

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
811 S. First St., 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

Form C-144  
Revised June 6, 2013

For temporary pits, below-grade tanks, and multi-well fluid management pits, submit to the appropriate NMOCD District Office.  
For permanent pits submit to the Santa Fe Environmental Bureau office and provide a copy to the appropriate NMOCD District Office.

Pit, Below-Grade Tank, or  
Proposed Alternative Method Permit or Closure Plan Application  
13264 **OIL CONS. DIV DIST. 3**

- Type of action:  Below grade tank registration  
 Permit of a pit or proposed alternative method  
 Closure of a pit, below-grade tank, or proposed alternative method  
 Modification to an existing permit/or registration  
 Closure plan only submitted for an existing permitted or non-permitted pit, below-grade tank, or proposed alternative method

NOV 18 2015

**Instructions: Please submit one application (Form C-144) per individual pit, 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: Williams Four Corners LLC OGRID #: \_\_\_\_\_  
Address: 188 County Road 4900, Bloomfield, NM 87413  
Facility or well name: Buena Vista Compressor Station  
API Number: \_\_\_\_\_ OCD Permit Number: \_\_\_\_\_  
U/L or Qtr/Qtr NE/4 NE/4 Section 32 Township 24N Range 8W County: San Juan  
Center of Proposed Design: Latitude 36.274537 Longitude -107.698719 NAD:  1927  1983  
Surface Owner:  Federal  State  Private  Tribal Trust or Indian Allotment

2.  
 **Pit:** Subsection F, G or J of 19.15.17.11 NMAC  
Temporary:  Drilling  Workover  
 Permanent  Emergency  Cavitation  P&A  Multi-Well Fluid Management Low Chloride Drilling Fluid  yes  no  
 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.  
 **Below-grade tank:** Subsection I of 19.15.17.11 NMAC  
Volume: 43 BBL \_\_\_\_\_ bbl Type of fluid: Waste 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 Double-wall/Double-bottom  
Liner type: Thickness 40 \_\_\_\_\_ mil  HDPE  PVC  Other Installed at surface within AST containment

4.  
 **Alternative Method:**  
Submittal of an exception request is required. Exceptions must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

5.  
**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 \_\_\_\_\_

6. **Netting:** Subsection E of 19.15.17.11 NMAC (*Applies to permanent pits and permanent open top tanks*)

- Screen  Netting  Other \_\_\_\_\_  
 Monthly inspections (If netting or screening is not physically feasible)

7. **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 19.15.16.8 NMAC

8. **Variations 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:**

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

9. **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.

**General siting**

**Ground water is less than 25 feet below the bottom of a low chloride temporary pit or below-grade tank.**

- NM Office of the State Engineer - iWATERS database search;  USGS;  Data obtained from nearby wells

- Yes  No  
 NA

**Ground water is less than 50 feet below the bottom of a Temporary pit, permanent pit, or Multi-Well Fluid Management pit.**

NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells

- Yes  No  
 NA

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. **(Does not apply to below grade tanks)**

- Written confirmation or verification from the municipality; Written approval obtained from the municipality

- Yes  No

Within the area overlying a subsurface mine. **(Does not apply to below grade tanks)**

- Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division

- Yes  No

Within an unstable area. **(Does not apply to below grade tanks)**

- 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. **(Does not apply to below grade tanks)**

- FEMA map

- Yes  No

**Below Grade Tanks**

Within 100 feet of a continuously flowing watercourse, significant watercourse, lake bed, sinkhole, wetland or playa lake (measured from the ordinary high-water mark).

- Topographic map; Visual inspection (certification) of the proposed site

- Yes  No

Within 200 horizontal feet of a spring or a fresh water well used for public or livestock consumption;

- NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site

- Yes  No

**Temporary Pit using Low Chloride Drilling Fluid** (maximum chloride content 15,000 mg/liter)

Within 100 feet of a continuously flowing watercourse, or any other significant watercourse or within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). (Applies to low chloride temporary pits.)

- Topographic map; Visual inspection (certification) of the proposed site

- Yes  No

Within 300 feet from a occupied 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 200 horizontal feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, or 300feet of any other fresh water well or spring, in existence at the time of the initial application.

NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site

- Yes  No

Within 100 feet of a wetland.

- US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site

Yes  No

**Temporary Pit Non-low chloride drilling fluid**

Within 300 feet of a continuously flowing watercourse, or any other significant watercourse, or within 200 feet of any 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 spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, or 1000 feet of any other fresh water well or spring, in the existence at the time of the initial application;

- NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site

Yes  No

Within 300 feet of a wetland.

- US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site

Yes  No

**Permanent Pit or Multi-Well Fluid Management Pit**

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 1000 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 spring or a fresh water well used for domestic or stock watering purposes, 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 500 feet of a wetland.

- US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site

Yes  No

10.

**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: \_\_\_\_\_

11.

**Multi-Well Fluid Management Pit 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.*

- 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
- A List of wells with approved application for permit to drill associated with the pit.
- 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
- Hydrogeologic Data - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC
- Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC

Previously Approved Design (attach copy of design) API Number: \_\_\_\_\_ or Permit Number: \_\_\_\_\_

12.

**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

13.

**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  Multi-well Fluid Management Pit  
 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

14.

**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 C 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 H of 19.15.17.13 NMAC
- Site Reclamation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC

15.

**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 require justifications and/or demonstrations of equivalency. Please refer to 19.15.17.10 NMAC for guidance.*

- |   |  |
|---|--|
| Ground water is less than 25 feet below the bottom of the buried waste.<br>- NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells   | <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> NA |
| Ground water is between 25-50 feet below the bottom of the buried waste<br>- NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells   | <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> NA |
| Ground water is more than 100 feet below the bottom of the buried waste.<br>- NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells  | <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input checked="" type="checkbox"/> NA |
| Within 100 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse, lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).<br>- Topographic map; Visual inspection (certification) of the proposed site                        | <input type="checkbox"/> Yes <input type="checkbox"/> No   |
| Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.<br>- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image  | <input type="checkbox"/> Yes <input type="checkbox"/> No   |
| Within 300 horizontal feet of a private, domestic fresh water well or spring used for domestic or stock watering purposes, in existence at the time of initial application.<br>- NM Office of the State Engineer - iWATERS database; Visual inspection (certification) of the proposed site | <input type="checkbox"/> Yes <input type="checkbox"/> No   |
| Written confirmation or verification from the municipality; Written approval obtained from the municipality   | <input type="checkbox"/> Yes <input type="checkbox"/> No   |
| Within 300 feet of a wetland.<br>US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site   | <input type="checkbox"/> Yes <input type="checkbox"/> No   |
| Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance   | <input type="checkbox"/> Yes <input type="checkbox"/> No   |

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 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 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 type="checkbox"/> No
Within a 100-year floodplain. - FEMA map	<input type="checkbox"/> Yes <input type="checkbox"/> No

16. **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 E of 19.15.17.13 NMAC
- Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate requirements of Subsection K 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 19.15.17.13 NMAC
- Waste Material Sampling Plan - based upon the appropriate requirements 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 H of 19.15.17.13 NMAC
- Site Reclamation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC

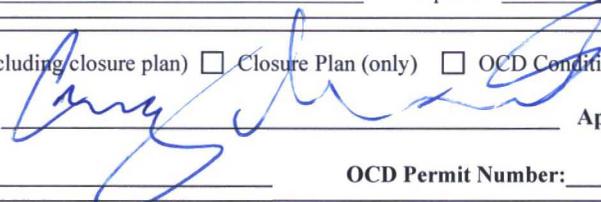
17. **Operator Application Certification:**  
 I hereby certify that the information submitted with this application is true, accurate and complete to the best of my knowledge and belief.

