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

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

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

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

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.
Operator: XTO ENERGY, INC. OGRID #: 5380
Address:#382 County Road 3100, Aztec, NM 87410
Facility or well name: Mudge B #1
API Number: 30-045-06301 OCD Permit Number:
U/L or Qtr/Qtr A Section 29 Township 27N Range 11W County: San Juan
Center of Proposed Design: Latitude36.550710 Longitude 108.021679 NAD: ☐ 1927 ☒ 1983
Surface Owner: X Federal State Private Tribal Trust or Indian Allotment
□ Permanent □ Emergency □ Cavitation □ P&A □ Lined □ Unlined □ Unlined Liner type: Thickness
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
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: Thickness mil LLDPE HDPE PVC Other Liner Seams: Welded Factory Other
Submittal of an exception request is required. Exceptions must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

Fencing: Subsection D of 19.15.17.11 NMAC (Applies to permanent pits, temporary pits, and below-grade tanks) Chain link, six feet in height, two strands of barbed wire at top (Required if located within 1000 feet of a permanent residence, school, and the strands of barbed wire at top (Required if located within 1000 feet of a permanent residence, school, and the strands of barbed wire at top (Required if located within 1000 feet of a permanent residence, school, and the strands of barbed wire at top (Required if located within 1000 feet of a permanent residence, school, and the strands of barbed wire at top (Required if located within 1000 feet of a permanent residence, school, and the strands of barbed wire at top (Required if located within 1000 feet of a permanent residence, school, and the strands of barbed wire at top (Required if located within 1000 feet of a permanent residence, school, and the strands of barbed wire at top (Required if located within 1000 feet of a permanent residence).	hospital,
institution or church) Note The properties of t	·
Alternate. Please specify	
7. Netting: Subsection E of 19.15.17.11 NMAC (Applies to permanent pits and permanent open top tanks) Screen Netting Other	
Monthly inspections (If netting or screening is not physically feasible)	
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	
9. 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 accept material are provided below. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau office for consideration of a Applicant must attach justification for request. Please refer to 19.15.17.10 NMAC for guidance. Siting criteria does not apply to drying above-grade tanks associated with a closed-loop system.	priate district pproval.
Ground water is less than 50 feet below the bottom of the temporary pit, permanent pit, or below-grade tank. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ⊠ No
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ⊠ No
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. (Applies to temporary, emergency, or cavitation pits and below-grade tanks) - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ⊠ No ☐ NA
Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. (Applies to permanent pits) - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	Yes No
Within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, in existence at the time of initial application. - NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site	☐ Yes ⊠ No
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality; Written approval obtained from the municipality	☐ Yes ⊠ No
Within 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ⊠ No
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	☐ Yes ⊠ No
 Within an unstable area. Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map 	☐ Yes ☒ No
Within a 100-year floodplain FEMA map	☐ Yes ☒ No

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

Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only: (19.15.17.13.D Instructions: Please indentify the facility or facilities for the disposal of liquids, drilling fluids and drill cuttings. Use attachment if magacilities are required.	NMAC) ore 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 occur on or in areas that will not be used for future service. Yes (If yes, please provide the information below) No	
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 closure plan. Recommendations of acceptable source provided below. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate districtions of acceptable source provided below. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate districtions of equivalency are required. Please refer to 19.15.17.10 NMAC for guidance.	ict office or may be
Ground water is less than 50 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☐ No ☐ NA
Ground water is between 50 and 100 feet below the bottom of the buried waste - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☐ No ☐ NA
Ground water is more than 100 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	Yes No
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	Yes No
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☐ No
Within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, in existence at the time of initial application. - NM Office of the State Engineer - iWATERS database; Visual inspection (certification) of the proposed site	Yes No
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality; Written approval obtained from the municipality	Yes No
Within 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☐ No
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	☐ Yes ☐ No
 Within an unstable area. Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map 	☐ Yes ☐ No
Within a 100-year floodplain FEMA map	☐ Yes ☐ No
On-Site Closure Plan Checklist: (19.15.17.13 NMAC) Instructions: Each of the following items must be attached to the closure plan by a check mark in the box, that the documents are attached. Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC Proof of Surface Owner Notice - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate requirements of 19.15.17.11 NMAC Construction/Design Plan of Temporary Pit (for in-place burial of a drying pad) - based upon the appropriate requirements of 19.15.17.13 NMAC Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC Waste Material Sampling Plan - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings or in case on-site closure standards cannot Soil Cover Design - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC Re-vegetation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC	5.17.11 NMAC

