

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.

RECEIVED  
2008 FEB 16 AM 11:44

**Pit, Closed-Loop System, Below-Grade Tank, or  
Proposed Alternative Method Permit or Closure Plan Application**

- Type of action:  Permit of a pit, closed-loop system, below-grade tank, or proposed alternative method  
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 environment. Nor does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rules, regulations or ordinances.

1.  
Operator: XTO Energy, Inc. OGRID #: 5380  
Address: #382 County Road 3100, Aztec, NM 87410  
Facility or well name: Jack Frost B #2  
API Number: 30-045-06295 OCD Permit Number: \_\_\_\_\_  
U/L or Qtr/Qtr D Section 27 Township 27N Range 10W County: San Juan  
Center of Proposed Design: Latitude 36.550810 Longitude 107.887830 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: Thickness \_\_\_\_\_ mil  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: Thickness \_\_\_\_\_ mil  LLDPE  HDPE  PVC  Other \_\_\_\_\_  
Liner Seams:  Welded  Factory  Other \_\_\_\_\_

4.  
 **Below-grade tank:** Subsection I of 19.15.17.11 NMAC  
Volume: 95 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 Visible sidewalls, vaulted, automatic high-level shut off, no liner  
Liner type: Thickness \_\_\_\_\_ mil  HDPE  PVC  Other \_\_\_\_\_

5.  
 **Alternative Method:**  
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)

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

10.

**Siting Criteria (regarding permitting):** 19.15.17.10 NMAC

**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	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. ( <i>Applies to temporary, emergency, or cavitation pits and below-grade tanks</i> ) - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA
Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. ( <i>Applies to permanent pits</i> ) - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> 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	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within a 100-year floodplain. - FEMA map	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

11.

**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)

13.

**Permanent Pits Permit Application Checklist:** Subsection B of 19.15.17.9 NMAC

**Instructions:** Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

- Hydrogeologic Report - based upon the requirements of Paragraph (1) of Subsection B of 19.15.17.9 NMAC
- Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
- Climatological Factors Assessment
- Certified Engineering Design Plans - based upon the appropriate requirements of 19.15.17.11 NMAC
- Dike Protection and Structural Integrity Design - based upon the appropriate requirements of 19.15.17.11 NMAC
- Leak Detection Design - based upon the appropriate requirements of 19.15.17.11 NMAC
- Liner Specifications and Compatibility Assessment - based upon the appropriate requirements of 19.15.17.11 NMAC
- Quality Control/Quality Assurance Construction and Installation Plan
- Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- Freeboard and Overtopping Prevention Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- Nuisance or Hazardous Odors, including H<sub>2</sub>S, Prevention Plan
- Emergency Response Plan
- Oil Field Waste Stream Characterization
- Monitoring and Inspection Plan
- Erosion Control Plan
- Closure Plan - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

14.

**Proposed Closure:** 19.15.17.13 NMAC

**Instructions:** Please complete the applicable boxes, Boxes 14 through 18, in regards to the proposed closure plan.

- Type:  Drilling  Workover  Emergency  Cavitation  P&A  Permanent Pit  Below-grade Tank  Closed-loop System  
 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 I of 19.15.17.13 NMAC
- Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

16.

**Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only:** (19.15.17.13.D NMAC)

**Instructions:** Please identify the facility or facilities for the disposal of liquids, drilling fluids and drill cuttings. Use attachment if more than two facilities are required.

Disposal Facility Name: \_\_\_\_\_ Disposal Facility Permit Number: \_\_\_\_\_

Disposal Facility Name: \_\_\_\_\_ Disposal Facility Permit Number: \_\_\_\_\_

Will any of the proposed closed-loop system operations and associated activities occur on or in areas that will not be used for future service and operations?

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

17.

**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 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. Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17.10 NMAC for guidance.

- Ground water is less than 50 feet below the bottom of the buried waste.
  - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells Yes  No  
 NA
- Ground water is between 50 and 100 feet below the bottom of the buried waste
  - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells Yes  No  
 NA
- Ground water is more than 100 feet below the bottom of the buried waste.
  - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells Yes  No  
 NA
- Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).
  - Topographic map; Visual inspection (certification) of the proposed site Yes  No
- Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.
  - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image Yes  No
- Within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, in existence at the time of initial application.
  - NM Office of the State Engineer - iWATERS database; Visual inspection (certification) of the proposed site Yes  No
- Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended.
  - Written confirmation or verification from the municipality; Written approval obtained from the municipality Yes  No
- Within 500 feet of a wetland.
  - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site Yes  No
- Within the area overlying a subsurface mine.
  - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division Yes  No
- Within an unstable area.
  - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map Yes  No
- Within a 100-year floodplain.
  - FEMA map Yes  No

18.

**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 19.15.17.11 NMAC
- 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
- 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 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

19.

**Operator Application Certification:**

I hereby certify that the information submitted with this application is true, accurate and complete to the best of my knowledge and belief.

Name (Print): Kim Champlin Title: Environmental Representative

Signature: Kim Champlin Date: 01/14/2009

e-mail address: kim\_champlin@xtoenergy.com Telephone: (505) 333-3100

20.

**OCD Approval:**  Permit Application (including closure plan)  Closure Plan (only)  OCD Conditions (see attachment)

OCD Representative Signature: [Signature] Approval Date: 10/23/14

Title: Environmental Engineer OCD Permit Number: \_\_\_\_\_

21.

**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  Alternative Closure Method  Waste Removal (Closed-loop systems only)  
 If different from approved plan, please explain.

23.

**Closure Report Regarding Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only:**

*Instructions: Please indentify the facility or facilities for where the liquids, drilling fluids and drill cuttings were disposed. Use attachment if more than two facilities were utilized.*

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 or in areas that will not be used for future service and operations?

Yes (If yes, please demonstrate compliance to the items below)  No

Required for impacted areas which will not be used for future service and operations:

- Site Reclamation (Photo Documentation)
- Soil Backfilling and Cover Installation
- Re-vegetation Application Rates and Seeding Technique

24.

**Closure Report Attachment Checklist:** *Instructions: Each of the following items must be attached to the closure report. Please indicate, by a check 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 \_\_\_\_\_ Longitude \_\_\_\_\_ NAD:  1927  1983

25.