Name (Print): Kelsey Chrisitansen Title: Environmental Specialist

Signature: \_\_\_\_\_ Date: 11/11/2015

e-mail address: kelsey.christiansen@williams.com Telephone: 505-632-4606

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

OCD Representative Signature:  Approval Date: 12/8/15

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

19. **Closure Report (required within 60 days of closure completion):** 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: \_\_\_\_\_

20. **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.

21. **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 for private land only)
- 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

22.

**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: \_\_\_\_\_

**SITING CRITERIA  
SUMMARY INFORMATION SHEET  
19.15.17.10 NMAC**



**LT Environmental Inc.**  
2243 Main Avenue, Suite 3  
Durango, Colorado 81301  
T 970-385-1096

**GENERAL INFORMATION**

**Site Name:** Buena Vista Compressor Station #2  
**Pit Type:** Below Grade Tank

**Operator:** Williams Four Corners LLC  
**Date:** 11/11/2015  
**Prepared by:** LT Environmental

**GENERAL SITE LOCATION INFORMATION**

**Geologic Formation:** Nacimiento Formation  
**Soil Type:** Doak-Sheppard-Shiprock  
**Annual Precipitation:** Lybrook 10.83"

**SEC:** 32 **TWN:** 24N **RNG:** 8W  
**Latitude:** 36.274537° **Longitude:** -107.69871°

**GENERAL SITING CRITERIA**

**Is groundwater less than 25 feet below the bottom of below grade tank?** Greater than 100 feet  
See Figure 3 and attached iWaters Data

**BELOW GRADE TANK SITING CRITERIA**

**Within 100 feet of a continuously flowing watercourse?** NO See Figure 1

34.15 miles southeast of the San Juan River.

**Within 100 feet of a significant watercourse?** NO See Figure 1 and Figure 3

455' south of a 3rd order tributary of Blanco Wash, 4.24 miles southeast of Blanco Wash.

**Within 100 feet of a lakebed, playa lake, or sinkhole?** NO See Figure 2

1.61 miles east of a stock pond.

**Within 200 horizontal feet of a spring or a freshwater well used for public or livestock consumption?** NO See Figure 3 and attached iWaters data

996' north of a waterwell (SJ02686)

**ATTACHED DOCUMENTS:**

- Hydrogeologic Report
- Figure 1: Topographic Map
- Figure 2: Aerial Photograph
- Figure 3: Water Well and Surface Water Features
- iWaters Data

**ADDITIONAL COMMENTS:**



## **Buena Vista Compressor Station Waste Water Below Grade Tank (BGT #2) 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 below-grade tank location is near Blanco Wash east of Nageezi, New Mexico. The Nacimiento Formation of Tertiary age is exposed, along with Quaternary alluvial and aeolian sands within dry washes and arroyos.

Cretaceous and Tertiary sandstones, as well as Quaternary alluvial deposits, serve as the primary aquifers in the San Juan Basin. In most of the area, the Nacimiento Formation lies at the surface. Thickness of the Nacimiento Formation ranges from 418 feet to 2,232 feet, aquifers within the coarser and continuous sandstone bodies are between 0 feet and 1,000 feet deep in this section of the San Juan Basin (Stone et al., 1983). Groundwater within these aquifers flows toward the San Juan River and its tributaries.

The prominent soil type at the below-grade tank are entisols, which are defined as soils that do not show any profile development. Soils are basically unaltered from their parent rock. Miles of arroyos, washes, and intermittent streams exist as part of the drainage network toward the San Juan River ([www.emnrd.state.nm.us](http://www.emnrd.state.nm.us)). These features often cut into soil and other unconsolidated materials, contributing to sedimentation downstream. The sudden influx of water from storm events easily erodes soils that cover the area.

Dry and arid weather further prohibit active recharge. The climate of the region is arid, averaging just over 10 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 are sagebrush and grasses with a more restricted pinon-juniper association (Dick-Peddie, 1993).

### **Site-Specific Hydrogeology**

Depth to groundwater is estimated to be greater than 100 feet beneath the bottom of the below-grade tank. This estimation is based on data from Stone et al.(1983), the United States Geological Survey (USGS) *Groundwater Atlas of the United States* and depth to groundwater



data published on the New Mexico State Engineer's iWaters database website. Additionally, local topography and proximity to surface hydrologic features are taken into consideration. When available, cathodic protection well logs are referenced.

Local aquifers include sandstones within the Nacimiento Formation, which range from 0 feet to 1,000 feet below ground surface in this area, as well as shallow aquifers within Quaternary alluvial deposits (Stone et al., 1983). The 1,000-foot depth range for Nacimiento aquifers covers an area greater than 20 miles wide in the central San Juan Basin and depth decreases toward the margins of the San Juan Basin.

The below-grade tank is located in a region incised by canyons, washes, gullies, and arroyos, with Blanco Wash being the predominant topographic feature. The mesas are composed of cliff-forming San Jose sandstone, overlying slope-forming Nacimiento Formation sandstones and shales. Systems of dry washes and their tributaries composed of alluvium are evident on the attached aerial image.

The below-grade tank is located adjacent to Blanco Wash at an elevation of approximately 7,016 feet. Groundwater is expected to be shallow within the canyon and within the surrounding tributary systems. An elevation difference between the site and the base of Blanco Wash of 262 feet suggests groundwater is greater than 100 feet deep beneath the below-grade tank.

Groundwater data available from the New Mexico State Engineer's iWaters database for wells near the below-grade tank are attached. The nearest iWaters data point with similar topographical characteristics and associated depth to groundwater information is well number SJ 02686 located approximately 996 feet to the south. Depth to groundwater in the permitted water well is 690 feet below ground surface, which serves as additional evidence that groundwater is greater than 100 feet deep at the proposed below grade tank.

## References

Dane, C.H. and G.O. Bachman, 1965, *Geologic Map of New Mexico*: U.S. Geological Survey, 1 sheet, scale 1:500,000.

Dick-Peddie, W.A., 1993, *New Mexico Vegetation – Past, Present and Future*: Albuquerque, New Mexico, University of New Mexico Press, 244 p.

Stone, W.J., F.P. Lyford, P.F. Frenzel, N.H. Mizell, and E.T. Padgett, 1983, *Hydrogeology and Water Resources of the San Juan Basin, New Mexico*: HR-6 New Mexico Bureau of Geology and Mineral Resources Hydrology Report 6.



USGS, Groundwater Atlas of the United States: Arizona, Colorado, New Mexico, Utah, HA 730-C: (<http://www.pubs.usgs.gov>).

Western Region Climate Center, 2008, New Mexico climate summaries: Desert Research Institute at <http://www.wrcc.dri.edu/summary/climsmnm.html>.

New Mexico Energy, Minerals and Natural Resources Department, [www.emnrd.state.nm.us](http://www.emnrd.state.nm.us).

