Administrative/Environmental Order



AE Order Number Banner

Report Description

This report shows an AE Order Number in Barcode format for purposes of scanning. The Barcode format is Code 39.



App Number: pCS1727748680

144B - 16062

Williams Four Corners, LLC

4/24/2018

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

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.

	t, Below-Grade Tank, o Method Permit or Clos	
Type of action: Below grade tank Permit of a pit or Closure of a pit, I Modification to a	a registration proposed alternative method below-grade tank, or proposed al n existing permit/or registration	
Instructions: Please submit one application	on (Form C-144) per individual nit.	below-grade tank or alternative request
Please be advised that approval of this request does not relieve the environment. Nor does approval relieve the operator of its response	operator of liability should operations	result in pollution of surface water, ground water or the
1. Operator: <u>Williams Four Corners LLC</u>	OGRID #·	
Address: 1755 Arroyo Drive, Bloomfield, NM, 87413		OIL CONS. DIV DIST. 3
		007 0 0 2047
Facility or well name: <u>32-9 Compressor Station (BGT 2)</u> API Number:	OCD Permit Number:	OCT 0 2 2017
U/L or Qtr/Qtr <u>NE/SE (I)</u> Section <u>15</u> Township		
Center of Proposed Design: Latitude <u>36.895846</u> Longitud		County. <u>Sun suan</u>
Surface Owner: 🛛 Federal 🗋 State 🗌 Private 🗋 Tribal Tru		
2. Pit: Subsection F, G or J of 19.15.17.11 NMAC		
Temporary: Drilling Workover		
Permanent Emergency Cavitation P&A M	ulti-Well Fluid Management	Low Chloride Drilling Fluid 🗌 yes 🗌 no
Lined Unlined Liner type: Thicknessm		
String-Reinforced		
Liner Seams: Welded Factory Other	Volume:	hhl Dimensions: L x W x D
	volume	
3.		
Below-grade tank: Subsection I of 19.15.17.11 NMAC		
Volume: <u>166 bbl</u> Type of fluid: <u>Used Oil</u>		
Tank Construction material: <u>Steel</u>		
Secondary containment with leak detection Visible		
Visible sidewalls and liner Visible sidewalls only	_	
Liner type: Thickness 40 mil HDPE PVC	C [] Other <u>Polyurethane spray in</u>	liner
4.		
Alternative Method:		
Submittal of an exception request is required. Exceptions mu	ust be submitted to the Santa Fe Env	ironmental Bureau office for consideration of approval.
5.		
Fencing: Subsection D of 19.15.17.11 NMAC (Applies to pe		
Chain link, six feet in height, two strands of barbed wire a <i>institution or church</i>)	t top (Required if located within 100	00 feet of a permanent residence, school, hospital,
\Box Four foot height, four strands of barbed wire evenly space	d between one and four feet	
Alternate. Please specify		
		2
Form C-144	Oil Conservation Division	Page 1 of 6

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. 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.	Yes No

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

 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. 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 NJ Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the doct attached. A 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 19.1 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
II. 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 doct 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 19.1 and 19.15.17.13 NMAC Hydrogeologic Data - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.10 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:	15.17.9 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 Errosion Control Plan Closure Plan - based upon the appropriate requirements of 19.15.17.9 NMAC and 19.15.17.13 NMAC	e documents are
^{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
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 so provided below. Requests regarding changes to certain siting criteria require justifications and/or demonstrations of equivalency. 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	
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- 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 	
Within a 100-year floodplain. - FEMA map	 Yes □ No Yes □ No
16.	
On-Site Closure Plan Checklist: (19.15.17.13 NMAC) Instructions: Each of the following items must be attached to the closure play 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 Confirmation 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 cant 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	.11 NMAC .15.17.11 NMAC
 <u>Operator Application Certification</u>: I hereby certify that the information submitted with this application is true, accurate and complete to the best of my knowledge and be 	lief.
Name (Print): Matt Webre Title: EHS Supervisor	
Signature: The 29, 2017 Date: September 29, 2017	
e-mail address: <u>matt.webre@williams.com</u> Telephone: (505) 632-4442	
OCD Approval: Image: Permit Application (including closure plan) Image: Closure plan (only) Image: OCD Conditions (see attachment) OCD Representative Signature: Image: Closure plan (only) Image: OCD Conditions (see attachment) OCD Representative Signature: Image: Closure plan (only) Image: OCD Conditions (see attachment) Title: Image: Closure plan (only) Image: OCD Permit Number: //24 OCD Permit Number: //24	1/18
OCD Representative Signature: Approval Date: 4/24 Title: ENUITOR MONTAL Spec. OCD Permit Number: 16062	1/18
OCD Representative Signature: Approval Date:	/
OCD Representative Signature: Approval Date:	/
OCD Representative Signature: Approval Date: Title: Title: OCD Permit Number: /200 OCD Permit Number: /200 _	/ g the closure report. t complete this

22. Operator Closure Certification:

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

Variance Request:

Williams requests a variance from Subsection D(2) of 19.15.17.12 New Mexico Administrative Code (NMAC) which states:

The operator shall remove any measurable layer of oil from the fluid surface of a below-grade tank.