**Operator Closure Certification:**

I hereby certify that the information and attachments submitted with this closure report is true, accurate and complete to the best of my knowledge and belief. I also certify that the closure complies with all applicable closure requirements 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 Acreage Dedication Plat**

**SECTION A.**

Date **July 13, 1964**

Operator **PAN AMERICAN PETROLEUM CORPORATION** Lease **JACK FROST "B"**  
Well No. **2** Unit Letter **D** Section **27** Township **27 NORTH** Range **10 WEST** NMPM  
Located **930** Feet From **NORTH** Line **104-0** Feet From **WEST** Line  
County **SAN JUAN** G. L. Elevation **Report Later** Dedicated Acreage **320** Acres  
Name of Producing Formation **Dakota** Pool **Basin Dakota**

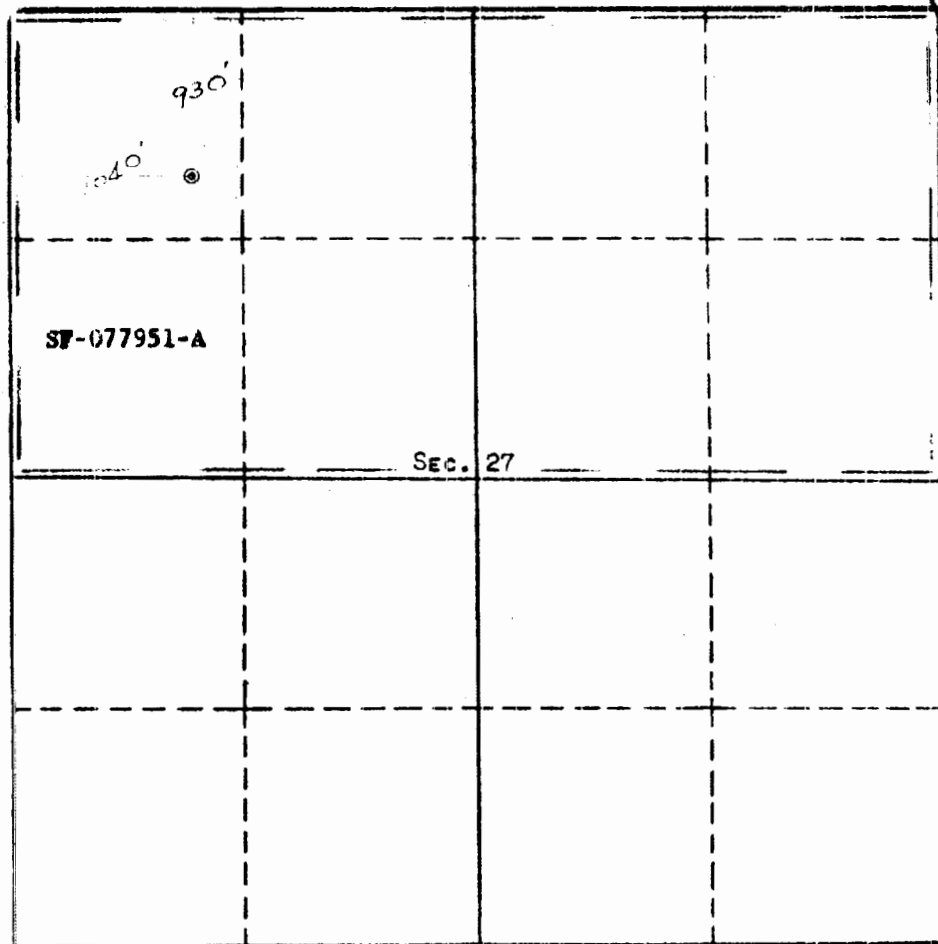
1. Is the Operator the only owner in the dedicated acreage outlined on the plat below? Yes  No
2. If the answer to question One is "No," have the interests of all the owners been consolidated by communitization agreement or otherwise? Yes  No  If answer is "Yes," Type of Consolidation **Jointly owned acreage - all owners approved drilling of well.**
3. If the answer to question Two is "No," list all the owners and their respective interests below:

OWNER

LAND DESCRIPTION



**SECTION B.**

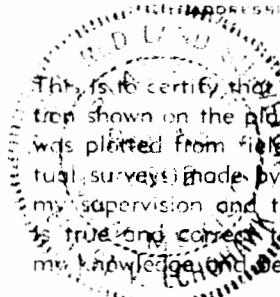


This is to certify that the information in Section A above is true and complete to the best of my knowledge and belief.

**PAN AMERICAN PETROLEUM CORP.**

*F. H. Hollingsworth*  
**F. H. Hollingsworth**  
REPRESENTATIVE

**P. O. Box 480**  
**Farmington, New Mexico**



This is to certify that the well location shown on the plat in Section B was plotted from field notes of actual surveys made by me or under my supervision and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed **JUNE 29, 1964**

**Four States Engineering Co.**  
FARMINGTON, NEW MEXICO

*Ernest E. Eckert*  
REGISTERED ENGINEER OR  
LAND SURVEYOR

Certificate No **3602**





**Lodestar Services, Inc.**

PO Box 4465, Durango, CO 81302

**Pit Permit  
Siting Criteria  
Information**

API#: 30-045-06295

Name: JACK FROST B No.002

Depth to groundwater: depth < 50'

Distance to closest continuously flowing watercourse: 9.8 miles N to 'San Juan River';

Distance to closest significant watercourse, lakebed, playa lake, or sinkhole: ~3000' NW to 'Kutz Canyon' (East Fork) main wash channel; ~8.3 miles E to 'Blanco Canyon' main wash channel

Permanent residence, school, hospital, institution or church within 300': NO

Domestic fresh water well or spring within 500': NO

Any other fresh water well or spring within 1000': NO

Within incorporated municipal boundaries: NO

Within defined municipal fresh water well field: NO

Wetland within 500': NO

Within unstable area: NO

Within 100 year flood plain: NO

Client: XTO Energy  
Project: tank permitting  
Revised: 12-Jan-09  
Prepared by: Trevor Ycas

USPLSS: 27N 10W 27 D

Lat/Long: 36.550810°, -107.887830°

Geologic formation: Nacimiento Formation (Tn)

site elevation: 1873m/6145' note; XTO information indicates name of site is "FROST JACK B No.002"

Soil Type: Alfisol / Entisol

Annual Precipitation: Navajo Reservoir: 11.90", Aztec: 9.77", Farmington (FAA): 8.21", Bloomfield: 8.71'

Precipitation Notes: Historical daily max. precip.: 4.0" (Bloomfield)