Operator Application Certification:	
I hereby certify that the information submitted with this application is true, a Name (Print):Kim Champlin	
11. 14.	Date:August 19, 2008
e-mail address:kim_champlin@xtoenergy.com	Telephone:(505) 333-3100
OCD Approval: Permit Application (including closure plan) Closure	ure Plan (only) OCD Conditions (see attachment)
OCD Representative Signature: B.A. S.M.	Approval Date: 10-7-08
Title: Enviro/spec	OCD Permit Number:
Closure Report (required within 60 days of closure completion): Subsections: Operators are required to obtain an approved closure plan parties closure report is required to be submitted to the division within 60 days section of the form until an approved closure plan has been obtained and to	rior to implementing any closure activities and submitting the closure report. s of the completion of the closure activities. Please do not complete this
	Closure Completion Date.
22. Closure Method: Waste Excavation and Removal On-Site Closure Method All If different from approved plan, please explain.	Iternative Closure Method Waste Removal (Closed-loop systems only)
Closure Report Regarding Waste Removal Closure For Closed-loop Sys Instructions: Please indentify the facility or facilities for where the liquids two facilities were utilized. Disposal Facility Name: Disposal Facility Name: Were the closed-loop system operations and associated activities performed of	Disposal Facility Permit Number: Disposal Facility Permit Number:
☐ Yes (If yes, please demonstrate compliance to the items below) ☐ N Required for impacted areas which will not be used for future service and op ☐ Site Reclamation (Photo Documentation) ☐ Soil Backfilling and Cover Installation ☐ Re-vegetation Application Rates and Seeding Technique	No
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 closure) Disposal Facility Name and Permit Number Soil Backfilling and Cover Installation Re-vegetation Application Rates and Seeding Technique Site Reclamation (Photo Documentation) On-site Closure Location: Latitude L	
25.	
Operator Closure Certification: I hereby certify that the information and attachments submitted with this closurelief. I also certify that the closure complies with all applicable closure required.	sure report is true, accurate and complete to the best of my knowledge and uirements and conditions specified in the approved closure plan.
Name (Print):	Title:
Signature:	Date:
e-mail address:	Telephone:

Submit to Appropriate District Office State Lease - 4 copies Fee Lease - 3 copies

State of New Mexico Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

P.O. Box 2088 Santa Fe, New Mexico 87504-2088

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210
DISTRICT III

330 660 990 1320 1650 1980 2310 2640

DISTRICT I P.O. Box 1980, Hobbs, NM 88240

Santa Fe, New Mexico 87504-2088

Form C-102 Revised 1-1-89

DISTRICT III 1000 Rio Brazos Rd	, Aziec, NM 87410				REAGE DEDICA outer boundaries of the		•		
Operator DEKALB En	ergy Company	,		Lease	Mudge "B"			Well No.	
Unit Letter A	Section 29	Township 27N		Range	11W	NMPM	County	San Juan	
Actual Footage Loca	tion of Well:						_		
990 Ground level Elev.	feet from the	North	line and	Fool	990	feet from t	the East	line Dedicated Acreage:	
1	i			1001	Design Fronts	1			
6241'	the acreage dedicated	land Coal	Il by solored non		Basin Fruit			320 A	ere s
2. If more 3. If more unitizal	than one lease is dedi than one lease of diff ion, force-pooling, etc Yes is "no" list the owners	icated to the well, erent ownership is .7 .No If an	outline each and dedicated to the twer is "yes" typ	identify the well, have	e ownership thereof (b the interest of all own	oth as to workin			
this form	if neccessary.								
	ible will be assigned to					tion, unitization,	forced-pooling	g, or otherwise)	
IN AF	P S P W C	and the second s	cu, nas ocen app		190	Pr Cc	I hereby entained herei est of my known gnature R. L. inted Name Distr Destion DEKALE Donpany March ate	OR CERTIFICAT certify that the in in true and completed and belief. Flowers, Jr. ict Superinte 3 Energy Comp 29, 1991 OR CERTIFICAT	formation the to
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	District of the second of the					or ac su cc ba	s this plat w clual surveys opervison, and	as plotted from field made by me or I that the same is best of my knowl	notes of under my true and