This variance will allow Williams to store used lubrication oil from operation of facility equipment within a below-grade tank (BGT). For the purposes of this variance request, facility is defined as a natural gas compressor station or a natural gas processing/treatment plant. Williams is requesting this variance based on the following:

- 1. The BGT is located at a facility and not at a well production location.
- 2. Used oil is contained within the equipment skid and subsequently stored in the BGT to stop oil from discharging onto the ground.
- 3. Lube oil will be transferred into the BGT via the facility system piping using manual operated valves. Transfer will only occur by Williams or contract personnel. The manual valves will be normally closed and only operated during transfer of oil to the BGT.
- 4. The BGT will have a permanent cover installed.
- Tanks inspections will be performed in compliance with the 19.15.17.12.D(3) NMAC on a monthly basis. Williams uses an environmental tracking management system to record completion of the monthly BGT inspections.
- Williams will maintain a 10-inch freeboard to prevent overtopping of the BGT. The BGT will be emptied if the freeboard is equal to or less than 10-inches and/or on an annual basis, whichever comes first.
- 7. The used oil will be removed by the currently approved Williams contactor and will either be recycled or disposed of at a permitted facility. At the time this variance requested was prepared, Safety Kleen (A Clean Harbors Company) is managing the recycling of the used oil for Williams.
- Prior to removing the used oil from the BGT, a sample is collected by Safety Kleen for RCRA classification. Analysis of the used oil includes ignitability, corrosivity, and RCRA 8 metals. Reactivity and toxicity (other than metals) are not evaluated based on generator knowledge. Copies of the waste profiles will be maintained by Williams.

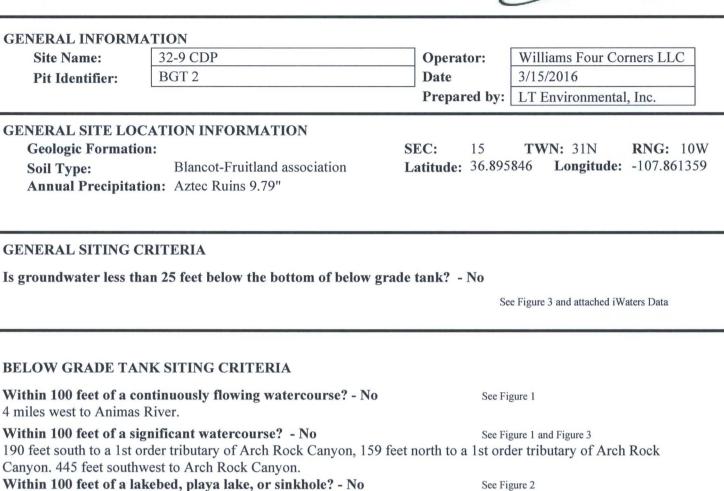
Variance Request:

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



LT Environmental Inc. 2243 Main Avenue, Suite 3

T 970-385-1096

See Figure 3 and attached iWaters data

Durango, Colorado 81301

Within 200 horizontal feet of a spring or a freshwater well used for public or livestock consumption? - No NA

ATTACHED DOCUMENTS:

NA

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

ADDITIONAL COMMENTS:



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

32-9 CDP 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 Arch Rock Canyon, south 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, and 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 (<u>www.emnrd.state.nm.us</u>). 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 9.79ss 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 greater than 100 feet beneath the bottom of the belowgrade 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 Arch Rock Canyon at an elevation of approximately 6,241 feet. An elevation difference between the site and the incised portion in the primary channel of Arch Rock Canyon of approximately 140 feet suggests groundwater is greater than 100 feet deep beneath the proposed below-grade tank.

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 point with similar topographical characteristics and associated depth to groundwater information is well number SJ 03807 located approximately 2.3 miles to the southeast. Depth to groundwater in the permitted water well is 120 feet below ground surface.

