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

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2008 DEC 8 PM 4 36

Form C-144
July 21, 200

For temporary pits, closed-loop systems, and below-grade tanks, submit to the appropriate NMOCD District Office.
For permanent pits and exceptions submit to the Santa Fe Environmental Bureau office and provide a copy to the appropriate NMOCD District Office.

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

Type of action: ☒ 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
BGT1 ☐ 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: WF FEDERAL 01 # 2
API Number: 30-045-32269 OCD Permit Number:
U/L or Qtr/Qtr C Section 01 Township 30N Range 14W County: San Juan
Center of Proposed Design: Latitude 36.846936 Longitude 108.263125 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: 120 bbl Type of fluid: Produced Water
Tank Construction material: Steel
☐ Secondary containment with leak detection ☐ Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off
☐ Visible sidewalls and liner ☐ Visible sidewalls only ☒ Other 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	☐ Yes ☒ No
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	☒ Yes ☐ No
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. *(Applies to temporary, emergency, or cavitation pits and below-grade tanks)* - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☒ No ☐ NA
Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. *(Applies to permanent pits)* - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes ☐ No ☒ NA
Within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, in existence at the time of initial application. - NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site	☒ Yes ☐ No
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality; Written approval obtained from the municipality	☐ Yes ☒ No
Within 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes ☒ No
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	☐ Yes ☒ No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	☐ Yes ☒ No
Within a 100-year floodplain. - FEMA map	☐ Yes ☒ No

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_2S, 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 indentify 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: 11-25-08

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: Victoria Venegas Approval Date: 02/22/2022

Title: Environmental Specialist OCD Permit Number: BGT1

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:

State of New Mexico
Energy, Minerals & Mining Resources Department
OIL CONSERVATION DIVISION
2040 South Pacheco
Santa Fe, NM 87505

Form C - 102

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AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-045- 32269	71629	Basin Fruitland Coal

Property Code	Property Name	Well Number
29136	WF Federal 1	2

OGRID No.	Operator Name	Elevation
19219	RICHARDSON OPERATING COMPANY	5872'

Surface Location

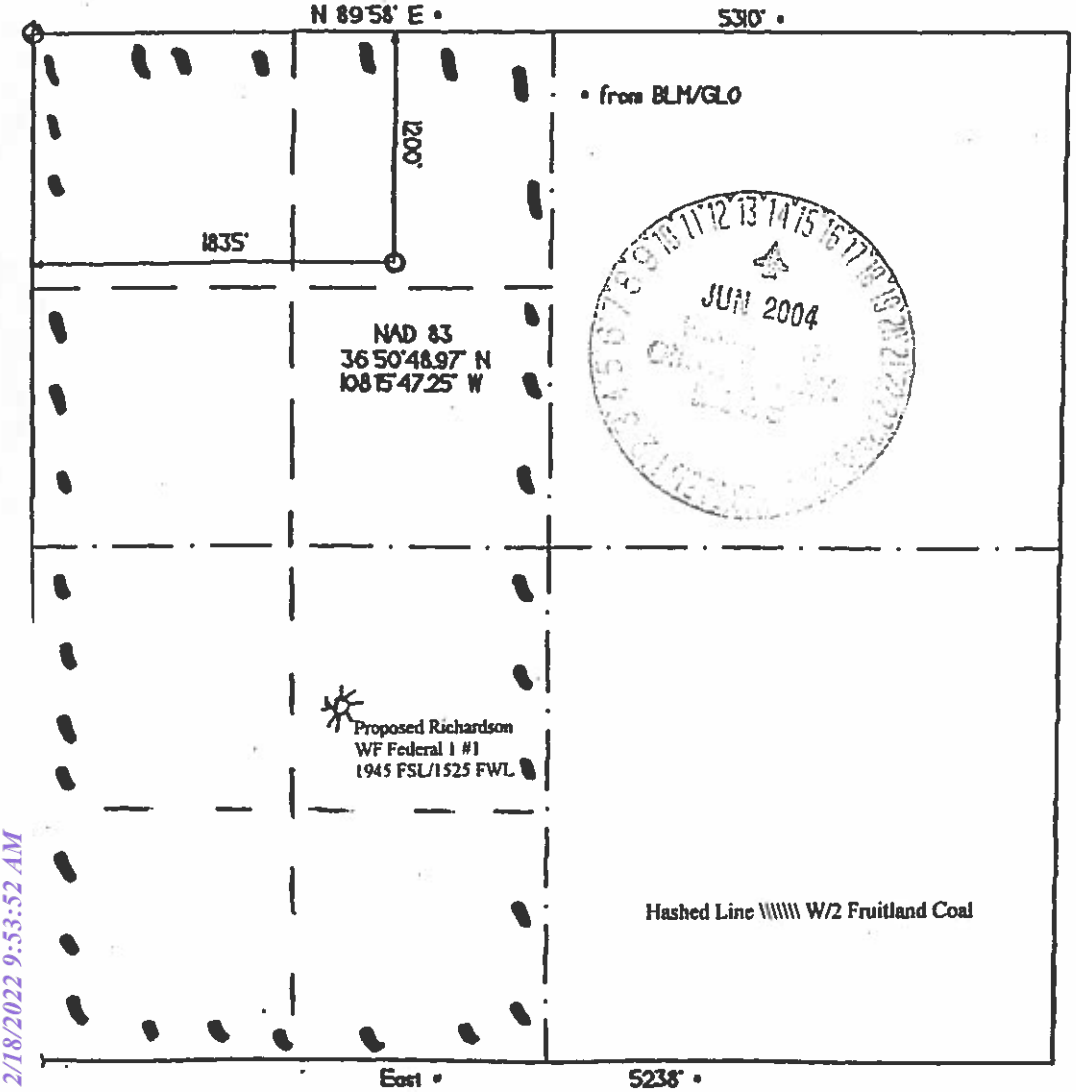
UL or Lot	Sec.	Twp.	Rge.	Lot Idn.	Feet from>	North/South	Feet from>	East/West	County
E	1	30 N.	14 W.		1200'	NORTH	1835'	WEST	SAN JUAN

Bottom Hole Location If Different From Surface

UL or Lot	Sec.	Twp.	Rge.	Lot Idn.	Feet from>	North/South	Feet from>	East/West	County

Dedication	Joint ?	Consolidation	Order No.
W/2 320.36			

NO ALLOWABLE WILL ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Signature

Printed Name: Paul Lehrman

Title: Landman

Date: 4-1-04

SURVEYOR CERTIFICATION

I hereby certify that the well location on this plat 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 belief.

