

AE Order Number Banner

Report Description

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App Number: pCS1733935116

144B - 16139

Williams Four Corners, LLC

12/5/2017

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 April 3, 2017

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.

| 6139 | <u>Pit, Below-Grade Tank, or</u> Proposed Alternative Method Permit or Closure Plan Application | |
|--|--|---|
| le 1 S 1 | 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 or proposed alternative method | OIL CONS. DIV DIST. 3 NOV 1 3 2017, w-grade tank, |
| Please be advised th | Instructions: Please submit one application (Form C-144) per individual pit, below-grade tank or alternative at approval of this request does not relieve the operator of liability should operations result in pollution of surface water, | |
| environment. Nor d | oes approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rules | , regulations or ordinances. |
| 200 | ns Four Corners LLC OGRID #: | |
| Address: <u>1755 A</u> | rroyo Drive, Bloomfield, NM, 87413 | |
| Facility or well na | me: <u>Aztec Compressor Station (BGT 1)</u> | |
| API Number: | OCD Permit Number: | |
| U/L or Qtr/Qtr _ | <u>SW/SW (M)</u> Section <u>8</u> Township <u>32N</u> Range <u>10W</u> County: <u>San Juan</u> | |
| Center of Propose | d Design: Latitude <u>36.994446</u> Longitude <u>-107.913579</u> NAD83 | |
| Surface Owner: |] Federal 🗌 State 🖾 Private 🗌 Tribal Trust or Indian Allotment | |
| Permanent Cun Lined Un String-Reinfor | Drilling Workover Emergency Cavitation P&A Multi-Well Fluid Management Low Chloride Drilling Fluid lined Liner type: Thickness mil LLDPE HDPE PVC Other rced Welded Factory Other x | |
| 3. | | |
| | tank: Subsection I of 19.15.17.11 NMAC | |
| | bbl Type of fluid: <u>Waste Water</u> n material: Steel | |
| | ntainment with leak detection D Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off | |
| | alls and liner 🛛 Visible sidewalls only 🗌 Other <u>Tank Installed prior to June 18, 2008</u> | |
| | ness mil HDPE PVC Other | and Marketing and |
| 4. | | |
| Alternative M | lethod: | |
| Submittal of an ex | aception request is required. Exceptions must be submitted to the Santa Fe Environmental Bureau office for cons | ideration of approval. |
| 5. | | |
| | tion 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, such) | chool, hospital, |
| A CONTRACTOR AND A CONTRACTOR AND A CONTRACTOR | | |
| Four foot heig | ht, four strands of barbed wire evenly spaced between one and four feet | |

Oil Conservation Division

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

Screen Netting Other Solid Steel

Monthly inspections (If netting or screening is not physically feasible)

Signs: Subsection C of 19.15.17.11 NMAC

🛛 12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers

Signed in compliance with 19.15.16.8 NMAC

Variances 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.

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. | 🗌 Yes 🗌 No |
| - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image | |
| 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 | |
| Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. | 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; | Yes □ No Yes □ No |
| Within 300 feet of a wetland. - US Fish and Wildlife Wetland Identification man: Topographic man: 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. | ☐ Yes ☐ No |
| 10. Temporary Pits, Emergency Pits, and Below-grade Tanks Permit Application Attachment Checklist: Subsection B of 19.15.17.9 NM <i>Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the docu. attached.</i> Arguing Hydrogeologic Report (Below-grade Tanks) - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC Hydrogeologic Data (Temporary and Emergency Pits) - based upon the requirements of Paragraph (2) of Subsection B of 19.15.17.9 NMAC Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC Design Plan - based upon the appropriate requirements of 19.15.17.12 NMAC Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15 and 19.15.17.13 NMAC Previously Approved Design (attach copy of design) API Number: or Permit Number: | uments are NMAC 5.17.9 NMAC |
| 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 docutattached. □ 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 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: | 5.17.9 NMAC |