Attached Documents: 26N09W\_iWaters.pdf, 26N10W\_iWaters.pdf, 26N11W\_iWaters.pdf, 27N09W\_iWaters.pdf, 27N10W\_iwaters.pdf, 27N11W\_iwaters.pdf, 28N09W\_iWaters.pdf, 28N10W\_iWaters.pdf, 28N11W\_iWaters.pdf

FM3500640550B\_30-045-06295.jpg 30-045-06295\_gEarth-iWaters.jpg, 30-045-06295\_gEarth-PLS.jpg, 30-045-06295\_topo-PLS.jpg

Mining Activity: None Near  
NM\_NRD-MMD\_MinesMillQuarries\_30-045-06295.jpg

**Additional Notes:**

drains to 'San Juan River' via 'Kutz Canyon'

headwaters of Kutz Canyon(East Fork), NW of Angel Peak & W of Harris Mesa

## **JACK FROST B 2**

### **Below Ground Tank**

API#: 30-045-06295

## **Hydrogeologic Report for Siting Criteria**

### **General Geology and Hydrology**

The San Juan Basin is a typical Rocky Mountain basin with a gently dipping southern flank and a steeply dipping northern flank. Asymmetrically layered Tertiary sandstones and shales, along with Quaternary alluvial deposits, dominate surficial geology (Dane and Bachman, 1965). The proposed pit location will be located in the southernmost Kutz Canyon region of the San Juan Basin. The predominant geologic formation is the Nacimiento Formation of Tertiary age, which underlies surface soils and is often exposed (Dane and Bachman, 1965). Deposits of Quaternary alluvial and aeolian sands occur prominently near the surface of the area, especially near streams and washes.

Cretaceous and Tertiary sandstones, as well as Quaternary alluvial deposits serve as the primary aquifers in the San Juan basin (Stone et al., 1983). In most of the proposed area, the Nacimiento Formation lies at the surface and grades into the Animas Formation to the west. Thickness of the Nacimiento ranges from 418 to 2232 feet (Stone et al., 1983). Aquifers within the coarser and continuous sandstone bodies of the Nacimiento Formation are between 0 and 1000' deep in this section of the basin (Stone et al., 1983). Groundwater within these aquifers flows toward the San Juan River.

The prominent soil type at the proposed site are entisols and aridisols, which are defined as soils that exhibit little to no any profile development ([www.emnrd.state.nm.us](http://www.emnrd.state.nm.us)). Soils are basically unaltered from their parent rock. Miles of arroyos, washes and intermittent streams exist as part of the drainage network towards the San Juan River. These features often cut into soil and other unconsolidated materials, contributing to sedimentation downstream. The sudden influx of water from storm events easily erodes the soils that cover the area. The sudden influx of water from storm events easily erodes the soils that cover the area and prohibits effective recharge to the underlying aquifers.

Dry and arid weather further prohibit active recharge. The climate of the region is arid, averaging 8 to 12 inches of rainfall annually. As is typical of the southwestern United States monsoonal weather patterns, most precipitation falls from August through October. The heaviest rainfall occurs in the summer in isolated, intense cloudbursts. November through June is relatively dry. Snow generally falls from December to mid-February and averages less than one-half inch in depth. However, most recharge occurs during the winter months during snowmelt periods from the upper elevations (Western Regional Climate Center [www.wrcc.dri.edu](http://www.wrcc.dri.edu)).

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



### **Site Specific Hydrogeology**

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

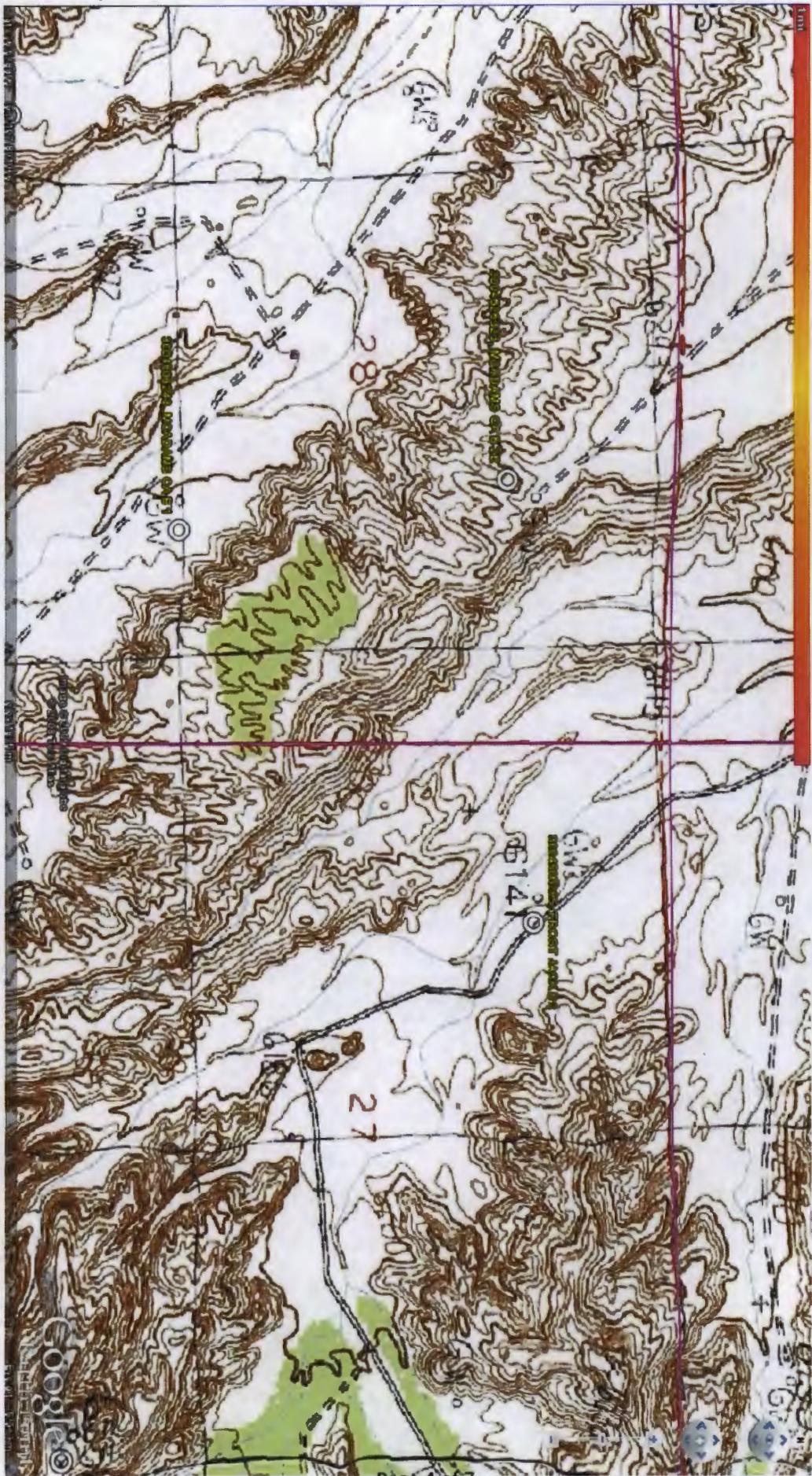
Beds of water-yielding sandstone are present in the Nacimiento Formation, which are fluvial in origin and are interbedded with siltstone, shale and coal. Porous sandstones form the principal aquifers, while relatively impermeable shales form confining units between the aquifers (Stone et al., 1983).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