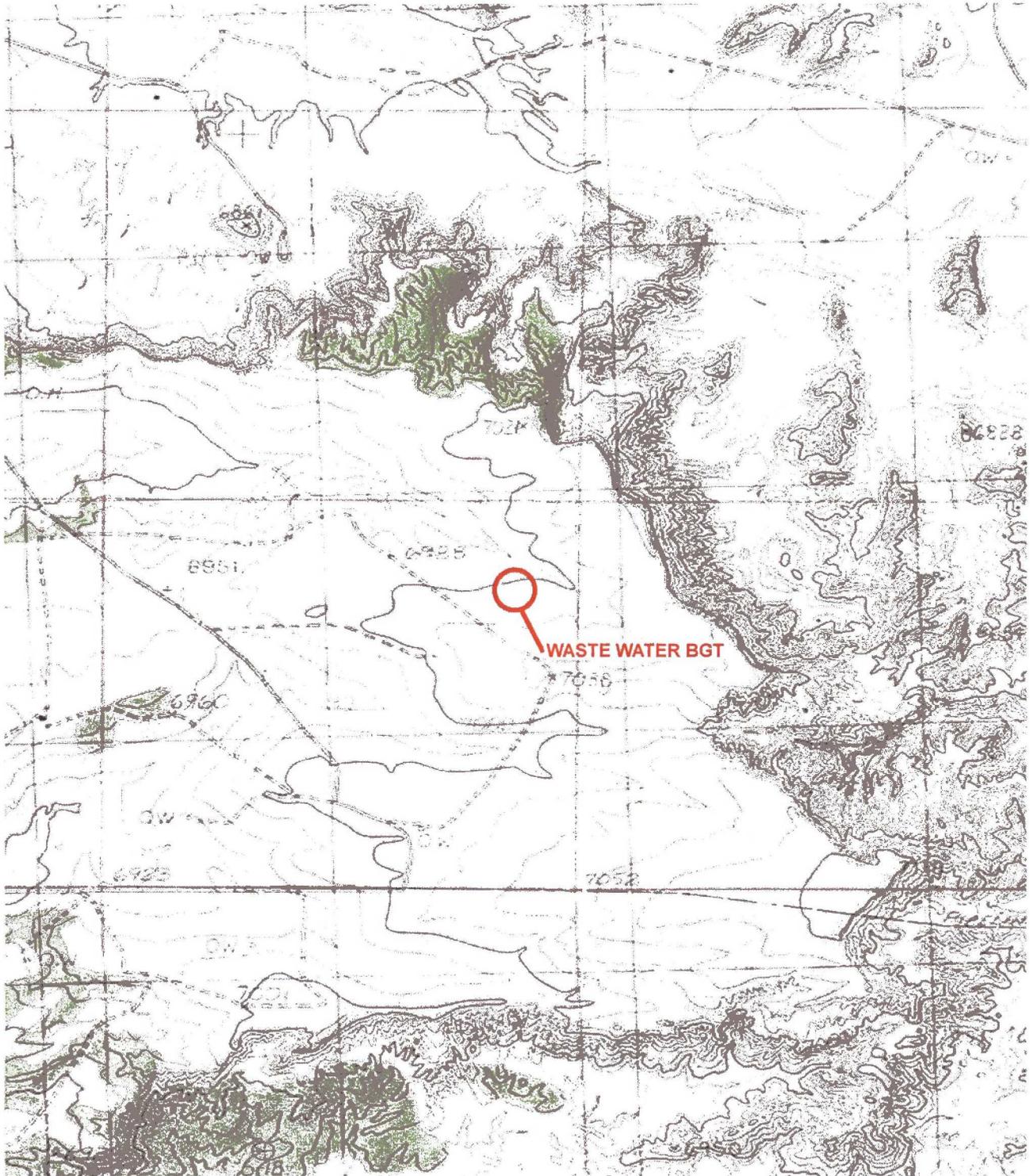
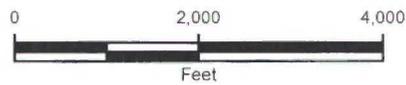


IMAGE COURTESY OF ESRI/USGS

**LEGEND**

 SITE LOCATION

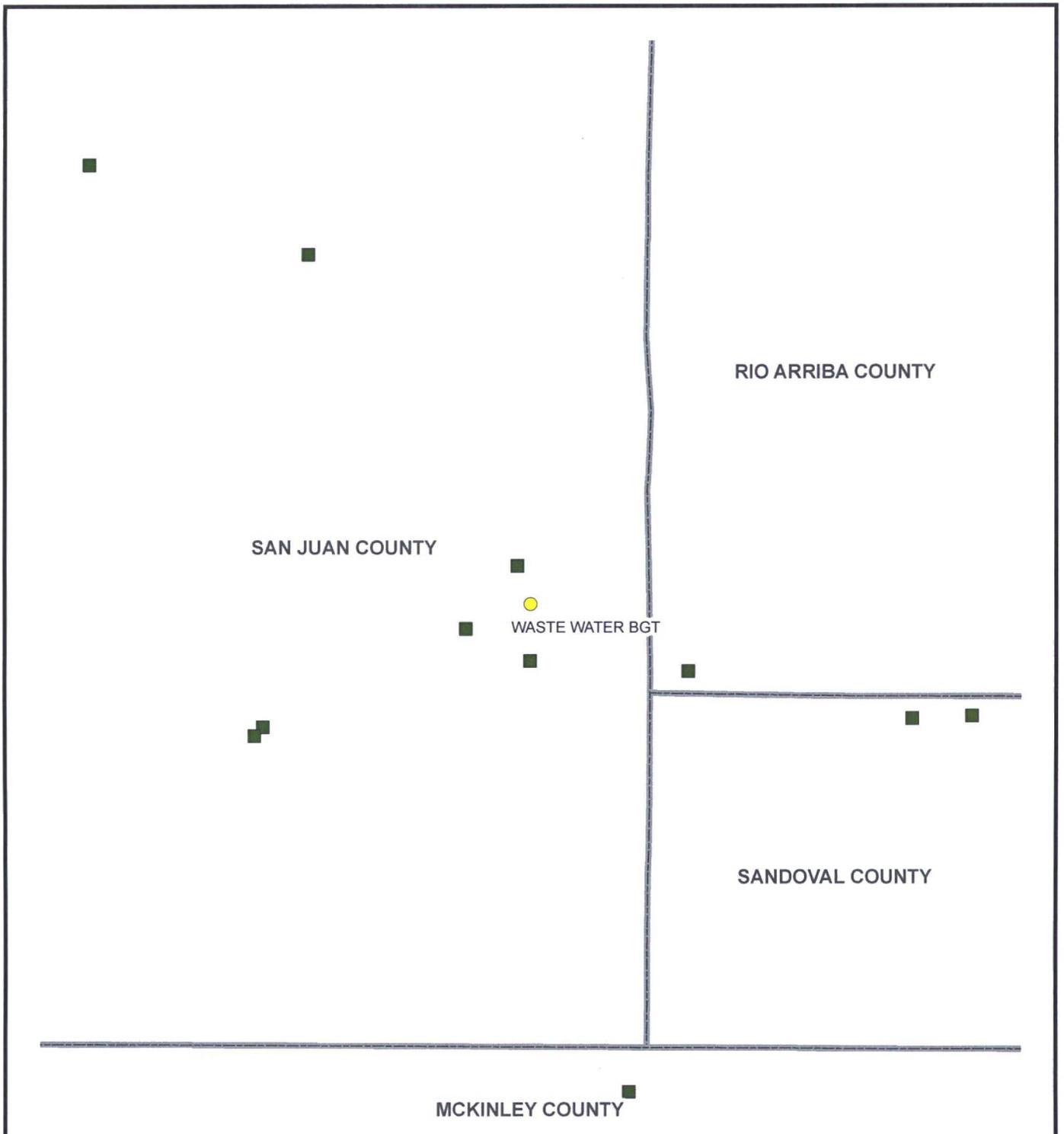
BGT: BELOW GRADE TANK



**FIGURE 1**  
**TOPOGRAPHIC MAP**  
**WASTE WATER BGT**  
**NENE SEC 32 T24N R8W**  
**SAN JUAN COUNTY, NEW MEXICO**  
**WILLIAMS FOUR CORNERS**







