*District I

1625 N. French Dr., Hobbs, NM 88240

District II

1301 W. Grand Ave., Artesia, NM 88210

District III

1000 Rio Brazos Rd., 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 July 21, 2008

For temporary pits, closed-loop sytems, and below-grade tanks, submit to the appropriate NMOCD District Office.

For permanent pits and exceptions submit to the Santa Fe Environmental Bureau office and provide a copy to the appropriate NMOCD District Office.

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

Type of action:	X Permit of a pit, closed-loop system, below-grade tank, or proposed alternative method
	Closure of a pit, closed-loop system, below-grade tank, or proposed alternative method
	Modification to an existing permit
	Closure plan only submitted for an existing permitted or non-permitted pit, closed-loop systems
	below-grade tank, or proposed alternative method

Instructions: Please submit one application (Form C-144) per individual pit, closed-loop system, below-grade tank or alternative request

Please be advised that approval of this request does not relieve the operator of liability should operations result in pollution of surface water, ground water or the environment. Nor does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rules, regulations or ordinances.

environment. Nor does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rules, regulations or ordinances.
Operator: Burlington Resources Oil & Gas Company, LP OGRID#: 14538
Address: PO Box 4289, Farmington, NM 87499
Facility or well name: GRENIER 11E
API Number: 3004523646 OCD Permit Number:
U/L or Qtr/Qtr: N Section: 13 Township: 31N Range: 12W County: San Juan
Center of Proposed Design: Latitude: 36.89452°N Longitude: -108.05158°W NAD: X 1927 1983
Surface Owner: Federal State X Private Tribal Trust or Indian Allotment
Pit: Subsection F or G of 19.15.17.11 NMAC Temporary: Drilling Workover Permanent Emergency Cavitation P&A Lined Unlined Liner type: Thickness mil LLDPE HDPE PVC Other String-Reinforced Liner Seams: Welded Factory Other Volume: bbl Dimensions L x W x D
Closed-loop System: Subsection H of 19.15.17.11 NMAC Type of Operation: P&A Drilling a new well Workover or Drilling (Applies to activities which require prior approval of a permit or notice of intent) Drying Pad Above Ground Steel Tanks Haul-off Bins Other Lined Unlined Liner type: Thickness mil LLDPE HDPE PVD Other Liner Seams: Welded Factory Other
4 X Below-grade tank: Subsection I of 19.15.17.11 NMAC Volume: 120 bbl Type of fluid: Produced Water Tank Construction material: Metal Secondary containment with leak detection X Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off Visible sidewalls and liner Visible sidewalls only Other Liner Type: Thickness mil HDPE PVC X Other Unspecified
Alternative Method: Submittal of an exception request is required. Exceptions must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

Fencing: Subsection D of 19.15.17 11 NMAC (Applies to permanent pit, temporary pus, and below-grade tanks) Chain link, six feet in height, two strands of barbed wire at top (Required i) located within 1000 feet of a permanent residence, school, hospital, in: [] tour foot height, four strands of barbed wire evenly spaced between one and four feet X Afternate. Please specify 4' hog wire fencing topped with two strands barbed wire.	sutunon or chi	arch)								
7 Netting: Subsection E of 19.15.17.11 NMAC (Applies to permanent pits and permanent open top tanks) X Screen Netting Other 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 X Signed in compliance with 19.15.3.103 NMAC										
Administrative Approvals and Exceptions: Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17 NMAC for guidance. Please check a box if one or more of the following is requested, if not leave blank: X Administrative approval(s): Requests must be submitted to the appropriate division district of the Santa Fe Environmental Bureau office for con- (Fencing/BGT Liner) Lexception(s): Requests must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.	osideration of a	pproval.								
Siting Criteria (regarding permitting): 19.15.17.10 NMAC Instructions: The applicant must demonstrate compliance for each siting criteria below in the application. Recommendations of acceptable source material are provided below. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau Office for consideration of approval. Applicant must attach justification for request. Please refer to 19.15.17.10 NMAC for guidance. Siting criteria does not apply to drying pads or above grade-tanks associated with a closed-loop system.										
Ground water is less than 50 feet below the bottom of the temporary pit, permanent pit, or below-grade tank. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	Yes	XNo								
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other watercourse, lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	Yes	XNo								
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.	Yes	X No								
(Applies to temporary, emergency, or cavitation pits and below-grade tanks) - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	∐NA									
Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. (Applied to permanent pits)	Yes X NA	No								
- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image										
Within 500 horizonal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, in existence at the time of initial application.	Yes	XNo								
- NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site.										
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	XNo								
Within 500 feet of a wetland US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	Yes	XNo								
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD - Mining and Mineral Division	Yes	XNo								
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological	Yes	XNo								
Society; Topographic map Within a 100-year floodplain - FEMA map	Yes	XNo								

Sound, 144 Oil Coesce atten Dir Liber Page 2 of 5

Temporary Pits, Emergency Pits and Below-grade Tanks Permit Application Attachment Checklist: Subsection B of 19.15.17.9 NMAC										
Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached. V Undergoing in Propert (Polony grade Taples) bound upon the requirements of Parsuranh (A) of Subsection B of 19.15.17.9 NMAC										
X 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										
X Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC										
[X] Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC										
X Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC										
[X] Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC										
Previously Approved Design (attach copy of design) API or Permit										
12										
Closed-loop Systems Permit Application Attachment Checklist: Subsection B of 19.15.17.9 NMAC Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.										
Geologic and Hydrogeologic Data (only for on-site closure) - based upon the requirements of Paragraph (3) of Subsection B of 19.15.17.9										
Siting Criteria Compliance Demonstrations (only for on-site closure) - based upon the appropriate requirements of 19.15.17.10 NMAC										
Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC										
Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC										
Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9										
NMAC and 19.15.17.13 NMAC										
Previously Approved Design (attach copy of design) API										
Previously Approved Operating and Maintenance Plan API										
Permanent Pits Permit Application Checklist: Subsection B of 19.15.17.9 NMAC										
Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.										
Hydrogeologic Report - based upon the requirements of Paragraph (I) of Subsection B of 19.15.17.9 NMAC										
Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC										
Climatological Factors Assessment										
Certified Engineering Design Plans - based upon the appropriate requirements of 19.15.17.11 NMAC										
Dike Protection and Structural Integrity Design: based upon the appropriate requirements of 19.15.17.11 NMAC										
Leak Detection Design - based upon the appropriate requirements of 19.15.17.11 NMAC										
Liner Specifications and Compatibility Assessment - based upon the appropriate requirements of 19.15.17.11 NMAC										
Quality Control/Quality Assurance Construction and Installation Plan Operating and Maintenance Plan, based upon the consequence of 10.15.17.12 NIMAC										
Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC Freeboard and Overtopping Prevention Plan - based upon the appropriate requirements of 19.15.17.11 NMAC										
Nuisance or Hazardous Odors, including H2S, Prevention Plan										
Emergency Response Plan										
Oil Field Waste Stream Characterization										
Monitoring and Inspection Plan										
Erosion Control Plan										
Closure Plan - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC										
14										
Proposed Closure: 19.15.17.13 NMAC										
Instructions: Please complete the applicable boxes, Boxes 14 through 18, in regards to the proposed closure plan.										
Type: Drilling Workover Emergency Cavitation P&A Permanent Pit X Below-grade Tank Closed-loop System										
Alternative Proposed Closure Method: X Waste Excavation and Removal (Below-Grade Tank)										
Waste Removal (Closed-loop systems only)										
On-site Closure Method (only for temporary pits and closed-loop systems)										
In-place Burial On-site Trench										
Alternative Closure Method (Exceptions must be submitted to the Santa Fe Environmental Bureau for consideration)										
Waste Excavation and Removal Closure Plan Checklist: (19.15.17.13 NMAC) Instructions: Each of the following items must be attached to the closure plan.										
Please indicate, by a check mark in the box, that the documents are attached.										
Trotocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC										
X Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC										
X Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings)										
X Soil Backfill and Cover Design Specifications - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC										
X Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC										
X Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC										

Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only: (19.15.17.13.D NMAC Instructions: Please identify the facility or facilities for the disposal of liquids, drilling fluids and drill cuttings. Use attachment if more than two)) facilities								
Disposal Facility Name: Disposal Facility Permit #:									
Disposal Facility Name: Disposal Facility Permit #:									
Will any of the proposed closed-loop system operations and associated activities occur on or in areas that will not be used for future Yes (If yes, please provide the information No									
Required for impacted areas which will not be used for future service and operations: Soil Backfill and Cover Design Specification - based upon the appropriate requirements of Subsection H of 19.15.17.13 NM Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC	AC								
Siting Criteria (Regarding on-site closure methods only: 19.15.17.10 NMAC Instructions: Each siting criteria requires a demonstration of compliance in the closure plan. Recommendations of acceptable source material are provided by certain stung criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to to for consideration of approval. Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17.10 NMAC for guidance.									
Ground water is less than 50 feet below the bottom of the buried waste.	Yes No								
- NM Office of the State Engineer - iWATERS database search; USGS: Data obtained from nearby wells	∐N/A								
Ground water is between 50 and 100 feet below the bottom of the buried waste	Yes No								
- NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	∐N/A								
Ground water is more than 100 feet below the bottom of the buried waste.	Yes No								
- NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	N/A								
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).	Yes No								
- 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								
	Yes No								
Within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000 horizontal fee 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; Visual inspection (certification) of the proposed site									
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended. Written confirmation or verification from the municipality; Written approval obtained from the municipality	Yes No								
Within 500 feet of a wetland - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	Yes No								
Within the area overlying a subsurface mine.	Yes No								
- Written confirantion or verification or map from the NM EMNRD-Mining and Mineral Division									
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 bee attached to the closury a check mark in the box, that the documents are attached.	re plan. Please indicate,								
Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC									
Proof of Surface Owner Notice - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC									
Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate requirements of 19.15.17.11 NMAC									
Construction/Design Plan of Temporary Pit (for in place burial of a drying pad) - based upon the appropriate requirements of	19.15.17.11 NMAC								
Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC									
Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC									
Waste Material Sampling Plan - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC									
Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings or in case on-site closure standards ca	innot be achieved)								
Soil Cover Design - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC									
Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC									

Fig. a. Consertation Division Fage 4 of 5

Operator Application Contification	
Operator Application Certification: I hereby certify that the information submitted with this application is true,	accurate and complete to the best of my knowledge and belief.
Name (Print): Crystal Tafoya	Title: Regulatory Technician
Signature: Contal Tologo	Date: 12/22/2008
e-mail address: crystal latoya@conocophylips.com	Telephone: 505-326-9837
20 OCD Approval: Permit Application (including closure plan) OCD Representative Signature: Title: Ervicornul Bureen Class	OCD Permit Number:
21	
Closure Report (required within 60 days of closure completion): Instructions: Operators are required to obtain an approved closure plan pri report is required to be submitted to the division within 60 days of the comp approved closure plan has been obtained and the closure activities have been	ior to implementing any closure activities and submitting the closure report. The closure pletion of the closure activities. Please do not complete this section of the form until an
22	
Closure Method: Waste Excavation and Removal On-site Closure Method If different from approved plan, please explain.	d Alternative Closure Method Waste Removal (Closed-loop systems only)
23	
Closure Report Regarding Waste Removal Closure For Closed-loop Sys	stems That Utilize Above Ground Steel Tanks or Haul-off Bins Only: drilling fluids and drill cuttings were disposed. Use attachment if more than two facilities
were utilized.	arting finals and articlatings were aisposed. Ose attachment (f more than two facilities
Disposal Facility Name:	Disposal Facility Permit Number:
Disposal Facility Name:	Disposal Facility Permit Number:
	med on or in areas that will not be used for future service and opeartions?
Yes (If yes, please demonstrate compliane to the items below)	∐No
Required for impacted areas which will not be used for future service and Site Reclamation (Photo Documentation)	d operations:
Soil Backfilling and Cover Installation	
Re-vegetation Application Rates and Seeding Technique	
24	
	following items must be attached to the closure report. Please indicate, by a check mark in
the box, that the documents are attached. Proof of Closure Notice (surface owner and division)	
Proof of Deed Notice (required for on-site closure)	
Plot Plan (for on-site closures and temporary pits)	
Confirmation Sampling Analytical Results (if applicable)	
Waste Material Sampling Analytical Results (if applicable)	
Disposal Facility Name and Permit Number	
Soil Backfilling and Cover Installation	
Re-vegetation Application Rates and Seeding Technique	
Site Reclamation (Photo Documentation)	
On-site Closure Location: Latitude:	Longitude:NAD
Operator Closure Certification: I hereby certify that the information and attachments submitted with this closure complies with all applicable closure requirements and conditions.	usure report is ture, accurate and complete to the best of my knowledge and belief. I also certify that as specified in the approved closure plan.
Name (Print):	Title:
Signature:	Date:
e-mail address:	Telephone:

New Mexico Office of the State Engineer POD Reports and Downloads

Sections: Township: 31N Range: 12W Search Radius: Zone: **Y**: NAD27 X: Basin: Number: Suffix: County: Non-Domestic Domestic All Owner Name: (First) (Last) Water Column Report POD / Surface Data Report Avg Depth to Water Report Clear Form iWATERS Menu Help

WATER COLUMN REPORT 08/20/2008

	(quarter	s are	1=	MΝ	2=	NE	3=SW 4=SE)							
	(quarter	s are	bi	gge	est	to	o smallest)			Depth	Depth	Water	(in	feet)
POD Number	Tws	Rng	Sec	P	P	q	Zone	X	Y	Well	Water	Column		
SJ 03488	31N	12W	01	3	3	2				150				
SJ 03738 POD	1 31N	12W	01	4	1	3				115	50	65		
SJ 02034	31N	12W	01	4	3					85	55	30		
SJ 03134	31N	12W	01	4	3	2				80	20	60		
SJ 03022	31N	12W	01	4	3	2				490	250	240		
SJ 01660	31N	12W	01	4	3	3				320	275	45		
SJ 01649	31N	12W	01	4	3	4				220	161	59		
SJ 03660	31N	12W	01	4	3	4				70	42	28		
SJ 02099	31N	12W	01	4	4					95				
SJ 02904	31N	12W	80	4	4	4				325	142	183		
SJ 03026	31N	12W	24	4	3	4				140	85	55		
SJ 01477	31N	12W	25	2						565	505	60		
SJ 01163	31N	12W	25	2	1	3				200	90	110		
SJ 01108	31N	12W	25	2	1	4				245	90	155		
SJ 01303	31N	12W	25	2	2	3				210				
SJ 01180	31N	12W	25	2	2	4				200	120	80		
SJ 00968	31N	12W	25	2	4					170	100	70		
SJ 03204	31N	12W			_	1				40	20	20		
SJ 02021 X	31N	12W	35	4	2					290	250	40		
SJ 02021	31N	12W	35	4	2					115				
SJ 03309	31N	12W	35	4	4	4				240	210	30		

Record Count: 21

New Mexico Office of the State Engineer POD Reports and Downloads

Township: 31N Range: 11W Sections: NAD27 X: Y: Search Radius: Zone: Number: County: Basin: Suffix: Owner Name: (First) O Non-Domestic O Domestic O All (Last) Avg Depth to Water Report POD / Surface Data Report Water Column Report Clear Form **iWATERS** Menu Help

WATER COLUMN REPORT 08/20/2008

	(quarter			-		smallest)		Depth	Depth	Water	(in	feet
POD Number	Tws	Rng	Sec			Zone	x	Y	Well	Water	Column		
SJ 02395	31N	11W	13	1	1 3				95	35	60		
SJ 01640	31N	11W	13	2	4				32	7	25		
SJ 01551	31N	11W	13	2	4				64	42	22		
SJ 00560	31N	11W	13	2					39	25	14		
SJ 01729	31N	11W	13	2	4				48	28	20		
SJ 01541	31N	11W	13	3					52	30	22		
SJ 01539	31N	11W	13	3					. 52	30	22		
SJ 00946	31N	11W	13	3	3				135	100	35		•
SJ 01540	31N	11W	13	4					52	30	22		
SJ 01879	31N	11W	13	4					26	8	18		
SJ 01 801	31N	11W	13	4					22	15	7		
SJ 03413	31N	11W	13	4	2				60				
SJ 03412	31N	11W	13	4	2				60				
SJ 03736 POD1	31N	11W	13	4	2 1				19	6	13		
SJ 02495	31N	11W	13	4	2 1				28	12	16		
SJ 03623	31N	11W	13	4	2 1				30	16	14		
SJ 03264	31N	11W	13	4	2 2				20	11	9		
SJ 03124	31N	11W	13	4	2 4				20	5	15		
SJ 03125	31N	11W	13	4	2 4				20	5	15		
SJ 03712 POD1	31N	11W	13	4	3 1				19	11	8		
SJ 03018	31N	11W	13	4	3 4				20	8	12		
SJ 03670	31N	11W	13	4	3 4				26	10	16		
SJ 01538	31N	11W	13	4	4				52	30	22		
SJ 01683	31N	11W	13	4	4				45	25	20		
SJ 01731	31N	11W	13	4	4				43	25	. 18		
SJ 01644	31N	11W	13	4	4				23	6	17		
SJ 02149	31N	11W	13	4	4				35				
SJ 01645	31N	11W		4	4				22	6	16		
SJ 01767	31N	11W		4	4				42	18	24		
SJ 01730	31N	11W		4	_				40	24	16		
SJ 01699	31N	11W		4					42	12	30		
SJ 01609	31N	11W		4					40	18	22		

