

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

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

Form C-144
Revised April 3, 2017

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

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
BGT 1 [x] 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

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

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

1. Operator: Hilcorp Energy Company OGRID #: 372171
Address: 382 Road 3100 Aztec NM 87410
Facility or well name: R B Sullivan 3F
API Number: 3004534304 OCD Permit Number:
U/L or Qtr/Qtr E Section 11 Township 27N Range 10W County: San Juan
Center of Proposed Design: Latitude 36.591286 °N Longitude -107.871087 °W NAD83
Surface Owner: [] Federal [] State [x] Private [] Tribal Trust or Indian Allotment

2. [] Pit: Subsection F, G or J of 19.15.17.11 NMAC
Temporary: [] Drilling [] Workover
[] Permanent [] Emergency [] Cavitation [] P&A [] Multi-Well Fluid Management Low Chloride Drilling Fluid [] yes [] no
[] Lined [] Unlined Liner type: Thickness mil [] LLDPE [] HDPE [] PVC [] Other
[] String-Reinforced
Liner Seams: [] Welded [] Factory [] Other Volume: bbl Dimensions: L x W x D

3. [x] Below-grade tank: Subsection I of 19.15.17.11 NMAC
Volume: Max 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 45 mil [] HDPE [] PVC [x] Other LLDPE

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

5. Fencing: Subsection D of 19.15.17.11 NMAC (Applies to permanent pits, temporary pits, and below-grade tanks)
[] Chain link, six feet in height, two strands of barbed wire at top (Required if located within 1000 feet of a permanent residence, school, hospital, institution or church)
[] Four foot height, four strands of barbed wire evenly spaced between one and four feet
[x] Alternate. Please specify 4' hog wire fence with a single strand of barbed wire or a welded railing on top

6.
Netting: Subsection E of 19.15.17.11 NMAC (*Applies to permanent pits and permanent open top tanks*)
 Screen Netting Other _____
 Monthly inspections (If netting or screening is not physically feasible)

7.
Signs: Subsection C of 19.15.17.11 NMAC
 12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers
 Signed in compliance with 19.15.16.8 NMAC

8.
Variations and Exceptions:
 Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17 NMAC for guidance.
Please check a box if one or more of the following is requested, if not leave blank:
 Variance(s): Requests must be submitted to the appropriate division district for consideration of approval.
 Exception(s): Requests must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

9.
Siting Criteria (regarding permitting): 19.15.17.10 NMAC
Instructions: The applicant must demonstrate compliance for each siting criteria below in the application. Recommendations of acceptable source material are provided below. Siting criteria does not apply to drying pads or above-grade tanks.

<u>General siting</u>	
Ground water is less than 25 feet below the bottom of a low chloride temporary pit or below-grade tank. - <input type="checkbox"/> NM Office of the State Engineer - iWATERS database search; <input type="checkbox"/> USGS; <input type="checkbox"/> Data obtained from nearby wells	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> 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	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended. (Does not apply to below grade tanks) - Written confirmation or verification from the municipality; Written approval obtained from the municipality	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within the area overlying a subsurface mine. (Does not apply to below grade tanks) - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within an unstable area. (Does not apply to below grade tanks) - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within a 100-year floodplain. (Does not apply to below grade tanks) - FEMA map	<input type="checkbox"/> Yes <input type="checkbox"/> No
<u>Below Grade Tanks</u>	
Within 100 feet of a continuously flowing watercourse, significant watercourse, lake bed, sinkhole, wetland or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Within 200 horizontal feet of a spring or a fresh water well used for public or livestock consumption. - NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<u>Temporary Pit using Low Chloride Drilling Fluid</u> (maximum chloride content 15,000 mg/liter)	
Within 100 feet of a continuously flowing watercourse, or any other significant watercourse or within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). (Applies to low chloride temporary pits.) - Topographic map; Visual inspection (certification) of the proposed site	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within 300 feet from a occupied permanent residence, school, hospital, institution, or church in existence at the time of initial application. - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within 200 horizontal feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, or 300feet of any other fresh water well or spring, in existence at the time of the initial application. NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site	<input type="checkbox"/> Yes <input type="checkbox"/> No