| 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 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 Quality Control/Quality Assurance Construction and Installation Plan Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.11 NMAC Nuisance or Hazardous Odors, including H ₂ S, Prevention Plan Emergency Response Plan Oil Field Waste Stream Characterization Monitoring and Inspection Plan Erosion Control Plan Closure Plan - based upon the appropriate requirements of 19.15.17.9 NMAC and 19.15.17.13 NMAC | documents are |
|---|----------------------|
| 13. <u>Proposed Closure</u> : 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 F | luid Management Dit |
| Alternative | fuld Management I it |
| 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 | |
| Waste Excavation and Removal Closure Plan Checklist: (19.15.17.13 NMAC) Instructions: Each of the following items must be closure plan. Please indicate, by a check mark in the box, that the documents are attached. | |
| | |
| 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 sour provided below. Requests regarding changes to certain siting criteria require justifications and/or demonstrations of equivalency. F 19.15.17.10 NMAC for guidance. | |
| Ground water is less than 25 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 25-50 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 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 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). 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 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. NM Office of the State Engineer - iWATERS database; Visual inspection (certification) of the proposed site | 🗌 Yes 🗌 No |
| Written confirmation or verification from the municipality; Written approval obtained from the municipality | 🗌 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 |
| 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 the area overlying a subsurface mine. Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division | 🗌 Yes 🗌 No |
| Within an unstable area. | |
| Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map | Yes No |
| Within a 100-year floodplain. - FEMA map | 🗌 Yes 🗌 No |
| | |
| On-Site Closure Plan Checklist: (19.15.17.13 NMAC) Instructions: Each of the following items must be attached to the closure plan by a check mark in the box, that the documents are attached. Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC Proof of Surface Owner Notice - based upon the appropriate requirements of Subsection 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. Construction/Design Plan of Temporary Pit (for in-place burial of a drying pad) - based upon the appropriate requirements of 19.15.17.13 NMAC Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of 19.15.17.13 NMAC 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 cannow 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 | .11 NMAC .15.17.11 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 bel | ief |
| | 101. |
| Name (Print): <u>Matt Webre</u> Title: <u>EHS Supervisor</u> | |
| Signature: Multi Date: November 9, 2017 | |
| V | |
| e-mail address: <u>matt.webre@williams.com</u> Telephone: (505) 632-4442 | |
| e-mail address: <u>matt.webre@williams.com</u> <u>B.</u> <u>OCD Approva</u> l: Permit Application (including closure plan) Closure Plan (only) OCD Conditions (see attachment) OCD Representative Signature: <u>Title: ENVicemment Pal Spec</u> <u>OCD Permit Number:</u> <u>16139</u> | 5/17 |
| 18. OCD Approval: Permit Application (including closure plan) Closure Plan (only) OCD Conditions (see attachment) OCD Representative Signature: | 5/17 |
| 18. OCD Approval: ☑ Permit Application (including closure plan) □ Closure Plan (only) □ OCD Conditions (see attachment) OCD Representative Signature: | |
| 18. OCD Approval: I Permit Application (including closure plan) □ Closure Plan (only) □ OCD Conditions (see attachment) OCD Representative Signature: | |
| 18. OCD Approval: Permit Application (including closure plan) Closure Plan (only) OCD Conditions (see attachment) OCD Representative Signature: | t complete this |
| 18. OCD Approval: Permit Application (including closure plan) Closure Plan (only) OCD Conditions (see attachment) OCD Representative Signature: | t complete this |

| 22. | |
|---|------------|
| Operator Closure Certification: | |
| I hereby certify that the information and attachments submitted with this closure repor- belief. I also certify that the closure complies with all applicable closure requirements | |
| Name (Print): | Title: |
| Signature: | Date: |
| e-mail address: | Telephone: |

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

SITING CRITERIA SUMMARY INFORMATION SHEET 19.15.17.10 NMAC



| 19.15.17.10 NMAC | | | | |
|--|---|--|--|---------|
| GENERAL INFORMA Site Name: Pit Identifier: | ATION Aztec Compressor Station BGT 1 | Operator: Date Prepared by: | Williams Four Corne 4/27/2015 LT Environmental, In | |
| Geologic Formatio Soil Type: | CATION INFORMATION n: Nacimiento Blancot-Fruitland association con: Aztec Ruins 9.79" | SEC: 8 Latitude: 36.994 | | NG: 10W |
| GENERAL SITING C | | rada tank? No | | |
| is groundwater less th | an 25 feet below the bottom of below g | | ee Figure 3 and attached iWater | s Data |
| BELOW GRADE TAN | IK SITING CRITERIA | | | |
| Within 100 feet of a co 2.6 miles east to Animas | ntinuously flowing watercourse? - No 8 River. | See F | gure 1 | |
| Within 100 feet of a signal feet east to main characteristics of the set of t | nificant watercourse? - No nnel of Cox Canyon. | See Fi | gure 1 and Figure 3 | |
| Within 100 feet of a lab | kebed, playa lake, or sinkhole? - No | See Fi | gure 2 | |
| Within 200 horizontal public or livestock con NA | feet of a spring or a freshwater well us sumption? - No | | gure 3 and attached iWaters dat | a |
| ATTACHED DOCUM | ENTS: | | | |
| Hydrogeologic Report Figure 1: Topographic M Figure 2: Aerial Photogr Figure 3: Water Well an iWaters Data | | | | |
| ADDITIONAL COMM | IENTS: | | | |
| | | | | |
| | | | | |
| | | | | |



LT Environmental Inc.