2000

1500

1000

500

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

Pit Permit Siting Criteria Information Sheet

Client:	XTO Energy	
Project:	Pit Permits	-
Revised:	15-Aug-08	
Prepared by:	Ashley Ager	

PO Box 4465, Durango,	CO 81302	Information Sheet	Revised: Prepared by:	15-Aug-08 Ashley Ager			
API#:		30-045-06301	USPLSS:	27N 11W 29A			
Name:	М	UDGE B No. 001	Lat/Long:	36.550710, -108.021649			
Depth to groundwater:		>100'	Geologic formation:	Nacimiento Formation			
Distance to closest continuously flowing watercourse:		es N to 'San Juan River'					
Distance to closest significant watercourse, lakebed, playa lake, or sinkhole:	1477' SE to SW & 6660'	vegtated waterway feeding pond; i "NAPI/NIIP Main Canal", 3940' NW to pond; 7505' S to 'Gallegos in' tributary stream-channel		:			
Permanent residence, school, hospital, institution or church within 300'		NO	Soil Type:	Entisols			
			Annual Precipitation:	Farmington: 8.21", Bloomfield: 8.71", Otis, 10.41"			
Domestic fresh water well or spring within 500'		NO	Precipitation Notes:	Historical daily max: Bloomfield (4.19")			
Any other fresh water well or spring within 1000'		NO	,				
Within incorporated municipal boundaries	_	NO	Attached Documents:	27N11W_iwaters pdf, 27N12W_iwaters pdf, , 26N11W_iWaters pdf, 26N12W_iWaters pdf, 28N10W_iWaters pdf, 28N11W_iWaters pdf, 28N12W_iWaters pdf			
Within defined municipal fresh water well field		NO	FM3500640725B_30- 045-06301 jpg	30-045-06301_gEarth-iWaters jpg, 30-045-06301_gEarth- PLS.jpg, 30-045-06301_topo-PLS jpg			
Wetland within 500'		NO	Mining Activity:	None Near			
Within unstable area	NO			NM_NRD-MMD_MinesMillQuarries_30-045-06301 jpg			
Within 100 year flood plain	NI/	D- FEMA Zone 'X'	,	! !			
Additional Notes:	70' to	edge of center-pivot rigated cropland					

Mudge B #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

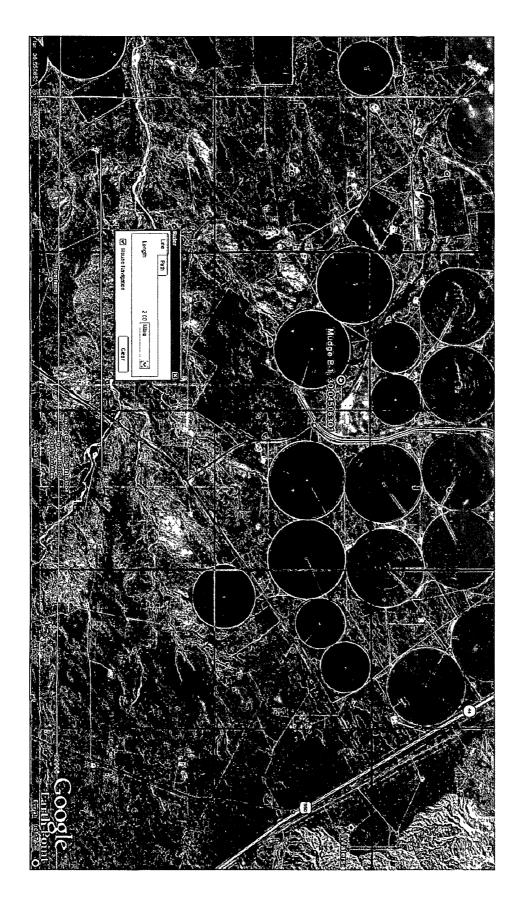
Depth to groundwater is estimated to be greater than 100 feet. This estimation is based on data from Stone and others (1983), the USGS Groundwater Atlas of the United States and depth to groundwater data published on the New Mexico State Engineer's iWaters Database website. Local topography and proximity 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).