Within 100 feet of a wetland.
 - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site Yes No

Temporary Pit Non-low chloride drilling fluid

Within 300 feet of a continuously flowing watercourse, or any other significant watercourse, or within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).
 - Topographic map; Visual inspection (certification) of the proposed site Yes No

Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.
 - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image Yes No

Within 500 horizontal feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, or 1000 feet of any other fresh water well or spring, in the existence at the time of the initial application;
 - NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site Yes No

Within 300 feet of a wetland.
 - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site Yes No

Permanent Pit or Multi-Well Fluid Management Pit

Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse, or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).
 - Topographic map; Visual inspection (certification) of the proposed site Yes No

Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.
 - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image Yes No

Within 500 horizontal feet of a spring or a fresh water well used for domestic or stock watering purposes, in existence at the time of initial application.
 - NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site Yes No

Within 500 feet of a wetland.
 - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site Yes No

10.
Temporary Pits, Emergency Pits, and Below-grade Tanks Permit Application Attachment Checklist: Subsection B of 19.15.17.9 NMAC
Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

- Hydrogeologic Report (Below-grade Tanks) - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC
 - Hydrogeologic Data (Temporary and Emergency Pits) - based upon the requirements of Paragraph (2) of Subsection B of 19.15.17.9 NMAC
 - Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
 - Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
 - Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
 - Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC
- Previously Approved Design (attach copy of design) API Number: _____ or Permit Number: _____

11.
Multi-Well Fluid Management Pit Checklist: Subsection B of 19.15.17.9 NMAC
Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

- Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
 - Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
 - A List of wells with approved application for permit to drill associated with the pit.
 - Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC
 - Hydrogeologic Data - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC
 - Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
- Previously Approved Design (attach copy of design) API Number: _____ or Permit Number: _____

12.

Permanent Pits Permit Application Checklist: Subsection B of 19.15.17.9 NMAC

Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

- Hydrogeologic Report - based upon the requirements of Paragraph (1) of Subsection B of 19.15.17.9 NMAC
- Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
- Climatological Factors Assessment
- Certified Engineering Design Plans - based upon the appropriate requirements of 19.15.17.11 NMAC
- Dike Protection and Structural Integrity Design - based upon the appropriate requirements of 19.15.17.11 NMAC
- Leak Detection Design - based upon the appropriate requirements of 19.15.17.11 NMAC
- Liner Specifications and Compatibility Assessment - based upon the appropriate requirements of 19.15.17.11 NMAC
- Quality Control/Quality Assurance Construction and Installation Plan
- Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- Freeboard and Overtopping Prevention Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- Nuisance or Hazardous Odors, including 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

13.

Proposed Closure: 19.15.17.13 NMAC

Instructions: Please complete the applicable boxes, Boxes 14 through 18, in regards to the proposed closure plan.

- Type: Drilling Workover Emergency Cavitation P&A Permanent Pit Below-grade Tank Multi-well Fluid Management Pit
 Alternative
- Proposed Closure Method: Waste Excavation and Removal
 Waste Removal (Closed-loop systems only)
 On-site Closure Method (Only for temporary pits and closed-loop systems)
 In-place Burial On-site Trench Burial
 Alternative Closure Method

14.

Waste Excavation and Removal Closure Plan Checklist: (19.15.17.13 NMAC) *Instructions: Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.*

- Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC
- Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.13 NMAC
- Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings)
- Soil Backfill and Cover Design Specifications - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- Re-vegetation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- Site Reclamation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC

15.