2243 Main Avenue, Suite 3 Durango, Colorado 81301 T 970.385.1096 / F 970.385.1873

Aztec Compressor Station 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 below-grade tank location is located in Cox Canyon a tributary of the Animas River, northwest of Cedar Hill, 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 nearby San Juan River and its tributaries.

The prominent soil type at the proposed site 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). 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 9.90 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 are sagebrush and grasses with a more restricted pinon-juniper association (Dick-Peddie, 1993).

Site-Specific Hydrogeology

Depth to groundwater is estimated to be between 50 and 75 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*. Additionally, local



topography and proximity to surface hydrologic features are taken into consideration. When available, permitted water well logs and cathodic protection well logs are referenced to infer depth to groundwater near the site.

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 towards the margins of the San Juan Basin.

The proposed site is located in a region dominated by the main channel of the Animas River on the Nacimiento Formation. Topography is dominated by the main channel of the river, its floodplain, and terrace deposits. The below-grade tank site is located in Cox Canyon at an elevation of approximately 6,176 feet.

Groundwater data available from the New Mexico State Engineer's iWaters database for wells near the proposed site are attached. Groundwater data are sparse in this region; the nearest iWaters data points with similar topographical characteristics and associated depth to groundwater information is well number SJ 03429 located approximately 1.85 miles to the southwest and SJ 02144 located approximately 2.20 miles to the southeast. Depth to groundwater in the permitted water wells, which are similarly situated near a significant water course, are 54 and 62 feet below ground surface suggesting that groundwater is between 50 and 75 feet deep beneath 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.

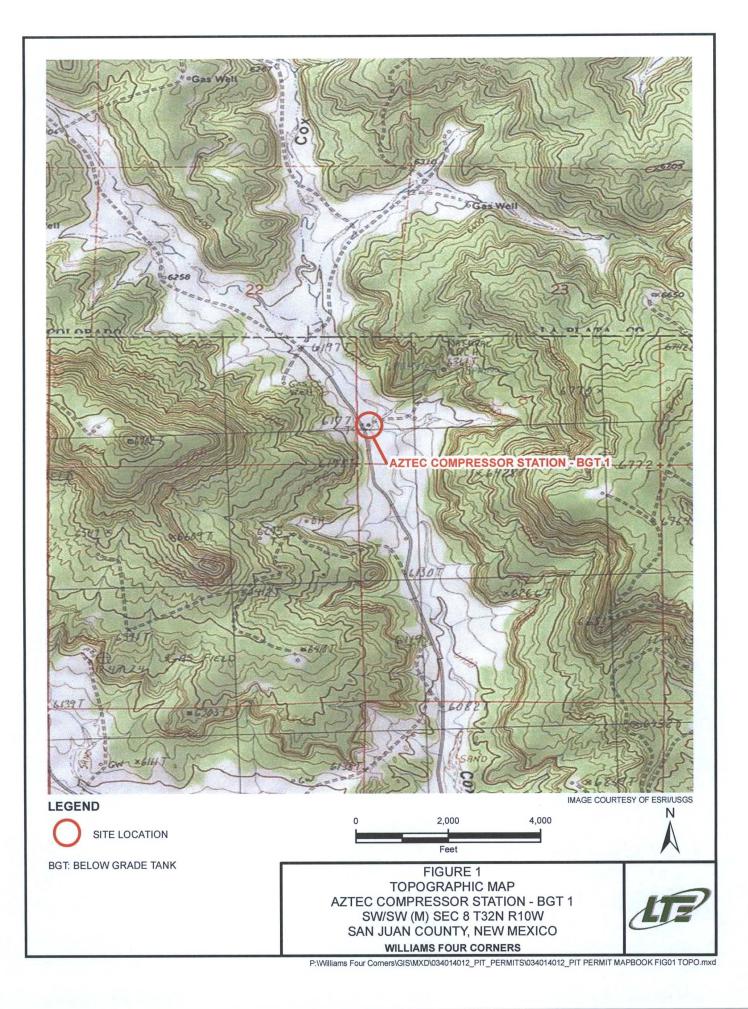
Dick-Peddie, W.A., 1993, *New Mexico Vegetation – Past, Present and Future*: Albuquerque, New Mexico, University of New Mexico Press, 244 p.