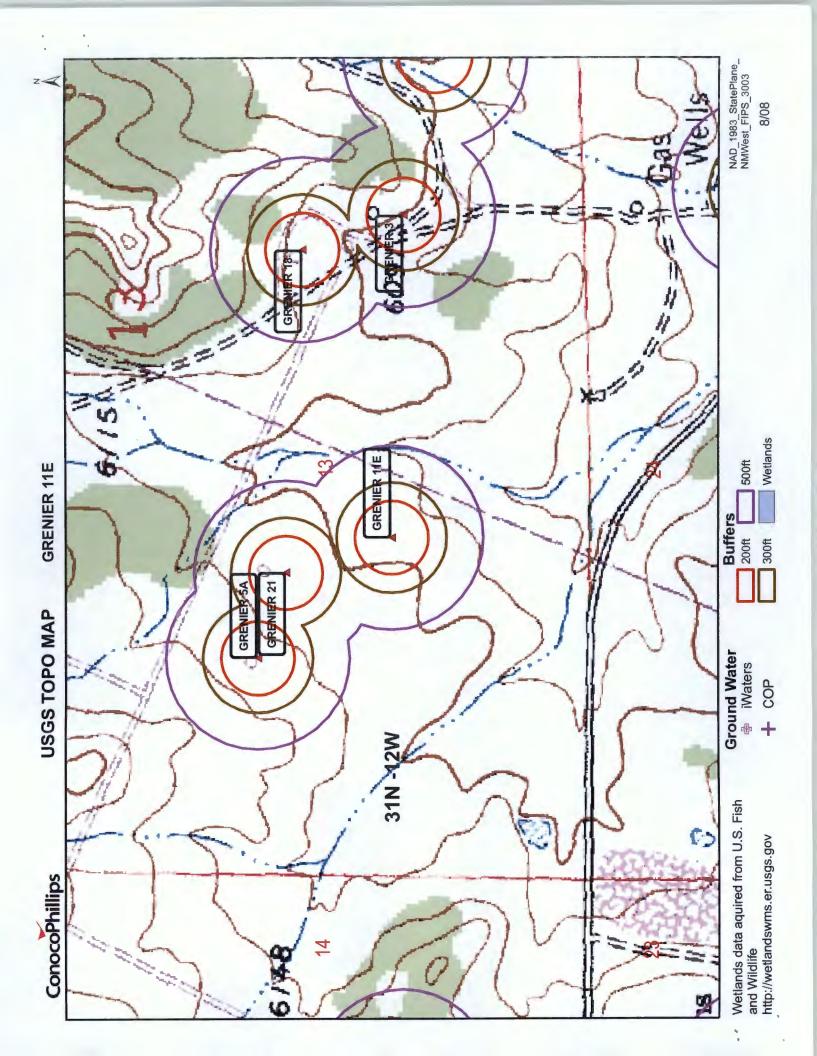
SJ	01537	3 LN	11W 13	4 4				52	28	24
SJ	01542	31N	11W 13	4 4						
$\mathbb{S}J$	01663	3 I N	11W 13	4 4				45	25	20
	02093	31N	11W 13	4 4	W	470700	2143800	4 O	20	20
SJ	03440	31N	11W 13	4 4 1				20	6	14
	03084	31N	11W 13	4 4 2				19	11	8
	03085	31N	11W 13	4 4 2				1.8	8	10
	02801	31N	11W 13	4 4 3				36	5	31
Jan 11 1	03064	31N	11W 13	4 4 3				45		
	01142	31N	11W 13	4 4 4				30	8	22
	02838	31N	11W 13	4 4 4				38	10	28
	02855	31.N	11W 13	4 4 4				31		
1 24 10	01173	31N	11W 13	4 4 4				46	28	18
	02289	31N	11W 13	4 4 4				45	16	29
5.7	03458	31N	11W 19	3 3 4				140		
	02978	31N	11W 23	2 1 3				800		
	01817	31N	11W 23	2 4				65	20	45
	02129	31N	11W 23	2 4				72	35	37
	02161	31N	11W 23	3 4				40	25	15
10010 -0	01600	31N	11W 24	1				30	6	24
	02124	31N	11W 24	1 1				55	40	15
	03755 POD1	31N	11W 24	1 4		269112	2142037	27	7	20
A4- F1	03695 POD1	31N	11W 24	1 4 2				25	13	12
	03695 POD	31N	11W 24	1 4 2				2.5	13	1.2
	03696	31N	11W 24	1 4 2				24	12	12
	03695	31N	11W 24	1 4 2				25	13	12
222	03696 POD1	31N	11W 24	1 4 2				24	12	12
	01559	31N	11W 24	2				50	27	23
	01744	31N	11W 24	2 2				44	20	24
	01375	31N	11W 24	2 2				30	11	19
2100	01986 S	31N	11W 24	2 2 2				45	30	15
	01986	31N	11W 24	2 2 2				38	21	17
	00555	31N	11W 24 11W 24	2 2 4 2 3 1				60	19	41
	03408 02928	31N 31N	11W 24 11W 24	2 3 1 2 3 2				26 70	11	15
400	02924	31N	11W 24 11W 24	2 3 2				33	15	18
	02846	31N	11W 24	2 3 3				45	18	27
	02888	31N	11W 24	2 3 3				65	TO	27
	03650	31N	11W 24	2 3 3				32	15	17
	00555 X		11W 24	2 4				58	39	19
	02839		11W 24	2 4 1				55	19	36
	03707 PODL	31N	11W 24	2 4 1				60	40	20
SJ	02758	31N	11W 24	2 4 2				69	51	18
SJ	02758 02791	31N	11W 24	2 4 2				74	54	20
SJ	00379	31N	11W 24	2 4 4				65	40	25
SJ	00365	31N	11W 24	2 4 4				71	40	31
	01670		11W 24	3				45	27	1.8
	00287		11W 24	3 2 4				38	6	32
	01553		11W 24	3 4				44	35	9
SJ	02171	31N	11W 24	3 4 3				45	25	20
SJ	01366	31N	11W 24	4 1				30	11	19
SJ	02644	31N	11W 24	4 1 4				45	18	27
SJ	00913	31N	11W 24	4 3				81	55	26
SJ	01405	31N	11W 24	4 3				30	9	21
SJ	01455	31N	11W 24	4 3 4				101	66	35
	01047	31N	11W 24	4 3 4				205	70	135
	00405	31N	11W 24	4 3 4				69	42	27
	03438	31N	11W 24	4 4 4				40		
	03045	31N	11W 25	1 4 4				200		

SJ	02499	31N	11W 25	2 1	1			66	45	21
4 1	03198	31N	11W 25	3 3	1			600	100	500
	02834	31N	11W 25	3 3	3			200	160	40
	03450	31N	11W 25	3 3	3			144	95	49
	03126	31N	11W 26	1 1	1			41	21	20
	01233	31N	11W 26	1 4				49	27	22
	03158	31N	11W 26		2			280	25	255
	00675	31N	11W 26	1 4	3			36	22	14
	02887	31N	11W 26	1 4	4			51	28	23
		31.N	11W 26	2 1	4			50	22 0	13 3
	02898	31N	11W 26	3 1	*1.6			29	12	17
	01789		11W 26	3 1	1			18	8	10
	00705	31N	11W 26	3 1	2			29	9	20
	00371	31N	11W 26					30	6	24
-	03323	31N						25	5	20
	00363	31N	11W 26		4			27	10	17
	01545 X	31N	11W 26	3 3				62	32	30
·	00926	31N	11W 26	4 1						
- mine 14 m ppm	01519	31N	11W 26	4 2				69	47	22
	01620	31N	11W 26	4 2				67	26	41
	00610	31N	11W 26	4 2				80	50	30
	02011	31N	11W 26	4 2				55	38	17
	01628	31N	11W 26	4 2	~			66	25	41
SJ	03697 POD1	31N	11W 26		3			80	50	30
	00562	31N	11W 26	4 3				40	20	20
	00561	31N	11W 26	4 3				38	20	18
	01042	31N	11W 26	4 4				100	30	70
SJ	00494	31N	11W 26	4 4				88	60	28
	02482	31N	11W 27		2			75	55	20
SJ	03600	31N	11W 27	4 2	1			51	39	12
	03540	31N	11W 27		1			40	21	19
	03772 POD1	31N	11W 27		1	268239	2135717	41	30	11
	02914	31N	11W 27	4 2	3			25	15	10
	02468	31N	11W 27	4 2	3			49	30	19
	02656	31N	11W 27	4 2	4			21	9	12
	02871	31N	11W 27	4 2	4			22	11	11
	02215	31N	11W 27	4 3				54	23	31
	02676	31N	11W 27	4 3	1			19	7	12
	03247	31N	11W 27	4 3	1			70	1.4	2.0
	03505	31N	11W 27		3			50	14	36
	02549	31N	11W 27		3			49 22	30 6	19 16
	02853	31N	11W 27		4			20	O	1.0
	02984	31N	11W 27		1 1			19	10	9
	03181	31N	11W 27		3			71	30	41
	01884	31N	11W 30 11W 30		4			98	30	68
	01739	31N	11W 30		4			190	150	40
	01154	31N	11W 30		4			103	30	73
	01834	31N 31N	11W 30	4 4	4			100	40	60
	01797	31N	11W 30		1			80	57	23
	01396	31N	11W 30		4			110	80	30
	00970	31N	11W 30	2 2	*2			89	50	39
- 4-	01811				2			300	200	100
	02994	31N	1.1W 33					280	160	120
- 41. 14	02993	31N	11W 33	4 3				37	19	18
**	01137	31N	11W 33		4				7	9
	02277	31N	11W 34	1 2				16		
	02167	31N	11W 34	1 4				83	69	14
	01533	31N	11W 34	1 4				58	40	18
	01251	31N	11W 34	1 4				79	65	14
SJ	03211	31N	11W 34	1 4	1			24	14	10

