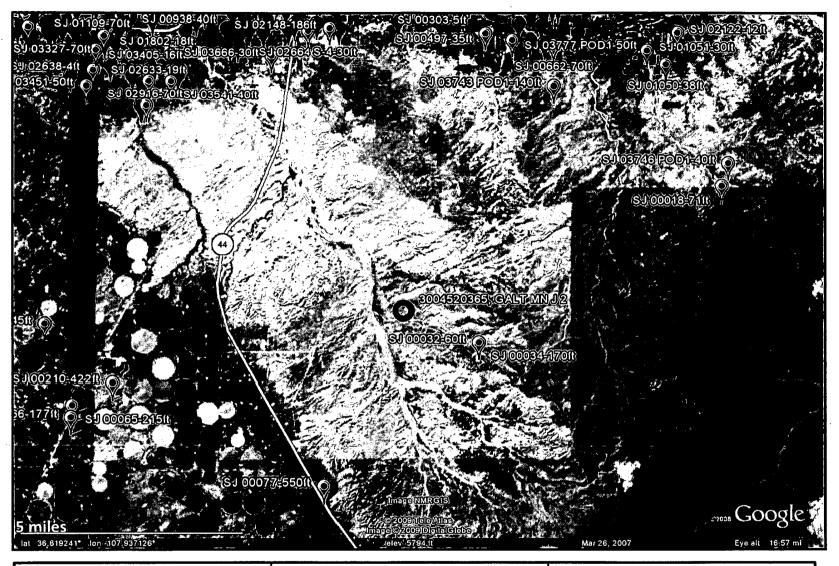
The pit will be located approximately 3,805 feet east of Kutz Canyon at an elevation of approximately 5,772 feet. Ground water is expected to be shallow within Kutz Canyon. The floor of Kutz Canyon sits at 5,699 feet, an elevation difference of approximately 70 feet exists between the site and the floor of Kutz Canyon. The elevation difference of almost 70 feet between the proposed site and the floor of Kutz Canyon, suggests that depth to groundwater is between 50 and 100 feet at the proposed site.

Lined channels associated with the Navajo Irrigation Project supply water for nearby agriculture lands, which are characterized by center-pivot irrigation patterns. During spring and summer, irrigation practices often produces shallow perched aquifers that are not defined in published literature. These shallow zones of water are not continuous and are not saturated year round.

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 (SJ00032) is at an elevation of approximately 5,983 feet and is located 1.95 miles to the southeast this well puts depth to groundwater at 60 feet below the surface. However this site is not representative of the proposed site, for it place groundwater at an elevation above the proposed site. The elevation difference of approximatly 70 feet between the floor of Kutz Canyon and the proposed site should be used as the deciding factor on distance to groundwater in this case, seeing how the water wells surrounding the proposed sites cannot be used to accurately judge distance to groundwater. The

observations made within this report suggest that distance to groundwater is between 50 and 100 feet deep at the proposed location.





Lodestar Services, Inc PO Box 4465 Durango, CO 81302 Galt MN J # 2 T27N,R10W,06D SAN JUAN COUNTY, NM

i-Waters Ground Water Data Map

AVERAGE DEPTH OF WATER REPORT 11/11/2008

							(Depth	Water in	Feet)
Bsn	Tws	Rng Sec	Zone	X	, Y	Wells	Min	Max	Avg
SJ	2 6 N	09W 11				1	40	40	40
SJ	26N	09W 12				1	175	175	175
SJ	2 6N	09W 16				1	€5	65	65
\$J	26N	09W 26				3	215	. 234	226

AVERAGE DEPTH OF WATER REPORT 11/10/2008

							(Depth	Water in	Feet)
Bsn	Tws	Rng Sec	Zone	. 3	Y Y	Wells	Min	Max	Avg
SJ	27N	10W 08				2	60	170	115

AVERAGE DEPTH OF WATER REPORT 11/03/2008

							(Depth	Water in	Feet)
Bsn	Tws	Rng Sec	Zone	X	Y	Wells	Min	Max	Avg
SJ	27N	11W 26				1	550	550	550

AVERAGE DEPTH OF WATER REPORT 11/03/2008

							(Depth	Water in	Feet)
Bsn	Tws	Rng Sec	Zone	x	Y	Wells	Min	Max	Avg
RG	27N	12W 02				1	145	145	145
SJ	27N	12W 13				4	177	422	306

AVERAGE DEPTH OF WATER REPORT 01/21/2009

								(Depth	Water in	Feet)
Bsn	Tws	Rng	Sec	Zone	X	Y	Wells	Min	Max	Avg
SJ	23N	oew	14				1	480	480	430
SJ	23N	08W	17				1			
SJ	28N	081	18				1	800	800	800