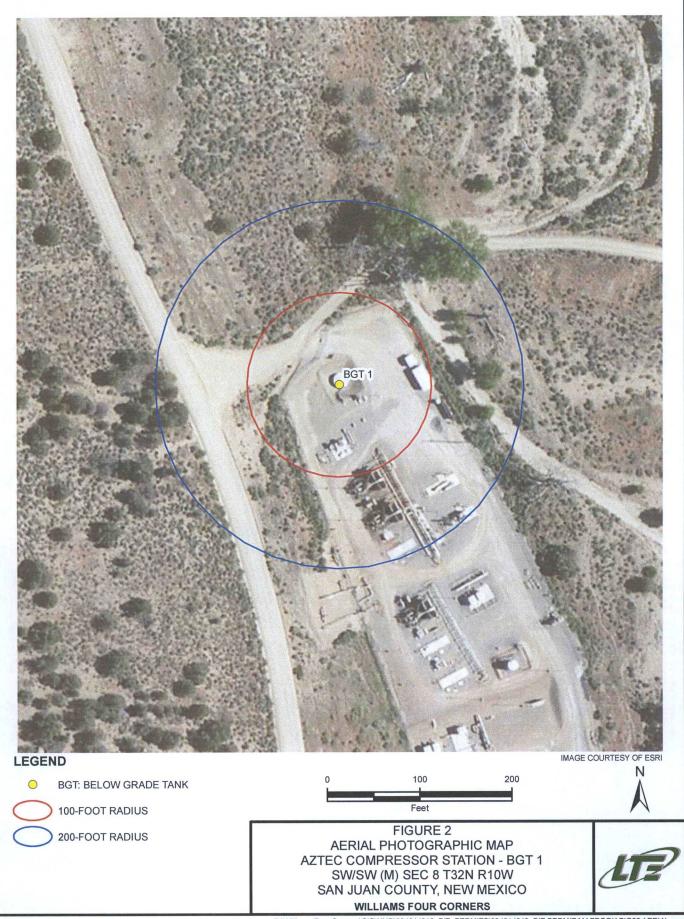
Stone, W.J., F.P. Lyford, P.F. Frenzel, N.H. Mizell, and E.T. Padgett, E.T., 1983, *Hydrogeology* and *Water Resources of the San Juan Basin, New Mexico*: HR-6 New Mexico Bureau of Geology and Mineral Resources Hydrology Report 6.

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





P:\Williams Four Comers\GIS\MXD\034014012_PIT_PERMITS\034014012_PIT PERMIT MAPBOOK FIG02 AERIAL.mxd





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 | (R=POD has been replaced, O=orphaned, C=the file is | | | | | | | =SW 4=SE | | | | | |
|--|--|------|------|------|--------|--------|------------|----------|----------------|-------------|---------------------------|--|--------|
| water right file.) | closed) POD | (qua | rtei | rs a | ire si | malles | st to larg | jest) (N | AD83 UTM in me | eters) | (| In feet) | |
| | Sub- | | Q | | | | | | | | Depth | Depth | Water |
| POD Number | Code basin Count | | | | | | | X | Y | Distance | TTT POST PRODUCE I NUMBER | In the other sectors and the sector of the | Column |
| SJ 03429 | SJ | 3 | 1 | | | | 10W | 240675 | 4095316* 🌍 | 2966 | 103 | 54 | 49 |
| SJ 00017 | SJ | | | 2 | 24 | 32N | 11W | 238546 | 4096052* 🌍 | 3112 | 105 | | |
| SJ 02144 | SJ | | | | 21 | 32N | 10W | 242948 | 4095545* 🌍 | 3530 | 87 | 62 | 25 |
| SJ 01512 | SJ | | 3 | 2 | 21 | 32N | 10W | 243173 | 4095721* 🌑 | 3547 | 77 | 67 | 10 |
| SJ 01153 | SJ | | | 1 | 15 | 32N | 10W | 244230 | 4097506* 🌑 | 3596 | 100 | 47 | 53 |
| SJ 00446 | SJ | 4 | 3 | 2 | 21 | 32N | 10W | 243272 | 4095620* 🌑 | 3689 | 76 | 60 | 16 |
| SJ 03483 | SJ | 1 | 4 | 2 | 21 | 32N | 10W | 243482 | 4095810* 🌍 | 3708 | 90 | | |
| SJ 03527 | SJ | 1 | 4 | 1 | 15 | 32N | 10W | 244316 | 4097380* 🌑 | 3709 | 80 | | |
| SJ 01177 | SJ | | 4 | 3 | 10 | 32N | 10W | 244444 | 4098072* 🌍 | 3731 | 83 | 38 | 45 |
| SJ 03072 | SJ | 1 | 1 | 1 | 22 | 32N | 10W | 243899 | 4096199* 🌑 | 3802 | 80 | 62 | 18 |
| <u>SJ 01290</u> | SJ | | | 3 | 15 | 32N | 10W | 244206 | 4096700* 🌍 | 3829 | 105 | 20 | 85 |
| SJ 02381 | SJ | 3 | 4 | 2 | 21 | 32N | 10W | 243482 | 4095610* 🌑 | 3844 | 65 | | |
| SJ 00263 | SJ | 2 | 2 | 3 | 10 | 32N | 10W | 244553 | 4098557* 🌑 | 3844 | 108 | 50 | 58 |
| SJ 03078 | SJ | 2 | 2 | 1 | 15 | 32N | 10W | 244530 | 4097776* 🌑 | 3845 | 21 | 18 | 3 |
| SJ 02845 | SJ | 3 | 2 | 3 | 15 | 32N | 10W | 244302 | 4096778* 🌑 | 3886 | 11 | 5 | 6 |
| SJ 02980 | SJ | 3 | 1 | 1 | 22 | 32N | 10W | 243899 | 4095999* 🌑 | 3915 | 65 | 36 | 29 |
| SJ 01424 | SJ | | | | 10 | 32N | 10W | 244655 | 4098691* 🌍 | 3958 | 164 | 94 | 70 |
| SJ 03973 POD1 | SJ | 4 | 1 | 4 | 21 | 32N | 10W | 243211 | 4095180 🌍 | 3979 | 43 | | |
| | | | | | | | | | Avera | ge Depth to | Water: | 47 | feet |
| | | | | | | | | | | Minimum | Depth: | 5 | feet |
| | | | | | | | | | | Maximum | Depth: | 94 | feet |
| Record Count: 18 | | | | | | | | | | | | | |
| UTMNAD83 Radius S | earch (in meters): | | | | | | | | | | | | |
| Easting (X): 2407 | 18 | No | rth | ing | (Y): | 409 | 8282 | | Radius | : 4000 | | | |

