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 *Page 1 of 21* Form C-144

Form C-144 Revised April 3, 2017

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

Pit, Below-Grade Tank, or
Proposed Alternative Method Permit or Closure Plan Application
Type of action:       Below grade tank registration         Permit of a pit or proposed alternative method         Closure of a pit, below-grade tank, or proposed alternative method         Modification to an existing permit/or registration         Closure plan only submitted for an existing permitted or non-permitted pit, below-grade tank,
or proposed alternative method
<i>Instructions: Please submit one application (Form C-144) per individual pit, below-grade tank or alternative request</i> Please be advised that approval of this request does not relieve the operator of liability should operations result in pollution of surface water, ground water or the environment. Nor does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rules, regulations or ordinances.
1.     Operator:
Address: 382 Road 3100 Aztec NM 87410
Facility or well name: San Juan 28-7 Unit 417
API Number: <u>30-039-25172</u> OCD Permit Number
U/L or Qtr/Qtr K_Section 13 Township 28N Range 7W County: Rio Arriba
Center of Proposed Design: Latitude <u>36.658294</u> °N Longitude <u>-107.529139</u> °W NAD83
Surface Owner: 🛛 Federal 🗌 State 🗌 Private 🗌 Tribal Trust or Indian Allotment
2.
<u>Pit</u> : Subsection F, G or J of 19.15.17.11 NMAC
Temporary: Drilling Workover
Permanent Emergency Cavitation P&A Multi-Well Fluid Management Low Chloride Drilling Fluid yes no
Lined Unlined Liner type: Thicknessmil LLDPE HDPE PVC Other
String-Reinforced
Liner Seams: Welded Factory Other Volume: bbl Dimensions: L x W x D
3. ∑ <u>Below-grade tank</u> : Subsection I of 19.15.17.11 NMAC Volume: <u>Max 120</u> bbl Type of fluid: <u>Produced Water</u>
Metal         Secondary containment with leak detection       Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off         Visible sidewalls and liner       Visible sidewalls only       Other         Liner type:       Thickness       45       mil       HDPE       PVC       Other       LLDPE
<ul> <li>Secondary containment with leak detection  Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off</li> <li>Visible sidewalls and liner  Visible sidewalls only  Other</li> </ul>

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

Screen D 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

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.

<sup>9.</sup> <u>Siting Criteria (regarding permitting)</u>: 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	☐ 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
<ul> <li>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)</li> <li>Written confirmation or verification from the municipality; Written approval obtained from the municipality</li> </ul>	🗌 Yes 🗌 No
<ul> <li>Within the area overlying a subsurface mine. (Does not apply to below grade tanks)</li> <li>Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division</li> </ul>	🗌 Yes 🗌 No
<ul> <li>Within an unstable area. (Does not apply to below grade tanks)</li> <li>Engineering measures incorporated into the design; NM Bureau of Geology &amp; Mineral Resources; USGS; NM Geological Society; Topographic map</li> </ul>	🗌 Yes 🗌 No
Within a 100-year floodplain. ( <b>Does not apply to below grade tanks</b> ) - FEMA map	🗌 Yes 🗌 No
Below Grade Tanks	
<ul> <li>Within 100 feet of a continuously flowing watercourse, significant watercourse, lake bed, sinkhole, wetland or playa lake (measured from the ordinary high-water mark).</li> <li>Topographic map; Visual inspection (certification) of the proposed site</li> </ul>	🗌 Yes 🛛 No
<ul> <li>Within 200 horizontal feet of a spring or a fresh water well used for public or livestock consumption;.</li> <li>NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site</li> </ul>	🗌 Yes 🛛 No
Temporary Pit using Low Chloride Drilling Fluid (maximum chloride content 15,000 mg/liter)	
<ul> <li>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.)</li> <li>Topographic map; Visual inspection (certification) of the proposed site</li> </ul>	🗌 Yes 🗌 No
<ul> <li>Within 300 feet from a occupied permanent residence, school, hospital, institution, or church in existence at the time of initial application.</li> <li>Visual inspection (certification) of the proposed site; Aerial photo; Satellite image</li> </ul>	🗌 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

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<ul> <li>Within 100 feet of a wetland.</li> <li>US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site</li> </ul>	🗌 Yes 🗌 No						
Temporary Pit Non-low chloride drilling fluid							
<ul> <li>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).</li> <li>Topographic map; Visual inspection (certification) of the proposed site</li> </ul>							
<ul> <li>Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.</li> <li>Visual inspection (certification) of the proposed site; Aerial photo; Satellite image</li> </ul>	🗌 Yes 🗌 No						
<ul> <li>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;</li> <li>NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site</li> </ul>							
<ul> <li>Within 300 feet of a wetland.</li> <li>US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site</li> </ul>	🗌 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						
<ul> <li>Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.</li> <li>Visual inspection (certification) of the proposed site; Aerial photo; Satellite image</li> </ul>							
<ul> <li>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.</li> <li>NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site</li> </ul>							
<ul> <li>Within 500 feet of a wetland.</li> <li>US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site</li> </ul>							
10. <b>Temporary Pits, Emergency Pits, and Below-grade Tanks Permit Application Attachment Checklist:</b> Subsection B of 19.15.17.9 N <i>Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the doc attached.</i> M 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            M Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC            Design Plan - based upon the appropriate requirements of 19.15.17.10 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. and 19.15.17.13 NMAC            Previously Approved Design (attach copy of design) API Number:	cuments are NMAC 15.17.9 NMAC						
11.							
Multi-Well Fluid Management Pit Checklist:       Subsection B of 19.15.17.9 NMAC         Instructions:       Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the doc attached. <ul> <li>Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC</li> <li>Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC</li> <li>A List of wells with approved application for permit to drill associated with the pit.</li> <li>Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19 and 19.15.17.13 NMAC</li> <li>Hydrogeologic Data - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC</li> <li>Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC</li> </ul>							
Previously Approved Design (attach copy of design) API Number: or Permit Number:							