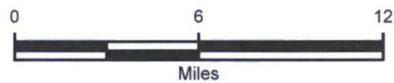
**LEGEND**

- BGT: BELOW GRADE TANK
- NEW MEXICO MINERALS INDUSTRY LOCATOR SYSTEM

COAL MINE PERMIT BOUNDARY

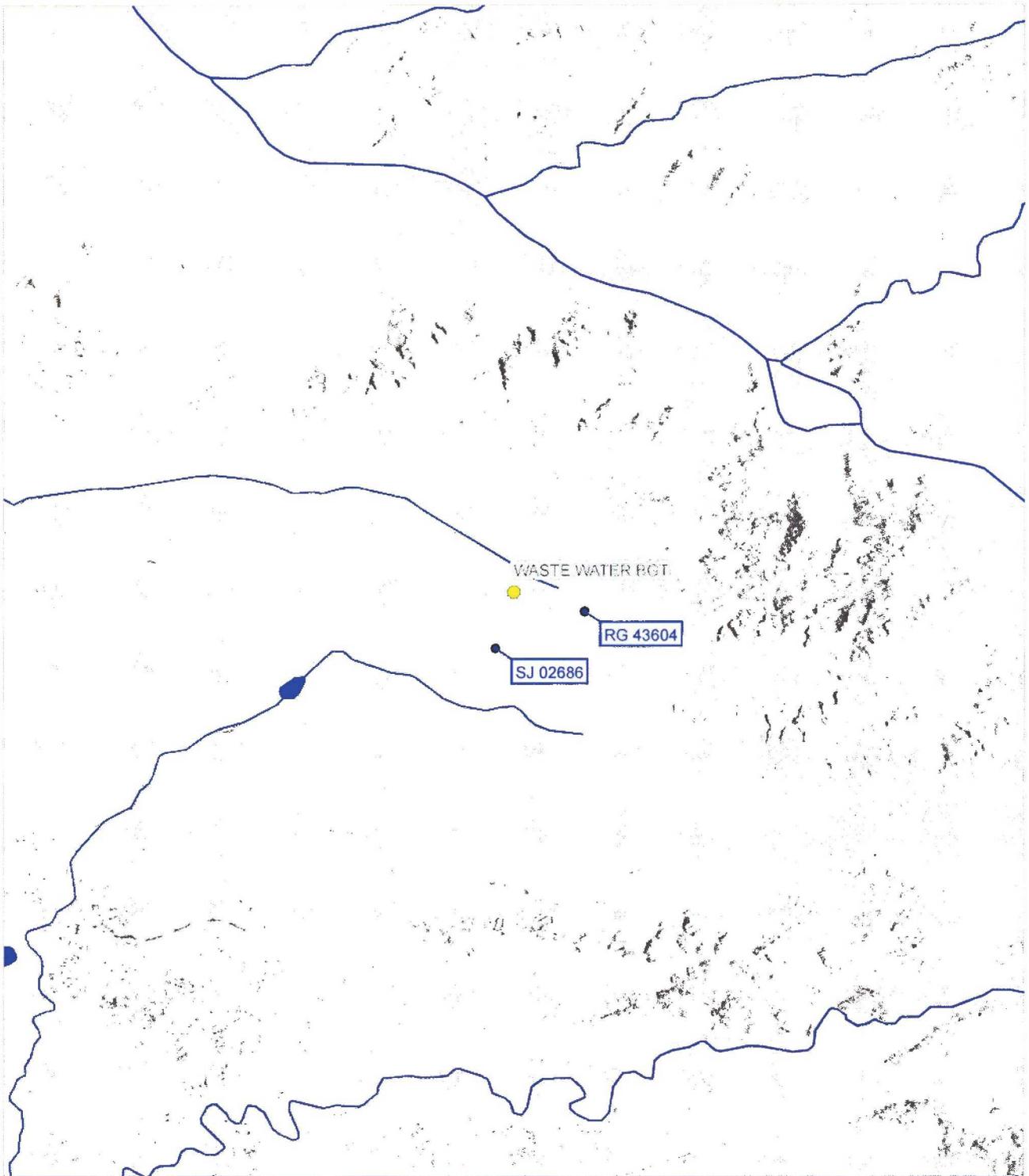
COUNTY BOUNDARY

NEAREST MINE (EL SEGUNDO) IS 41.11 MILES AWAY



**FIGURE 3**  
**MINES, MILLS, AND QUARRIES MAP**  
**WASTE WATER BGT**  
**NENE SEC 32 T24N R8W**  
**SAN JUAN COUNTY, NEW MEXICO**  
**WILLIAMS FOUR CORNERS**





MAP COURTESY OF ESRI

**LEGEND**

- WATER WELL
- BGT: BELOW GRADE TANK
- SURFACE WATER



FIGURE 4  
 WATER WELL MAP  
 WASTE WATER BGT  
 NENE SEC 32 T24N R8W  
 SAN JUAN COUNTY, NEW MEXICO  
 WILLIAMS FOUR CORNERS







# New Mexico Office of the State Engineer

## Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned, C=the file is closed)

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

(quarters are smallest to largest) (NAD83 UTM in meters) (In feet)

POD Number	POD Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water Column	Water Column
<a href="#">SJ 02686</a>			SJ	3	4	2	32	24N	08W	257502	4017472*	690	690	0

Average Depth to Water: **690 feet**

Minimum Depth: **690 feet**

Maximum Depth: **690 feet**

**Record Count: 1**

**PLSS Search:**

**Section(s): 32, 33**

**Township: 24N**

**Range: 08W**

\*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.



**Williams Four Corners LLC  
Design and Construction Plan - Below Grade Tanks  
San Juan Basin – New Mexico**

**Background**

The following Design and Construction Plan has been developed to satisfy requirements of the "Pit Rule" as defined in 19.15.17.11 New Mexico Administrative Code (NMAC) and describes general design and construction standards to be used by Williams Four Corners LLC (Williams) when installing below grade tanks (BGTs). This is a standard procedure and any deviation from these standards due to site-specific conditions will require development of a design and construction plan modification. Any such deviation and plan modification requires separate New Mexico Oil Conservation Division (NMOCD) approval.

While existing tank installations have served to protect public health and the environment, this plan serves to standardize the construction design to ensure the required elements specified by NMOCD Rules are incorporated when installing new tanks, or when modifying or retrofitting tanks. The design standards herein shall also apply when modifications are made to existing BGTs.

**Applicability**

This plan applies to all new BGT installations for Williams operations in New Mexico as well as modifications made to existing tanks. It is developed to ensure that BGT operations are protective of fresh water, public health and the environment.