*UTM location was derived from PLSS - see Help

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Williams Four Corners LLC Design and Construction Plan - Below Grade Tanks

In accordance with Rule 19.15.17.11 NMAC of the New Mexico Administrative Code (NMAC), the information within this document describes the design and construction standards to be used by Williams Four Corners LLC (Williams) when installing Below Grade Tanks (BGTs). This is Williams' standard procedure for all BGTs. A separate design and construction plan will be submitted for any BGT which does not conform to this plan.

| Pit Rule Citation (NMAC) | Rule Requirement | Operator Requirements |
|-----------------------------|---------------------|---|
| 19.15.17.11.A | Design | Williams will design and construct a properly sized and approved BGT to contain liquids and solids, prevent contamination of fresh water and protect public health and environment. 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. |
| 19.15.17.11.C | Construction | Williams will post appropriate signage to 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. |
| 19.15.17.11.D(1) | Construction | Williams will fence the BGT in a manner that deters unauthorized access and will maintain the fence in good repair. Williams facilities with an exterior perimeter fence will not have a fence installed around the BGT if it is located within the facility exterior perimeter fence. |
| 19.15.17.11.D(3) | Construction | BGT installations will be fenced to protect livestock and wildlife. Fencing will be a minimum of four feet high with four strands of barbed wire spaced in the interval between one foot and four feet above ground. As a variance (if approved with the BGT registration), the fence may be constructed using four 4 foot tall "hog wire" with 1 stand of barbed wire at the top. |
| 19.15.17.11.E | Construction | BGTs will have one-inch (or less) steel mesh (i.e. expanded metal), solid steel covers, or otherwise be constructed to prevent migratory bird contact. |
| 19.15.17.11.I(1) | Design/Construction | Williams will design and construct the BGT to contain liquids associated with the dehydration and compression of natural gas, which will be resistant to the contents of the tank and resistant to damage from ultra violet light. |
| 19.15.17.11.I(2) | Construction | The BGT foundation will be level and free of rocks, debris, sharp edges or irregularities and have a firm compacted bottom and sidewalls that are stable for the soil conditions. |
| 19.15.17.11.I(3) | Construction | BGT installations will include an earthen berm or equivalent alternative at least 6-inches above ground to prevent surface water run-on; and install overflow monitoring device and/or monitor the tank at a frequency to prevent overflow as depicted in Figure 1. |
| 19.15.17.11.I.4(a) | Construction | For BGTs that do not have double walls, Williams will construct the BGT to meet the requirements listed in 19.15.17.11.1(a) associated with visual inspection, tank construction, liner, and overflow as depicted in Figure 1. 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. |
| 19.15.17.11.I.4.(b) | Construction | Buried BGTs will be constructed of steel with double-walls and double-bottom, welded following appropriate API and industry codes, coated with an epoxy based paint. A solid riser pipe will be installed between the space of the double-walls to allow monthly inspection to determine tank integrity. |
| 19.15.17.11.I.4.(c) | Design/Construction | Williams will meet with NMOCD district office before submitting application for an alternative BGT design. |
| 19.15.17.11.I(5) | Construction | A 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 defined in Paragraphs (1) through (4) of Subsection I of 19.15.17.11 NMAC unless the integrity fails. If the integrity failes, the tank will then be closed pursuant to the approved Closure Plan or be retrofitted in accordance with the design drawings (see Figures 1 or 2) or NMOCD approved modification. Retrofitting actions that include changes to the BGT design and construction require an update to the BGT registration. |
| 19.15.17.11.I(6) | Construction | All single walled BGTs must have sidewalls that are completely visible for inspection. Single walled tanks that do not meet this requirement must be retrofitted or closed persuant to the approved Closure Plan. Retrofitting actions that include changes to the BGT design and construction require an update to the BGT registration. |
| 19.15.17.11.I(7) | Construction | A double walled tank (installed prior to June 16, 2008) need not meet the above design and construction standards defined in Paragraphs (1) through (4) of Subsection I of 19.15.17.11 NMAC unless the integrity fails. If the integrity fails, the tank will then be closed pursuant to the approved Closure Plan or be retrofitted in accordance with the design drawings (see Figures 1 or 2) or NMOCD approved modification. Retrofitting actions that include changes to the BGT design and construction require an update to the BGT registration. |