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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         Reregency Response Plan         Oil Field Waste Stream Characterization         Monitoring and Inspection Plan         Erosion Control Plan         Erosion Control Plan         Closure Plan - based upon the appropriate requirements of 19.15.17.9 NMAC and 19.15.17.13 NMAC	documents are					
13. <u>Proposed Closure</u> : 19.15.17.13 NMAC Instructional Plagae complete the applicable bases. Pages 14 through 18 in records to the managed elegance plan						
Instructions: Please complete the applicable boxes, Boxes 14 through 18, in regards to the proposed closure plan. Type: Drilling Workover Emergency Cavitation P&A Permanent Pit Below-grade Tank Multi-well F Alternative Proposed Closure Method: Waste Excavation and Removal Waste Removal (Closed-loop systems only) On-site Closure Method (Only for temporary pits and closed-loop systems) In-place Burial On-site Trench Burial Alternative Closure Method	luid Management Pit					
<ul> <li><sup>14.</sup> Waste Excavation and Removal Closure Plan Checklist: (19.15.17.13 NMAC) Instructions: Each of the following items must be a closure plan. Please indicate, by a check mark in the box, that the documents are attached.</li> <li>Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC</li> <li>Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.13 NMAC</li> <li>Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings)</li> <li>Soil Backfill and Cover Design Specifications - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC</li> <li>Re-vegetation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC</li> <li>Site Reclamation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC</li> </ul>						
Siting Criteria (regarding on-site closure methods only): 19.15.17.10 NMAC Instructions: Each siting criteria requires a demonstration of compliance in the closure plan. Recommendations of acceptable sour provided below. Requests regarding changes to certain siting criteria require justifications and/or demonstrations of equivalency. F 19.15.17.10 NMAC for guidance.						
Ground water is less than 25 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	Yes No NA					
Ground water is between 25-50 feet below the bottom of the buried waste - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	□ Yes □ No □ NA					
<ul> <li>Ground water is more than 100 feet below the bottom of the buried waste.</li> <li>NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells</li> </ul>	□ Yes □ No □ NA					
<ul> <li>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).</li> <li>Topographic map; Visual inspection (certification) of the proposed site</li> </ul>	🗌 Yes 🗌 No					
<ul> <li>Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.</li> <li>Visual inspection (certification) of the proposed site; Aerial photo; Satellite image</li> </ul>	🗌 Yes 🗌 No					
<ul> <li>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.</li> <li>NM Office of the State Engineer - iWATERS database; Visual inspection (certification) of the proposed site</li> </ul>	🗌 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						
ithin incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance $\Box$ Yes $\Box$ No						

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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
<ul> <li>Within the area overlying a subsurface mine.</li> <li>Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division</li> </ul>	🗌 Yes 🗌 No
<ul> <li>Within an unstable area.</li> <li>Engineering measures incorporated into the design; NM Bureau of Geology &amp; Mineral Resources; USGS; NM Geological Society; Topographic map</li> </ul>	🗌 Yes 🗌 No
Within a 100-year floodplain. - FEMA map	Yes No
<ul> <li>16.</li> <li>On-Site Closure Plan Checklist: (19.15.17.13 NMAC) Instructions: Each of the following items must be attached to the closure ple by a check mark in the box, that the documents are attached.</li> <li>Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC</li> <li>Proof of Surface Owner Notice - based upon the appropriate requirements of Subsection E of 19.15.17.13 NMAC</li> <li>Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate requirements of Subsection K of 19.15.17.13 NMAC</li> <li>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</li> <li>Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of 19.15.17.13 NMAC</li> <li>Material Sampling Plan - based upon the appropriate requirements of 19.15.17.13 NMAC</li> <li>Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings or in case on-site closure standards cann</li> <li>Soil Cover Design - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC</li> <li>Re-vegetation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC</li> <li>Site Reclamation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC</li> </ul>	.11 NMAC 15.17.11 NMAC
17. Operator Application Certification: I hereby certify that the information submitted with this application is true, accurate and complete to the best of my knowledge and bel	
Name (Print): Kandis Roland   Title: Operations/Regulatory Technicia	<u>n – Sr.</u>
Signature:   Kandis Roland   Date: 12/14/2020	
e-mail address: <u>kroland@hilcorp.com</u> Telephone: <u>505.324.5149</u>	
18.         OCD Approval:       X Permit Application (including closure plan)         Closure Plan (only)       OCD Conditions (see attachment)	
OCD Representative Signature: CRW hitehead Approval Date:04/2	26/2021
Title:       Environmental Specialist       OCD Permit Number:       BGT 1	
19. <u>Closure Report (required within 60 days of closure completion)</u> : 19.15.17.13 NMAC Instructions: Operators are required to obtain an approved closure plan prior to implementing any closure activities and submitting The closure report is required to be submitted to the division within 60 days of the completion of the closure activities. Please do not section of the form until an approved closure plan has been obtained and the closure activities have been completed. Closure Completion Date:	
20. Closure Method:	
Waste Excavation and Removal       On-Site Closure Method       Alternative Closure Method       Waste Removal (Closed-legendreft)         If different from approved plan, please explain.	oop systems only)
21.         Closure Report Attachment Checklist: Instructions: Each of the following items must be attached to the closure report. Please in mark in the box, that the documents are attached.         Proof of Closure Notice (surface owner and division)         Proof of Deed Notice (required for on-site closure for private land only)         Plot Plan (for on-site closures and temporary pits)         Confirmation Sampling Analytical Results (if applicable)         Waste Material Sampling Analytical Results (required for on-site closure)         Disposal Facility Name and Permit Number         Soil Backfilling and Cover Installation         Re-vegetation Application Rates and Seeding Technique	ndicate, by a check