**Design and Construction**

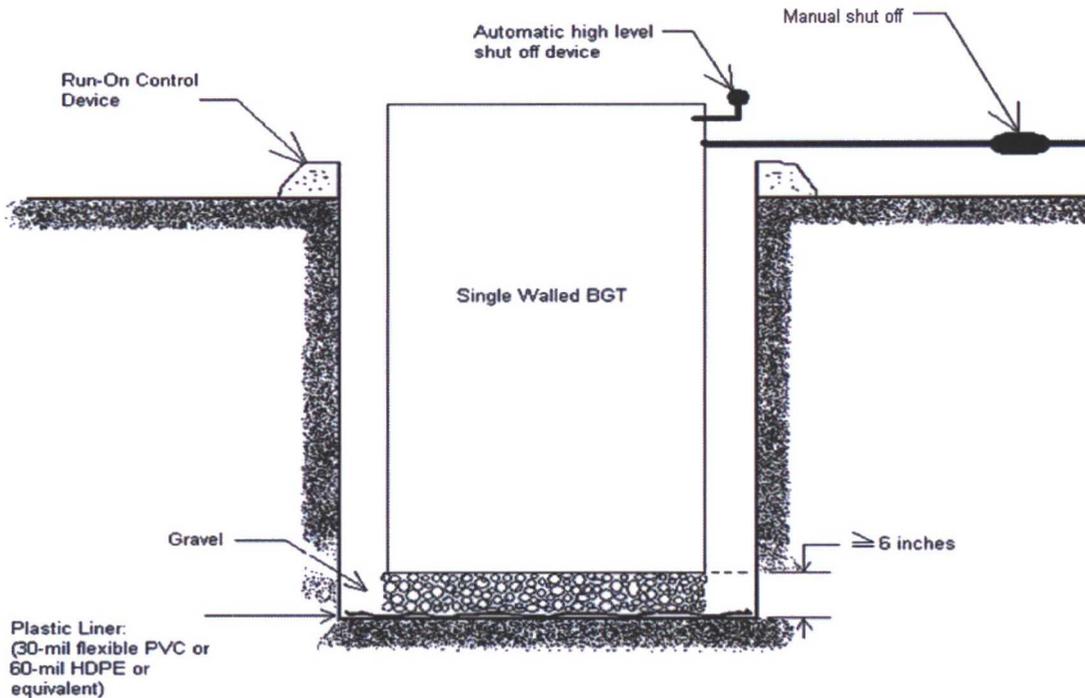
1. Excavation for tanks shall be made to ensure a properly constructed level foundation free of rocks and debris which could puncture or damage a synthetic liner or tank bottom.
2. Soil conditions will dictate the size and sidewall slope and will be evaluated for stability. Cribbing reinforcement may be necessary at certain sites.
3. For BGTs that do not have double walls, Williams will construct the BGT to meet the following requirements as depicted in Figure 1.
  - A. The BGTs sidewalls must be open for visual inspection for leaks.
  - B. A 30-mil flexible Polyvinyl Chloride (PVC) or 60-mil High-density polyethylene (HDPE) liner (or equivalent liner when approved by the NMOCD) with hydraulic conductivity no greater than  $1 \times 10^{-9}$  centimeters per second (cm/sec) shall be installed within the excavation to cover the bottom and sidewalls and in such a manner to direct fluid to a single inspection point (for evidence of leakage).

- C. The liner will be resistant to Ultra-Violet (UV) light, hydrocarbons, salts, alkaline, and acidic solutions, and otherwise compatible with the material(s) to be contained. Liner compatibility shall comply with United States Environmental Protection Agency (USEPA) SW-846 method 9090A. To evidence appropriate liner use, a liner specification sheet will be provided to the NMOCD for approval when a C-144 is prepared for modifications or retrofit, or if new liner material is utilized.
  - D. Washed gravel will be placed on the liner (lined bottom) for tank placement to allow for visual leak detection (some liner exposed) and subsequent inspection. The tank bottom is required to be at least six inches above the underlying ground surface.
  - E. Each tank installed in accordance with 19.15.17.11.1(4)(a) NMAC shall be installed with automatic high level shut-off control devices and manual controls appropriate to prevent overflows. The automatic shut-off shall be set to maintain adequate freeboard (minimum 28 inches).
4. All other BGTs, in which the side walls are not open for visible inspection shall be double walled with leak detection capability as depicted in Figure 2.
  5. Tanks shall be constructed of single wall steel meeting all American Petroleum Institute (API) and industry codes and shall otherwise be compatible with the fluids to be contained and be UV resistant. Williams shall, in most cases, utilize 45 barrel tanks (5 feet high x 8 feet in diameter) or 70 barrel tanks (5 feet high x 10 feet diameter) for future BGT installations (variations will be noted on C-144 Forms as appropriate). Tanks may or may not be constructed with double bottoms.
  6. Tanks will have one inch (or less) steel mesh (i.e. expanded metal) or solid steel covers or otherwise be constructed to prevent migratory bird / fowl contact.
  7. A solid riser pipe will be installed to facilitate liquid removal from the tank. The riser shall have a cap or cover and be positioned to prevent standing accumulation of liquids within the riser.
  8. BGT installations will include an earthen berm to prevent surface water run-on in accordance with 19.15.17.11.1(3) NMAC.
  9. BGT installations will be fenced to protect livestock and wildlife in accordance with 19.15.17.11.D. NMAC. Fencing shall prevent unauthorized access and at a minimum be four feet high with four strands of barbed wire spaced in the interval between one foot and four feet above ground. In lieu of barbed wire, the fence may be constructed using "hog wire" or similar fencing to satisfy the requirement. Other fence designs will require NMOCD approval.
  10. A six-foot high chain link will be installed around BGT locations within 1000 ft of a permanent residence, school, hospital, institution, or church. At least two strands of barbed wire will be placed at the top. If the well site or facility has perimeter chain link fencing of equivalent design, then a pit or BGT fence is not necessary. Unmanned facilities must have a locked gate.
  11. Appropriate signage will be installed in accordance with 19.15.17.11.C NMAC and include Operator name, legal location information, and emergency telephone contact information. The sign will be at least 12-inches x 24-inches with lettering not less than 2-inches in height and be placed on the fence surrounding the BGT.

12. An existing single walled tank (installed prior to June 16, 2008) which has completely open sidewalls for visible inspection and which may or may not have a geomembrane liner, need not meet the above design and construction standards unless and until integrity fails, or there is a change of Operator, or the tank or facility is sold. The tank will then be closed pursuant to the Closure Plan or be retrofitted in accordance with the design drawings (see Figures 1 or 2) or NMOCD approved modification.
13. An existing single walled tank (installed prior to June 2008) where any portion of the tank sidewall is below the ground surface and not visible shall be modified or retrofitted to meet the above design and construction standards if at any time the tank leaks, or demonstrates failed integrity prior to June 15, 2013. If the tank is not retrofitted or replaced, then the tank shall be closed by June 15, 2013 in accordance with the BGT Closure Plan. Such tanks shall also be closed or retrofitted prior to June 15, 2013; prior to any sale or change in Operator, or, at **any time at the discretion of the Operator or NMOCD.**

Any modifications to, or retrofitting of existing tanks shall necessitate that all of the aforementioned design elements be included and as provided in the design drawings (Figures 1 and 2). If modifications cannot reasonably include the same design standards for new tanks or the BGT cannot be retrofitted with alternative system approved by the NMOCD, the existing tank shall be retired and removed from service. In this event, the Williams Closure Plan for BGTs shall be implemented.

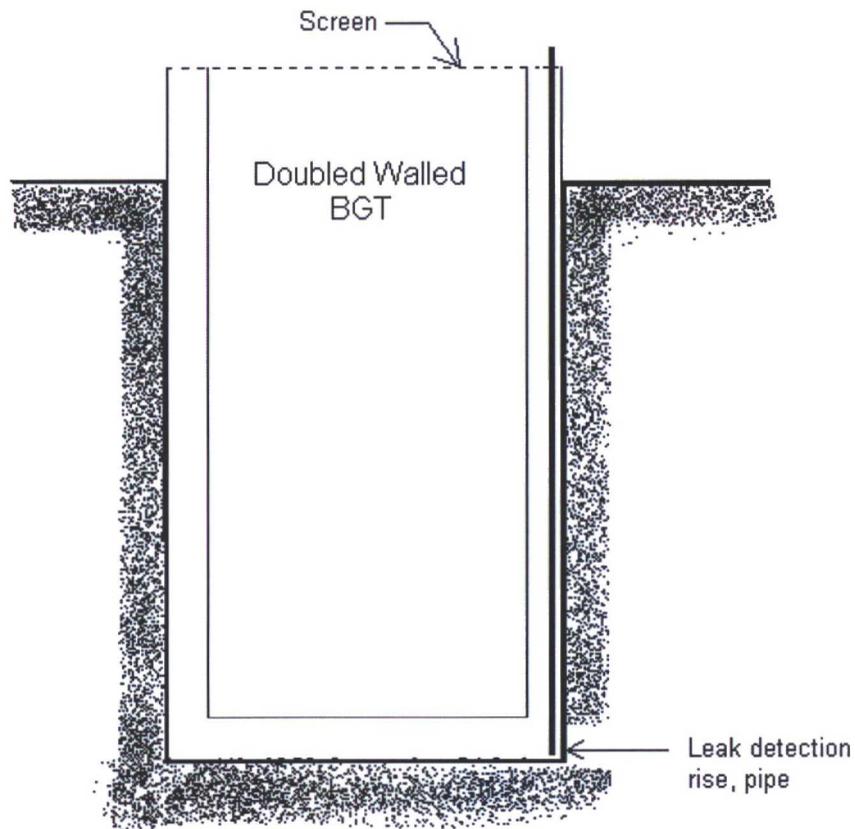
**FIGURE 1. BGT DESIGN AND CONSTRUCTION – 19.15.17.11.1.(4)(a) NMAC**