References

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

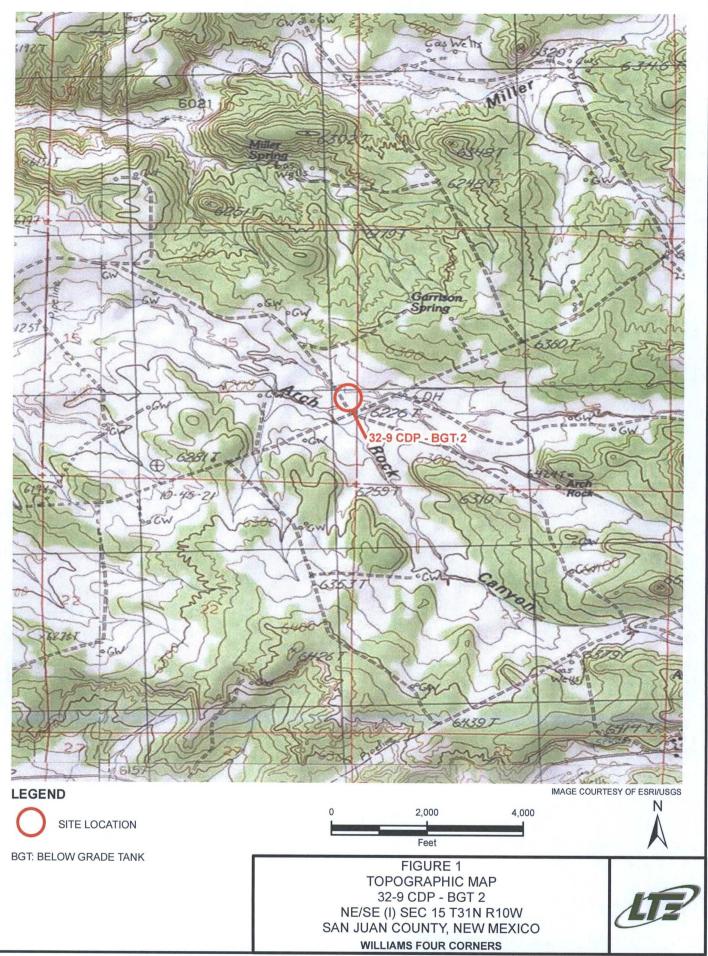
Dick-Peddie, W.A., 1993, *New Mexico Vegetation – Past, Present and Future*: Albuquerque, New Mexico, University of New Mexico Press, 244 p.

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.

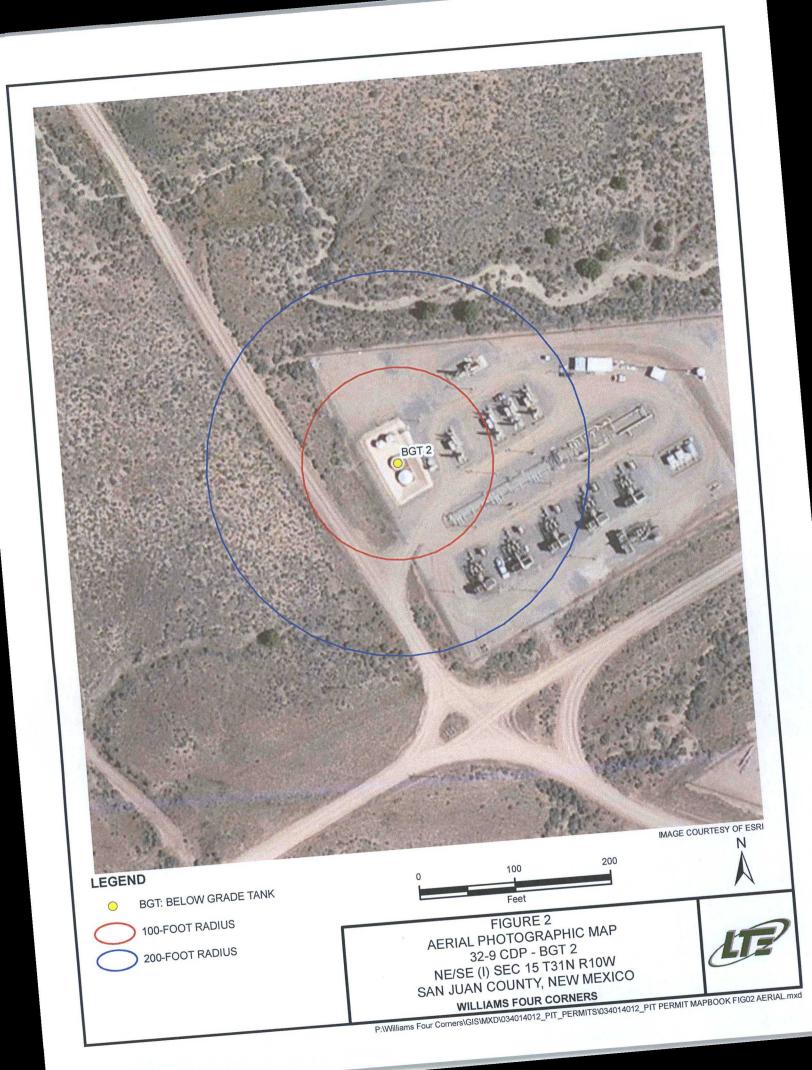
USGS, <u>Groundwater Atlas of the United States</u>: Arizona, Colorado, New Mexico, Utah, HA 730-C: (<u>http://www.pubs.usgs.gov</u>).