regetation - ppireation rates and seed	
Site Reclamation (Photo Documentation)	
On-site Closure Location: Latitude	

\_\_Longitude \_

\_\_\_\_ NAD: \_\_\_\_ 1927 \_\_\_\_ 1983

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

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### San Juan 28-7 Unit 417 (BELOW GRADE TANK)

Hilcorp Energy Company requests a variance for the items listed below. The requested variance, per 19.15.17.15.A, provides equal or better protection of fresh water, public health & the environment.

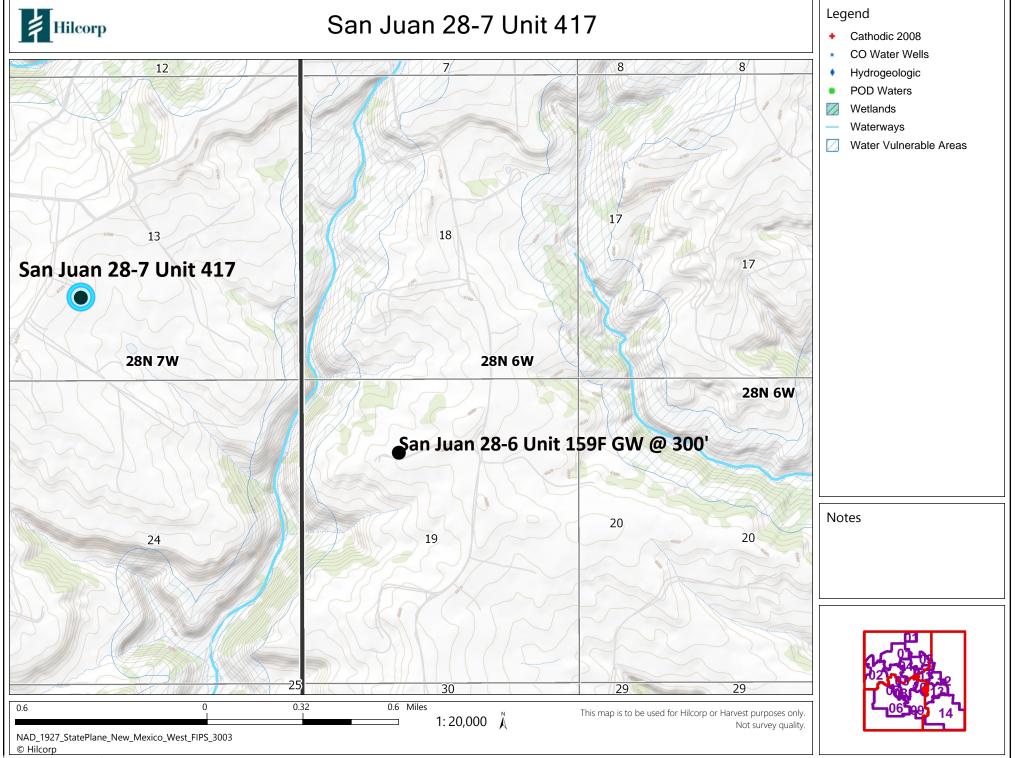
- 1. Fencing
  - Fencing as described in Section 5 under Alternate, Hilcorp will construct all new fences around the below grade tank utilizing 48" steel mesh field-fence (hog-wire) on the bottom with a single strand of barbed wire or a welded railing on top. T-posts shall be installed every 12 feet and corners shall be anchored utilizing a secondary T-post. Below grade tanks will be fenced, regardless of location.
- 2. <u>Geo-membrane Liner</u>
  - The geo-membrane liner consists of a 45-mil flexible LLDPE material manufactured by Brawler Industries, LLC as SuperScrim H45. SuperScrim H45 is manufactured with LLDPE and is 45 mil inch thickness and is reinforced with polyester scrim. The geomembrane liner has a hydraulic conductivity of less than 5 X 10<sup>-14</sup> cm/s and is resistant to ultraviolet light, petroleum hydrocarbons, salts and acidic and alkaline solutions. The manufacturer specific sheet is attached.
- 3. Hilcorp will notify Public Entity Surface Owners by email in lieu of certified mail. Private Entity Surface Owners will still be notified via certified mail.