Date of Survey: 1/14/03

Signature and Seal of Professional Surveyor:

GERALD G. HUDDLESTON
NEW MEXICO
6844
REGISTERED LAND SURVEYOR

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

Pit Permit Siting Criteria Information Sheet

Client:	XTO Energy
Project:	Pit Permits
Revised:	10/26/2008
Prepared by:	Daniel Newman

API#:	3004532269	USPLSS:	T30N,R14W,01C
Name:	WF FEDERAL 01 #2	Lat/Long:	36.846936 / -108.263125
Depth to groundwater:	>100'	Geologic formation:	Nacimiento Formation
Distance to closest continuously flowing watercourse:	2.35 miles west of the La Plata River		
Distance to closest significant watercourse, lakebed, playa lake, or sinkhole:	within Coyne Arroyo	Soil Type:	Entisols
Permanent residence, school, hospital, institution or church within 300'	No	Annual Precipitation:	8.08 inches average
Domestic fresh water well or spring within 500'	No	Precipitation Notes:	no significant precipatation events
Any other fresh water well or spring within 1000'	within Coyne Arroyo		
Within incorporated municipal boundaries	No	Attached Documents:	
Within defined municipal fresh water well field	No		Topo map, ground water data map, ariel photo, mines and quarries map, FEMA map
Wetland within 500'	No	Mining Activity:	No
Within unstable area	No		
Within 100 year flood plain	Zone X		

Additional Notes:

WF FEDERAL 01 #2 Below Ground Tank
Hydrogeologic Report for Siting Criteria

General Geology and Hydrology

The San Juan Basin is a typical Rocky Mountain basin with a gently dipping southern flank and a steeply dipping northern flank. Asymmetrically layered Tertiary sandstones and shales, along with Quaternary alluvial deposits, dominate surficial geology (Dane and Bachman, 1965). The proposed pit location will be situated in the northwest corner of the San Juan Basin, where the Hogback Monocline ends and the thicker units that dominate the San Juan Basin stratigraphy begin to pinch out and a range of geologic formations are exposed.

The predominant geologic formation is the Nacimiento Formation of Tertiary age, which underlies surface soils and is often exposed (Dane and Bachman, 1965). Deposits of Quaternary alluvial and aeolian sands occur prominently near the surface of the area, especially near streams and washes.