**BGT Design Per 19.15.17.11.1.(4)(a) NMAC**

- The BGT's side walls must be open for visual inspection for leaks.
- The BGT's bottom must be elevated a minimum of six inches above the underlying ground surface.
- The BGT must be underlain with a geomembrane liner to divert leaked liquid to a location that can be visually inspected (may be covered with gravel).
- Geomembrane liner shall consist of 30-mil flexible PVC or 60-mil HDPE liner, or an equivalent liner material. The liner must have a hydraulic conductivity no greater than  $1 \times 10^{-9}$  cm/sec, be composed of an impervious, synthetic material that is resistant to petroleum hydrocarbons, salts and acidic and alkaline solutions, and resistant to ultraviolet light. The liner compatibility must comply with USEPA SW-846 method 9090A.
- Equipped with a properly operating automatic high-level shut-off control device and manual controls to prevent overflows.

**FIGURE 2. BGT DESIGN AND CONSTRUCTION – 19.15.17.11.I.(4)(b) NMAC**



**BGT Design Per 19.15.17.11.I.(4)(b) NMAC**

- Tank side walls are not open for visible inspection for leaks.
- Double walled with leak detection capability.



**Williams Four Corners LLC  
Operation and Maintenance Plan - Below Grade Tanks  
San Juan Basin – New Mexico**

**Background**

The following Maintenance and Operating Plan has been developed to satisfy requirements of the "Pit Rule" as defined in 19.15.17 New Mexico Administrative Code (NMAC) and describes the procedures to be used by Williams Four Corners LLC (Williams) when performing maintenance and/or operation including inspections of below grade tanks (BGTs).

This plan describes in greater detail, the operating policies and procedures to be followed in accordance with Rule 19.15.17 NMAC. All BGTs have been operating in general compliance with New Mexico Oil Conservation Division (NMOCD) regulations developed prior to the Pit Rule enacted in June 2008.

**Applicability**

This plan shall be used for all BGTs currently in service located in New Mexico. The plan was developed to ensure that Williams operation of BGTs protect fresh water, public health and the environment. Elements of this plan have been developed to satisfy current regulatory requirements as well as provide Best Management Practices (BMPs) for responsible operations.

While unlikely, if conditions at a BGT location prevent or limit adherence to this plan, a separate site-specific plan will be developed. Such a plan will be prepared and submitted to the NMOCD for approval and serve as a site specific amendment.

**Operation of BGTs**

Williams shall operate and maintain all BGTs, including liners and secondary containment structures in a condition to ensure integrity. The goal is to prevent contamination of soil and fresh water and otherwise be protective of public health and the environment. To accomplish this, regular inspection events and specific installation (i.e. design) criteria must be followed and performed.

New and existing BGTs shall be operated to comply with the standards established by the NMOCD and described in 19.15.17 NMAC. Installation design details are provided in the Williams Design and Construction Plan for BGTs. The following operating standards shall be completed for BGTs operated by Williams:

1. Williams shall not allow surface water run-on to enter BGTs. As required, berms and/or dike shall be constructed to prevent surface water run-on from entering BGTs. Surface water control features will be routinely inspected and repaired as required.
2. BGT fluid levels will be maintained to ensure proper free board using either active or inactive monitoring methods. Active monitoring methods may include

the use of high level shut-offs / level controllers. Inactive monitoring may be conducted during monthly inspections or more frequently based on operations. In the event of malfunction or if freeboard cannot otherwise be maintained, then excessive volumes shall be removed and disposed in accordance with applicable NMOCD regulations.

3. Williams shall operate and maintain BGTs to contain liquids and solids, and maintain the integrity of associated liner or secondary containment systems.
4. Williams shall remove any visible or measurable layer of oil from the fluid surface of the BGT.
5. Williams will not discharge into or store any hazardous waste in a below-grade tank.
6. If a BGT is damaged below the liquid surface, all fluids will be removed which are above the damage or leak within 48 hours of discovery. Notification will be made to the NMOCD District Office within 48 hours and appropriate repairs made before putting the BGT back in service.
7. Fluid removal shall be performed in a manner preventing damage to the tank, secondary containment liner, or diversion structures (i.e. berms).
8. Ensure that any BGT modification, replacement, or retrofit conforms with current NMOCD design and construction specifications.
9. A BGT constructed and installed prior to June 16, 2008 that does not meet current NMOCD design and construction standards and that does not otherwise demonstrate integrity, shall be closed pursuant to the Williams Closure Plan for BGTs. Installation of a new/replacement BGT meeting the current design and construction criteria shall commence only after closing the defective BGT.
10. A BGT constructed and installed prior to June 16, 2008 that does not meet current NMOCD design and construction standards can be retrofitted so long as the BGT demonstrates integrity. In such cases, the following procedures shall be completed:
  - A. Visually inspect the area beneath the BGT tank during the retrofit and document any areas that are wet, discolored or showing other evidence of a release on Form C-141.
  - B. Demonstrate to the NMOCD whether the evidence of contamination indicates an imminent threat to fresh water, public health, safety or the environment exists.
  - C. If the NMOCD determines that there is not an imminent threat to fresh water, public health, safety or the environment, Williams will complete the retrofit or the replacement of the BGT.
  - D. If Williams or the NMOCD determines that contamination poses an imminent threat to fresh water, public health, safety or the environment, then the BGT will be closed pursuant to the Williams Closure Plan for BGTs prior to initiating the retrofit or replacement.
  - E. If the BGT is not retrofitted to meet current design and construction standards, then the tank will be closed prior to any sale, transfer of ownership, or change of Operator.

11. Close all single walled BGTs that do not have completely open and visible sidewalls when integrity is compromised and modifications cannot be made to meet current design and construction standards. **Note that all single walled BGTs must be retrofitted to meet current design and construction standards or be closed by June 15, 2013. This requirement also applies prior to any sale, transfer of ownership, or change of Operator.**

### **Inspection**

Monthly inspections will be performed to assess the overall operation of BGTs and secondary containment systems to ensure integrity as well as monitor free board including the proper operation of high level shut off systems. Williams shall inspect BGTs at least monthly and maintain written inspection reports for five years.

### **Records and Documentation**

Records of monthly inspections will be documented and maintained for at least five years. Monthly inspection information shall include:

- Well or Facility name
- API # (for well locations only)
- Legal information (Section, Township, Range)
- Inspection date
- Confirmation of visible sidewalls (single-wall tanks) and adequate berms
- Confirmation of BGT integrity and overall condition
- Observations of overflows, oil accumulation, freeboard, integrity of liner, etc.
- Identified deficiencies and corrective action(s)
- Inspector Name

The attached form shall be used when performing BGT monthly inspections.

### **Notification Requirements**

If a release is identified, all liquid above the leak line shall be removed within 48 hours and oral notification made to the NMOCD District Office (within 48 hours of discovery). Independent of the notification requirement described above, and depending on the estimated volume of the release, a separate written spill report (Form C-141) may be required per the NMOCD Release Notification requirements defined in 19.15.29 NMAC.