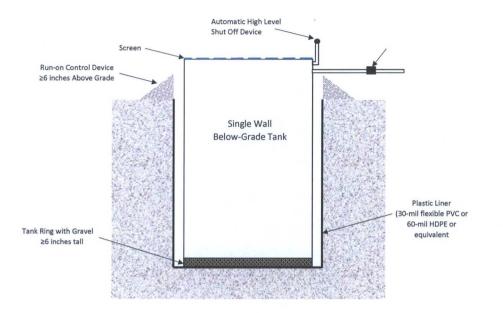
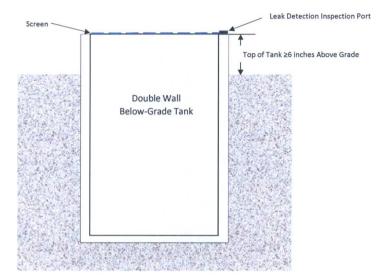


FIGURE 1. BGT DESIGN AND CONSTRUCTION - 19.15.17.11.I.(4)(a) NMAC

- 1. 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. Gravel will be contained within a tank ring and not cover the visible portion of the liner.
- 3. 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 x 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-
- 4. Equipped with a properly operating automatic high-level shut-off control device and manual controls to prevent overflows.

Williams Four Corners LLC Design and Construction Plan - Below Grade Tanks

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



1. Tank side walls are not open for visible inspection for leaks.

2. Double walled with leak detection capability.

Williams Four Corners LLC Operations and Maintenance Plan - Below Grade Tanks

In accordance with Rule 19.15.17.12 NMAC of the New Mexico Administrative Code (NMAC), the information within this document describes the operations and maintenance standards to be used by Williams Four Corners LLC (Williams) when operating Below Grade Tanks (BGTs). This is Williams' standard procedure for all BGTs. A separate operations and maintenance plan will be submitted for any BGT which does not conform to this plan.

| Pit Rule Citation (NMAC) | Rule Requirement | Operator Requirements |
|-----------------------------|--|--|
| 19.15.17.12.A(1) | Integrity | Williams will operate and maintain the BGT to contain liquids and solids and maintain the integrity of the liner, liner systems and secondary containment system to prevent contamination of fresh water and protect public health and environment. |
| 19.15.17.12.A(3) | Waste Management | Willams will not discharge or store any hazardous waste in a BGT. "Hazardous waste" means non-exempt waste that exceeds the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. |
| 19.15.17.12.A(5) | Release Requirements | If the BGT integrity is compromised: 1. All discharges will be shut off to the BGT. 2. All liquids will be removed as soon as possible but no later than 48 hours after discovery. 3. Williams will notify and report to NMOCD in accordance to 19.15.29 NMAC and all other applicable agencys as require. |
| 19.15.17.12.A(7) | Surface Water Run-on | Williams will maintain a berm or equivalent alternative at least 6-inches above ground to keep surface water run on from entering the BGT as shown on the Design and Construction Plan. |
| 19.15.17.12.D(1) | Surface Water Run- on and Overflow | Williams will require and maintain an adequate freeboard to prevent overtopping of the BGT. |
| 19.15.17.12.D(2) | Measurable Oil | Any oil or hydrocarbon collecting in the BGT will be removed. Saleable condensate will be returned to the facility or field condensate tank. Slop oil from compression will be removed and transported to an offsite recycle facility. |
| 19.15.17.12.D(3) | Inspection | Williams will inspect the BGT for leakage and damage on a monthly basis. Williams will document the integrity of each tank at least annually and maintain a written record for five years. Inspections may include: 1. Containment berms adequate and no oil present 2. Tank had no visible signs of corrosion 3. Tank valves, flanges, and hatches had no visible leaks 4. No evidence of significant spillage of produced liquids. 5. BGT cover intact and no signs of dead wildlife. 6. Sidewalls are completely visible for single walled BGTs. |
| 19.15.17.12.D(4) | Freeboard | Williams will maintain a 10-inch freeboard to prevent overtopping of the BGT. |
| 19.15.17.12.D(5) | Integrity | If the BGT loses integrity, Williams will repair the damage or close the BGT pursuant to the approved Closure Plan. |
| 19.15.17.12.D(6) | Retrofit or Replacement Requirements | While performing BGT equipment or retrofitting actions, Williams will visually inspect the area beneath the BGT and document any areas that are wet, discolored or showing other evidence of a release on OCD Form C-141. Williams will report the concentration of contaminants to the OCD with respect to the standards set forth in Table I of 19.15.17.13 NMAC. Williams will proceed with the approved Closure Plan if no evidence of impacts are present or concentrations of contaminants are below the OCD standards. |