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

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

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

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

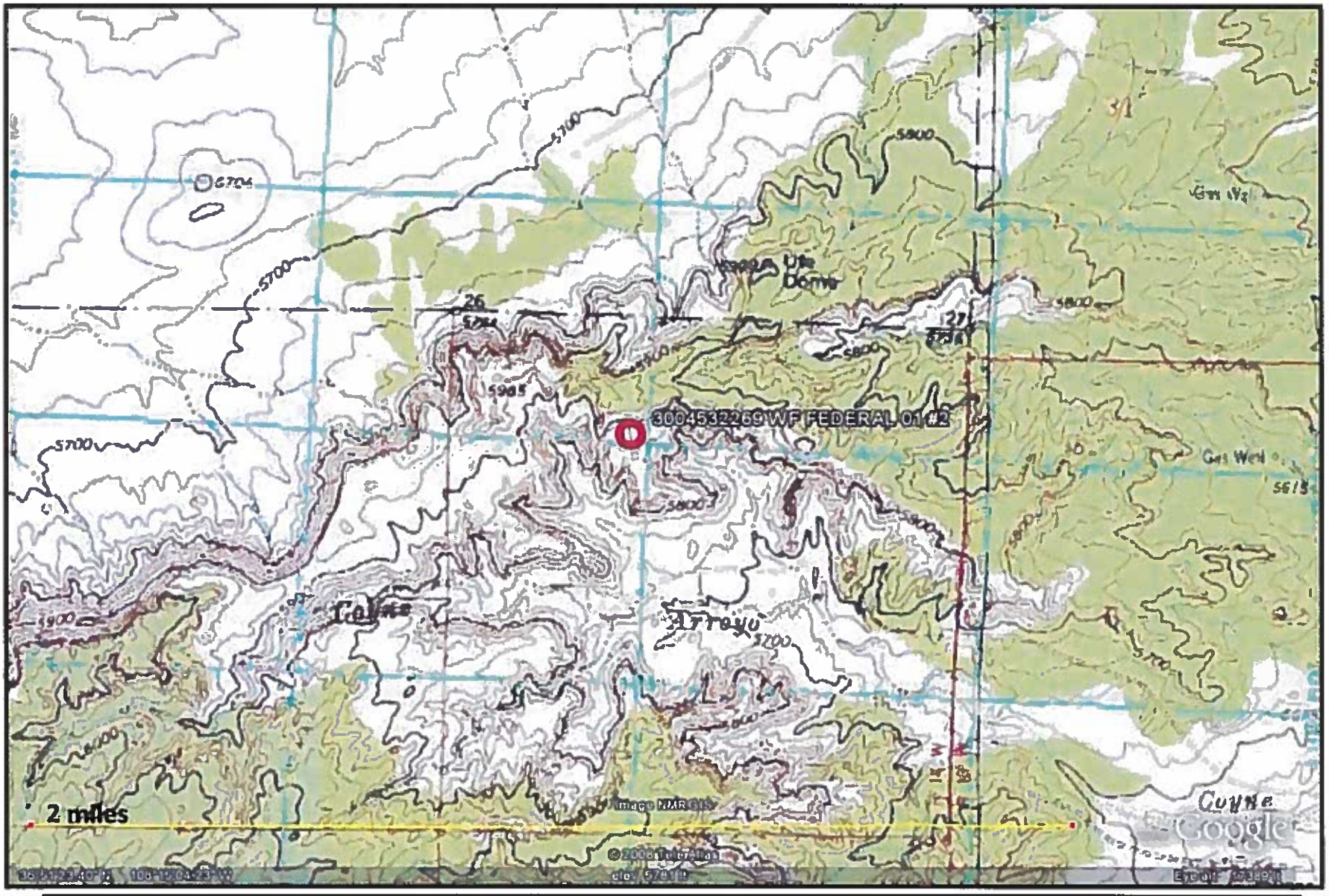
Site Specific Hydrogeology

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

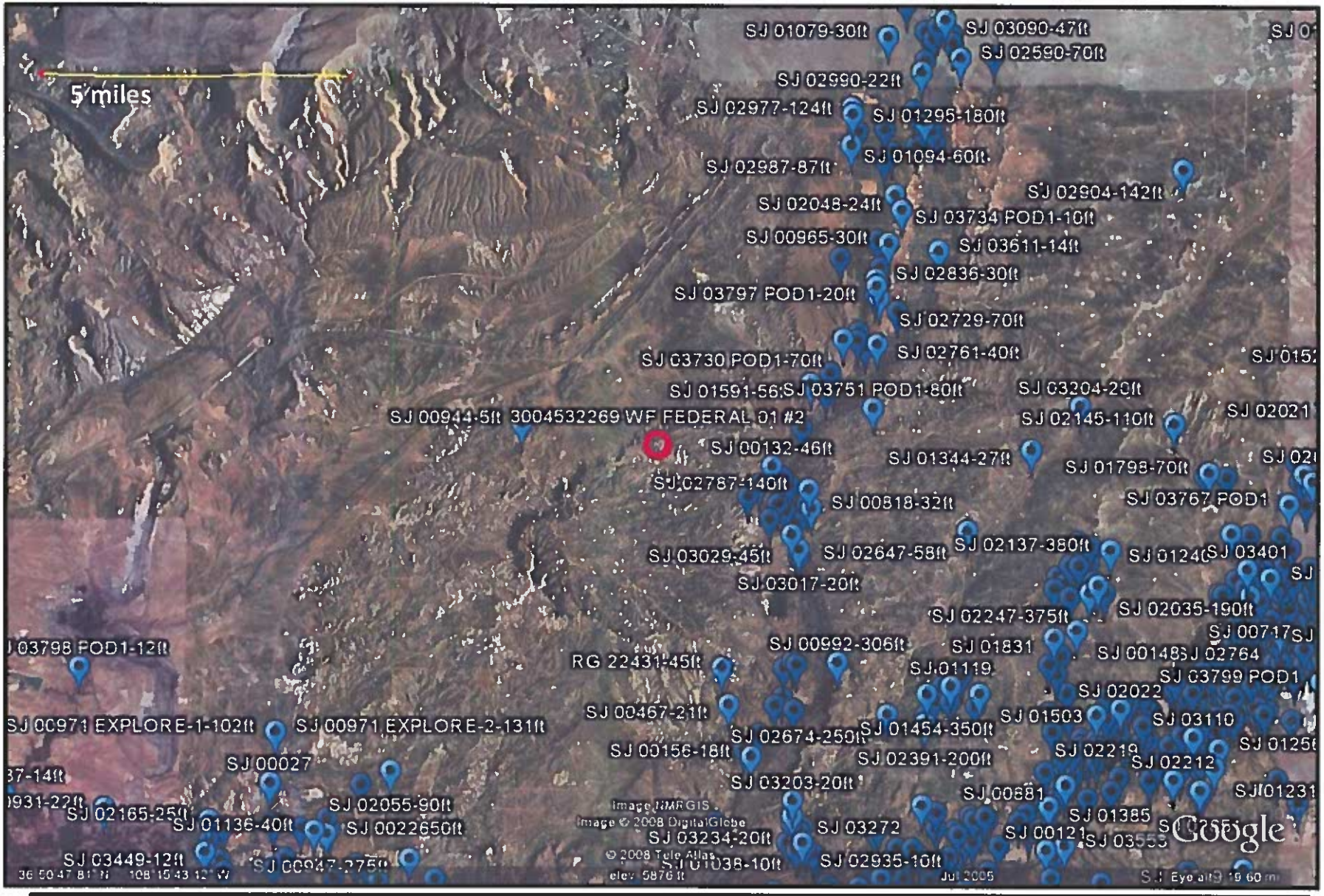
Beds of water-yielding sandstone are present in the Nacimiento Formation, which are fluvial in origin and are interbedded with siltstone, shale and coal. Porous sandstones form the principal aquifers, while relatively impermeable shales form confining units between the aquifers (Stone et al., 1983).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

Groundwater data available from the NM State Engineer's iWaters Database for wells near the proposed site are attached. Wells located within the area contain groundwater at depths ranging from 9 to 140 feet. The site in question is located within Coyne Arroyo at an elevation of approximately 5863 feet. The closest well to the proposed site sits at an elevation of approximately 5639 feet, at a distance if approximately 1.89 miles to the east. This site puts groundwater at a distance of 30 feet below the ground surface.

Exposures of shale at the surface and within channel cuts of arroyos suggest groundwater is restricted to deeper sandstone units. However, proximity of the site to the La Plata River should also be considered. Groundwater data recorded from wells drilled with the immediate vicinity of the proposed site put groundwater depth at less than 50 feet. However there is an elevation difference of approximately 200 feet between these wells and the proposed site. Therefore, depth to groundwater is estimated to be greater than 100 feet.



Lodestar Services, Inc PO Box 4465 Durango, CO 81302	WF FEDERAL 01 #2 T30N,R14W,01C SAN JUAN COUNTY, NM	TOPOGRAPHIC MAP



Lodestar Services, Inc PO Box 4465 Durango, CO 81302	WF FEDERAL 01 #2 T30N,R14W,01C SAN JUAN COUNTY, NM	i-Waters Ground Water Data Map

New Mexico Office of the State Engineer
POD Reports and Downloads

AVERAGE DEPTH OF WATER REPORT 10/21/2008

								(Depth Water in Feet)		
Bsn	Tws	Rng	Sec	Zone	X	Y	Wells	Min	Max	Avg
RG	29N	12W	01				2	35	40	38
RG	29N	12W	02				2	40	40	40
RG	29N	12W	13				1	105	105	105
SJ	29N	12W	01				1	120	120	120
SJ	29N	12W	04				3	155	310	212
SJ	29N	12W	05				1	45	45	45
SJ	29N	12W	06				9	4	118	24
SJ	29N	12W	07				3	80	180	117
SJ	29N	12W	08				2	60	60	60
SJ	29N	12W	10				1	175	175	175
SJ	29N	12W	14				1	60	60	60
SJ	29N	12W	15				3	75	86	80
SJ	29N	12W	19				9	2	40	18
SJ	29N	12W	20				1	10	10	10
SJ	29N	12W	22				1	185	185	185
SJ	29N	12W	24				4	6	35	18
SJ	29N	12W	24		265819	2077065	1	11	11	11
SJ	29N	12W	25				13	3	40	16
SJ	29N	12W	26				15	12	70	26
SJ	29N	12W	26		265547	2072216	1	11	11	11
SJ	29N	12W	26		265592	2072287	1	14	14	14
SJ	29N	12W	27				31	6	48	21
SJ	29N	12W	27		264678	2071912	1	10	10	10
SJ	29N	12W	28				3	23	25	24
SJ	29N	12W	29				19	3	17	8
SJ	29N	12W	30				5	4	8	6
SJ	29N	12W	33				2	35	50	43
SJ	29N	12W	34				1	2	2	2
SJ	29N	12W	35				5	4	50	17
SJ	29N	12W	36				11		40	16