The site in question is located in the upper, southernmost, reaches of Kutz Canyon, where deeply eroded sandstone-capped mesas and slope-forming mudstones occur in a sparsely vegetated and arid badlands-type setting. Broad 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 on a relatively flat mesa top at an elevation of approximately 6145 feet near the head of Kutz Wash. It will be approximately 400 feet from the Kutz Canyon tributary system and 3000 feet southeast of Kutz Wash(East Fork). Groundwater is expected to be shallow within Kutz Wash.

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

### **References**





New Mexico Office of the State Engineer  
POD Reports and Downloads

Township: 28N Range: 10W Sections: \_\_\_\_\_

NAD27 X: \_\_\_\_\_ Y: \_\_\_\_\_ Zone: \_\_\_\_\_ Search Radius: \_\_\_\_\_

County: \_\_\_\_\_ Basin: \_\_\_\_\_ Number: \_\_\_\_\_ Suffix: \_\_\_\_\_

Owner Name: (First) \_\_\_\_\_ (Last) \_\_\_\_\_ Non-Domestic  Domestic  All

POD / Surface Data Report | Avg Depth to Water Report | Water Column 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)

POD Number	Tws	Rng	Sec	q	q	Zone	X	Y	Depth Well	Depth Water	Water Column

No Records found, try again

New Mexico Office of the State Engineer  
POD Reports and Downloads

Township: 28N Range: 09W Sections: \_\_\_\_\_  
 NAD27 X: \_\_\_\_\_ Y: \_\_\_\_\_ Zone: \_\_\_\_\_ Search Radius: \_\_\_\_\_  
 County: \_\_\_\_\_ Basin: \_\_\_\_\_ Number: \_\_\_\_\_ Suffix: \_\_\_\_\_  
 Owner Name: (First) \_\_\_\_\_ (Last) \_\_\_\_\_ Non-Domestic  Domestic  All

POD / Surface Data Report Avg Depth to Water Report Water Column Report  
 Clear Form iwATERS Menu Help

WATER COLUMN REPORT 08/06/2008

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

POD Number	Tws	Rng	Sec	q	q	q	Zone	X	Y	Depth Well	Depth Water	Water Column
SJ 03746 POD1	28N	09W	20	1	2	3				190	40	150
SJ 00018	28N	09W	20	3	1	4				135	71	64
SJ 02800	28N	09W	24	4	2	3				200		

Record Count: 3

New Mexico Office of the State Engineer  
POD Reports and Downloads

Township:  Range:  Sections:

NAD27 X:  Y:  Zone:  Search Radius:

County:  Basin:  Number:  Suffix:

Owner Name: (First)  (Last)   Non-Domestic  Domestic  All

WATER COLUMN REPORT 08/06/2008

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

POD Number	Tws	Rng	Sec	q	q	Zone	X	Y	Depth Well	Depth Water	Water Column
SJ 01787	27N	11W	07	2	2				650		
SJ 00077	27N	11W	26	2	1	3			1102	550	552

Record Count: 2

New Mexico Office of the State Engineer  
POD Reports and Downloads

Township:  Range:  Sections:

NAD27 X:  Y:  Zone:  Search Radius:

County:  Basin:  Number:  Suffix:

Owner Name: (First)  (Last)   Non-Domestic  Domestic  All

WATER COLUMN REPORT 08/06/2008

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

POD Number	Tws	Rng	Sec	q	q	Zone	X	Y	Depth Well	Depth Water	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	08	2	2	3			235	170	65

Record Count: 3

New Mexico Office of the State Engineer  
POD Reports and Downloads

Township:  Range:  Sections:

NAD27 X:  Y:  Zone:  Search Radius:

County:  Basin:  Number:  Suffix:

Owner Name: (First)  (Last)   Non-Domestic  Domestic  All

AVERAGE DEPTH OF WATER REPORT 08/06/2008

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

Record Count: 2



New Mexico Office of the State Engineer  
POD Reports and Downloads

Township: E7N Range: 60W Sections: \_\_\_\_\_  
 NAD27 X: \_\_\_\_\_ Y: \_\_\_\_\_ Zone: \_\_\_\_\_ Search Radius: \_\_\_\_\_  
 County: \_\_\_\_\_ Basin: \_\_\_\_\_ Number: \_\_\_\_\_ Suffix: \_\_\_\_\_  
 Owner Name: (First) \_\_\_\_\_ (Last) \_\_\_\_\_ Non-Domestic Domestic ~ All

POD / Surface Data Report | Avg Depth to Water Report | Water Column Report

Clear Form | IWATERS Menu | Help

POD / SURFACE DATA REPORT 08/12/2008

DB File Nbr (acre ft per annum) Use Diversion Owner

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

Source Tws Rng Sec q q q Zone X Y UTM\_Zone Easting Northing Start Date Finish Date Depth Dept Well Water

No Records found, try again

New Mexico Office of the State Engineer  
POD Reports and Downloads

Township:  Range:  Sections:

NAD27 X:  Y:  Zone:  Search Radius:

County:  Basin:  Number:  Suffix:

Owner Name: (First)  (Last)   Non-Domestic  Domestic  All

WATER COLUMN REPORT 08/11/2008

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

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

Record Count: 2

New Mexico Office of the State Engineer  
POD Reports and Downloads

Township: [26N] Range: [10W] Sections: [ ]  
 NAD27 X: [ ] Y: [ ] Zone: [ ] Search Radius: [ ]  
 County: [ ] Basin: [ ] Number: [ ] Suffix: [ ]  
 Owner Name: (First) [ ] (Last) [ ]  Non-Domestic  Domestic  All