**Below-Grade Tank Inspection Form (Double-Wall BGT)**

<b>Well/Facility Name:</b>		<b>API No.:</b>	
<b>Section/Township/Range:</b>			
<b>Inspector:</b>		<b>Inspection Date:</b>	
<b>Work Order No.</b>			

**Inspection Requirements:** All BGTs (tanks where any portion of the tank's sidewall is below the surrounding ground surface's elevation) must be inspected monthly. Report the discovery of any system found to be leaking or has lost integrity immediately to the Environmental Department.

**Inspection Procedure (Double-Wall Only):**

1. Perform a visual inspection of the BGT looking for any evidence of a release (e.g., leaks or overflows), presence of oil accumulation in tank, freeboard, condition of secondary containment devices (e.g., liner, berm) if present.
2. Open the BGT inspection port to access the leak detection system (interstitial space between the inner and outer tank walls).
3. Prior to measurement, wipe dry and then lower the measuring device to the bottom of the BGT and retrieve the device.
4. Check the measuring device for the presence of liquids.
5. Record results of inspection below and provide a copy to the Environmental Department.

Tank/Sump ID	Tank Material	Evidence of Release (Yes / No)	Oil Present in Tank (Yes / No)	Depth of Fluid Below Top of Tank [Free Board] (feet)	Condition of Secondary Containment and/or Diversion Devices	Fluid Thickness in Leak Detection (feet)

**Required Corrective Actions (identify which apply based on inspection results)**

- |  |   |
|--|---|
| <input type="checkbox"/> Remove fluid from leak detection and re-inspect | <input type="checkbox"/> Notify Environmental Department if leak/release detected |
| <input type="checkbox"/> Repair secondary containment/diversion devices  | <input type="checkbox"/> Other:   |

**Below-Grade Tank Inspection Form (Single-Wall and Double-Bottom BGTs)**

<b>Well/Facility Name:</b>		<b>API No.:</b>	
<b>Section/Township/Range:</b>			
<b>Inspector:</b>		<b>Inspection Date:</b>	
<b>Work Order No.</b>			

**Inspection Requirements:** All BGTs (tanks where any portion of the tank's sidewall is below the surrounding ground surface's elevation) must be inspected monthly. Report the discovery of any system found to be leaking or has lost integrity immediately to the Environmental Department.

**Inspection Procedure (Single-Wall and Double-Bottom Only):**

1. Perform a visual inspection of the BGT looking for any evidence of a release (e.g., leaks or overflows), presence of oil accumulation in tank, sidewalls completely visible to tank bottom, freeboard, condition of secondary containment devices (e.g., liner, berm) if present.
2. If present, open the BGT inspection port to access the leak detection system (interstitial space below the tank bottom).
3. Prior to measurement, wipe dry and then lower the measuring device to the bottom of the BGT and retrieve the device.
4. Check the measuring device for the presence of liquids.
5. Record results of inspection below and provide a copy to the Environmental Department.

Tank/Sump ID	Tank Material	Evidence of Release (Yes / No)	Oil Present in Tank (Yes / No)	Sidewalls Completely Visible (Yes / No)	Depth of Fluid Below Top of Tank [Free Board] (feet)	Condition of Secondary Containment and Diversion Devices	Fluid Thickness in Leak Detection (feet)

**Required Corrective Actions (identify which apply based on inspection results)**

- |  |   |
|--|---|
| <input type="checkbox"/> Remove fluid from leak detection and re-inspect | <input type="checkbox"/> Notify Environmental Department if leak/release detected |
| <input type="checkbox"/> Repair secondary containment/diversion devices  | <input type="checkbox"/> Other:   |
| <input type="checkbox"/> Remove soil accumulation from tank sidewalls    |   |



**Williams Four Corners LLC  
Closure Plan - Below Grade Tanks  
San Juan Basin – New Mexico**

**Background**

The following Closure Plan has been developed to satisfy requirements of the "Pit Rule" as defined in Title 19 Chapter 15 Part 17 of the New Mexico Administrative Code (NMAC) and describes the requirements and procedures to be used by Williams Four Corners LLC (Williams) when removing below grade tanks (BGTs). The plan will be used when closing BGT locations owned or operated by Williams.

Certain BGTs targeted under this closure plan were, in some cases, installed subsequent to earthen pit closures and were constructed in conformance with New Mexico Oil Conservation Division (NMOCD) approved criteria. All BGTs have been operating in general compliance with NMOCD regulations developed prior to the new Pit Rule enacted in June 2013.

**Applicability**

This plan shall be implemented when any BGT is closed. The plan shall also be used if any leaking BGT is not retrofitted or modified to comply with applicable design criteria defined in the Pit Rule or when it is determined that continued operation of the BGT represents an imminent danger to fresh water, human health, or the environment. All BGTs with or without completely visible sidewalls, and that do not meet current design standards, shall be closed prior to sale, transfer, or change of Operator or will be retrofitted to meet current design standards.

If there are conditions at a BGT location which prevent or limit adherence to this plan, a separate site specific plan will be developed. Such a plan will be prepared and submitted to the NMOCD for approval and serve as a new, site specific closure plan.

**Description of Work**

Prior to initiating BGT closure work, notification will be made to the appropriate division district office at least 72 hours, but not more than one week, prior to any closure operation. As indicated on the variance page, notifications to NMOCD will be made in writing via email and will include the legal location of the BGT, and the well name / number and American Petroleum Institute (API) number if the BGT is associated with a well. Verbal notifications to the NMOCD will be provided at the request of the division district office.

In addition, the landowner of record (obtained through county tax records) will be notified in advance by certified mail with return receipt at least 72 hours, but not more than one week, prior to any closure operation. Notifications will provide operator identity, and legal location of the BGT, and the well name / number and API number if the BGT is associated with a well. Public entities including the Bureau of Land Management (BLM), State of New Mexico, local government/municipalities, and/or tribal agencies may be

notified via email based on their notification preferences (as indicated on the variance page).

Removal of liquids and sludge from the BGT will commence within 60 days of cessation of operations. The liquids and sludge removed from the BGT will be disposed at a division-approved facility. Removal of the BGT and any equipment associated with the BGT will commence within 6 months of cessation of operations. Williams will remove the BGT and dispose of it in a division-approved facility or recycle, reuse, or reclaim it in a manner that the appropriate division district office approves.

Table 1 provides a summary of waste materials and the facility proposed for disposal or recycling. Williams may utilize other facilities which may be approved by the NMOCD in the future. As such, the selected disposal site will be identified on the closure form (C-144) prepared for each discrete closure action.

**Table 1 - Summary of Waste Materials and Disposal Facilities**

Waste Materials	Disposal Facility
Steel Tank	SJ County Landfill or Steel Recycling
Fiberglass Tank	SJ County or Bondad Landfill * or Re-use
Liner (cleaned – absent soil / sludge)	SJ County or Bondad Landfill
Sludge	Envirotech, IEI, TNT, or Bondad Landfill
Liquids (Water / Hydrocarbons)	Basin Disposal, Key Energy, TNT
Contaminated Soil	Envirotech, IEI, TNT, or Bondad Landfill
Fencing / Miscellaneous	Re-use or scrap

\*The tank must be empty, cut up or shredded and EPA clean

The use of any disposal or recycling facility will be identified on the C-144 form submitted to the NMOCD as part of the closure report. Any and all ancillary equipment related to the tank will also be removed, including any synthetic liner material(s) and fencing. Williams will ensure that liners and liner material will be free of soil and sludge material and disposed of at a NMOCD approved solid waste facility (e.g. San Juan County Landfill or Permitted Colorado Facility).