SJ 01125	31N	11W 34	1 4	2			59	42	17
SJ 01657	31M	11W 34	2				20	6	14
SJ 01675	31N	11W 34	2				33	7	26
SJ 00632	31N	11W 34	2				25	7	18
SJ 01656	31N	11W 34	2				20	6	14
SJ 00656	31N	11W 34	2				3 0	8	22
SJ 00631	31N	11W 34	2				30	11	19
SJ 03448	31N	11W 34	2 1				41	21	20
SJ 01267	31N	11W 34	2 1				65	45	20
SJ 01618	31N	11W 34	2 1				28	8	20
SJ 01840	31N	11W 34	2 1	1			65	25	40
SJ 03316	31N	11W 34	2 1				30	10	20
SJ 00660	31N	11W 34	2 1				50	30	20
SJ 01768	31N	11W 34	2 2	_			20	6	14
SJ 01721	31N	11W 34	2 2				22	10	12
SJ 03172	31N	11W 34	2 2	2			19	7	12
SJ 03047	31N	11W 34	2 2	4			19	6	13
SJ 02119	31N	11W 34	2 3	4			11	3	8
SJ 02113	31N	11W 34	2 3				12	4	8
SJ 00659	31N	11W 34	2 3				33	11	22
	31N	11W 34		1			52	32	20
SJ 00661		11W 34	2 3	4			15	5	10
SJ 02972	31N							8	1.0
SJ 03107	31N	11W 34	2 4	1			18	0	1. 0
SJ 03106	31N	11W 34	2 4	1			25	6	1 2
SJ 03183	31N	11W 34	2 4	4	267022	2120241	19	6	13
SJ 03780 POD1		11W 34	3 1	2	267922	2130341	28	12	16
SJ 02859	31N	11W 34	3 1	4			22	6	16
SJ 02967	31N	11W 34	3 2	3			20	5	15
SJ 02856	31N	11W 34	3 2	3			24	6	18
SJ 02852	31N	11W 34	3 2	3			23	7	16
SJ 03065	31N	11W 34		3			22	7	15
SJ 03025	31N	11W 34	3 2	3			22	5	17
SJ 03014	31N	11W 34	3 2	4			30	5	25
SJ 03002	31N	11W 34	3 2	4			22	-	1 4
SJ 02861	31N	11W 34	3 3	1			21	7	14
SJ 03220	31N	11W 34	3 3	1			20	6	14
SJ 03042	31N	11W 34	3 3	2			23	6	17
SJ 03710 POD1	31N	11W 34	3 3 3	2			20	4	16
SJ 03048	31N	11W 34	-	-			21	4	17
SJ 02857	31N	11W 34		1 .			23 30	6	17
SJ 03492	31N 31N	11W 34 11W 34	3 4 3 4	2			27	6	21
SJ 03631	31N	11W 34	3 4	2			25	15	10
SJ 03493 SJ 03357		11W 34	3 4	2			22	6	16
		11W 34	3 4				41	3	38
SJ 03260 SJ 03609	31N	11W 34	3 4				27	6	21
SJ 03609	31N	11W 34	4	4			48	17	31
		11W 34	4 1	3			21	6	15
SJ 03720 POD1 SJ 03497	31N	11W 34	4 1				30	10	20
SJ 03497	31N	11W 34					25	10	20
SJ 03377	31N	11W 34	4 2	4			20	2	18
		11W 34	4 3				35	4	10
SJ 03016		11W 34	4 3				25	3	. 22
SJ 03739 POD1									
SJ 02966	31N	11W 34	4 3	3			48	20	28
SJ 00985	31N	11W 34	4 4	2			40	16	24
SJ 02827	31N	11W 35	1 1				60	-	4.2
SJ 03371	31N	11W 35	1 1				21	5	16
SJ 02902	31N	11W 35	1 1				19	5	14
SJ 02897	31M	11W 35	1 3	Τ			17	6	11

SJ	00333	31N	11W 35	1	3	4			3.0	6	24
SJ	03760 POD1	31N	11W 35	1	4	1	268465	213077	2 43	1.2	31
SJ	03543	31N	11W 35	1	4	4			61	3.0	31
SJ	01144	31N	11W 35	1	4	4			5.5	30	25
SJ	01319	31N	11W 35	2	2	2				155	
SJ	00195	31N	11W 35	2	3				54		
SJ	03676	31N	11W 35	2	3	1			52	19	33
SJ	03560	31N	11W 35	2	3	2			62	32	30
SJ	031.65	31N	11W 35	2	4	4			20		
SJ	03166	31N	11W 35	2	4	4		•	20		
SJ	00983	31N	11W 35	3					110	70	40
SJ	00939	31N	11W 35	3					60	30	30
SJ	00940	31N	11W 35	3	1				64	15	49
SJ	01580	31N	11W 35	3	1	1			65	30	35
SJ	02932	31N	11W 35	3	1	2			27	14	13
SJ	02933	31N	11W 35	3	1	2			37	24	13
SJ	03574	31N	11W 35	3	1	4			100		
SJ	00591	31N	11W 35	3	1	4			83	54	29
SJ	00939 1	31N	11W 35	3	2				60	30	30
SJ	00713	31N	11W 35	4	2				37	19	18

Record Count: 229



TIERRA CORROSION CONTROL, INC. DRILLING LOG

COMPANY: ConocoPhillips LOCATION: Grenier 13F

STATE: NM BIT SIZE: 7 7/8"

LBS COKE BACKFILL: 2,600# ANODE TYPE: 2" X 60" Duriron DATE: April 1, 2008

LEGALS: S20 T31N R11W

DRILLER: Gilbert Peck

CASING SIZE/TYPE: 8" X 20' PVC VENT PIPE: 300'

ANO

COUNTY: San Juan

DEPTH: 300'

COKE TYPE: Asbury

PERF PIPE: 140'

DDE AMOUNT: 10	BOULDER DRILLING:	none

DEPTH	DRILLER'S LOG	AMPS	DEPTH	DRILLER'S LOG	AMPS
20	Casing		310		
25	Sand Stone		315		
30			320		
35			325		
40			330		
45			335		
50		1.4	340		
55	Shale/Sand Stone	.2	345		
60	Citation Carita Citatio	.4	350		
65		.0	355		-
70	Gray Shale	1.1	360		
75		2.1	365		
80		2.2	370		
85		2.0	375		
90		1.9	380		
95		1.9	385		
100		1.8	390		
105		2.0	395		
110		2.0	400		
115		2.1	405		
120		2.0	410		
125		1.1	415		
130		1.8	420		
135		2.8	425		
140		2.8	430		
145		2.6	435		
150		2.6	440		
155		2.7	445		
160		2.8	450		
165		2.9	455		
170		2.7	460		
175		3.0	465		
180		3.1	470		
185		3.2	475		
190		3.6	480		
195		2.6	485		
200		3.0	490		
205		2.9	495		
210		2.6	500		
215		2.7			
220		2.7			
225		2.9			
230		3.0			
235		3.0			
240		3.1			
245		3.0			
250		2.8			
255		2.9			
260		3.2			
265		3.2			
270		3.3			
275		3.4			
280		3.6			
285		3.4			
290		3.1			
295		td	-		
300		- 10			
305		-			-

ANODE #	DEPTH	NO COKE	COKE
1	290	3.1	6.5
2	280	3.6	8.0
3	270	3.3	8.2
4	260	3.2	8.0
5	250	2.8	8.0
6	240	3.1	8.5
7	230	3.0	8.5
8	220	2.7	7.9
9		2.6	7.6
10	210		
	200	3.0	7.0
11			
12			
13			
14			
15			
16 17			
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25			
26			
27			
28			
29			
30			