Record Count: 3

AVERAGE DEPTH OF WATER REPORT 01/09/2009

Bsn	Tws	Rng Sec	Zone	x	Y	Wells		Water in Max	•
SJ	28N	09W 20				2	40	71	5€

Record Count: 2

AVERAGE DEPTH OF WATER REPORT 01/05/2009

								(Depth	Water in	Feet)
Bsn	Tws	Rng	Sec	Zone	x	Y	Wells	Min	Max	Avg
SJ	29N	0 9 W	02				. 28	3	71	11
SJ	29N	0 9 W	03				10	2	40	11
SJ	29N	09W	04				2	5	20	13
SJ	2.9N	09W	05				3	18	20	18
SJ	29N	0 9 W	06				1	40	40	40
§J	29N	09W	07				1	٤	ð	ર્ક
SJ	29N	0 9 W	08				3	24	100	65
SJ	29N	09W	09		, •		2	5	б	ε
SJ	29N	0 9 W	09		273716	2090921	1	250	250	250
SJ	29N	09W	16				2	37	100	94
SJ	29N	09W	18				9	1	5	4

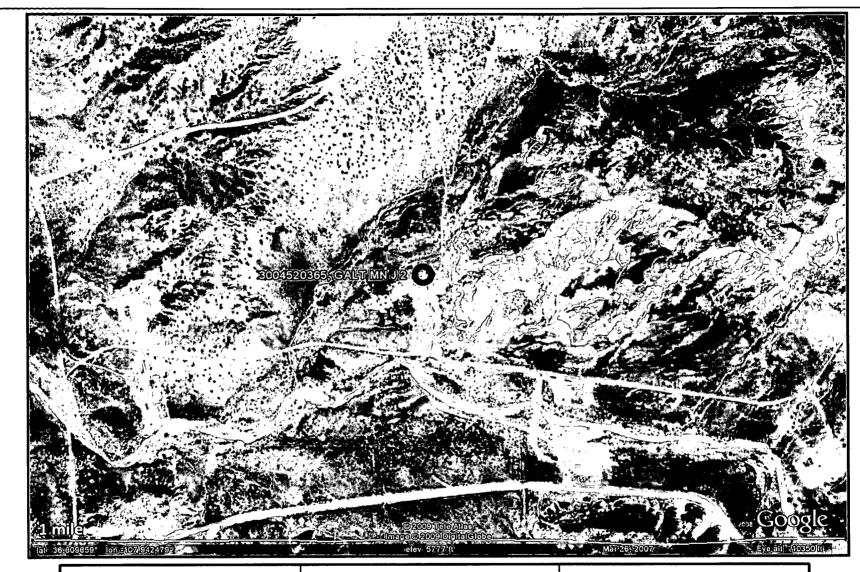
AVERAGE DEPTH OF WATER REPORT 11/15/2008

								(Depth	Water in	Feet)
Bsn	Tws	Rng	Sec	Zone	x	Y	Wells	Min	Max	Avg
RG	29N	107	25				1	·450	450	450
SJ	29N	10W	13				3	10	20	17
SJ	29N	10W	18				1	65	€5	65
SJ	29N	10W	19				3	2	9	5
ຮຸງ	29N	10W	20				4	2	12	€
SJ	29N	107	21				5	7	30	17
SJ	29N	10W	22				1	20	20	20
೨೨	29N	10%	23				1	1€	16	16
<i>3</i> J	29N	10W	24				3	20	34	28
SJ	29N	10W	25				1	12	12	12
SJ	29N	100	26				1	4	4	4
ຮຸປ	29N	10W	27				1	31	31	31
SJ	29N	10W	28				9	4	70	23
sJ ·	29N	10W	28	W	484600	2075600	1	20	20	20
SJ	29N	100	29		-		1	35	35	35
SJ	29N	100	29		270344	2071311	1	50	50	50
SJ	29N	10W	30				1	10	10	10
SJ	29N	10W	33				1	140	140	140
SJ	29N	10W	35				. 1	30	30	30
SJ	29N	10W	36				1	38	38	38