### TIERRA CORROSION CONTROL, INC. DRILLING LOG

COMPANY: Conoco Phillips	DATE: July 3, 2008	
LOCATION: San Juan 28-6 #159F	LEGALS: Sec19 T28N R6W	COUNTY: Rio Arriba
STATE: NM	DRILLER: Gilbert Peck	DEPTH: 300"
BIT SIZE: 7 7/8"	CASING SIZE/TYPE: 8" x 20' PVC	COKE TYPE: Asbury
LBS COKE BACKFILL: 2,600#	VENT PIPE: 300'	PERF PIPE: 140'
ANODE TYPE: 2" X 60" Duriron	ANODE AMOUNT: 10	BOULDER DRILLING: None

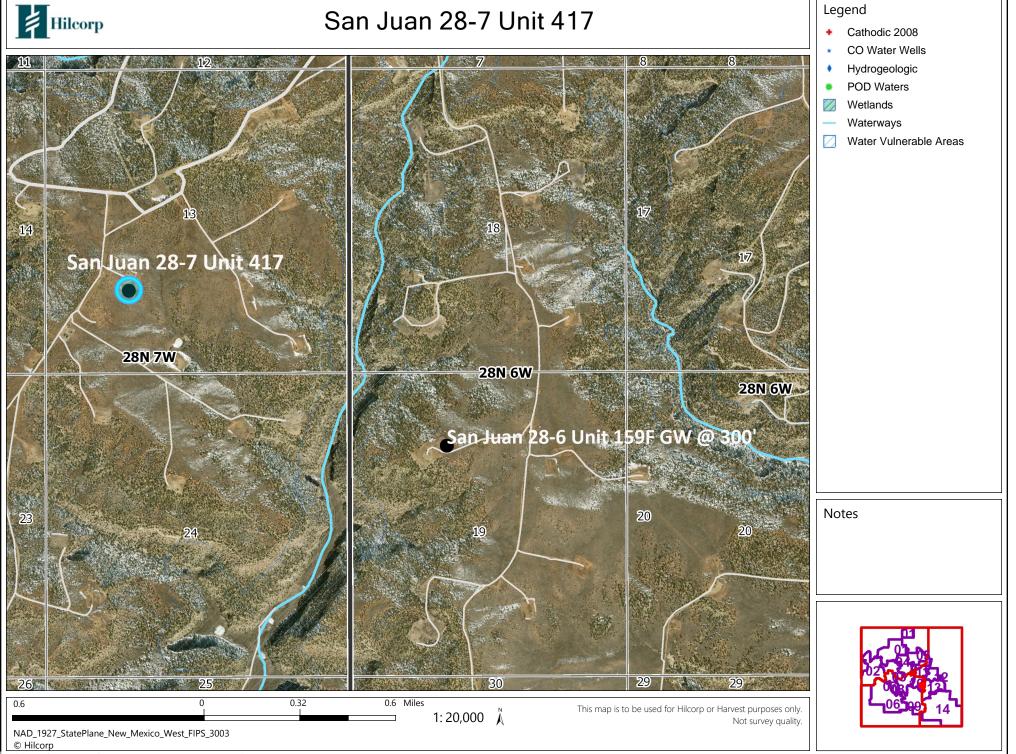
DEPTH	DRILLER'S LOG	AMPS	DEPTH	DRILLER'S LOG	AMPS	Γ	ANODE #	DEPTH	NO COKE	COKE
20	Casing	44	210				1	290	.7	2.5
20	Casing	1.4	310 315				2	280	1.0	2.5
25 30	Sandstone	.7	320				3	270	.7	2.5
35		.4	325				4	260	1.6	5.9
40	Gray Shale	2.6	330				5	250	2.5	6.4
45	Oray Onale	2.2	335							8.4
50		2.1	340				6	240	3.1	
55		2.0	345		_		7	230	3.3	9.2
60		1.9	350				8	220	3.1	9.0
65		1.9	355				9	210	2.0	7.9
70		1.7	360				10	200	2.8	7.6
75		1.5	365				11			
80		1.3	370				12			
85	Sandstone	.6	375				13			
90		.3	380				14			
95		.3	385				15			
100		.3	390				16			
105		.2	395				17	-		
110		.6	400				18			
115		.7	405							
120		.5	410				19			
125		.8	415		_		20			
130	Gray Shale	1.0	420				21			
135		.7	425				22			
140		.5	430				23			
145		2.5	435				24			
150		2.3	440				25			
155		2.2	445				26			
160		2.0	450 455				27			
165 170		1.9	455				28			
170		1.9	465				29			
175		1.6	405				30			
185	Sandstone	.5	475			1	30		l.	
190	Ganusione	.6	480			1				
195		.5	485							
200	Gray Shale	2.8	490			F	and the second second	A CONTRACTOR OF THE OWNER OF THE		and the second second
205	oraj orialo	2.5	495				WATER D	EPTH: N	one	
210		2.0	500				ISOLATIO	N PLUGS		
215		2.7					LOGING \			
220		3.1							TO BATTE	ov
225		3.2								NI
230		3.3					TOTAL AN			
235		3.2							ANCE: .92	
240		3.1					REMARKS	S:		
245		2.9								
250		2.5								
255		1.9								
260		1.6								
265	Sandstone	.9								
270		.7								
275		.9			_					
280		1.0								
285		.9								
290		.7								
295		td								
300						100				
305										





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## Below Grade Tank (BGT) Siting Criteria and Compliance Demonstrations

 Well Name:
 San Juan 28-7 Unit 417

1. Depth to groundwater (should not be less than 25 feet):

The nearest recorded well with available water-depth information is cathodic well San Juan 28-6 Unit 159F which was drilled to a depth of 300'. No water was encountered during the drilling of the Cathodic Well as indicated in the **Cathodic Data Sheet** attached. The subject well is 32' more in elevation making depth to groundwater at 332'.