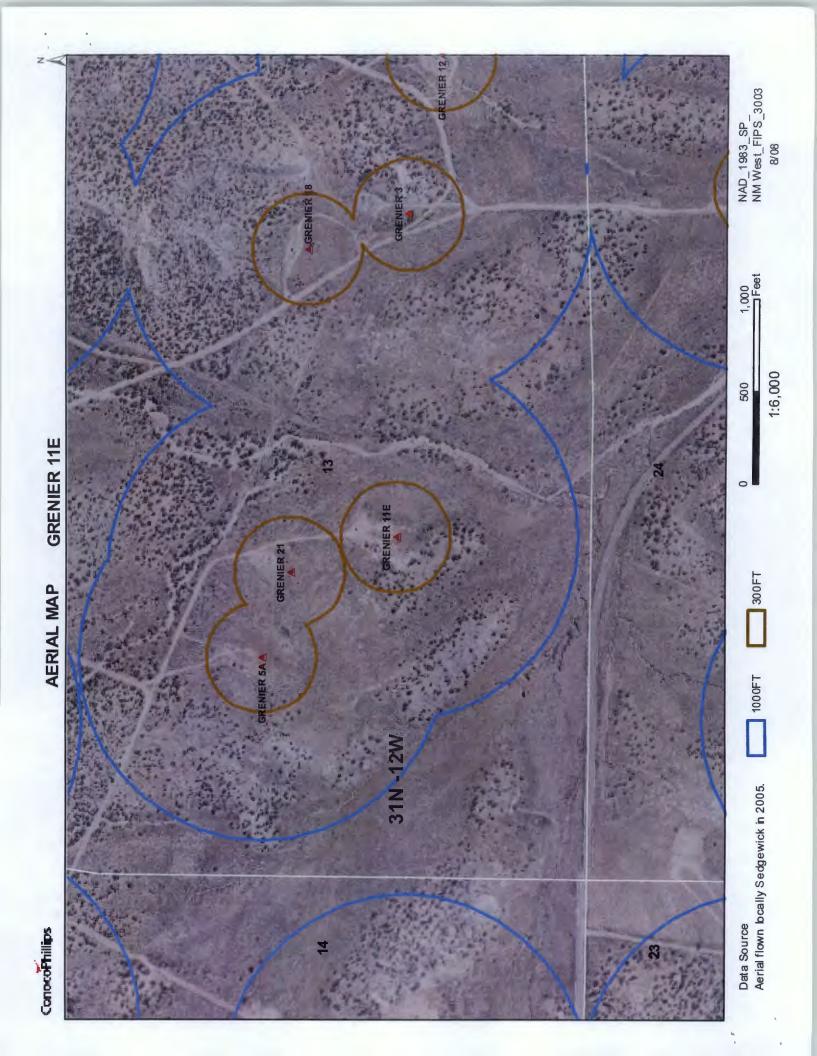
WATER DEPTH: 100' ISOLATION PLUGS: None LOGING VOLTS: 11.36

VOLT SOURCE: AUTO BATTERY

TOTAL AMPS: 18.7

TOTAL GB RESISTANCE: .60

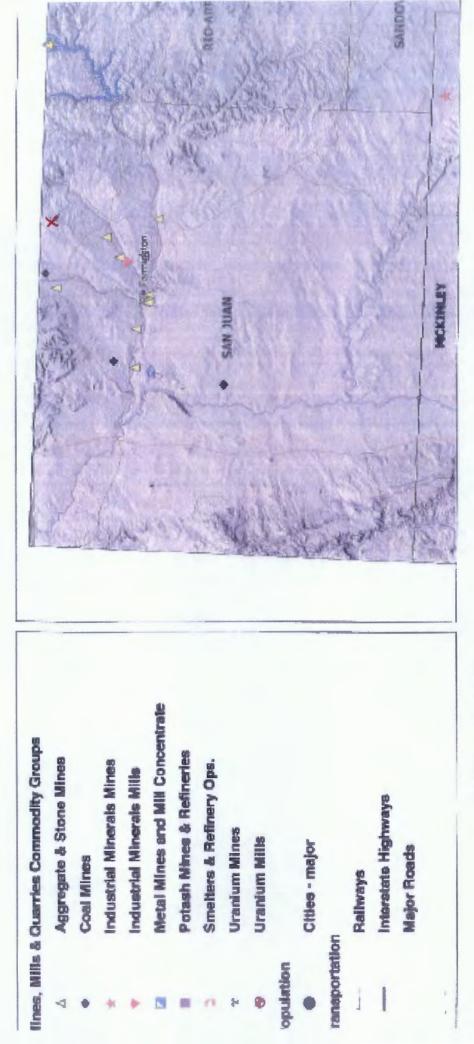
REMARKS:



Mines, Mills and Quarries Web Map

GRENIER 11E

Unit Letter: N, Section: 13, Town: 031N, Range: 012W



SCALE 1:1,180,363



PANEL 350 OF 1450 SEE MAP INDEX FOR PANELS NOT PRINTED! NATIONAL FLOOD INSURANCE PROGRAM EFFECTIVE DATE: AUGUST 4, 1988 FLOOD INSURANCE RATE MAP COMMUNITY-PANEL NUMBER 35064 0350 B SAN JUAN COUNTY, NEW MEXICO UNINCORPORATED AREAS APPROXIMATE SCALE PANEL LOCATION 20 **ZONE X** 6 Grenier RIIM ZONE A 12 24 1011. 5 PANEL 0325 a

GRENIER 11E

Site Specific Hydrogeology

A visual site inspection confirming the information contained herein was performed on the well 'GRENIER 11E', which is located at 36.89452 degrees North latitude and 108.05158 degrees West longitude. This location is located on the Abode Downs Ranch 7.5' USGS topographic quadrangle. This location is in section 13 of Township 31 North Range 12 West of the Public Land Survey System (New Mexico Principal Meridian). This location is located in San Juan county, New Mexico. The nearest town is Aztec, located 6.0 miles to the southeast. The nearest large town (population greater than 10,000) is Farmington, located 14.0 miles to the southwest (National Atlas). The nearest highway is State Highway 574, located 0.2 miles to the south. The location is on Private land and is 2,014 feet from the edge of the parcel as notated in the BLM land status layer updated January 2008. This location is in the Animas. Colorado, New Mexico, Sub-basin. This location is located 1855 meters or 6084 feet above sea level and receives 13 inches of rain each year. The vegetation at this location is classified as Inter-Mountain Basins Big Sagebrush Shrubland as per the Southwest Regional Gap Analysis Program.

The estimated depth to ground water at this point is \(\frac{1}{2} \) feet. This estimation is based on the data published on the New Mexico Engineer's iWaters Database website and water depth data from ConocoPhillips' cathodic wells. Groundwater data available from the NM State Engineer's iWaters Database for wells near the proposed site are attached. The nearest stream is 294 feet to the east and is classified by the USGS as an intermittent stream. The nearest perennial stream is 3,700 feet to the north. The nearest water body is 1,856 feet to the west. It is classified by the USGS as an intermittent lake and is 0.5 acres in size. The nearest spring is 23,964 feet to the northeast. All stream, river, water body and spring information was determined as per the USGS Hydrographic Dataset (High Resolution), downloaded 3/2008. The nearest water well is 4,180 feet to the southeast. There is no wetland data available for this area. The slope at this location is 2 degrees to the southeast as calculated from USGS 30M National Elevation Dataset. This information is also discerned from the aerial and topographic map included. The surface geology at this location is NACIMIENTO FORMATION--Shale and sandstone with a Shale dominated formations of all ages substrate. The soil at this location is 'Blancot-Notal association, gently sloping' and is well drained and not hydric with moderate erosion potential as taken from the NRCS SSURGO map unit, downloaded January 2008. The nearest underground mine is 5.6 miles to the north as indicated on the Mines, Mills and Quarries Map of New Mexico provided.

Regional Geological context:

The Nacimiento Formation is of Paleocene age (Baltz, 1967, p. 35). It crops out in a broad band inside the southern and western margins of the central basin and in a narrow band along the west face of the Nacimiento Uplift. The Nacimiento is a nonresistant unit and typically erodes to low, rounded hills or forms badland topography.

The Nacimiento Formation occurs in approximately only the southern two-thirds of the San Juan Basin where it conformably overlies and intertongues with the Ojo Alamo Sandstone (Fassett, 1974, p. 229). The Nacimiento Formation grades laterally into the main part of the Animas Formation (Fassett and Hinds, 1971, p. 34); thus, in this area, the two formations occupy the same stratigraphic interval.

Strata of the Nacimiento Formation were deposited in lakebeds in the central basin area with lesser deposition in stream channels (Brimhall, 1973, p. 201). In general, the Nacimiento consists of drab, interbedded black and gray shale with discontinuous, white, medium- to very coarse grained arkosic sandstone (Stone e al., 1983, p.30). Stone et al. indicated that the formation may contain more sandstone than commonly reported because some investigators assume the slope-forming strata in the unit area shales, whereas in many places the strata actually are poorly consolidated sandstones.