AVERAGE DEPTH OF WATER REPORT 11/10/2008

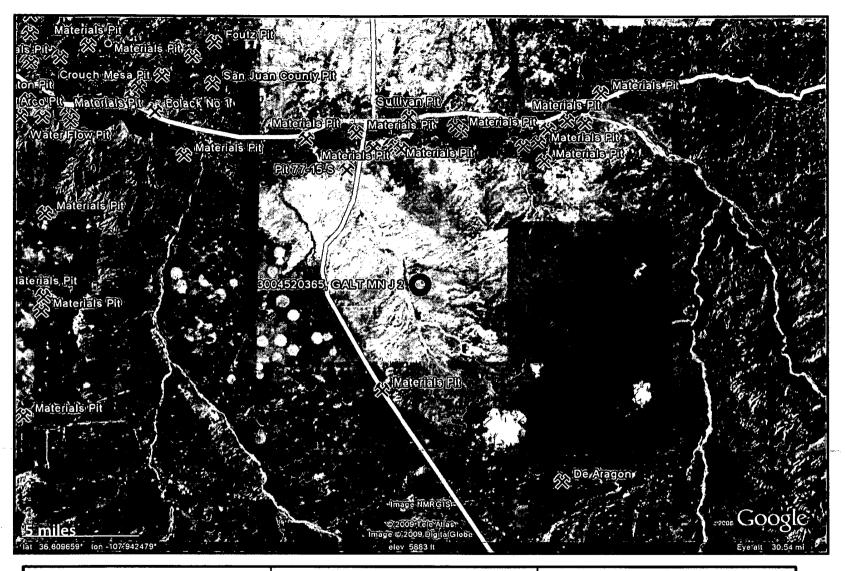
							_, _ , _	(Depth	Water in	Feet)
Bsn	Tws	Rng	Sec	Zone	X	Y	Wells	Min	Max	Avg
SJ	29N	110	07				2	55	210	133
SJ	29N	110	10		-	÷	1	48	48	48
ຮັ	29N	110	13				1	300	300	300
SJ	29N	117	14				4	6	5€	24
SJ	29N	11W	15				3	12	30	21
SJ	29N	117	16				1	40	40	4 Ü
SJ	29N	117	17				2	6	80	43
SJ	29N	117	19				3	18	55	31
SJ	29N	11W	19		440000	2077700	1	ક	6	6
SJ	29N	11W	20				2	3	30	17
SJ	29N	11W	21				7	8	55	18
SJ	29N	11W	22				25	3	59	15
SJ	29N	11W	23				15	15	30	21
SJ	29N	11W	24				2	12	18	15
ಽ೨	29N	11W	25		_		1	25	25	25
SJ	29N	11W	26				1	43	43	43
SJ	29N	11W	27				20	€	186	29
SJ	29N	11W	28				9	5	115	27
SJ	29N	11W	28		267348	2075529	1	15	15	15
SJ	29N	117	29				9	4	28	13
SJ	29N	1177	30				6	ε	25	1€
SJ	29N	11W	31				1	40	40	40
SJ	29N	11W	31		266438	2067001	1	45	45	45
SJ	29N	117	33				1	30	30	30

Record Count: 119



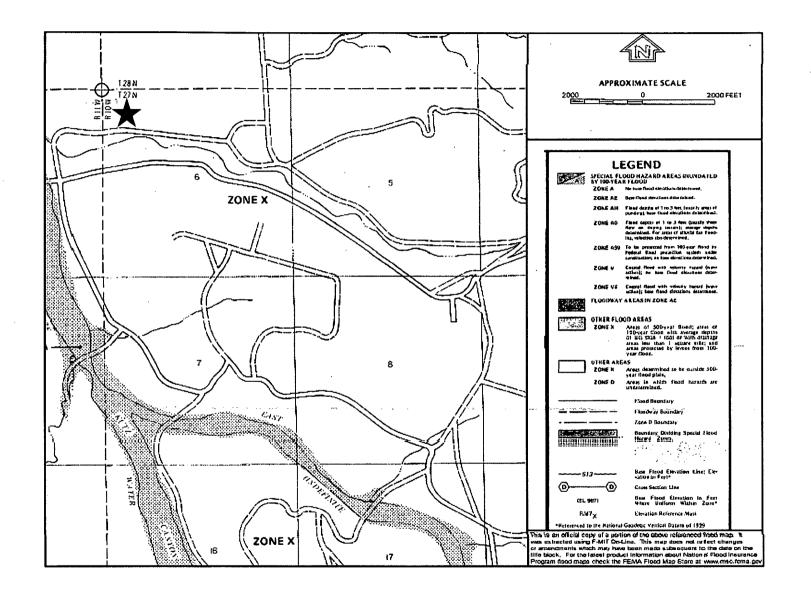
Lodestar Services, Inc PO Box 4465 Durango, CO 81302 Galt MN J # 2 T27N,R10W,06D SAN JUAN COUNTY, NM

AERIAL PHOTOGRAPH



Lodestar Services, Inc PO Box 4465 Durango, CO 81302 Galt MN J # 2 T27N,R10W,06D SAN JUAN COUNTY, NM

Mines and Quarries Map



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.