 Distance to watercourse (should not be within 100 feet of a continuously flowing watercourse, other significant watercourse, lakebed, sinkhole, wetland or playa lake [measured from the ordinary high-water mark]):

Aerial map attached indicates that there are **no** lakebeds, sinkholes, playa lakes, or watercourses within 100 feet of the proposed Below Grade Tank.

3. <u>Distance to springs or wells (should not be within 200 feet of a spring or a fresh water</u> well used for public or livestock consumption):

Aerial map attached indicates that the Below Grade Tank will **not** be within 200 feet of any recorded well or spring.

## Hydrogeological report for San Juan 28-7 Unit 417

### **Regional Hydrogeological context:**

The San Jose Formation of Eocene age occurs in New Mexico and Colorado, and its outcrop forms the land surface over much of the eastern half of the central basin. It overlies the Nacimiento Formation in the area generally south of the Colorado-New Mexico State line and overlies the Animas Formation in the area generally north of the State line.

The San Jose Formation was deposited in various fluvial-type environments. In general, the unit consists of an interbedded sequence of sandstone, siltstone, and variegated shale. Thickness of the San Jose Formation generally increases from west to east (200 feet in the west and south to almost 2,700 feet in the center of the structural basin). Ground water is associated with alluvial and fluvial sandstone aquifers. Thus, the occurrence of ground water is mainly controlled by the distribution of sandstone in the formation. The distribution of such sandstone is the result of original depositional extent plus any post-depositional modifications, namely erosion and structural deformation. Transmissivity data for San Jose Formation are minimal. Values of 40 and 120 feet squared per day were determined from two aquifer tests (Stone et al, 1983, table 5). The reported or measured discharge from 46 water wells completed in San Jose Formation ranges from 0.15 to 61 gallons per minute and the median is 5 gallons per minute. Most of the wells provide water for livestock and domestic use.

The San Jose Formation is a very suitable unit for recharge from precipitation because soils that form on the unit are sandy and highly permeable and therefore readily adsorb precipitation. However, low annual precipitation, relatively high transpiration and evaporation rates, and deep dissection of the San Jose Formation by the San Juan River and its tributaries all tend to reduce the effective recharge to the unit.

Stone et al., 1983, Hydrogeology and Water Resources of the San Juan Basin, New Mexico: Socorro, New Mexico Bureau of Mines and Mineral Resources Hydrologic Report 6, 70 p.

### **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 Hilcorp Energy Company, hereinafter known as HEC, locations. This is HEC'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.

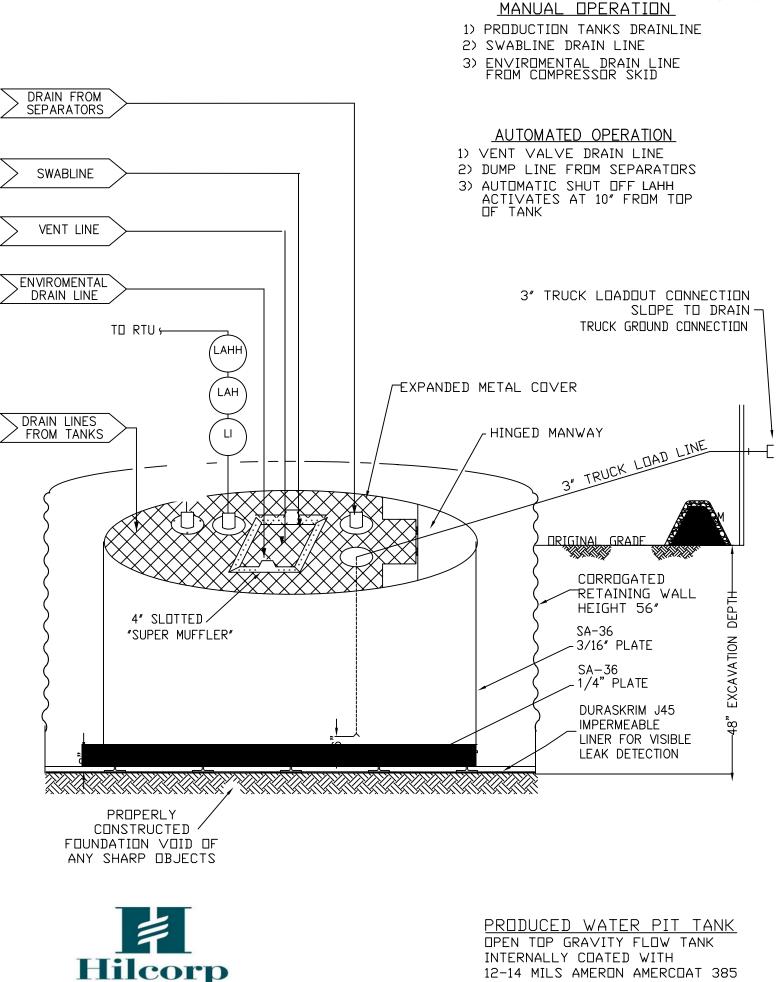
#### General Plan:

- 1. HEC 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.
- 2. HEC signage will comply with 19.15.17.11.C NMAC.
- 3. HEC is requesting approval of an alternative fencing to be used on BGT tank locations. HEC requests to utilize 48" steel mesh field-fence (hog-wire) on the bottom with a single strand of barbed wire or a welded railing on top. T-posts shall be installed every 12 feet and corners shall be anchored utilizing a secondary T-post. BGTs will be fenced, regardless of location.
  - a. If the BGT is located within 1000' of an occupied permanent residence, school, hospital, institution or church, HEC will construct A 6' chain link fence with two strands of barbed wire or a welded railing on top. The operator shall ensure that all gates associated with the fence are closed and locked when responsible personnel are not onsite.
- 4. HEC will construct a screened, expanded metal covering, on the top of the BGT.
- 5. HEC will ensure that a BGT is constructed of materials resistant to the BGT's particular contents and resistant to damage from sunlight as shown on design drawing and specification sheet.
- 6. The HEC BGT system will have a properly constructed foundation consisting of a level base free of rocks, debris, sharp edges or irregularities to prevent punctures, cracks or indentations of the liner or tank bottom as shown on design drawing.
- 7. HEC shall operate and install the BGT to prevent the collection of surface water run-on. HEC has built in shut off devices that do not allow a BGT to overflow. HEC constructs berms and corrugated retaining walls at least 6" above ground to keep from surface water run-on entering the BGT as shown on the design plan.
- 8. If HEC needs to modify/retrofit the existing BGT it will meet the below specifications.
- 9. HEC will construct and use a BGT that does not have double walls. The BGT's side walls will be open for visual inspection for leaks, the BGT's bottom is elevated a minimum of six inches above the underlying ground surface and the BGT is underlain with a geomembrane liner to divert leaked liquid to a location that can be visually inspected.
- 10. HEC will equip below grade tanks with a properly functioning, automatic high-level shut off control device, as well as manual controls, to prevent overflows.
- 11. HEC will utilize a geomembrane liner manufactured by Brawler Industries, LLC as SuperScrim H45. SuperScrim H45 is manufactured with LLDPE and is 45 mil inch thickness and is reinforced with polyester scrim. The geomembrane liner has a hydraulic conductivity of less than 5 X 10<sup>-14</sup> cm/s and is resistant to ultraviolet light, petroleum hydrocarbons, salts and acidic and alkaline solutions. The manufacturer specific sheet is attached.
- 12. The general specification for design and construction are attached

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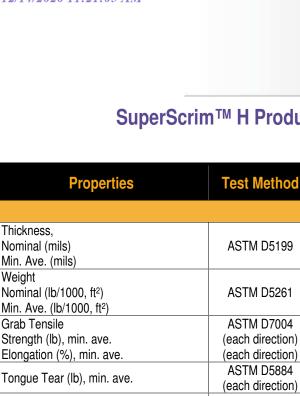
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Page 14 of 21

Thickness,



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UU		UU	, NU		
Re	inforced	Geomem	branes	C	

DDAM/I ED

Frequency

Per roll

# SuperScrim<sup>™</sup> H Product Specifications

### This product meets GRI GM 25 Specifications

H30

30

27

**Minimum Average Values** 

**H36** 

36

32

H45

45

40

win. Ave. (mis)						
Weight						
Nominal (lb/1000, ft <sup>2</sup> )	ASTM D5261	Per roll	140	168	210	
Min. Ave. (lb/1000, ft <sup>2</sup> )			125	151	189	
Grab Tensile	ASTM D7004					
Strength (lb), min. ave.	(each direction)	30,000 lb	300	310	320	
Elongation (%), min. ave.	(each direction)		25	25	25	
Tongue Tear (lb), min. ave.	ASTM D5884	30,000 lb	130	130	130	
	(each direction)	00,000 10	100	100	100	
Index Puncture (lb), min. ave.	ASTM D4833	30,000 lb	85	103	105	
Ply Adhesion (lb), min. ave. (1)	ASTM D6636	30,000 lb	20	25	25	
Oxidative Induction Time (OIT) (2)						
(a) Standard OIT	ASTM D3895	Formulation	>100	>100	>100	
Or						
(b) High Pressure OIT	ASTM D5885		>1000	>1000	>1000	
	Standard Roll I	Dimensions				
Roll Width (3), ft			11.83	11.83	11.83	
Roll Length <sup>(3)</sup> , ft			1500	1230	1000	
Roll Area, ft <sup>2</sup>			17,745	14,551	11,830	
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1						

<sup>(1)</sup>Alternatively, an acceptable ply adhesion is to have a film tearing bond occur within the sheet material. <sup>(2)</sup>The Manufacturer has the option to select either one of the OIT methods listed to evaluate the

antioxidant effectiveness in the geomembrane.

 $^{(3)} Roll$  widths and lengths have a tolerance of  $\pm\,1\%$ 

\*Custom material thicknesses also available

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This is a preliminary data sheet based upon laboratory testing of initial manufacturing lots and may be changed without notice as additional product testing data becomes available.