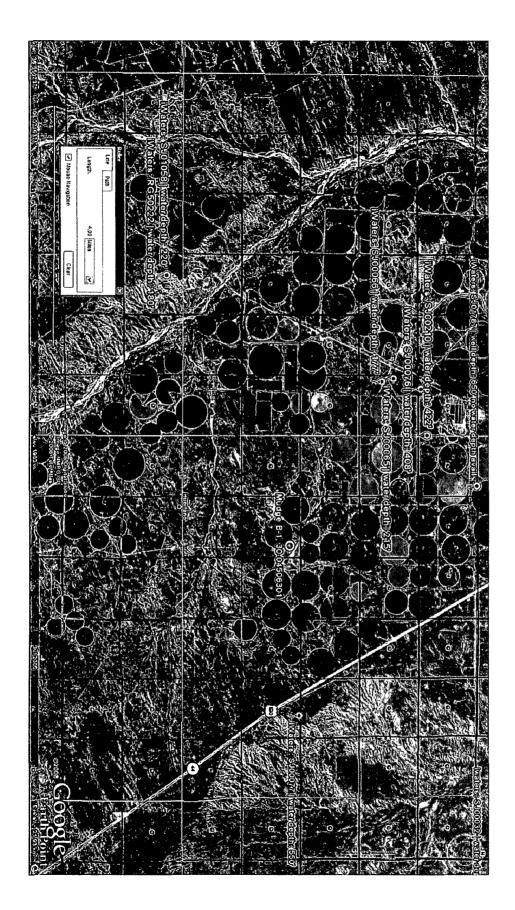
The site in question is located on the relatively flat mesa top at an elevation of approximately 6240 feet and approximately 4 miles east of Gallegos Canyon. Broad shalely hills are interspersed with occasional sandstone outcrops, and systems of dry washes and their tributaries are evident on the attached aerial image. Groundwater is expected to be shallow within Gallegos Canyon. But the significant distance between the Canyon and the site, as well as an elevation difference of almost 400 feet suggest groundwater is greater than 100 feet at the proposed site.

Lined channels associated with the Navajo Irrigation Project supply water for the fields surrounding the proposed site, 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.

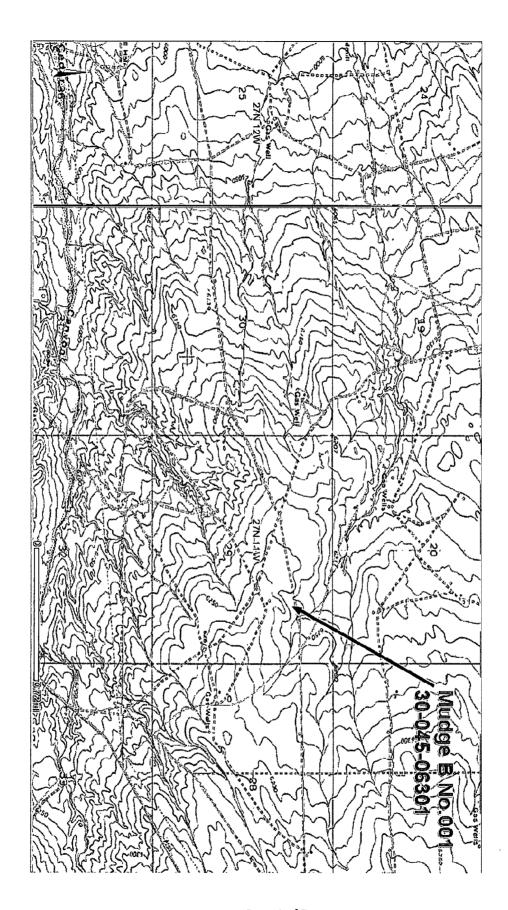
Groundwater data available from the NM State Engineer's iWaters Database for wells near the proposed site are attached. Wells located at similar elevations within the irrigated area contain groundwater greater than 100 feet deep. A map showing the location of wells in reference to the proposed pit location is attached.