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

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

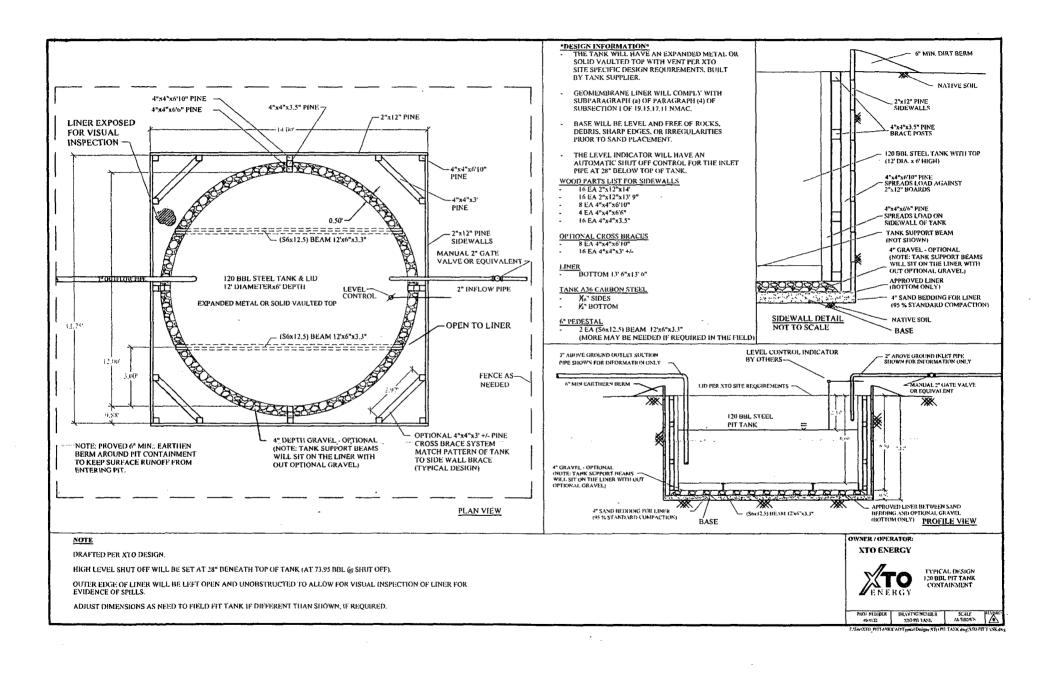
General Plan

- 1. XTO will design and construct below-grade tanks to contain liquids and solids and prevent contamination of fresh water and protect public health and environment.
- 2. XTO will post a well sign, in compliance with 19.15.3.103 NMAC, on the existing well site operated by XTO where the existing below-grade tank is located. The sign will list the Operator on record as the operator, the location of the well site by unit letter, section, township, range, and emergency telephone numbers.
- 3. XTO is requesting approval of an alternative fencing to be used on below-grade tank locations. Below-grade tank locations will be fenced utilizing 48" steel mesh field-fence (hogwire) with pipe railing along the top. A 6' chain link fence will be utilized around the well pad if the well site is within a city limits or ¼ mile of a permanent residence, school, hospital, institution or church. Below-grade tanks located within 1000' of a permanent residence, school, hospital, institution or church will be fenced by 6' chain link fence with at least two strands of barbed wire at the top. All gates associated with below-grade tanks will remain closed and locked when responsible individuals are not on site.
- 4. XTO shall construct below-grade tanks with an expanded metal covering or solid vaulted top on the top of the below-grade tank.
- 5. XTO will ensure that below-grade tanks are constructed of materials resistant to the below-grade tank's particular contents and resistant to damage from sunlight. Tanks will be constructed of A36 carbon steel with 3/16" sides and ¼" bottom. (See attached drawing).
- 6. The below-grade tank system will have a properly constructed foundation consisting of a level base free of rocks, debris, sharp edges or irregularities to prevent punctures, cracks or indentations of the liner or tank bottom. Sand bedding (4") will be placed on top of a level foundation to ensure prevention of punctures, cracks or indentations of the liner or tank bottom.
- 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

- 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.

		MONTI	HLY BELO	W GRADE TANK	INSPECTIO	ON FORM		
Well Nan	ne:	-			API No.:			
egals	Sec:		Township:		Range:		•	
XTO Inspector's		Inspection	Any visible liner	Any visible signs of	Collection of surface	Visible layer	Any visible signs	Freeboa
Name	<u>Date</u>	Time	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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