WATER COLUMN REPORT 08/08/2008

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

POD Number	Tws	Rng	Sec	q	q	Zone	X	Y	Depth	Water	Depth	Water	Water
									Well	Column	(in	feet)	Column
SJ 00193	26N	10W	13	4	2				2287	500	500	1787	
SJ 00194	26N	10W	25	4	1				2105	500	500	1605	

Record Count: 2

New Mexico Office of the State Engineer  
POD Reports and Downloads

Township: [26N] Range: [09W] Sections: [ ]  
 NAD27 X: [ ] Y: [ ] Zone: [ ] Search Radius: [ ]  
 County: [ ] Basin: [ ] Number: [ ] Suffix: [ ]  
 Owner Name: (First) [ ] (Last) [ ]  Non-Domestic  Domestic  All

WATER COLUMN REPORT 08/08/2008

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

POD Number	Tws	Rng	Sec	q	q	q	Zone	X	Y	Depth Well	Depth Water	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 POD1	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

Record Count: 8

New Mexico Office of the State Engineer  
POD Reports and Downloads

Township: 28N Range: 11W Sections: \_\_\_\_\_  
 NAD27 X: \_\_\_\_\_ Y: \_\_\_\_\_ Zone: \_\_\_\_\_ Search Radius: \_\_\_\_\_  
 County: \_\_\_\_\_ Basin: \_\_\_\_\_ Number: \_\_\_\_\_ Suffix: \_\_\_\_\_  
 Owner Name: (First) \_\_\_\_\_ (Last) \_\_\_\_\_  Non-Domestic  All

[POD / Surface Data Report](#) | [Avg Depth to Water Report](#) | [Water Column Report](#)

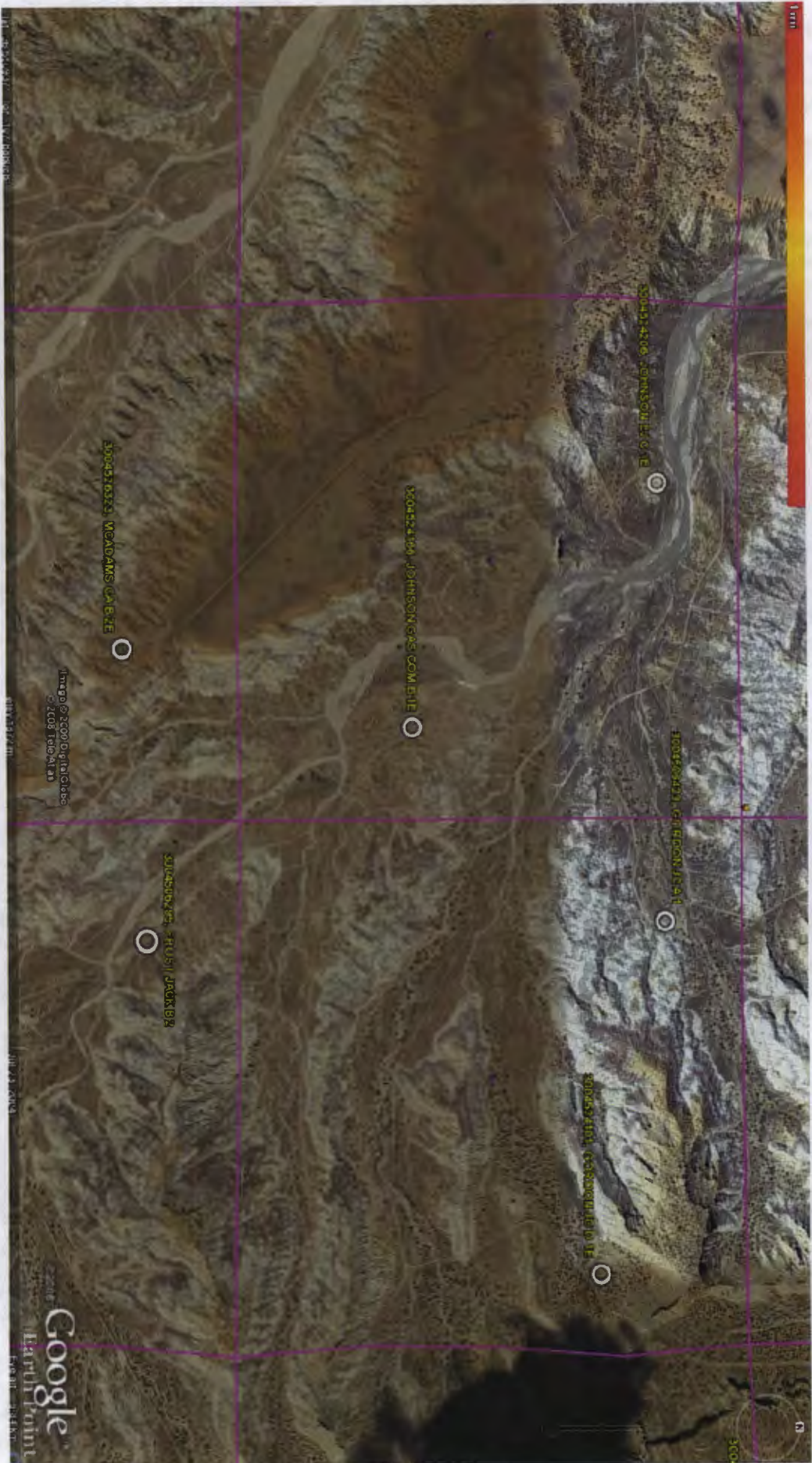
[Clear Form](#) | [WATERS Menu](#) | [Help](#)

WATER COLUMN REPORT 08/06/2008

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

POD Number	Tws	Rng	Sec	q	q	Zone	X	Y	Depth Well	Depth Water	Water Column
SJ 03193	28N	11W	07	3	4	3			80	35	45
SJ 02916	28N	11W	07	3	4	4			98	70	28