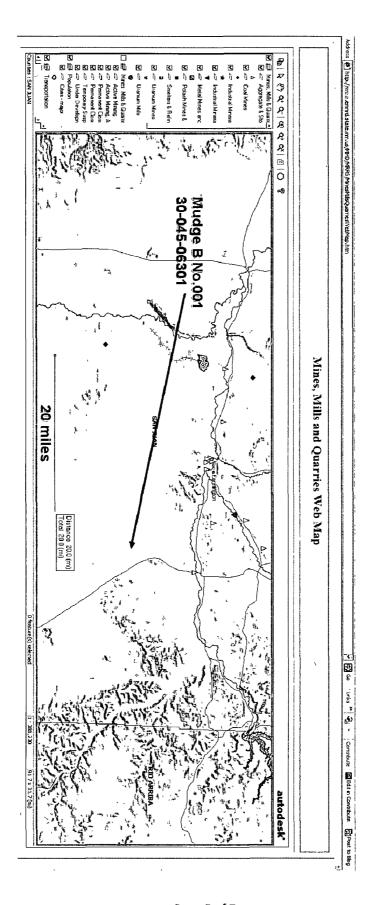
Page 2 of 7



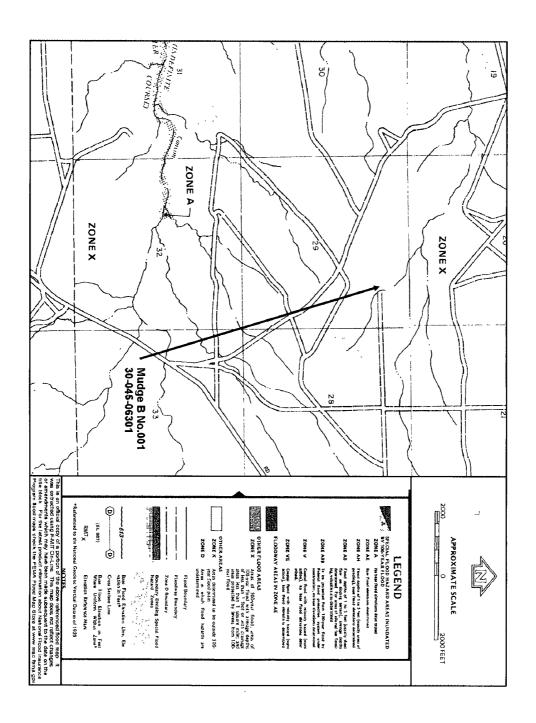
Page 3 of 7



Page 4 of 7



Page 5 of 7



Township: 28N Range: 13W Sections:
NAD27 X: Y: Zone: Search Radius:
County: Basin: Number: Suffix:
Owner Name: (First) (Last) Onn-Domestic Odomestic Odomes
POD / Surface Data Report
Clear Form iWATERS Menu Help
WATER COLUMN REPORT 08/12/2008
(quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are biggest to smallest) Depth Depth Water (in feet)

Y Well Water

Column

No Records found, try again

Tws Rng Secqqq

Zone

Х

POD Number

	Township: 28N Range: 12W Sections:
	NAD27 X: Y: Zone: Search Radius:
	County: Basin: Number: Suffix:
	Owner Name: (First) (Last) ONon-Domestic ODomestic OAll
	POD / Surface Data Report
	Clear Form iWATERS Menu Help
	WATER COLUMN REPORT 08/12/2008
POD Number	(quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are biggest to smallest) Tws Rnq Sec q q Zone X Y Well Water Column