New Mexico Office of the State Engineer

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POD Reports and Downloads

AVERAGE DEPTH OF WATER REPORT 10/21/2008

								(Depth Water in Feet)		
Bsn	Tws	Rng	Sec	Zone	X	Y	Wells	Min	Max	Avg
RG	29N	13W	19				1	30	30	30
RG	29N	13W	29	C			1	6	6	6
SJ	29N	13W	01				4	18	40	28
SJ	29N	13W	02				7	17	90	34
SJ	29N	13W	04				2	10	16	13
SJ	29N	13W	05				4	10	20	16
SJ	29N	13W	06				1	12	12	12
SJ	29N	13W	08				2	4	30	17
SJ	29N	13W	09				13	9	50	17
SJ	29N	13W	10				15	9	38	20
SJ	29N	13W	11				9	10	39	19
SJ	29N	13W	14				33	4	30	6
SJ	29N	13W	15				2	4	25	15
SJ	29N	13W	16				3	21	35	27
SJ	29N	13W	17				2	8	20	14
SJ	29N	13W	18				1	11	11	11
SJ	29N	13W	21				3	6	20	11
SJ	29N	13W	21		261218	2079099	1	5	5	5
SJ	29N	13W	22				28	7	35	16
SJ	29N	13W	22		261533	2080965	1	15	15	15
SJ	29N	13W	23				7	6	30	15
SJ	29N	13W	24				1	32	32	32
SJ	29N	13W	25				1	75	75	75

New Mexico Office of the State Engineer
POD Reports and Downloads

AVERAGE DEPTH OF WATER REPORT 10/21/2008

								(Depth Water in Feet)		
Bsn	Tws	Rng	Sec	Zone	X	Y	Wells	Min	Max	Avg
SJ	29N	14W	05				1	90	90	90
SJ	29N	14W	06				2	30	52	41
SJ	29N	14W	07				6	6	50	24
SJ	29N	14W	08				3	50	275	132
SJ	29N	14W	12		259584	2086850	1	20	20	20
SJ	29N	14W	13				2	4	10	7
SJ	29N	14W	13		259540	2085641	1	6	6	6
SJ	29N	14W	17				7	3	28	13
SJ	29N	14W	18				6	7	25	17

New Mexico Office of the State Engineer
POD Reports and Downloads

AVERAGE DEPTH OF WATER REPORT 10/21/2008

								(Depth Water in Feet)		
Bsn	Tws	Rng	Sec	Zone	X	Y	Wells	Min	Max	Avg
SJ	29N	15W	04				1	22	22	22
SJ	29N	15W	06				1	14	14	14
SJ	29N	15W	11				6	4	45	15
SJ	29N	15W	11	W	336000	2092200	1	25	25	25
SJ	29N	15W	12				6	6	110	38
SJ	29N	15W	13				2	12	20	16

New Mexico Office of the State Engineer
POD Reports and Downloads

AVERAGE DEPTH OF WATER REPORT 10/21/2008

								(Depth Water in Feet)		
Bsn	Tws	Rng	Sec	Zone	X	Y	Wells	Min	Max	Avg
SJ	30N	12W	02				2	135	140	138
SJ	30N	12W	04				8	39	110	76
SJ	30N	12W	10				3	43	70	58
SJ	30N	12W	10		265151	2121325	1	82	82	82
SJ	30N	12W	11				2	122	123	123
SJ	30N	12W	12				5	20	51	35
SJ	30N	12W	12		266123	2118278	1	12	12	12
SJ	30N	12W	13				12	10	50	26
SJ	30N	12W	14				21	6	50	22
SJ	30N	12W	15				38	8	105	43
SJ	30N	12W	16				1	100	100	100
SJ	30N	12W	18				19	190	420	331
SJ	30N	12W	18		266399	2116162	1	9	9	9
SJ	30N	12W	19				2	195	240	218
SJ	30N	12W	21				1	35	35	35
SJ	30N	12W	21	W	424400	2174000	1	15	15	15
SJ	30N	12W	22				48	3	66	18
SJ	30N	12W	22		264817	2109564	1	33	33	33
SJ	30N	12W	23				57	2	80	11
SJ	30N	12W	23		265343	2107306	1	6	6	6
SJ	30N	12W	23		265563	211067	1	5	5	5
SJ	30N	12W	24				9	4	44	14
SJ	30N	12W	25				4	18	150	65
SJ	30N	12W	26				1	40	40	40
SJ	30N	12W	26		265470	2106124	1	80	80	80
SJ	30N	12W	27				24	3	55	13
SJ	30N	12W	27		264712	2103138	1	35	35	35
SJ	30N	12W	28				16	5	61	26
SJ	30N	12W	28		264258	2104657	1	5	5	5
SJ	30N	12W	29				10	11	185	57
SJ	30N	12W	30				5	16	220	91
SJ	30N	12W	31				26	7	47	24
SJ	30N	12W	32				43	4	50	20
SJ	30N	12W	32		263644	2098600	1	8	8	8

SJ	30N	12W	33				28	10	269	74
SJ	30N	12W	34				1	25	25	25
SJ	30N	12W	36				1	89	89	89
SJ	30N	12W	36	W	436910	2097860	1	100	100	100

Record Count: 399

New Mexico Office of the State Engineer
POD Reports and Downloads

AVERAGE DEPTH OF WATER REPORT 10/20/2008

								(Depth Water in Feet)		
Bsn	Tws	Rng	Sec	Zone	X	Y	Wells	Min	Max	Avg
RG	30N	13W	30				1	45	45	45
SJ	30N	13W	01				1	27	27	27
SJ	30N	13W	05				2	8	46	27
SJ	30N	13W	08				18	8	56	27
SJ	30N	13W	09				3	32	140	91
SJ	30N	13W	11				1	58	58	58
SJ	30N	13W	17				3	9	45	25
SJ	30N	13W	26				8	230	350	286
SJ	30N	13W	27				1	250	250	250
SJ	30N	13W	28				2	306	306	306
SJ	30N	13W	29				10	15	65	31
SJ	30N	13W	30				1	21	21	21
SJ	30N	13W	32				4	10	18	14
SJ	30N	13W	35				1	200	200	200

New Mexico Office of the State Engineer
POD Reports and Downloads

AVERAGE DEPTH OF WATER REPORT 10/21/2008

Bsn	Tws	Rng	Sec	Zone	X	Y	Wells	(Depth Water in Feet) Min	Max	Avg
SJ	30N	15W	29		254738	2105417	1	12	12	12
SJ	30N	15W	36	W	342253	2100399	2	102	131	117