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MIDLAND, TX 11701 Co. Rd. 125 W Midland, TX . 79711 800.583.6005 432,563,4005

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# SuperScrim<sup>™</sup> WC Product Specifications

Properties	Test Method	Minimum Average Values							
		9 mil	12 mil	16 mil	20 mil	24 mil	30 mil		
Weight	D5261	5.4 oz/yd <sup>2</sup>	5.7 oz/yd <sup>2</sup>	7.2 oz/yd <sup>2</sup>	9.6 oz/yd <sup>2</sup>	11.5 oz/yd <sup>2</sup>	13.4 oz/yd <sup>2</sup>		
Thickness		9 mil	12 mil	16 mil	20 mil	24 mil	30 mil		
Grab Tensile (lbs.)	D751	MD 200 CD 135	MD 210 CD 176	MD 230 CD 210	MD 330 CD 286	MD 352 CD 300	MD 352 CD 300		
Mullen Burst	D6241	300 psi	350 psi	400 psi	600 psi	680 psi	780 psi		
Accelerated UV Weathering	D4355	>80% after 2000 hrs exposure	>90% after 2000 hrs exposure						
		Standard	Roll Dimension	ns		-			
Roll Length <sup>(2)</sup> , Ft		3,000	3,000	4,000	3,000	2,250	2,250		
Roll Width (2), Ft		12	12	12	12	12	12		
Roll Area, Ft <sup>2</sup>		36,000	36,000	48,000	36,000	27,000	27,000		

 $^{(1)}$ 9 of 10 views shall be Category 1 or 2. No more than 1 view from Category 3.  $^{(2)}$ Roll widths and lengths have a tolerance of  $\pm$  1%

Custom material thicknesses also available

This data is provided for informational purposes only. Brawler Industries, LLC makes no warranties as to the suitability of the fitness for a specific use or merchantability of products referred to, no guarantee of satisfactory results upon contained information or recommendations and disclaims all liability from resulting loss or damage. This information is subject to change without notice, please check with Brawler Industries, LLC for current updates.



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### Hilcorp Energy Company 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 a below-grade tank (BGT) on a Hilcorp Energy Company (HEC) location. This is HEC's standard procedure for all BGT's. A separate plan will be submitted for any BGT which does not conform to this plan.

### **General Plan:**

- 1. HEC will operator 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 the environmental. HEC will perform an inspection on a monthly basis, install cathodic protection and automatic overflow shutoff devices as seen on the design plan.
- 2. HEC will not discharge into or store any hazardous waste in the BGT.
- 3. HEC shall operator and install the BGT to prevent the collection of surface water run-on. HEC has built in shut-off devices that do not all ow a BGT to overflow. HEC constructs berms and corrugated retained walls at least 6" above grade to keep surface water run-on from entering the BGT as shown on the design plan.
- 4. As per 19.15.17.12.D(3), HEC will inspect the BGT for leakage and damage at least monthly. The operator will document the integrity of each tank at least annually and maintain a written record for 5 years. Inspections may 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. HEC shall remove any visible or measurable layer of oil from the fluid surface of the BGT in an effort to prevent significant accumulation of oil overtime.
- 5. HEC shall maintain adequate freeboard to prevent overtopping of the BGT.
- 6. If a BGT develops a leak, then HEC shall removal all liquid above the damage or leak within 48 hours of discovery, notify the appropriate division office pursuant to 19.15.29 NMAC and repair the damage or replace BGT as applicable.
- 7. If HEC discovers a BGT designed in accordance with 19.15.17.11.I(5) has lost integrity the BGT will promptly be drained and removed from service and HEC will follow the approved closure plan. If HEC discovers a retrofitted BGT designed in accordance with 19.15.17.11.I(4)(a-c), does not demonstrate integrity or that the BGT develops any of the conditions identified in Paragraph (5) of Subsection A of 19.15.17.12 NMAC shall repair the damage or close the existing BGT pursuant to the closure requirements of 19.15.17.13 NMAC.
- 8. If HEC equips or retrofits the existing BGT to comply with Paragraphs (1) through (4) of Subsection I of 19.15.17.11 NMAC, HEC shall visually inspect the area beneath the BGT during the retrofit and document any areas that are wet, discolored or showing other evidence of a release on form C-141. HEC shall measure and report to the division the concentration of contaminants in the wet or discolored soil with respect to the standards set forth in Table I of 19.15.17.13 NMAC. If there is no wet or discolored soil or if the concentration of contaminants in the wet or discolored soil is less than the standard set forth in Table I of 19.15.17.13 NMAC, then HEC will proceed with the closure requirements of 19.15.17.13 NMAC prior to initiating the retrofit or replacement.

### Hilcorp Energy Company San Juan Asset Production BGT Closure Plan

In accordance with Rule 19.15.17.13 NMAC, the following plan describes the general closure requirements of a below-grade tank (BGT) on any Hilcorp Energy Company (HEC) location in the San Juan Asset. This is HEC's standard closure procedure for all BGT's regulated under Rule 19.15.17 NMAC and operated by HEC. For those closures which do not conform to this standard closure plan, a separate BGT specific closure plan will be developed and utilized.

### **Closure Conditions and Timing for BGT:**

- Within 60 days of cessation of operation HEC will:
  - Remove all liquids and sludge and dispose in a division approved manner.
- Within 72 hours or 1 week prior to closure HEC will:
  - Give notice to surface owners by certified mail. For public entities by email as specified on the variance page.
  - Give notice to Division District Office verbal or in writing/email.
- Within 6 months of cessation of operation HEC will:
  - Remove BGT and dispose, recycle, reuse, or reclaim in a division approved manner.
  - Remove unused onsite equipment associated with the BGT.
- Within 60 days of closure HEC will:
  - $\circ$  Send the Division District Office a Closure Report per 19.15.17.13.F (1).