No Records found, try again

-	Township: 28N Rang	e: 11W	Sections:			
NAI	D27 X: Y:		Zone:	Search R	adius:	
County:	Basin:		N	umber:	Suffix:	
Owner Name:	(First)	(Last)		ONon-Dom	nestic ODomestic	@All
_	POD / Surface Data Repo	ort Avg D	epth to Water Repo	ort Water C	olumn Report	
	Cle	ar Form	WATERS Menu	Help		
	WATER COLUMN	REPORT 08	/06/2008			

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

(quarters are biggest to smallest)							Depth	Depth	Water	(in feet)		
POD Number	Tws	Rng	Sec	q q	q	Zone	x	Y	Well	Water	Column	
SJ 03193	28N	11W	07	3 4	3				80	35	45	
SJ 02916	28N	11W	07	3 4	4				98	70	28	

	-
	Township: 28N Range: 10W Sections:
,	NAD27 X: Y: Zone: Search Radius:
	County: Basin: Number: Suffix:
	Owner Name: (First) (Last) ONon-Domestic ODomestic OAll
	POD / Surface Data Report
	Clear Form iWATERS Menu Help
	WATER COLUMN REPORT 08/08/2008
POD Number	(quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are biggest to smallest) Two Rng Sec g g g Zone X Y Well Water Column

No Records found, try again

	2 3 2 3 1
	Township: 27N Range: 13W Sections:
	NAD27 X: Y: Zone: Search Radius:
	County: Number: Suffix:
	Owner Name: (First)
	POD / Surface Data Report
	Clear Form iWATERS Menu Help
	WATER COLUMN REPORT 08/12/2008
	(quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are biggest to smallest) Depth Depth Water (in feet)
POD Number	Tws Rng Sec q q q Zone X Y Well Water Column
RG 44629	27N 13W 33 366 310 56

Township: 27N Range: 12W Sections:
NAD27 X: Y: Zone: Search Radius:
County:
Owner Name: (First) (Last) Onn-Domestic Odomestic Odomes
POD / Surface Data Report
Clear Form iWATERS Menu Help

WATER COLUMN REPORT 08/12/2008

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

	(quarter	s are b	iggest to	smallest)			Depth	Depth	Water	(in feet
POD Number	Tws	Rng Sec	cqqq	Zone	Х	Y	Well	Water	Column	
RG 76598	27N	12W 02	3 4 1				225	145	80	
SJ 00076	27N	12W 13	1 3 2				641	408	233	
SJ 00210	27N	12W 13	2 2 2				717	422	295	
SJ 00065	27N	12W 13	3 1 1				671	215	456	
SJ 00066	27N	12W 13	3 3 1				750	177	573	

	Town	ship: 27N	Range: 11W	Sections:		
	NAD27	X:	Y:	Zone:	Search	Radius:
Cour	nty:	Ba	sin:		Number:	Suffix:
Owne	er Name: (Firs	st)	(Last)		ONon-Doi	mestic ODomestic OAll
	POD	/ Surface D	Pata Report Avg	Depth to Water F	Report Water (Column Report
			Clear Form	iWATERS Men	u Help	

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

(quarters are biggest to smallest)								Depth	Depth	Water	(in feet)	
POD Number	Tws	Rng	Sec	q	PF	Zone	X	Y	Well	Water	Column	
SJ 01787	27N	11W	07	2 2	2				650			
SJ 00077	27N	11W	26	2 1	L 3				1102	550	552	

Township: 27N Range: 10W Sections:
NAD27 X: Zone: Search Radius:
County:
Owner Name: (First) (Last) Onn-Domestic Odomestic Odomes
POD / Surface Data Report
Clear Form iWATERS Menu Help

WATER COLUMN REPORT 08/06/2008

(quarters are biggest to smallest)

	(quarter	s ar	e bı	gge	st	to	smallest)			Depth	Depth	Water	(in ree
POD Number	Tws	Rng	Sec	q	q ·	q	Zone	X	Y	Well	Water	Column	
SJ 00032	27N	10W	08	2	2	3				235	60	175	
SJ 00033	27N	10W	08	2	2	3				204			
SJ 00034	27N	10W	80	2	2	3				235	170	65	