Total thickness of the Nacimiento Formation ranges from about 500 to 1,300 feet. The unit generally thickens from the basin margins toward the basin center (Steven et al., 1974). The sandstone deposits within the Nacimiento Formation are much thinner than the total thickness of the formation because their environment of deposition was localized stream channels (Brimhall, 1973, p. 201). The thickness of the combined San Jose, Animas, and Nacimiento Formations ranges from 500 to more than 3.500 feet.

Hydraulic Properties:

Reported well yields for 53 wells completed in either the Animas or Nacimiento Formations range from 2 to 90 gallons per minute and the median yield is 7.5 gallons per minute. The primary use of water from Nacimiento and Animas Formations is domestic and livestock supplies. There are no known aquifer tests for the Animas or Nacimiento Formations, but specific capacities reported for six wells range from 0.24 to 2.30 gallons per minute per foot of drawdown (Levings et al., 1990).

The Animas and Nacimiento Formations are in many ways hydrologically similar to the San Jose Formation because sands in both units produce approximately the same quantities of water. However, the greater percentage of fine materials in the Animas and Nacimiento Formations may restrict downward vertical leakage to the Ojo Alamo Sandstone or Kirtland Shale. The poorly cemented fine material is highly erodible, forms a badland terrain, and supports only spotty vegetation. These conditions are more conductive to runoff than retention of precipitation.

References:

Baltz, E.H., 1967, Stratigraphy and regional tectonic implications of part of Upper Cretaceous rocks, east-central San Juan Basin, New Mexico: USGS Professional Paper 552, 101 p.

Brimhall, R.M., 1973, Ground-water hydrology of Tertiary rocks of the San Juan Basin, New Mexico, in Fassett, J.E., ed., Cretaceous and Tertiary rocks of the Southern Colorado Plateau: Four Corners Geological Society Memoir, p. 197-207.

Fassett, J.E., 1974, Cretaceous and Tertiary rocks of the eastern San Juan Basin, New Mexico and Colorado, in Guidebook of Ghost Ranch, central-northern New Mexico: New Mexico Geological Society, 25th Field Conference, p. 225-230.

Fassett, J.E., and Hinds, J.S., 1971, Geology and fuel resources of the Fruitland Formation and Kirtland Shale of the San Juan Basin, New Mexico and Colorado: USGS Professional Paper 676, 76 p. Levings, G.W., Craigg, S.d., Dam, W.L., Kernodle, J.M., and Thorn, C.R., 1990, Hydrogeology of the San Jose, Nacimiento, and Animas Formations in the San Juan structural basin, New Mexico, Colorado, Arizona, and Utah: USGS Hydrologic Investigations Atlas HA-720-A, 2 sheets.

Stone, W.J., Lyford, F.P., Frenzel, P.F., Mizell, N.H., and Padgett, E.T., 1983, Hydrogeology and water resources of San Juan Basin, New Mexico: New Mexico Bureau of Mines and Mineral Resources, Hydrologic Report 6.

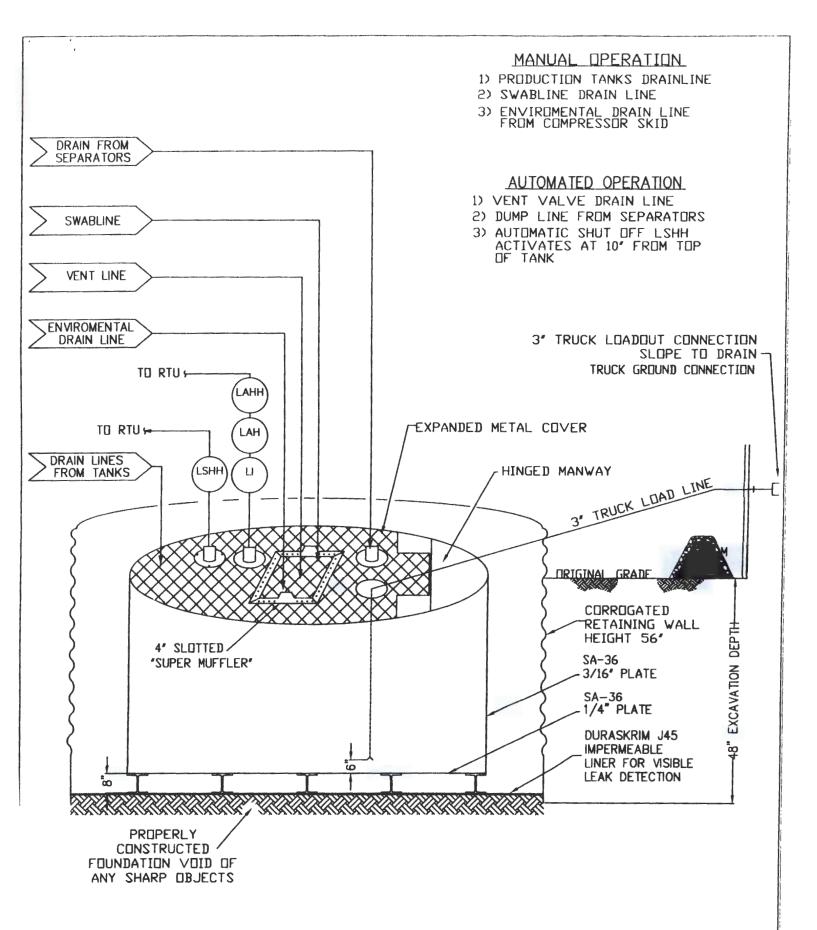
Burlington Resources Oil & Gas Company, LP San Juan Basin Below Grade Tank Design and Construction

In accordance with NMAC 19.15.17 the following information describes the design and construction of below grade tanks on Burlington Resources Oil & Gas Company, LP (BR) locations. This is BR's standard procedure for all below grade tanks (BGT). A separate plan will be submitted for any BGT which does not conform to this plan.

General Plan:

- BR will design and construct a properly sized and approved BGT which will contain liquids and should prevent contamination of fresh water to protect the public health and environment.
- BR signage will comply with 19.15.3.103 NMAC when BR is the operator. If BR is not the operator it will comply with 19.15.17.11NMAC. BR includes Emergency Contact information on all signage.
- 3. BR has approval to use alternative fencing that provides better protection. BR constructs fencing around the BGT using 4 foot hog wire fencing topped with two strands of barbed wire, or with a pipe top rail. A six foot chain link fence topped with three strands of barbed wire will be use if the well location is within 1000 feet of permanent residence, school, hospital, institution or church. BR ensures that all gates associated with the fence are closed and locked when responsible personnel are not onsite.
- 4. BR will construct a screened, expanded metal covering, on the top of the BGT.
- BR shall ensure that a below-grade tank is constructed of materials resistant to the below-grade tank's particular contents and resistant to damage from sunlight as shown on design drawing and specification sheet.
- The BR below-grade tank system shall have a properly constructed foundation
 consisting of a level base free of rocks, debris, sharp edges or irregularities to
 prevent punctures, cracks or indentations of the liner or tank bottom as shown on
 design drawing.
- 7. BR shall operate and install the below-grade tank to prevent the collection of surface water run-on. BR has built in shut off devices that do not allow a below-grade tank to overflow. BR constructs berms and corrugated retaining walls at least 6" above ground to keep from surface water run-on entering the below grade tank as shown on the design plan.
- 8. BR will construct and use a below-grade tank that does not have double walls. The below-grade tank's side walls will be open for visual inspection for leaks, the below-grade tank's bottom is elevated a minimum of six inches above the underlying ground surface and the below-grade tank is underlain with a geomembrane liner to divert leaked liquid to a location that can be visually inspected.

- 9. BR has equipped the below-grade tanks with the ability to detect high level in the tank and provide alarm notification and shutdown process streams into the tank. Once high level is detected RTU logic closes the inlet separator sales valve and does not permit vent valve to open. This shutdown of the sales valve and gagging of the vent valves prevents any hydrocarbon process streams from entering the pit tank once a high level is detected. Furthermore, an electronic page is sent to the BR MSO for that well site and to the designated contract "Water-Hauling" Company indicating a high level and that action must be taken to address this alarm. The environmental drain line from BR's compressor skid under normal operating conditions is in the open position. The environmental drain line is in place to capture any collected rain water or spilled lubricants from our compressor skids. The swab drain line is a manually operated drain and by normal operating procedures is in the closed position. The tank drain line is also a manually operated drain and during normal operations it is in the closed position.
- 10. The geomembrane liner consists of a 45-mil flexible LLDPE material manufactured by Raven Industries as J45BB. This product is a four layer reinforced laminated containing no adhesives. The outer layers consist of a high strength polyethylene film manufactured using virgin grade resins and stabilizers for UV resistance in exposed applications. The J45BB is reinforced with 1300 denier (minimum) tri-directional scrim reinforcement. It exceeds ASTMD3083 standard by 10%. J45BB has a warranty for 20 years from Raven Industries and is attached. It is typically used in Brine Pond, Oilfield Pit liner and other industrial applications. The manufacture specific sheet is attached and the design attached displays the proper installation of the liner.
- The general specification for design and construction are attached in the BR document.