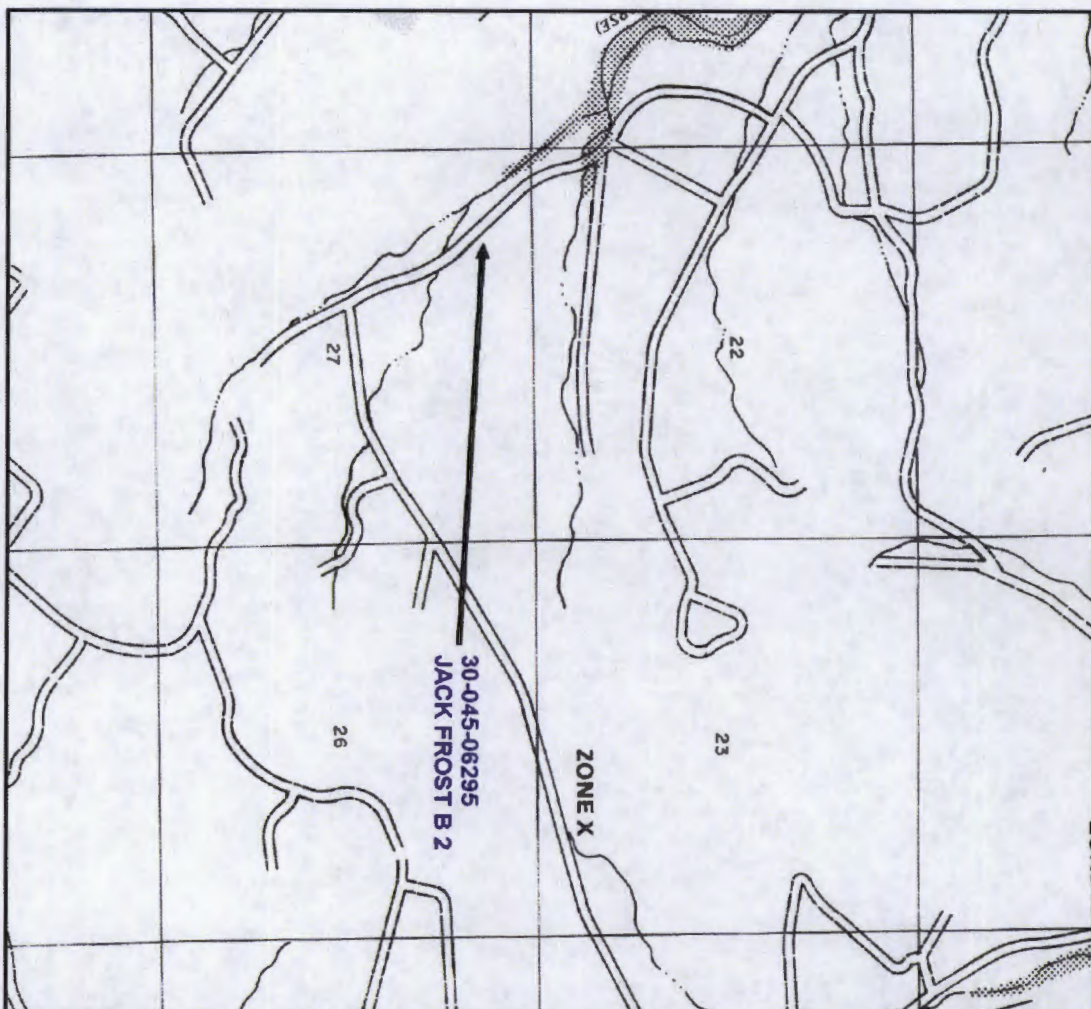
Record Count: 2



### Mines, Mills and Quarries Web Map



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



2000  
APPROXIMATE SCALE  
0

**LEGEND**

- SPECIAL FLOOD HAZARD AREAS BOUNDARIED**
- ZONE A** Area subject to flooding from storm surge.
  - ZONE AE** Area subject to flooding from storm surge.
  - ZONE AH** Flood depth of 1 to 3 feet (average depth of 2 feet). See Flood Protection Parameters.
  - ZONE AO** Flood depth of 3 to 5 feet (average depth of 4 feet). See Flood Protection Parameters. For areas of elevated flood risk, see Flood Protection Parameters.
  - ZONE AV** To be protected from 100-year flood by construction to meet minimum standards. Coastal flood risk subject to special provisions. See Flood Protection Parameters.
  - ZONE VE** Coastal flood risk subject to special provisions. See Flood Protection Parameters.
  - FLOODWAY AREAS IN ZONE AE**
  - OTHER FLOOD AREAS**
  - ZONE X** Areas of 500-year flood, flood areas of 100-year flood with average depth of 1 to 3 feet (average depth of 2 feet) and areas less than 1 square mile and area protected by levees from 100-year flood.
  - OTHER AREAS**
  - ZONE D** Areas determined to be outside 500-year flood plain. Areas in which flood hazard is undetermined.
- Flood Boundary**  
 Floodway Boundary  
 Zone D Boundary  
 Boundary/Dividing Special Flood Hazard Zone
- State Flood Elevation Limit: Elevation in Feet**  
 Cross Section Line  
 Mean Flood Elevation in Feet  
 Water Elevation Within Zone  
 Elevation Reference Mark
- RD/7 X**  
 Reference to the National Geographic Vertical Datum of 1929

**NOTES**

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at [www.fema.gov](http://www.fema.gov)



**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.

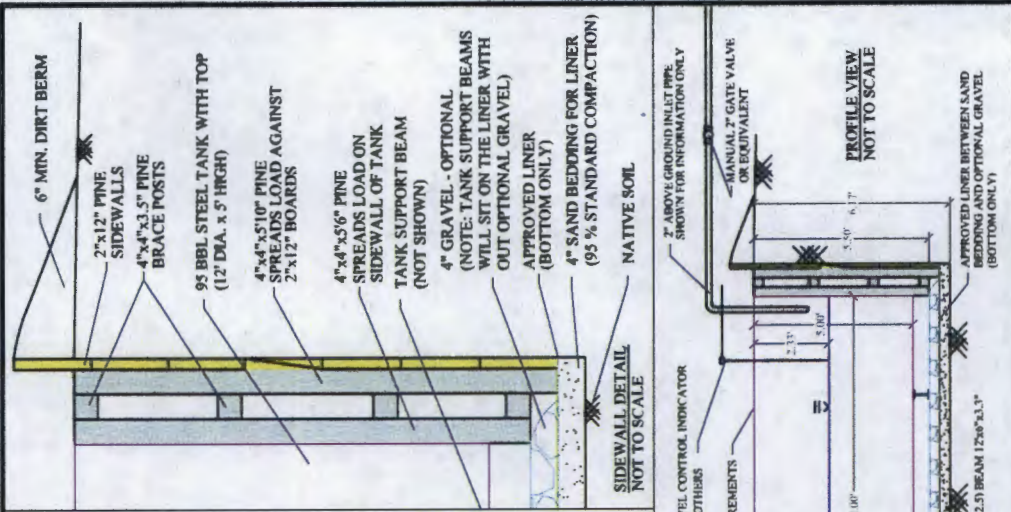
**General Plan**

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 below-grade tank will be underlain with a geomembrane liner to divert leaked liquid to a location that can be visually inspected. (See attached drawing).