Township: 26N Range: 12W Sections:
NAD27 X: Zone: Search Radius:
County: Basin: Number: Suffix:
Owner Name: (First) (Last) Onon-Domestic Odomestic Odomestic
POD / Surface Data Report
Clear Form iWATERS Menu Help

WATER COLUMN REPORT 08/12/2008

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

	(quarter	s are	bi	gge	st to	smallest)			Depth	Depth	Water	(in feet)
POD Number	Tws	Rng	Sec	q	P F	Zone	X	Y	Well	Water	Column	
RG 50222	26N	12W	04						258	180	78	
RG 30567	26N	12W	25	2					102	45	57	
SJ 01058	26N	12W	03	1 4	4				254	220	34	

	Township: 26N Range:	e: 11W Sections:
NA	D27 X: Y:	Zone: Search Radius:
County:	Basin:	Number: Suffix:
Owner Name:	(First)	(Last) ONon-Domestic ODomestic @All
	POD / Surface Data Report	Avg Depth to Water Report Water Column Report
	Clear	ar Form iWATERS Menu Help
	,	

WATER COLUMN REPORT 08/11/2008

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

	(quarter						smalles	•		Depth	Depth	Water	(in feet)
POD Number	Tws	Rng	Sec	q	q	q	Zone	X	Y	Well	Water	Column	
SJ 01626	26N	11W	16	4	3					255	200	55	
SJ 02734	26N	11W	35	4	3	2				275	165	110	

	Township: 26N Range: 10W Sections:										
	NAD27 X: Y: Zone: Search Radius:										
	County: Basin: Number: Suffix:										
	Owner Name: (First) (Last) One-Domestic Odomestic Odomes										
POD / Surface Data Report											
	Clear Form iWATERS Menu Help										
	WATER COLUMN REPORT 08/08/2008 (quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are biggest to smallest) Depth Depth Water (in feet)										
POD Number	Tws Rng Sec q q q Zone X Y Well Water Column										

2287

2105

500

500

1787

1605

Record Count: 2

SJ 00193

SJ 00194

10W 13 4 2

26N 10W 25 4 1

26N

	Township: 26N Range: 09W Sections:
	NAD27 X: Y: Zone: Search Radius:
	County: Basin: Number: Suffix:
	Owner Name: (First) (Last) Onn-Domestic Odmestic Odl
,	POD / Surface Data Report
	Clear Form iWATERS Menu Help

WATER COLUMN REPORT 08/08/2008

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

	(qua	arter	s are	e biq	gge	st	: to	smallest)			Depth	Depth	Water	(in feet)
POD Number		Tws	Rng	Sec	q	q	q	Zone	X	Y	Well	Water	Column	
SJ 02961		26N	09W	01	2	2	3				1500			
SJ 02962		26N	09W	01	3	2	3				1500			
SJ 01756		26N	09W	11	2	2	3				75	40	35	
SJ 03811 PO	D1	26N	09W	12	3	3	3				348	175	173	
SJ 00412		26N	09W	16	4	2					202	65	137	
SJ 00214		26N	09W	26	2	4	2				946	230	716	
SJ 00064		26N	09W	26	4	2	1				490	215	275	
SJ 00063		26N	09W	26	4	2	3	-			479	234	245	

XTO Energy Inc. San Juan Basin Below Grade Tank Design and Construction Plan

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 (BGT) which does not conform to this plan.