Record Count: 3

New Mexico Office of the State Engineer
POD Reports and Downloads

AVERAGE DEPTH OF WATER REPORT 10/20/2008

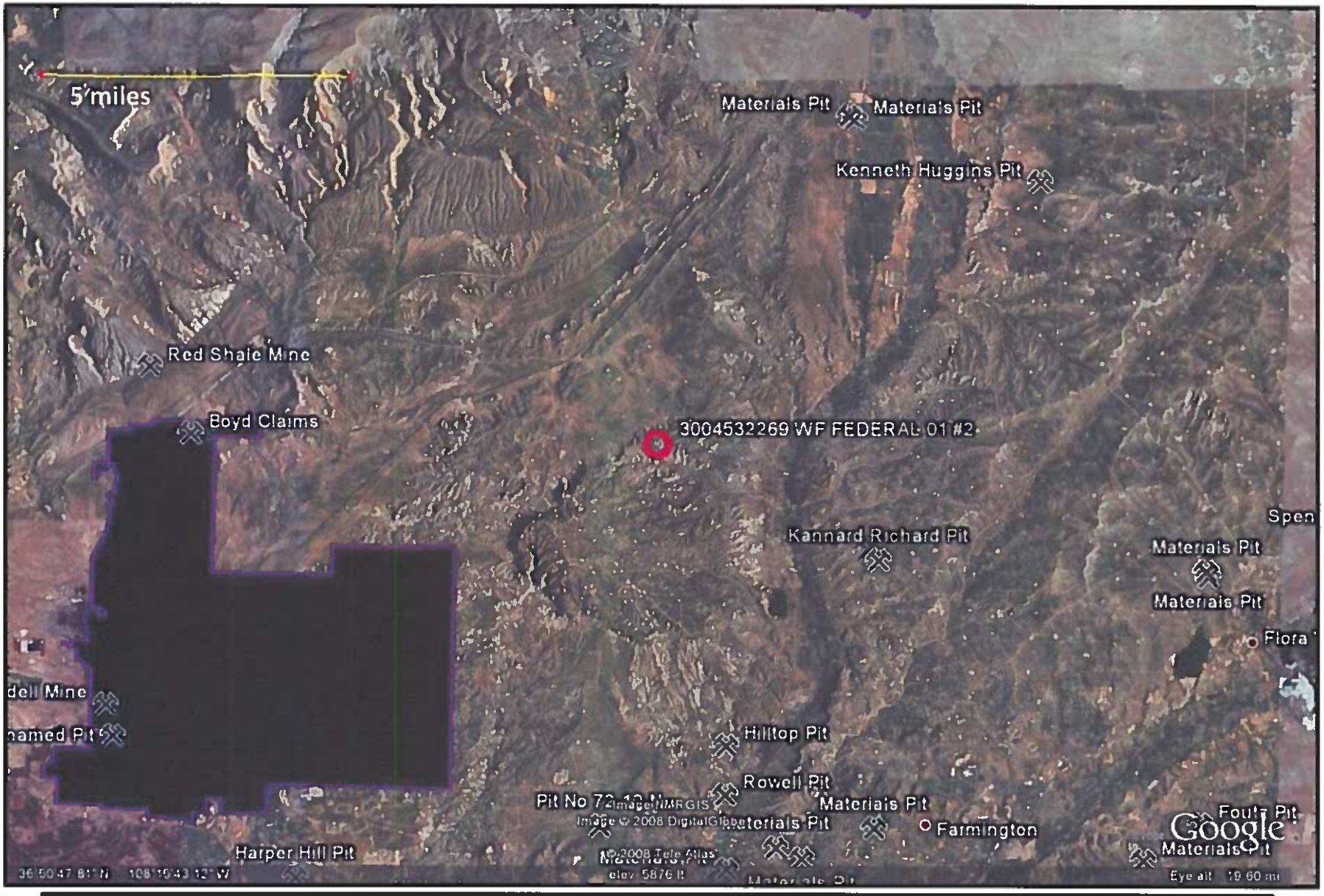
							(Depth Water in Feet)		
Bsn	Tws	Rng	Sec	Zone	X	Y	Wells	Min	Max	Avg
SJ	31N	12W	01				7	20	275	122
SJ	31N	12W	08				1	142	142	142
SJ	31N	12W	24				1	85	85	85
SJ	31N	12W	25				5	90	505	181
SJ	31N	12W	31				1	20	20	20
SJ	31N	12W	35				2	210	250	230

New Mexico Office of the State Engineer
POD Reports and Downloads

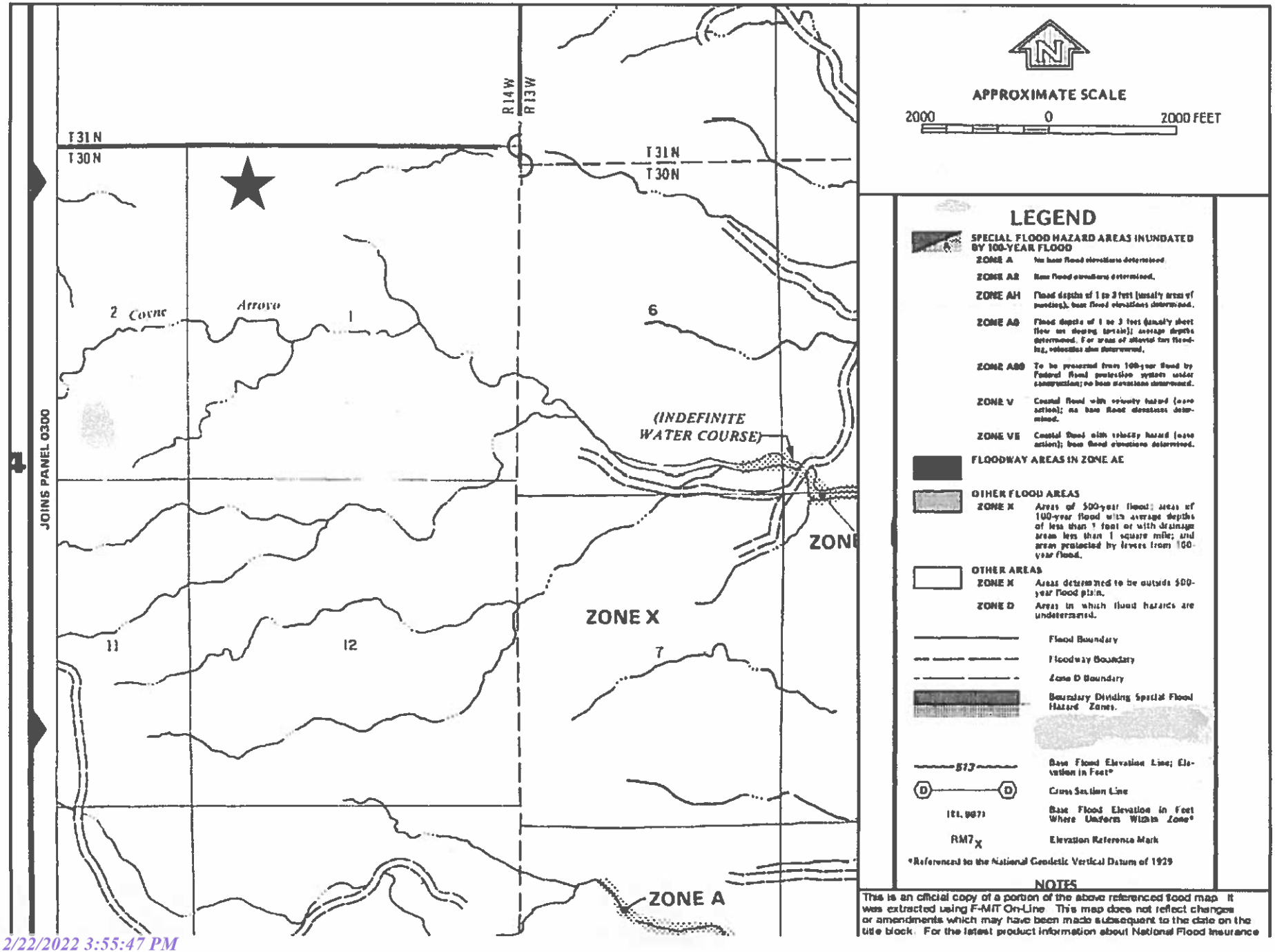
AVERAGE DEPTH OF WATER REPORT 10/20/2008