ConocoPhillips

San Juan Business Unit

PRODUCED WATER PIT TANK OPEN TOP GRAVITY FLOW TANK INTERNALLY COATED WITH 12-14 MILS AMERON AMERCOAT 385

DURA-SKR M®

J30, J36 a J45

PROPERTIES	TEST METHOD	J30BB		J36B B		J45BB		
	The state of the s	Min. Roll Averages	Typical Roll Averages	Min. Roll Averages	Typical Roll Averages	Min. Roll Averages	Typical Roll Averages	
Appearance		Black/Black		Black/Black		Black/Black		
Thickness	ASTM D 5199	27 mil	30 mil	32 mil	36 mil	40 mil	45 mil	
Weight Lbs Per MSF (oz/yd²)	ASTM D 5261	126 lbs (18.14)	140 lbs (20.16)	151 lbs (21.74)	168 lbs (24.19)	189 lbs (27.21)	210 lbs (30.24)	
Construction		**Extr	**Extrusion laminated with encapsulated tri-directional scrim reinforcement					
Ply Adhesion	ASTM D 413	16 lbs	20 lbs	19 lbs	24 lbs	25 lbs	31 lbs	
1* Tensile Strength	ASTM D 7003	88 lbf MD 63 lbf DD	110 lbf MD 79 lbf DD	90 lbf MD 70 lbf DD	113 lbf MD 87 lbf DD	110 lbf MD 84 lbf DD	138 lbf MD 105 lbf DD	
1st Tensile Elongation @ Break % (Film Break)	ASTM D 7003	550 MD 550 DD	750 MD 750 DD	550 MD 550 DD	750 MD 750 DD	550 MD 550 DD	750 MD 750 DD	
1" Tensile Elongation @ Peak % (Scrim Break)	ASTM D 7003	20 MD 20 DD	33 MD 33 DD	20 MD 20 DD	30 MD 31DD	20 MD 20 DD	36 MD 36 DD	
Tongue Tear Strength	ASTM D 5884	75 lbf MD 75 lbf DD	97 lbf MD 90 lbf DD	75 lbf MD 75 lbf DD	104 lbf MD 92 lbf DD	100 lbf MD 100 lbf DD	117 lbf MD 118 lbf DD	
Grab Tensile	ASTM D 7004	180 lbf MD 180 lbf DD	218 lbf MD 210 lbf DD	180 lbf MD 180 lbf DD	222 lbf MD 223 lbf DD	220 lbf MD 220 lbf DD	257 lbf MD 258 lbf DD	
Trapezoid Tear	ASTM D 4533	120 lbf MD 120 lbf DD	146 lbf MD 141 lbf DD	130 lbf MD 130 lbf DD	189 lbf MD 172 lbf DD	160 lbf MD 160 lbf DD	193 lbf MD 191 lbf DD	
* Dimensional Stability	ASTM D 1204	<1	<0.5	<1	<0.5	<1	<0.5	
Puncture Resistance	ASTM D 4833	50 lbf	64 lbf	65 lbf	83 lbf	80 lbf	99 lbf	
Maximum Use Temperature		180° F	180° F	180° F	180° F	180° F	180° F	
Minimum Use Temperature		-70° F	-70° F	-70° F	-70° F	-70° F	-70° F	

MD = Machine Direction DD = Diagonal Directions



Note: Minimum Roll Averages are set to take into account product variability in addition to testing variability between laboratories.

*Dimensional Stability Maximum Value

**DURA-SKRIM J30BB, J36BB & J45BB are a four layer reinforced laminate containing no adhesives. The outer layers consist of a high strength polyethylene film manufactured using virgin grade resins and stabilizers for UV resistance in exposed applications. DURA-SKRIM J30BB, J36BB & J45BB are reinforced with a 1300 denier (minimum) tri-directional scrim reinforcement.

Note: RAVEN INDUSTRIES MAKES NO WARRANTIES AS TO THE FITNESS FOR A SPECIFIC USE OR MERCHANTABILITY OF PRODUCTS REFERRED TO, no guarantee of satisfactory results from reliance upon contained information or recommendations and discialins all liability for resulting loss or damage.

PLANT LOCATION

Sioux Falls, South Dakota

SALES OFFICE

P.O. Box 5107 Sioux Falls, SD 57117-5107 (605) 335-0174 (605) 331-0333 FAX **800-635-3456**



08/06

RAVEN INDUSTRIES INC. EXPOSED GEOMEMBRANE LIMITED WARRANTY

Raven Industries Inc. warrants Dura-Skrim J30BB, J36BB, and J45BB to be free from manufacturing defects and to be able to withstand normal exposure to sunlight for a period of 20 years from the date of sale for normal use in approved applications in the U.S and Canada, excluding Hawaii. This warranty is effective for products sold and shipped from January 1, 2008 to December 31, 2008. These dates will be updated prior to December 31, 2008.

This Limited Warranty does not include damages or defects in the Raven geomembrane resulting from acts of God, casualty or catastrophe including but not limited to: earthquakes, floods, piercing hail, or tornadoes. The term "normal use" as used herein does not include, among other things improper handling during transportation, unloading, storage or installation, the exposure of Raven geomembranes to harmful chemicals, atypical atmospheric conditions, abuse of Raven geomembranes by machinery, equipment or people; improper site preparation or covering materials, excessive pressures or stresses from any source or improper application or installation. Raven geomembrane material warranty is intended for commercial use only and is not in effect for the consumer as defined in the Magnuson Moss Warranty or any similar federal, state, or local statues. The parties expressly agree that the sale hereunder is for commercial or industrial use only.

Should defects or premature loss of use within the scope of the above Limited Warranty occur, Raven Industries Inc. will, at its option, repair or replace the Raven geomembrane on a pro-rata basis at the then current price in such manner as to charge the Purchaser/User only for that portion of the warranted life which has elapsed since purchase of the material. Raven Industries Inc. will have the right to inspect and determine the cause of any alleged defect in the Raven geomembrane and to take appropriate steps to repair or replace the Raven geomembrane if a defect exists which is covered under this warranty. This Limited Warranty extends only to Raven's geomembrane, and does not extend to the installation service of third parties nor does it extend to materials furnished or installed by others in connection with the intended use of the Raven geomembranes.

Any claim for any alleged breach of this warranty must be made in writing, by certified mail, to the General Manager of Engineered Films Division of Raven Industries Inc. within ten (10) days of becoming aware of the alleged defect. Should the required notice not be given, the defect and all warranties are waived by the Purchaser, and Purchaser shall not have any rights under this warranty. Raven Industries Inc. shall not be obligated to perform repairs or replacements under this warranty unless and until the area to be repaired or replaced is clean, dry, and unencumbered. This includes, but is not limited to, the area made available for repair and/or replacement of Raven geomembrane to be free from all water, dirt, sludge, residuals and liquids of any kind. If after inspection it is determined that there is no claim under this Limited Warranty, Purchaser shall reimburse Raven Industries Inc. for its costs associated with the site inspection.

In the event the exclusive remedy provided herein fails in its essential purpose, and in that event only, the Purchaser shall be entitled to a return of the purchase price for so much of the material as Raven Industries Inc. determines to have violated the warranty provided herein. Raven Industries Inc. shall not be liable for direct, indirect, special, consequential or incidental damages resulting from a breach of this warranty including, but not limited to, damages for loss of production, lost profits, personal injury or property damage. Raven Industries Inc. shall not be obligated to reimburse Purchaser for any repairs, replacement, modifications or alterations made by Purchaser unless Raven Industries Inc. specifically authorized, in writing, said repairs, replacements, modifications or alteration in advance of them having been made. Raven Industry's liability under this warranty shall in no event exceed the replacement cost of the material sold to the Purchaser for the particular installation in which it failed.

Raven Industries Inc. neither assumes nor authorizes any person other than the undersigned of Raven Industries Inc. to assume for it any other or additional liability in connection with the Raven geomembrane made on the basis of the Limited Warranty. The Limited Warranty on the Raven geomembrane herein is given in lieu of all other possible material warranties, either expressed or implied, and by accepting delivery of the material; Purchaser waives all other possible warranties, except those specifically given. This Limited Warranty may only be modified by written document mutually executed by Owner and Raven Industries Inc.

Limited Warranty is extended to the purchaser/owner and is non-transferable and non-assignable; i.e., there are no third-party beneficiaries to this warranty.

Purchaser acknowledges by acceptance that the Limited Warranty given herein is accepted in preference to any and other possible materials warranties.