Williams Four Corners LLC Closure Plan - Below Grade Tanks

In accordance with Rule 19.15.17.13 NMAC of the New Mexico Administrative Code (NMAC), the information within this document describes the closure requirements to be used by Williams Four Corners LLC (Williams) when closing Below Grade Tanks (BGTs). This is Williams' standard procedure for all BGTs. A separate closure plan will be submitted for any BGT closure which does not conform to this plan.

| Pit Rule Citation (NMAC) | Rule Requirement | Operator Requirements | | |
|-----------------------------|--|---|--|--|
| 19.15.17.13.A | | This plan describes Williams proposed closure methods and the proposed procedures and protocols to implement and complete BGT closure. | | |
| 19.15.17.13.C(1) | | Prior to commencing BGT closure, Williams will obtain a NMOCD approved closure plan before any closure activities start. Williams understands that the NMOCD considers the start of closure for a BGT is when the BGT is being removed from the ground. | | |
| 19.15.17.13.C(2) | | Williams will remove liquids and sludge from a BGT prior to commencing closure actions and will dispose the material in a NMOCD approved facility. | | |
| 19.15.17.13.C.3(a) | Closure Plan | Following removal of the tank and any liner material, Williams will test the soils beneath the BGT in accordance with 19.15.17.13.C.3(a) NMAC. Samples will be collected from beneath the liner and/or BGT for obvious stained or wet soils, or any other evidence of contamination. | | |
| 19.15.17.13.C.3(b) | | If any contaminant concentration is higher than the parameters listed in Table I of 19.15.17.13 NMAC, the NMOCD may require additional delineation upon review of the results and Williams must receive approval before proceeding with closure. | | |
| 19.15.17.13.C.3(c) | | Upon completion of BGT removal, if all contaminant concentrations are less than or equal to the parameters listed in Table I of 19.15.17.13 NMAC, the excavation will be backfilled with non-waste contained, uncontaminated, earthen material. | | |
| 19.15.17.13.E(1) | Notification | Notice of closure will be given to the surface owner at least 72 hours, but not more than one week, prior to any closure operation via Certified mail. As a variance (if approved with the closure plan), surface owners which are public entities (State, BLM, or Tribal) will be notified by email or phone. The notification of closure will include the following: operators name, well name and API number (if applicable), and location (ULSTR). | | |
| 19.15.17.13.E(2) | Notification | Notice of Closure will be given to the NMOCD office at least 72 hours, but not more than one week, prior to any closure operation via Certified mail. As a variance (if approved with the closure plan), the NMOCD district office will be notified by email or phone. The notification of closure will include the following: operators name, well name and API number (if applicable), and location (ULSTR). | | |
| 19.15.17.13.F(1) | Reporting | Operator will send the NMOCD a closure report in accordance with 19.15.17.F(1) NMAC within 60 days of closure including the following items: Proof of closure notice, analytical results, backfill information, revegetation, and photo documentation of reclamation. Williams understands that the NMOCD considers the closure date the day in which the BGT is backfilled and re-contoured. Revegetation is still required but, may be addressed in closure report. | | |
| 19.15.17.13.G.4(a) | | Within 60 days of cessation of operations, Williams will remove liquids and sludge from a BGT prior to implementing a closure method and will dispose of the material in a NMOCD approved facility. Disposal facilities to be used by Williams are listed below based on the listed waste types. | | |
| 19.15.17.13.G.4(b) | Timing | Within 6 months of cessation of operations, Williams will dispose, recycle, reuse, or reclaim the BGT in a NMOCD approved manner. If required, Williams will provide documentation of the disposition of the BGT to the NMOCD. Liner materials will be cleaned to remove soils or contaminated material for disposal as solid waste. Disposal facilities to be used by Williams are listed below based on the listed waste types. | | |
| 19.15.17.13.H.1(a) | | Williams will reclaim the area by substantially restoring the impacted surface area to the condition that existed prior to oil and gas operations by placement of soil cover as described below for 19.15.17.13.H.2 NMAC. The location and associated areas will be recontoured that approximates the original contour and blends with the surrounding topography and revegetate as described below for 19.15.17.13.H.5 NMAC. | | |
| 19.15.17.13.H.1(b) | Reclamation | Williams will submit an alternative plan to be approved by the NMOCD and written approval from the surface owner before submitting the C-144 application. | | |
| 19.15.17.13.H.1(c) | | If a BGT is removed from an area where production operations will continue, the area will be reclaimed in such a way to minimize dust and erosion to the extent practicable. | | |
| 19.15.17.13.H.2 | 15.17.13.H.2 Cover will include one foot of suitable material, with chloride concentrations less than 600 EPA Method 300.0, to establish vegetation at the site, or the background thickness of tops greater. | | | |
| 19.15.17.13.H.4 | | Williams will construct the soil cover to the existing grade to prevent ponding of water and erosion of the cover material. | | |