### **General Plan Requirements:**

- 1. Prior to initiating any BGT closure, except in the case of an emergency, HEC will notify the surface owner of the intent to close the BGT by certified mail no later than 72 hours or 1 week before closure and a copy of this notification will be included in the closure report. In the case of an emergency, the surface owner will be notified as soon as practical.
- 2. Notice of closure will be given to the Division District office between 72 hours and 1 week of the scheduled closure via email or phone. The notification of closure will include the following:
  - a. Operators Name
  - b. Well Name and API Number
  - c. Location
- 3. All liquids will be removed from the BGT following cessation of operation. Produced water will be disposed of at one of HEC's approved Salt Water Disposal facilities or at a Division District Office approved facility.
- 4. Solids and sludge's will be shoveled and/or vacuumed out for disposal at one of the Division District Office approved facilities, depending on the proximity of the BGT site: Envirotech Land Farm (Permit #NM-01-011), Industrial Ecosystems Inc. JFJ Land Farm (Permit #NM-01-0010B), and Basin Disposal (Permit #NM-01-005).
- 5. HEC will obtain prior approval from the Division District Office to dispose, recycle, reuse, or reclaim the BGT and provide documentation of the disposition of the BGT in the closure report. Steel materials will be recycled or reused as approved by the Division District Office. Fiberglass tanks will be empty, cut up or shredded, and EPA cleaned for disposal as solid waste. Liner materials will be cleaned without soils or contaminated material for disposal as solid waste. Fiberglass tanks and liner materials will meet the conditions of 19.15.35 NMAC. Disposal will be at a licensed disposal facility, presently San Juan County Landfill operated by Waste Management under NMED Permit SWM-052426.
- 6. Any equipment associated with the BGT that is no longer required for some other purpose, following the closure, will be removed.

Revised 3/15/2016

- 7. Following removal of the tank and any liner material, HEC will test the soils beneath the BGT as follows:
  - a. At a minimum, a five-point composite sample will be taken to include any obvious stained or wet soils or any other evidence of contamination.
  - b. The laboratory sample shall be analyzed for the constituents listed in Table I of 19.15.17.13.

Table I										
Closure Criteria for Soils Beneath Below-Grade Tanks, Drying Pads Associated with Closed-Loop Systems and Pits										
where Contents are Removed										
Depth below bottom of pit to	Constituent	Method*	Limit**							
groundwater less than 10,000										
mg/I TDS										
	Chloride	EPA 300.0	600 mg/kg							
≤50 feet	TPH	EPA SW-846 Method 418.1	100 mg/kg							
	BTEX	EPA SW-846 Method 8021B or 8260B	50 mg/kg							
	Benzene	EPA SW-846 Method 8021B or 8015M	10 mg/kg							
	Chloride	EPA 300.0	10,000 mg/kg							
51 feet-100 feet	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 Method 8021B or 8260B	50 mg/kg							
-	Benzene	EPA SW-846 Method 8021B or 8015M	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 Method 8021B or 8260B	50 mg/kg							
Ē	Benzene	EPA SW-846 Method 8021B or 8015M	10 mg/kg							

\*Or other test methods approved by the division

\*\*Numerical limits or natural background level, whichever is greater

(19.15.17.13 NMAC-Ro, 19.15.17.13 NMAC 3/28/2013)

- 8. If the Division District Office and/or HEC determine there is a release, HEC will comply with 19.15.17.13.C.3b.
- 9. Upon completion of the tank removal, pursuant to 19.15.17.13.C.3c, 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 containing earthen material compacted and covered with a minimum of one foot top soil, or background thickness of top soil, whichever is greater. The surface will then be re-contoured to match the native grade, prevent ponding of water, and prevent erosion of cover material.
- 10. For those portions of the former BGT area no longer required for production activities, HEC will seed the disturbed area in the first favorable growing season following the closure of the BGT. Seeding will be accomplished via drilling on the contour whenever practical, or by other Division District Office approved methods. HEC will notify the Division District Office when reclamation and re-vegetation is complete.

Reclamation of the BGT shall be considered complete when:

- Established vegetative cover reflects a life form ratio of +/- 50% of pre disturbance levels.
- Total plant cover is at least 70% of pre-disturbance levels (Excluding noxious weeds) OR
- Pursuant to 19.15.17.13.H.5d HEC will comply with obligations imposed by other applicable federal or tribal agencies in which there re-vegetation and reclamation requirements provide equal or better protection of fresh water, human health and the environment.

Revised 3/15/2016

11. For those portions of the former BGT area required for production activities, reseeding will be done at well abandonment, and following the procedure noted above.

### **Closure Report:**

All closure activities will include proper documentation and will be submitted to OCD within 60 days of the BGT closure on a Closure Report using Division District Office Form C-144. The Report will include the following:

- Proof of Closure Notice (surface owner and Division District Office)
- Backfilling & cover installation
- Confirmation Sampling Analytical Results
- Application Rate & Seeding techniques
- Photo Documentation of Reclamation

Revised 3/15/2016

District I 1625 N. French Dr., Hobbs, NM 88240

District II

District IV

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811 S. First St., Artesia, NM 88210 Phone:(575) 748-1283 Fax:(575) 748-9720

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1220 S. St Francis Dr., Santa Fe, NM 87505 Phone:(505) 476-3470 Fax:(505) 476-3462

District III 1000 Rio Brazos Rd., Aztec, NM 87410 CONDITIONS

Action 11995

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

#### CONDITIONS OF APPROVAL

Operator:				OGRID:	Action Number:	Action Type:
HILCORP ENERGY COMPANY	1111 Travis Street	Houston, TX77002		372171	11995	C-144B
OCD Reviewer			Condition			
cwhitehead			None			