							(Depth Water in Feet)		
Bsn	Tws	Rng	Sec	Zone	X	Y	Wells	Min	Max	Avg
SJ	31N	13W	02				2	19	70	45
SJ	31N	13W	03				2	11	22	17
SJ	31N	13W	09				4	40	180	108
SJ	31N	13W	10				11	4	65	22
SJ	31N	13W	15				2	10	24	17
SJ	31N	13W	21				1	6	6	6
SJ	31N	13W	22				6	5	40	24
SJ	31N	13W	23				1	14	14	14
SJ	31N	13W	27				5	20	70	38
SJ	31N	13W	28				5	2	70	21
SJ	31N	13W	33				4	6	56	24

Lodestar Services, Inc PO Box 4465 Durango, CO 81302	WF FEDERAL 01 #2 T30N,R14W,01C SAN JUAN COUNTY, NM	AERIAL PHOTOGRAPH



Lodestar Services, Inc PO Box 4465 Durango, CO 81302	WF FEDERAL 01 #2 T30N,R14W,01C SAN JUAN COUNTY, NM	Mines and Quarries Map


R14W
R13W
T31N
T30N
T31N
T30N
2
Coyne
Arroyo
1
6
(INDEFINITE
WATER COURSE)
JOINS PANEL 0300
ZONE
ZONE X
11
12
7
ZONE A
N
APPROXIMATE SCALE
2000
0
2000 FEET
LEGEND
SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD
ZONE A
No base flood elevations determined.
ZONE AE
Base flood elevations determined.
ZONE AH
Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.
ZONE AO
Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE A99
To be protected from 100-year flood by Federal flood protection system under construction; no base elevations determined.
ZONE V
Coastal flood with velocity hazard (wave action); no base flood elevations determined.
ZONE VE
Coastal flood with velocity hazard (wave action); base flood elevations determined.
FLOODWAY AREAS IN ZONE AE
OTHER FLOOD AREAS
ZONE X
Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood.
OTHER AREAS
ZONE X
Areas determined to be outside 500-year flood plain.
ZONE D
Areas in which flood hazards are undetermined.
Flood Boundary
Floodway Boundary
Zone D Boundary
Boundary Dividing Special Flood Hazard Zones.
513
Base Flood Elevation Line; Elevation in Feet*
D
D
Cross Section Line
(EL. 987)
Base Flood Elevation in Feet Where Uniform Within Zone*
RM7X
Elevation Reference Mark
*Referenced to the National Geodetic 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

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).

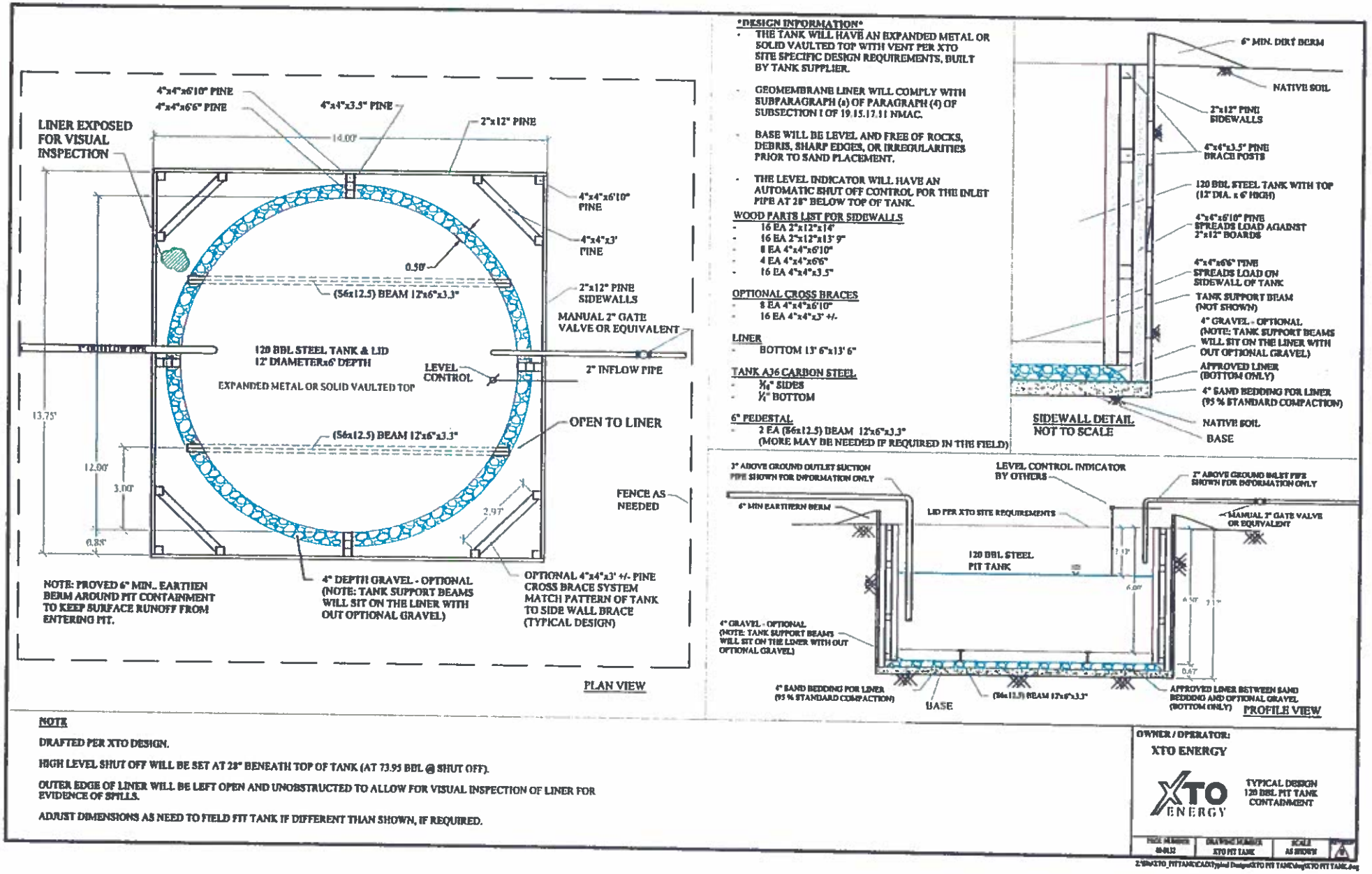
8. XTO will construct and use below-grade tanks that do not have double walls. The below-grade tank sidewalls will be open for visual inspection for leaks. The sidewalls of the cellar will be constructed with 2" X 12" pine sidewalls and 4" X 4" pine brace posts. The below-grade tank