Williams Four Corners LLC Closure Plan - Below Grade Tanks

| Pit Rule Citation (NMAC) | Rule Requirement | Operator Requirements |
|--|------------------|---|
| 19.15.17.13.H.5(a) 19.15.17.13.H.5(b) 19.15.17.13.H.5(c) 19.15.17.13.H.5(d) 19.15.17.13.H.5(e) | Reclamation | For those portions of the former BGT area no longer in use with the exception where production operations will continue, the area will be reclaimed as nearly as practicable to their original condition or their final land use. Reclamation will begin as early as practical. The areas will be maintained to minimize dust and topsoils placed and contoured to limit erosion control, maintain stability, and preserve surface-water flow patterns. Williams will seed the disturbed areas the first favorable growing season following closure of the BGT. Williams will comply with obligations imposed by other applicable federal or tribal agencies in which their re-vegetation and reclamation requirements provide equal or better protection of fresh water, human health and the environment. Williams will notify the NMOCD when reclamation and re-vegetation is complete. |

| Summary of Waste Materials and Disposal Facilities | | | |
|--|--|--|--|
| Waste Types | Disposal Facility | | |
| Steel Tank | San Juan County Landfill; Steel Recycling | | |
| Fiberglass Tank | San Juan County Landfill; Bondad Landfill; Re-use | | |
| Liner (cleaned – absent soil / sludge) | San Juan County Landfill; Bondad Landfill | | |
| Sludge | Envirotech; Industrial Ecosystems Inc.; T-N-T; Bondad Landfill | | |
| Liquids (Water / Hydrocarbons) | Basin Disposal; Key Energy; T-N-T | | |
| Contaminated Soil | Envirotech; Industrial Ecosystems Inc.; T-N-T; Bondad Landfill | | |
| Fencing / Miscellaneous | Re-use or Scrap | | |

Table I

| epth Below Bottom of pit to ground water less than 10,000 mg/l | Constituent | Method | Limit** |
|---|-------------|------------------------------|--------------|
| ≤50 feet | Chloride | EPA 300.0 | 600 mg/kg |
| | ТРН | EPA SW-846 Method 418.1 | 100 mg/kg |
| | BTEX | EPA SW-846 8021B or 8260B | 50 mg/kg |
| | Benzene | EPA SW-846 8021B or 8260B | 10 mg/kg |
| 51 feet - 100 feet | Chloride | EPA 300.0 | 10,000 mg/kg |
| | ТРН | EPA SW-846 Method 418.1 | 2,500 mg/kg |
| | GRO+DRO | EPA SW-846 Method 8015M | 1,000 mg/kg |
| | BTEX | EPA SW-846 8021B or 8260B | 50 mg/kg |
| | Benzene | EPA SW-846 8021B or 8260B | 10 mg/kg |
| ≤100 feet | Chloride | EPA 300.0 | 20,000 mg/kg |
| | ТРН | EPA SW-846 Method 418.1 | 2,500 mg/kg |
| | GRO+DRO | EPA SW-846 Method 8015M | 1,000 mg/kg |
| | BTEX | EPA SW-846 8021B or 8260B | 50 mg/kg |
| | Benzene | EPA SW-846 | 10 mg/kg |