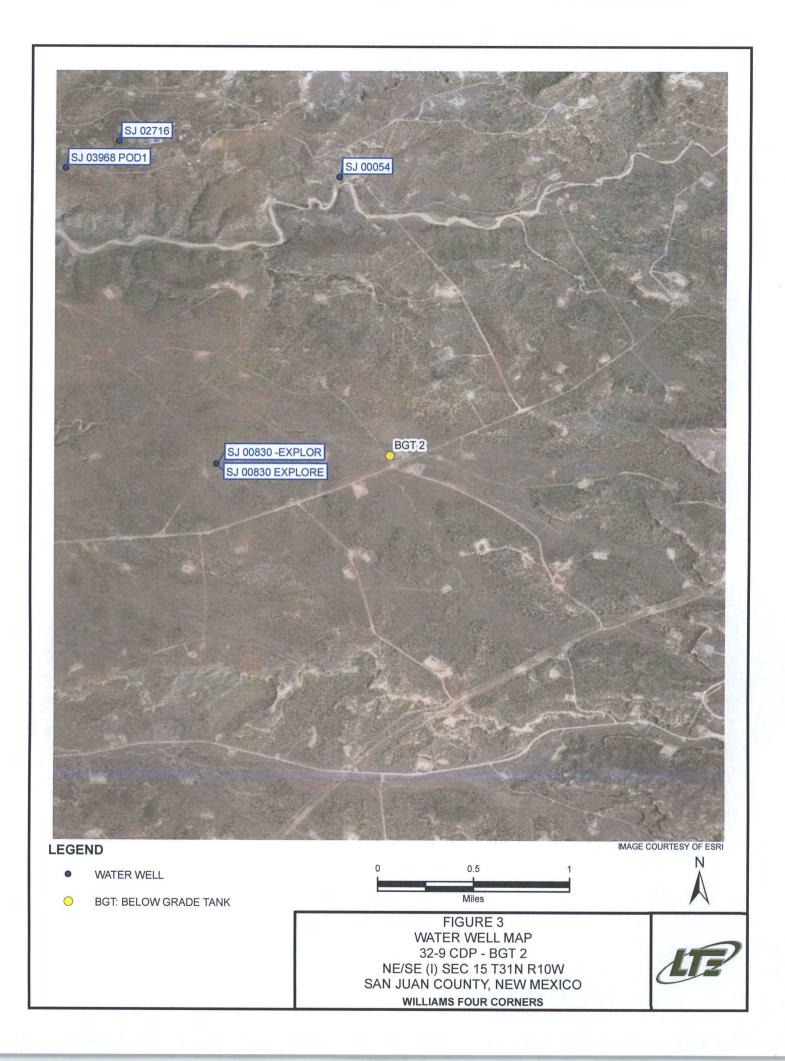
Western Region Climate Center, 2008, New Mexico climate summaries: Desert Research Institute at <u>http://www.wrcc.dri.edu/summary/climsmnm.html</u>.

New Mexico Energy, Minerals and Natural Resources Department, www.emnrd.state.nm.us