Steel or fiberglass tanks will be removed and transported to a storage yard where the condition of each tank will be evaluated for recycling, reuse, or disposal. If the tank is not in a condition allowing reuse, it will either be shipped to a permitted recycling facility (for steel tanks) or it will be disposed of at the San Juan County Landfill (NMED Permit SWM-052426) or other NMOCD approved solid waste disposal site. Specific waste acceptance conditions of the landfill could necessitate further actions as appropriate. Such actions include, but may not be limited to, cutting, shredding, or sizing; emptying or cleaning of tanks or liner material, and otherwise those necessary to conform with permit conditions for Subtitle D disposal and conditions identified in 19.15.35.8 NMAC.

After the tank and equipment have been removed, soils beneath the tank will be tested and evaluated to determine if there is hydrocarbon impact or otherwise if a release event has occurred. Specific sampling protocol will follow the description provided in the Pit Rule which calls for a five point composite sample (see Sampling and Lab Analyses section) to include any obvious staining, or when wet or discolored soil exists, or if there is other evidence of contamination will be collected under the liner or BGT. Samples will

be shipped to an off-site environmental testing laboratory for proper analyses. Results will be submitted to the NMOCD on Form C-141. Further sampling may be required if NMOCD determines additional assessment work is necessary.

If there has been no release to underlying soils as demonstrated by soil analyses (i.e. lab results), or if impacts are below closure limits provided in the table below, then the depression (i.e., excavation) will be backfilled with "non-waste containing" fill material. Sampling of the excavated material is detailed in the Sampling and Laboratory Analyses section later in this plan. Depending on site conditions and operating needs, the backfilled area will be reclaimed with prescribed topsoil and reseeded.

Due to the fact that a majority of Williams BGTs are located on active well sites, reclamation efforts may be deferred in order to avoid impact to ongoing lease operations. In this event, the area of the retired BGT will be incorporated into the overall well site reclamation effort with Williams documenting surface owner and lease operator approval of the proposed alternative.

The BGT site will nevertheless be prepared to prevent erosion, and protect fresh water, human health, and the environment. Williams will submit this documentation to the NMOCD for approval.

Reclamation will be performed as early as possible with the goal of matching original conditions or the final land use. Restoration efforts shall incorporate proper contouring as described in the Pit Rule and shall be constructed in a manner to provide dust control, prevent ponding, and minimize erosion, utilizing drainage controls such as water bars and/or silt traps as appropriate. Topsoils and subsoils will be replaced to their original relative positions and contoured so as to achieve erosion control, long-term stability and preservation of surface water flow patterns. Soil cover suitable for vegetative growth will be equivalent to the background thickness of topsoil or a minimum one foot depth (or background thickness whichever is greater). The area will be contoured in a manner blending soil into/with the surrounding grade. Reclamation shall target the location of the BGT along with associated access roads (not used for production operations) and be implemented to ensure a safe and stable condition that blends with the surrounding undisturbed area.

Re-vegetation efforts will conform with NMOCD approved methods and recommendations including seed type and application rates. The reclaimed area will be reseeded in the first favorable growing season following closure of the BGT. Reclamation and revegetation will be considered complete when all ground surface disturbing activities at the site have been completed, and a uniform vegetative cover has been established that reflects a life-form ratio of plus or minus fifty percent (50%) of pre-disturbance levels and a total percent plant cover of at least seventy percent (70%) of pre-disturbance levels, excluding noxious weeds.

Any other obligations imposed by tribal or federal agencies will be adhered to if such obligations provide equal or better protection of fresh water, human health, and the environment. Williams will notify the NMOCD once reclamation and re-vegetation are complete.

### Sampling and Laboratory Analyses

A minimum five point composite sample shall be collected from the soils beneath the BGT which will include any obvious stained, wet, or discolored soils, or soil showing other evidence of a release. Soil will be placed in clean glass jars and chilled and maintained at 4°C. Samples will be packaged and shipped under United States Environmental Protection Agency (USEPA) Chain-of-Custody protocol to an approved and certified environmental laboratory.

Soil samples collected from the earthen containment (i.e. BGT excavation) will be analyzed by an approved environmental laboratory by the listed test methods or as may be directed by the NMOCD. Table 2 summarizes the constituents of concern (COC), testing methods, and the closure limits defining action levels:

Table 2 - Summary of COCs, Test Methods, and Closure Limits

Depth below bottom of pit to groundwater less than 10,000 mg/L TDS	Constituents of Concern	Test Methods	Closure Limits (mg/Kg)**
<50 feet	Chlorides	EPA 300.0	600
	TPH	EPA SW-846 Method 418.1	100
	GRO + DRO	EPA SW-846 Method 8015M	100
	BTEX	EPA SW-846 Method 8021B or 8260B	50
	Benzene	EPA SW-846 Method 8021B or 8015M	10
51 feet – 100 feet	Chlorides	EPA 300.0	10,000
	TPH	EPA SW-846 Method 418.1	2,500
	GRO + DRO	EPA SW-846 Method 8015M	1,000
	BTEX	EPA SW-846 Method 8021B or 8260B	50
	Benzene	EPA SW-846 Method 8021B or 8015M	10
>100 feet	Chlorides	EPA 300.0	20,000
	TPH	EPA SW-846 Method 418.1	2,500
	GRO + DRO	EPA SW-846 Method 8015M	1,000
	BTEX	EPA SW-846 Method 8021B or 8260B	50
	Benzene	EPA SW-846 Method 8021B or 8015M	10

\*\* Or background concentration – whichever is greater.

If any contaminant concentration is higher than the parameters listed in Table I of 19.15.17.13 NMAC, the division may require additional delineation upon review of the results and Williams must receive approval before proceeding with closure. If all contaminant concentrations are less than or equal to the parameters listed in Table I of 19.15.17.13 NMAC, then Williams will proceed to backfill the excavation with non-waste containing, uncontaminated, earthen material.

Sampling of any excavated or stockpiled material, if required, shall conform with standard environmental sampling protocol. Samples from excavated materials (excavated to facilitate the BGT removal) will be composite samples comprised of at least five discrete samples from the inside and on the surface of the soil pile. A minimum of one composite will be collected from each 100 cubic yards of soil (i.e. one fraction from each cubic yard). Additional samples may be required at the direction of the

NMOCD. Every effort will be made to collect composite fractions from the inside and outside of the soil pile such that a “representative” sample is analyzed.

Stockpile sampling will be facilitated by utilizing a clean soil probe inserted into the soil pile at least three feet or by turning the soil pile with mechanized equipment to expose new soil. The goal is to collect a sample representative of the “whole”. These samples will be handled and packaged as described above and be analyzed by the methods listed in Table 2. Soil with contaminant concentrations at or below the Closure Limits may be returned to the BGT excavation prior to initiating reclamation work.

### **Records and Documentation**

All closure activities will be properly documented and include preparation of Form C-144 which shall be submitted to the NMOCD within 60 days of completing closure tasks. Information to be included in the closure report filing shall include, but not necessarily be limited to, the following:

- Proof of closure notice to NMOCD division and surface owner
- Confirmation sampling and analytical reports (results)
- Disposal facility name and permit information
- Description of capping and reclamation actions (i.e. revegetation rates)
- Photo documentation of site reclamation
- Other information required to complete applicable sections of C-144

As stated above, should conditions at any location necessitate a change to the approach described herein, separate site specific closure details will be provided as an addendum to this plan.

Variance Request:

Williams requests a variance request from Subsection E(1) of 19.15.17.13 New Mexico Administrative Code (NMAC) which states:

*The operator shall notify the surface owner by certified mail, return receipt requested that the operator plans closure operations at least 72 hours, but not more than one week, prior to any closure operation. Notice shall include well name, API number and location. Evidence of mailing of the notice to the address of the surface owner shown in the county tax records is sufficient to demonstrate compliance with this requirement.*

The variance will allow Williams to notify public agencies such as the Bureau of Land Management (BLM), State of New Mexico, local government/municipalities, and/or tribal agencies via email based on their notification preferences

October 20, 2014