General Plan

- 1. XTO will design and construct a BGT to contain liquids and solids and prevent contamination of fresh water and protect public heath and environment.
- Prior to constructing the pit, topsoil will be stockpiled in the construction zone for later use in restoration.
- 3. XTO will post a well sign, in compliance with 19.15.3.103 NMAC, on the well site prior to construction of the BGT. The sign will list the Operator on record as the operator, the location of the well site by unit letter, section, township, range, and emergency telephone numbers.
- 4. XTO shall construct all new fences utilizing 48" steel mesh field-fence (hogwire) on the bottom with two strands of barbed wire on top, or with a pipe top rail. A 6' chain link fence topped with three stands of barbed wire will be used if the well location is within 1000' of a permanent residence, school, hospital, institution or church.
- 5. XTO shall construct an expanded metal covering on top of the BGT.
- 6. XTO will ensure that a BGT is constructed of materials resistant to the BGT's particular contents and resistant to damage from sunlight.
- 7. The BGT 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.
- 8. XTO will construct a berm and/or diversion ditch in a manner that prevents the collection of surface water run-on.
- 9. XTO will construct and use BGT that does not have double walls. The BGT sidewalls will be open for visual inspection for leaks, the BGT bottom will be elevated a minimum of 6" above the underlying ground surface and the BGT will be underlain with a geomembrane liner to divert leaked liquid to a location that can be visually inspected.
- 10. XTO will equip BGT's designed in this manner with a properly functioning automatic high-level shut-off control device and manual controls to prevent overflows.
- 11. The geomembrane liner shall consist of 30-mil flexible PVC or 60-mil HDPE liner, or an equivalent liner material that the appropriate division district office approves. The geomembrane liner shall have a hydraulic conductivity greater that 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 acidic and alkaline solutions. The liner material shall be resistant to ultraviolet light. Liner compatibility shall comply with EPA SW-846 method 9090A.
- 12. The general specifications for design and construction are attached.

XTO Energy Inc. San Juan Basin Below Grade Tank Maintenance and Operating Plan

In accordance with Rule 19.15.17.11 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 (BGT) which does not conform to this plan.

General Plan

- 1. XTO will operate and maintain a BGT to contain liquids and solids and prevent contamination of fresh water and protect public health and the environment.
- 2. XTO will not allow a BGT to overflow and will use berms and/or diversion ditch to prevent surface run on to enter the BGT.
- 3. XTO will continuously remove any visible or measurable layer of oil from the fluid surface of a BGT in order to prevent significant accumulation of oil.
- 4. XTO will inspect the BGT monthly and maintain written records for five years.
- 5. XTO will maintain adequate freeboard to prevent over topping of the BGT.

XTO Energy Inc. San Juan Basin Below Grade Tank Closure Plan

In accordance with Rule 19.15.17.11 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 (BGT) which does not conform to this plan.

General Plan

- 1. XTO will close a BGT 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 an existing BGT 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 BGT within 60 days of cessation of the BGT'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 a BGT prior to implementing a closure method and will dispose of the liquids and sludge in a division-approved facility.
- 5. XTO will remove the BGT and dispose of it in a division approved facility or recycle, reuse, or reclaim it in a manner that the appropriate division district office approves.
- 6. XTO will remove any on-site equipment associated with a BGT unless the equipment is required for some other purpose.
- 7. XTO will test the solids beneath the BGT 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 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 will be given to the Aztec Division District III office between 72 hours and one week of closure via email or verbally. The notification will include the following:
 - i. Operator's name
 - Location by Unit Letter, Section, Township, and Range. Well name and API number.

- 11. All closure activities will include proper documentation and be available for review upon request and will be submitted to OCD within 60 days of closure of the BGT. Closure report will be filed on form C-144 and incorporate the following:
 - i. Details on capping and covering, where applicable
 - ii. Inspection reports
 - iii. Sampling results
- 12. 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.
- 13. XTO will seed the disturbed areas the first growing season after the operator closes the pit.

 Seeding will be accomplished via drilling on the contour whenever practical or by other divisionapproved methods. BLM or Forest Service stipulated seed mixes will be used on federal lands.

 Vegetative cover will equal 70% of the native perennial vegetative cover (un-impacted)
 consisting of at least three native plant species, including at least one grass, but not including
 noxious weeds, and maintain that cover through two successive growing seasons. Repeat seeding
 or planting will be continued until successful vegetative growth occurs.
- 14. A minimum of 4' of cover shall be achieved and the cover shall include 1' of suitable material to establish vegetation at the site, or the background thickness of topsoil, whichever is greater.
- 15. The surface owner shall be notified of XTO's proposal to close the BGT as per the approved closure plan using certified mail, return receipt requested.