P:\Williams Four Corners\GIS\MXD\034014012_PIT_PERMITS\034014012_PIT PERMIT MAPBOOK FIG01 TOPO.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 water right file.)	been replaced, O=orphaned, C=the file is closed)						2=NE 3 st to larg	=SW 4=SE gest) (N	E) IAD83 UTM in me	eters)	(In feet)	
	POD Sub-		Q	COMPLEX.								24. 00 1 1 2 C 2 C 1 1 1 2 C	Water
POD Number SJ 00830 -EXPLOR	Code basin Cour		16				Rng 10W	X 243864	Y 4087104* 🌑	Distance 1115	Well 550	Water	Column
5J 00030 -EXPLOR				3				243004		1115			
SJ 00054	SJ			2	10	31N	10W	244754	4089470* 🌑	2340	455		
SJ 03968 POD1	SJ		4	4	05	31N	10W	242912	4089595 🌑	3209	160	30	130
SJ 02960	SJ	2	4	4	27	31N	10W	244848	4083737* 🌑	3405	200	150	50
SJ 03178	SJ	2	4	4	27	31N	10W	244848	4083737* 🌑	3405	235	150	8
SJ 01483	SJ	1	4	4	27	31N	10W	244648	4083737* 🌑	3419	195	150	4
SJ 00967	SJ		3	4	27	31N	10W	244351	4083653* 🌑	3543	130	90	4(
SJ 00990	SJ		3	4	27	31N	10W	244351	4083653* 🌑	3543	162	110	52
SJ 03539	SJ	3	4	4	27	31N	10W	244648	4083537* 🌑	3618	205	124	81
SJ 00163	SJ	1	4	1	28	31N	10W	242330	4084609* 🌑	3663	1538		
SJ 03807 POD1	SJ	4	4	3	04	31N	10W	242694	4090108 🌑	3746	250	120	130
									Avera	ge Depth to	Water:	115	feet
										Minimum	Depth:	30	feet
										Maximum	Depth:	150	feet
Record Count: 11	44 148 (1966 A-17 - 1977 - 1997 - 1996 - 1996 - 1996 - 1996 - 1996 - 1997 -			-	-			no nice para large gives not	er inder men men von sind folge men	And only and inte star tore			
UTMNAD83 Radius	Search (in meters):												

Easting (X): 244979

Northing (Y): 4087140

Radius: 3750

*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

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 19.15.17.11.1.4(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.
19.15.17.11.1(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.
19.15.17.11.1(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.

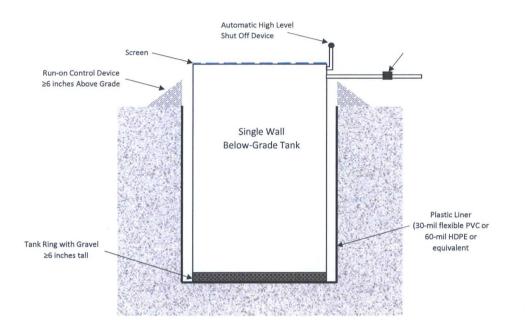
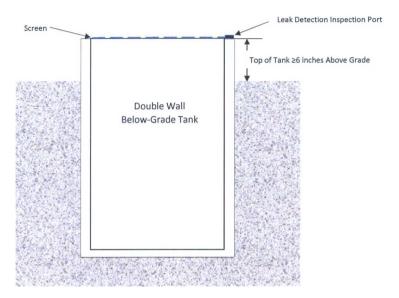


FIGURE 1. BGT DESIGN AND CONSTRUCTION – 19.15.17.11.I.(4)(a) NMAC

- 1. The BGT's bottom must be elevated a minimum of six inches above the underlying ground surface.
- 2. 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	Williams will report the concentration of contaminants to the OCD with respect to the standards set forth in			

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	1	Cover will include one foot of suitable material, with chloride concentrations less than 600 mg/kg as analyzed by EPA Method 300.0, to establish vegetation at the site, or the background thickness of topsoil, whichever is 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					

epth Below Bottom of pit to ground water less than 10,000 mg/l	Constituent	Method	Limit**
s50 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

#9	30-045-	22799
# 205	30-045-	27059

• 1

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS. NORTHWESTERN NEW MEXICO (Submit 3 copies to OCD Aztec Office)

Operator MERIDIAN OIL INC. Location: Unit A Sec. 22 Twp31 Rng 10
Name of Well/Wells or Pipeline Serviced ATLANTIC #9, #205
cps 2076w
Elevation6311' Completion Date 1/17/89 Total Depth 460' Land Type* N/A
Casing, Sizes, Types & DepthsN/A
If Casing is cemented, show amounts & types used N/A
If Cement or Bentonite Plugs have been placed, show depths & amounts used.
Depths & thickness of water zones with description of water when possible: Fresh, Clear, Salty, Sulphur, Etc160' NO SAMPLE
N
Depths gas encountered:N/A
Type & amount of coke breeze used: N/A
Depths anodes placed: 425', 365', 355', 345', 335', 325', 315', 305', 295', 285'
Depths vent pipes placed: 455'
Vent pipe perforations: 320' MAY 31 1991
Remarks: gb #1 OIL-CON. D!
DIST. 3

If any of the above data is unavailable, please indicate so. Copies of all logs, including Drillers Log, Water Analyses & Well Bore Schematics should be submitted when available. Unplugged abandoned wells are to be included

*Land Type may be shown: F-Federal; I-Indian; S-State; P-Fee. If Federal or Indian, add Lease Number.