9. XTO will equip below-grade tanks designed in this manner with a properly functioning automatic high-level shut-off control device and manual controls to prevent overflows. (See attached drawing).
10. XTO will demonstrate to the OCD that the geomembrane liner complies with the specifications of Subparagraph (a) of Paragraph (4) of Subsection I of 19.15.17.11 NMAC and obtain approval from OCD prior to the installation of the design. The geomembrane liner shall have a hydraulic conductivity no greater than  $1 \times 10^{-9}$  cm/sec. The geomembrane liner shall be composed of an impervious, synthetic material that is resistant to petroleum hydrocarbons, salts and acids 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.



**DESIGN INFORMATION\***

- THE TANK WILL HAVE AN EXPANDED METAL OR SOLID VAULTED TOP WITH VENT PER XTO SITE SPECIFIC DESIGN REQUIREMENTS. BUILT BY TANK SUPPLIER.
- GEOMEMBRANE LINER WILL COMPLY WITH SUBPARAGRAPH (a) OF PARAGRAPH (4) OF SUBSECTION I OF 19.15.17.11 NMAC.
- BASE WILL BE LEVEL AND FREE OF ROCKS, DEBRIS, SHARP EDGES, OR IRREGULARITIES PRIOR TO SAND PLACEMENT.
- THE LEVEL INDICATOR WILL HAVE AN AUTOMATIC SHUT OFF CONTROL FOR THE INLET PIPE AT 28" BELOW TOP OF TANK.

**WOOD PARTS LIST FOR SIDEWALLS**

- 14 EA 2"x12"x14'
- 4 EA 2"x12"x13' 9"
- 4 EA 4"x4"x5'6"
- 8 EA 4"x4"x5'10"
- 16 EA 4"x4"x3.5"

**OPTIONAL CROSS BRACES**

- 8 EA 4"x4"x5'10"
- 16 EA 4"x4"x3' 4"

**LINER**

- BOTTOM 13' 6"x13' 6"
- TANK 3/8" CARBON STEEL
- 3/8" SIDES
- K" BOTTOM

**6" PREMISTAL**

- 2 EA (86x12.5) BEAM 12'x6"x3.3"