bottom will be elevated a minimum of 6" above the underlying ground surface and the below-grade tank will be underlain with a geomembrane liner to divert leaked liquid to a location that can be visually inspected. (See attached drawing).

9. XTO will equip below-grade tanks designed in this manner with a properly functioning automatic high-level shut-off control device and manual controls to prevent overflows. (See attached drawing).

10. XTO will demonstrate to the OCD that the geomembrane liner complies with the specifications of Subparagraph (a) of Paragraph (4) of Subsection I of 19.15.17.11 NMAC and obtain approval from OCD prior to the installation of the design. The geomembrane liner shall have a hydraulic conductivity no greater than 1 x 10-9 cm/sec. The geomembrane liner shall be composed of an impervious, synthetic material that is resistant to petroleum hydrocarbons, salts and acidics and alkaline solutions. The liner material shall be resistant to ultraviolet light. Liner compatibility shall comply with EPA SW-846 method 9090A. (See attached drawing).

11. The general specifications for design and construction are attached.


4"x4"x6'10" PINE
4"x4"x6'6" PINE
4"x4"x3.5" PINE
2"x12" PINE
LINER EXPOSED FOR VISUAL INSPECTION
14.00'
4"x4"x6'10" PINE
4"x4"x3' PINE
0.50'
2"x12" PINE SIDEWALLS
(S6x12.5) BEAM 12'x6"x3.3"
MANUAL 2" GATE VALVE OR EQUIVALENT
120 BBL STEEL TANK & LID
12' DIAMETERx6' DEPTH
EXPANDED METAL OR SOLID VAULTED TOP
LEVEL CONTROL
2" INFLOW PIPE
13.75'
OPEN TO LINER
(S6x12.5) BEAM 12'x6"x3.3"
12.00'
3.00'
0.83'
FENCE AS NEEDED
2.97'
NOTE: PROVED 6" MIN.. EARTHEN BERM AROUND PIT CONTAINMENT TO KEEP SURFACE RUNOFF FROM ENTERING PIT.
4" DEPTH GRAVEL - OPTIONAL (NOTE: TANK SUPPORT BEAMS WILL SIT ON THE LINER WITH OUT OPTIONAL GRAVEL)
OPTIONAL 4"x4"x3' +/- PINE CROSS BRACE SYSTEM MATCH PATTERN OF TANK TO SIDE WALL BRACE (TYPICAL DESIGN)
PLAN VIEW
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
- 16 EA 2"x12"x14'
- 16 EA 2"x12"x13' 9"
- 8 EA 4"x4"x6'10"
- 4 EA 4"x4"x6'6"
- 16 EA 4"x4"x3.5"
OPTIONAL CROSS BRACES
- 8 EA 4"x4"x6'10"
- 16 EA 4"x4"x3' +/-
LINER
- BOTTOM 13' 6"x13' 6"
TANK A36 CARBON STEEL
- 1/4" SIDES
- 1/4" BOTTOM
6" PEDESTAL
- 2 EA (S6x12.5) BEAM 12'x6"x3.3" (MORE MAY BE NEEDED IF REQUIRED IN THE FIELD)
6" MIN. DIRT BERM
NATIVE SOIL
2"x12" PINE SIDEWALLS
4"x4"x3.5" PINE BRACE POSTS
120 BBL STEEL TANK WITH TOP (12' DIA. x 6' HIGH)
4"x6"x6'10" PINE SPREADS LOAD AGAINST 2"x12" BOARDS
4"x4"x6'6" PINE SPREADS LOAD ON SIDEWALL OF TANK
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)
NATIVE SOIL
BASE
SIDEWALL DETAIL
NOT TO SCALE
3" ABOVE GROUND OUTLET SUCTION PIPE SHOWN FOR INFORMATION ONLY
LEVEL CONTROL INDICATOR BY OTHERS
2" ABOVE GROUND INLET PIPE SHOWN FOR INFORMATION ONLY
6" MIN EARTHERN BERM
LID PER XTO SITE REQUIREMENTS
MANUAL 2" GATE VALVE OR EQUIVALENT
120 BBL STEEL PIT TANK
4" GRAVEL - OPTIONAL (NOTE: TANK SUPPORT BEAMS WILL SIT ON THE LINER WITH OUT OPTIONAL GRAVEL)
4" SAND BEDDING FOR LINER (95 % STANDARD COMPACTION)
BASE
(S6x12.5) BEAM 12'x6"x3.3"
APPROVED LINER BETWEEN SAND BEDDING AND OPTIONAL GRAVEL (BOTTOM ONLY)
PROFILE VIEW
NOTE
DRAFTED PER XTO DESIGN.
HIGH LEVEL SHUT OFF WILL BE SET AT 28" BENEATH TOP OF TANK (AT 73.95 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.
OWNER / OPERATOR:
XTO ENERGY
XTO ENERGY
TYPICAL DESIGN
120 BBL PIT TANK
CONTAINMENT
XTO PIT TANK
AS SHOWN

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,

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.

MONTHLY BELOW GRADE TANK INSPECTION FORM

Well Name: _____ **API No.:** _____

Legals **Sec:** _____ **Township:** _____ **Range:** _____

XTO Inspector's Name	Inspection Date	Inspection Time	Any visible liner tears (Y/N)	Any visible signs of tank overflows (Y/N)	Collection of surface run on (Y/N)	Visible layer of oil (Y/N)	Any visible signs of a tank leak (Y/N)	Freeboard Est. (ft)

Notes: Provide Detailed Description: _____

Misc: _____

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

In accordance with Rule 19.15.17.13 NMAC the following information describes the closure requirements of below-grade tanks on XTO Energy Inc. (XTO) locations. This is XTO's standard procedure for all below-grade tanks. A separate plan will be submitted for any below-grade tank which does not conform to this plan.