THIS LIMITED WARRANTY SHALL BE GOVERNED BY SOUTH DAKOTA LAW AND VENUE FOR ALL LEGAL PROCEEDINGS IN CONNECTION WITH THIS LIMITED WARRANTY SHALL BE IN MINNEHAHA COUNTY, SOUTH DAKOTA. RAVEN INDUSTRIES INC. MAKES NO WARRANTY OF ANY KIND OTHER THAN THAT GIVEN ABOVE AND HEREBY DISCLAIMS ALL WARRANTIES, BOTH EXPRESSED OR IMPLIED, OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THIS IS THE ONLY WARRANTY THAT APPLIES TO THE MATERIALS REFERRED TO HEREIN AND RAVEN INDUSTRIES INC. DISCLAIMS ANY LIABILITY FOR ANY WARRANTIES GIVEN BY ANY OTHER PERSON OR ENTITY, EITHER WRITTEN OR ORAL.

RAVEN INDUSTRIES' WARRANTY BECOMES AN OBLIGATION OF RAVEN INDUSTRIES INC. TO PERFORM UNDER THE WARRANTY ONLY UPON RECEIPT OF FINAL PAYMENT AND EXECUTION BY A DULY AUTHORIZED OFFICER OF RAVEN INDUSTRIES INC.

Burlington Resources Oil & Gas Company, LP San Juan Basin Below Grade Tank Maintenance and Operating Plan .

In accordance with Rule 19.15.17 the following information describes the operation and maintenance of Below Grade Tank (BGT) on Burlington Resources Oil & Gas Company, LP (BR) locations. This is BR's standard procedure for all BGT. A separate plan will be submitted for any BGT which does not conform to this plan.

General Plan:

- BR will operate and maintain a BGT to contain liquids and solids and maintain
 the integrity of the liner, liner system and secondary containment system to
 prevent contamination of fresh water and protect public health and environment.
 BR will accomplish this by performing an inspection on a monthly basis, installing
 cathodic protection, and automatic overflow shutoff devices as seen on the
 design plan.
- 2. BR will not discharge into or store any hazardous waste in the BGT.
- 3. BR shall operate and install the below-grade tank to prevent the collection of surface water run-on. BR has built in shut off devices that do not allow a belowgrade tank to overflow. BR constructs berms and corrugated retaining walls at least 6" above ground to keep from surface water run-on entering the below grade tank as shown on the design plan.
- 4. As per 19.17.15.12 Subsection D, Paragraph 3, BR will inspect the below-grade tank at least monthly reviewing several items which include 1) containment berms adequate and no oil present, 2) tanks had no visible leaks or sign of corrosion, 3) tank valves, flanges, and hatches had no visible leaks and 4) no evidence of significant spillage of produced liquids. In addition, BR's multi-skilled operators (MSOs) are required to visit each well location once per week. If detected on either inspection, BR shall remove any visible or measurable layer of oil from the fluid surface of a below-grade tank in an effort to prevent significant accumulation of oil overtime. The written record of the monthly inspections will include the items listed above and will be maintained for five years.
- 5. BR shall require and maintain a 10" adequate freeboard to prevent overtopping of the below-grade tank.
- 6. If the below grade tank develops a leak, or if any penetration of the pit liner or below grade tank, occurs below the liquid's surface, then BR shall remove all liquid above the damage or leak line within 48 hours. BR shall notify the appropriate district office. BR shall repair or replace the pit liner or below grade tank, within 48 hours of discovery. If the below grade tank or pit liner does not demonstrate integrity, BR shall promptly remove and install a below grade tank or pit liner that complies with Subsection I of 19.15.17.11 NMAC. BR shall notify the appropriate district office of a discovery of leaks less than 25 barrels as required pursuant to Subsection B of 19.15.3.116 NMAC shall be reported within twenty-four (24) hours of discovery of leaks greater than 25 barrels. In addition, immediate verbal notification pursuant to Subsection B, Paragraph (1), and Subparagraph (d) of 19.15.3.116 NMAC shall be reported to the division's Environmental Bureau Chief.

Burlington Resources Oil & Gas Company, LP San Juan Basin Below Grade Tank Closure Plan

In accordance with Rule 19.15.17.13 NMAC the following information describes the closure requirements of Below Grade Tanks (BGTs) on Burlington Resources Oil & Gas Company, LP locations hereinafter known as BR locations. This is BR's standard procedure for all BGTs. A separate plan will be submitted for any BGT which does not conform to this plan.

General Requirements:

- 1. BR shall close a below-grade tank within the time periods provided in Subsection A of 19.15.17.13 NMAC. This will include a) below-grade tanks that do not meet the requirements of Paragraphs (1) through (4) of Subsection I of 19.15.17.11 NMAC or is not included in Paragraph (5) of Subsection I of 19.15.17.11 NMAC within five years, if not retrofitted to comply with Paragraphs (1) through (4) of Subsection I of 19.15.17.11 NMAC; b) permitted below-grade tanks within 60 days of cessation of the below-grade tank's operation., or c) an earlier date that the division requires because of imminent danger to fresh water, public health or the environment. For any closure, BR will file the C144 Closure Report as required.
- 2. BR shall remove liquids and sludge from a below-grade tank prior to implementing a closure method and shall dispose of the liquids and sludge in a division-approved facility. The facilities to be used will be Basin Disposal (Permit #NM-01-005) and Envirotech Land Farm (Permit #NM-01-011). The liner after being cleaned well (Subsection D, Paragraph 1, Subparagraph (m) of 19.15.9.712 NMAC) will be disposed of at the San Juan County Regional Landfill located on CR 3100.
- 3. BR will receive prior approval to remove the below-grade tank and dispose of it in a division-approved facility or recycle, reuse, or reclaim it in a manner that the appropriate division district office approves. Documentation of how the below-grade tank was disposed of or recycled will be provided in the closure report.
- 4. If there is any on-site equipment associated with a below-grade tank, then BR shall remove the equipment, unless the equipment is required for some other purpose.
- 5. BR shall test the soils beneath the below-grade tank to determine whether a release has occurred. BR shall collect, at a minimum, a five point, composite sample; coffect individual grab samples from any area that is wet, discolored or showing other evidence of a release; and analyze for BTEX, TPH and chlorides to demonstrate that the benzene concentration, as determined by EPA SW-846 methods 8021B or 8260B or other EPA method that the division approves, does not exceed 0.2 mg/kg; total BTEX concentration, as determined by EPA SW-846 methods 8021B or 8260B or other EPA method that the division approves, does not exceed 50 mg/kg; the TPH concentration, as determined by EPA method 418.1 or other EPA method that the division approves, does not exceed 100 mg/kg; and the chloride concentration, as determined by EPA method 300.1 or other EPA method that the division approves, does not exceed 250 mg/kg, or the background concentration, whichever is greater. BR shall notify the division of its results on form C-141.
- 6. If BR or the division determines that a release has occurred, then BR shall comply with 19.15.3.116 NMAC and 19.15.1.19 NMAC, as appropriate.

- 7. If the sampling program demonstrates that a release has not occurred or that any release does not exceed the concentrations specified in Paragraph (4) of Subsection E of 19.15.17.13 NMAC, then BR shall backfill the excavation with compacted, non-waste containing, earthen material; construct a division-prescribed soil cover; recontour and re-vegetate the site.
- 8. Notice of Closure will be given prior to closure to the Aztec Division office between 72 hours and one week via email or verbally. The notification of closure will include the following:
 - i. Operator's name
 - ii. Location by Unit Letter, Section, Township, and Range. Well name and API number.
- The surface owner shall be notified of BR's closing of the below-grade tank prior to closure as per the approved closure plan via certified mail, return receipt requested.
- 10. Re-contouring of location will match fit, shape, line, form and texture of the surrounding. Re-shaping will include drainage control, prevent ponding, and prevent erosion. Natural drainages will be unimpeded and water bars and/or silt traps will be place in areas where needed to prevent erosion on a large scale. Final re-contour shall have a uniform appearance with smooth surface, fitting the natural landscape.
- 11. BR shall seed the disturbed areas the first growing season after the operator closes the pit. Seeding will be accomplished via drilling on the contour whenever practical or by other division-approved methods. BLM stipulated seed mixes will used on federally jurisdicted lands and division-approved seed mixtures (administratively approved if required) will be utilized on all State or private lands. Vegetative cover will equal 70% of the native perennial vegetative cover (un-impacted) consisting of at least three native plant species, including at least one grass, but not including noxious weeds, and maintain that cover through two successive growing seasons. If alternate seed mix is required by the state, private owner or tribe, it will be implemented with administrative approval if needed. BR will repeat seeding or planting will be continued until successful vegetative growth occurs.
- 12. A minimum of four feet of cover shall be achieved and the cover shall include one foot of suitable material to establish vegetation at the site, or the background thickness of topsoil, whichever is greater.
- 13. All closure activities will include proper documentation and be available for review upon request and will be submitted to OCD within 60 days of closure of the belowgrade tank. Closure report will be filed on C-144 and incorporate the following:
 - Soil Backfilling and Cover Installation
 - Re-vegetation application rates and seeding techniques
 - Photo documentation of the site reclamation
 - Confirmation Sampling Results
 - · Proof of closure notice