**1" ABOVE GROUND OUTLET SUCTION PIPE** SHOWN FOR INFORMATION ONLY

**6" MIN EARTHEN BERM**

**95 BBL STEEL PIT TANK**

**LID PER XTO SITE REQUIREMENTS**

**LEVEL CONTROL INDICATOR** BY OTHERS

**APPROVED LINER BETWEEN SAND BEDDING AND OPTIONAL GRAVEL (BOTTOM ONLY)**

**APPROVED LINER WITH OUT OPTIONAL GRAVEL**

**4" GRAVEL - OPTIONAL** TANK SUPPORT BEAMS WILL SIT ON THE LINER WITH OUT OPTIONAL GRAVEL

**4" SAND BEDDING FOR LINER** (95% STANDARD COMPACTION)

**12' DIA (86x12.5) BEAM 12'x6"x3.3"**

**6" MIN DIRT BERM**

**2"x12" PINE SIDE WALLS**

**4"x4"x3.5" PINE BRACE POSTS**

**95 BBL STEEL TANK WITH TOP (12' DIA. x 5' HIGH)**

**4"x4"x5.10" PINE SPREADS LOAD AGAINST SIDEWALL OF TANK**

**4"x4"x5.6" PINE TANK SUPPORT BEAM (NOT SHOWN)**

**4" GRAVEL - OPTIONAL (NOTE: TANK SUPPORT BEAMS WILL SIT ON THE LINER WITH OUT OPTIONAL GRAVEL)**

**APPROVED LINER** (BOTTOM ONLY)

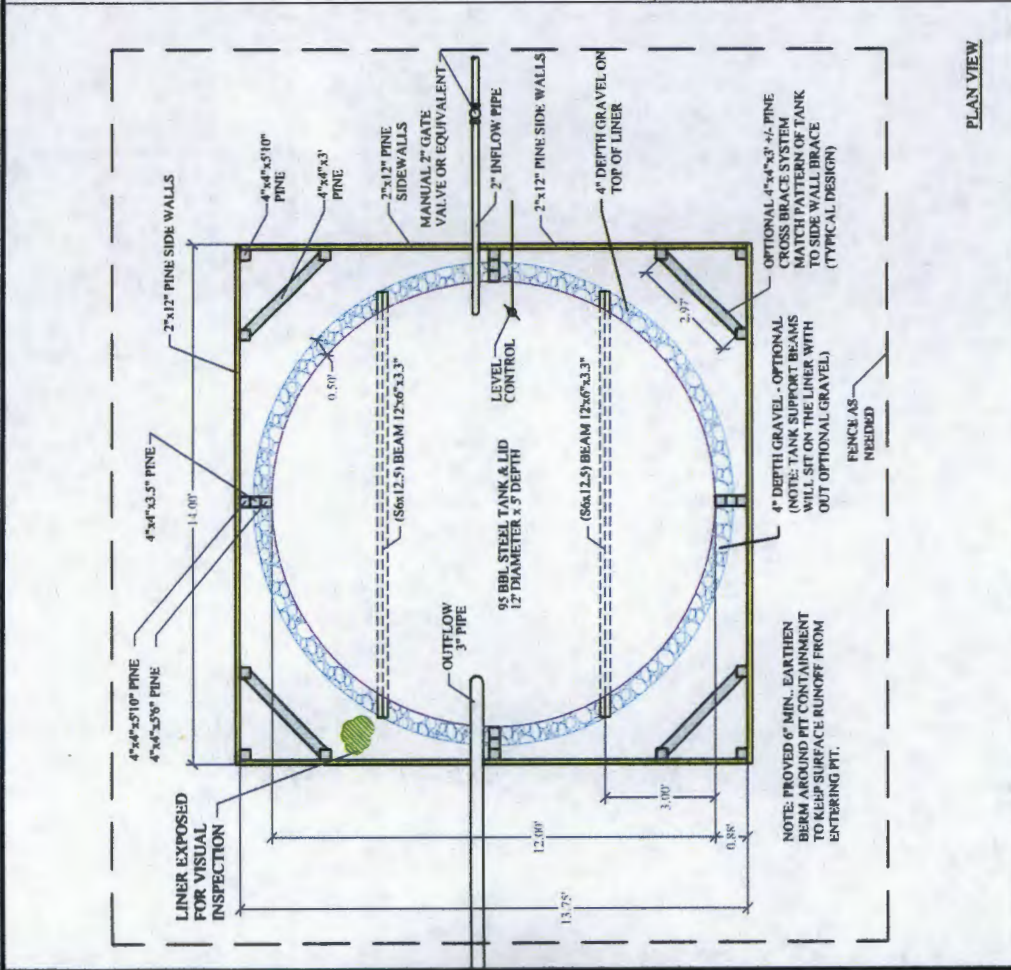
**4" SAND BEDDING FOR LINER (95% STANDARD COMPACTION)**

**6" MIN. DIRT BERM**

**2" ABOVE GROUND INLET PIPE** SHOWN FOR INFORMATION ONLY

**MANUAL 2" GATE VALVE OR EQUIVALENT**

**PROFILE VIEW NOT TO SCALE**



OWNER / OPERATOR:  
**XTO ENERGY**

TYPICAL DESIGN  
95 BBL PIT TANK  
CONTAINMENT

**XTO ENERGY**

PROJ NUMBER: 230222  
DRAWING NUMBER: XTO PIT TANK  
SCALE: AS SHOWN

REVISIONS: 1

**NOTE**

DRAFTED PER XTO DESIGN.

HIGH LEVEL SHUT OFF WILL BE SET AT 28" BENEATH TOP OF TANK (AT 53.80 BBL @ SHUT OFF).

OUTER EDGE OF LINER WILL BE LEFT OPEN AND UNOBSTRUCTED TO ALLOW FOR VISUAL INSPECTION OF LINER FOR EVIDENCE OF SPILLS.

ADJUST DIMENSIONS AS NEED TO FIELD FIT TANK IF DIFFERENT THAN SHOWN. IF REQUIRED.

**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.



**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.

**From:** Lowe, Leonard, EMNRD  
**To:** ["McDaniel, James"](#)  
**Cc:** [Hoekstra, Kurt](#); [Hixon, Logan](#); [Daniels, Melissa](#)  
**Subject:** APPROVED Below Grade Tank Approval - Jack Frost B #2  
**Date:** Tuesday, October 28, 2014 8:43:00 AM  
**Attachments:** [Approved Jack Frost B # 2 30-045-06295 95 bbl.pdf](#)  
**Importance:** High

---

Mr. McDaniel,

OCD approves closure of 95 bbl BGT at Jack Frost B # 2, API # 30-045-06295

## **Leonard Lowe**

Environmental Engineer

[Environmental Bureau]

**Oil Conservation Division**

**Energy Minerals and Natural Resources Department**

1220 South St. Frances

Santa Fe, New Mexico 87004

Office: 505-476-3492

Fax: 505-476-3462

E-mail: [leonard.lowe@state.nm.us](mailto:leonard.lowe@state.nm.us)

Website: <http://www.emnrd.state.nm.us/oed/>

---

**From:** McDaniel, James [mailto:James\_McDaniel@xtoenergy.com]  
**Sent:** Tuesday, October 21, 2014 7:27 PM  
**To:** Lowe, Leonard, EMNRD  
**Cc:** Hoekstra, Kurt; Hixon, Logan; Daniels, Melissa  
**Subject:** RE: Below Grade Tank Approval - Jack Frost B #2

I'm sure the original C-144 was submitted incorrectly for a 120 bbl tank. Please approve the CP for the 95 bbl closure plan that you were able to find. Thank you.

"Safety takes time, take the time to be safe" (PL)

### **James McDaniel**

EH&S Supervisor

CHMM #15676

ASP #A18313

XTO Energy Inc.

382 Road 3100

Aztec, New Mexico 87410

Phone: 505.333.3701 | Mobile: 505.787.0519

[james\\_mcdaniel@xtoenergy.com](mailto:james_mcdaniel@xtoenergy.com)

An **ExxonMobil** Subsidiary

---

**From:** Lowe, Leonard, EMNRD [<mailto:Leonard.Lowe@state.nm.us>]  
**Sent:** Tuesday, October 21, 2014 2:37 PM  
**To:** McDaniel, James  
**Cc:** Hoekstra, Kurt; Hixon, Logan; Daniels, Melissa  
**Subject:** RE: Below Grade Tank Approval - Jack Frost B #2  
**Importance:** High

Mr. McDaniel,

OCD could only find, the Jack Frost B #2 C-144 for the 95 bbl only. NO 120 BBL C-144 could be found for the 30-045-06295 Site. The found C-144 was found in the February, 12, 2009 box. OCD only has 4 2009 boxes, I searched all four boxes. No C-144 in particular found.

## **Leonard Lowe**

Environmental Engineer

[Environmental Bureau]

**Oil Conservation Division**

**Energy Minerals and Natural Resources Department**

1220 South St. Frances

Santa Fe, New Mexico 87004

Office: 505-476-3492

Fax: 505-476-3462

E-mail: [leonard.lowe@state.nm.us](mailto:leonard.lowe@state.nm.us)

Website: <http://www.emnrd.state.nm.us/ocd/>

---

**From:** McDaniel, James [[mailto:James\\_McDaniel@xtoenergy.com](mailto:James_McDaniel@xtoenergy.com)]  
**Sent:** Tuesday, October 07, 2014 6:21 AM  
**To:** Lowe, Leonard, EMNRD  
**Cc:** Hoekstra, Kurt; Hixon, Logan; Daniels, Melissa  
**Subject:** Below Grade Tank Approval - Jack Frost B #2

Mr. Lowe,

I would like to request approval of the closure plan only for the Below Grade Tank located at the Jack Frost B #2 well site. API # 30-045-06295, Section 27(D), Township 27N, Range 10W, San Juan County, New Mexico. Our records indicate that this permit application package was submitted to your office on January 23, 2009 for a 120 bbl tank. Thank you for your time in regards to this matter.

“Safety takes time, take the time to be safe” (PL)

### **James McDaniel**

EH&S Supervisor

CHMM #15676

ASP #A18313

XTO Energy Inc.

382 Road 3100  
Aztec, New Mexico 87410  
Phone: 505.333.3701 | Mobile: 505.787.0519  
[james\\_mcdaniel@xtoenergy.com](mailto:james_mcdaniel@xtoenergy.com)

An **ExxonMobil** Subsidiary