General Plan

1. XTO will close below-grade tanks within the time periods provided in 19.15.17.13 NMAC, or by an earlier date that the division requires because of imminent danger to fresh water, public health or the environment.

2. XTO will close a below-grade tank that does not meet the requirements of Paragraphs (1) through (4) of Subsection I of 19.15.17.11 NMAC or is not included in Paragraph (5) of Subsection I of 19.15.17.11 NMAC within five years after June 16, 2008, if not retrofitted to comply with Paragraphs (1) through (4) of Subsection I of 19.15.17.11 NMAC.

3. XTO will close a permitted below-grade tank within 60 days of cessation of the below-grade tank's operation or as required by the transitional provisions of Subsection B of 19.15.17.17 NMAC in accordance with a closure plan that the appropriate division district office approves. The closure report will be filed on form C-144.

4. XTO will remove liquids and sludge from below-grade tanks prior to implementing a closure method and will dispose of the liquids and sludge in a division-approved facility. Approved facilities and waste streams include:
   - Envirotech Permit No. NM01-0011 and IEI Permit No. NM 01-0010B
     - Soil contaminated by exempt petroleum hydrocarbons
     - Produced sand, pit sludge and contaminated bottoms from storage of exempt wastes
   - Basin Disposal Permit No. NM01-005
     - Produced water

5. XTO will remove the below-grade tank and dispose of it in a division approved facility or recycle, reuse, or reclaim it in a manner that the appropriate division district office has approved prior to removal. Any associated liners will be removed, properly cleaned and disposed of per 19.15.9.712 NMAC at San Juan County Landfill. Documentation of the final disposition will be included in the closure report.

6. XTO will remove any on-site equipment associated with a below-grade tank unless the equipment is required for some other purpose.

7. XTO will test the soils beneath the below-grade tank to determine whether a release has occurred. At a minimum 5 point composite sample will be collected along with individual grab samples from any area that is wet, discolored or showing other evidence of a release. Samples will be

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.

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.

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District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

QUESTIONS

Action 82618

QUESTIONS

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 82618
	Action Type: [C-144] Legacy Below Grade Tank Plan (C-144LB)

QUESTIONS

Facility and Ground Water *Please answer as many of these questions as possible in this group. More information will help us identify the appropriate associations in the system.*	
Facility or Site Name	WF Federal 1 2
Facility ID (f#), if known	*Not answered.*
Facility Type	Below Grade Tank - (BGT)
Well Name, include well number	WF Federal 1 2
Well API, if associated with a well	3004532269
Pit / Tank Type	*Not answered.*
Pit / Tank Name or Identifier	*Not answered.*
Pit / Tank Opened Date, if known	*Not answered.*
Pit / Tank Dimensions, Length (ft)	*Not answered.*
Pit / Tank Dimensions, Width or Diameter (ft)	*Not answered.*
Pit / Tank Dimensions, Depth (ft)	*Not answered.*
Ground Water Depth (ft)	*Not answered.*
Ground Water Impact	*Not answered.*
Ground Water Quality (TDS)	*Not answered.*

Below-Grade Tank *Subsection I of 19.15.17.11 NMAC*	
Volume / Capacity (bbls)	120
Type of Fluid	Produced Water
Pit / Tank Construction Material	Steel
Secondary containment with leak detection	*Not answered.*
Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off	*Not answered.*
Visible sidewalls and liner	*Not answered.*
Visible sidewalls only	True
Tank installed prior to June 18. 2008	*Not answered.*
Other, Visible Notation. Please specify	visible sidewalls, vaulted, automatic high level shut off, no liner
Liner Thickness (mil)	*Not answered.*
HDPE (Liner Type)	*Not answered.*
PVC (Liner Type)	*Not answered.*
Other, Liner Type. Please specify (Variance Required)	*Not answered.*

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QUESTIONS (continued)

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QUESTIONS

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)*	*Not answered.*
Four foot height, four strands of barbed wire evenly spaced between one and four feet	*Not answered.*
Alternate, Fencing. Please specify (Variance Required)	4' hogwire

Netting	
Subsection E of 19.15.17.11 NMAC (Applies to permanent pits and permanent open top tanks)	
Screen	*Not answered.*
Netting	*Not answered.*
Other, Netting. Please specify (Variance May Be Needed)	expanded metal or solid vaulted top

Signs	
Subsection C of 19.15.17.11 NMAC (If there are multiple operators at a site, each operator must have their own sign in compliance with Subsection C of 19.15.17.11 NMAC.)	
12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers	*Not answered.*
Signed in compliance with 19.15.16.8 NMAC	True

Variances and Exceptions	
Justifications and/or demonstrations ofequivalency 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:***	
Variance(s): Requests must be submitted to the appropriate division district for consideration of approval.	*Not answered.*
Exception(s): Requests must be submitted to the Santa Fe Environmental Bureau office for consideration of approval	*Not answered.*

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QUESTIONS (continued)

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	Action Number: 82618
	Action Type: [C-144] Legacy Below Grade Tank Plan (C-144LB)

QUESTIONS

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.* Siting criteria does not apply to drying pads or above-grade tanks.**

Siting Criteria, General Siting	
Ground water is less than 25 feet below the bottom of a low chloride temporary pit or below-grade tank	No
NM Office of the State Engineer - iWATERS database search	*Not answered.*
USGS	*Not answered.*
Data obtained from nearby wells	*Not answered.*

Siting Criteria, Below Grade Tanks	
Within 100 feet of a continuously flowing watercourse, significant watercourse, lakebed, sinkhole, wetland or playa lake (measured from the ordinary high-water mark)	No
Within 200 horizontal feet of a spring or a fresh water well used for public or livestock consumption	No

Proposed Closure Method	
Below-grade Tank	Below Grade Tank - (BGT)
Waste Excavation and Removal	True
Alternate Closure Method. Please specify (Variance Required)	*Not answered.*

Operator Application Certification	
Registered / Signature Date	11/25/2008

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ACKNOWLEDGMENTS

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	Action Number: 82618
	Action Type: [C-144] Legacy Below Grade Tank Plan (C-144LB)

ACKNOWLEDGMENTS

☑	I acknowledge that I have received prior approval from the OCD to submit documentation of a legacy below-grade tank on behalf of my operator.
☑	I hereby certify that the information submitted with this documentation is true, accurate and complete to the best of my knowledge and belief.

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CONDITIONS

Action 82618

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CONDITIONS

Created By	Condition	Condition Date
vvenegas	None	2/22/2022