Siting Criteria (regarding on-site closure methods only): 19.15.17.10 NMAC

Instructions: Each siting criteria requires a demonstration of compliance in the closure plan. Recommendations of acceptable source material are provided below. Requests regarding changes to certain siting criteria require justifications and/or demonstrations of equivalency. Please refer to 19.15.17.10 NMAC for guidance.

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

adopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality; Written approval obtained from the municipality	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within a 100-year floodplain. - FEMA map	<input type="checkbox"/> Yes <input type="checkbox"/> No

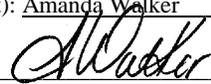
16. **On-Site Closure Plan Checklist:** (19.15.17.13 NMAC) *Instructions: Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.*

- Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
- Proof of Surface Owner Notice - based upon the appropriate requirements of Subsection E of 19.15.17.13 NMAC
- Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate requirements of Subsection K of 19.15.17.11 NMAC
- Construction/Design Plan of Temporary Pit (for in-place burial of a drying pad) - based upon the appropriate requirements of 19.15.17.11 NMAC
- Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC
- Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of 19.15.17.13 NMAC
- Waste Material Sampling Plan - based upon the appropriate requirements of 19.15.17.13 NMAC
- Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings or in case on-site closure standards cannot be achieved)
- Soil Cover Design - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- Re-vegetation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- Site Reclamation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC

17. **Operator Application Certification:**

I hereby certify that the information submitted with this application is true, accurate and complete to the best of my knowledge and belief.

Name (Print): Amanda Walker Title: Operations/Regulatory Technician – Sr.

Signature:  Date: 01/20/2022

e-mail address: mwalker@hilcorp.com Telephone: 346-237-2177

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

OCD Representative Signature:  **Approval Date:** January 26, 2022

Title: Environmental Specialist **OCD Permit Number:** BGT 1

19. **Closure Report (required within 60 days of closure completion):** 19.15.17.13 NMAC

Instructions: Operators are required to obtain an approved closure plan prior to implementing any closure activities and submitting the closure report. The closure report is required to be submitted to the division within 60 days of the completion of the closure activities. Please do not complete this section of the form until an approved closure plan has been obtained and the closure activities have been completed.

Closure Completion Date: _____

20. **Closure Method:**

Waste Excavation and Removal On-Site Closure Method Alternative Closure Method Waste Removal (Closed-loop systems only)

If different from approved plan, please explain.

21. **Closure Report Attachment Checklist:** *Instructions: Each of the following items must be attached to the closure report. Please indicate, by a check mark in the box, that the documents are attached.*

- Proof of Closure Notice (surface owner and division)
- Proof of Deed Notice (required for on-site closure for private land only)
- Plot Plan (for on-site closures and temporary pits)
- Confirmation Sampling Analytical Results (if applicable)
- Waste Material Sampling Analytical Results (required for on-site closure)
- Disposal Facility Name and Permit Number
- Soil Backfilling and Cover Installation
- Re-vegetation Application Rates and Seeding Technique
- Site Reclamation (Photo Documentation)

On-site Closure Location: Latitude _____ Longitude _____ NAD: 1927 1983

22.

Operator Closure Certification:

I hereby certify that the information and attachments submitted with this closure report is true, accurate and complete to the best of my knowledge and belief. I also certify that the closure complies with all applicable closure requirements and conditions specified in the approved closure plan.

Name (Print): _____ Title: _____

Signature: _____ Date: _____

e-mail address: _____ Telephone: _____

Hilcorp Energy Company
BGT Modification

Hilcorp Energy Company is requesting to modify the below-grade tank permit for **R B Sullivan 3F**.

The below-grade tank was registered on **10/18/2021** (through Legacy Permit Portal) as an existing below-grade tank with siting criteria provided showing ground water more than 100'. Hilcorp would like to modify the permit as the tank was retrofitted to bring the tank up to current standards. A sample was pulled, and no contamination was found, please see attached report. Hilcorp would like to modify the existing below-grade tank as well as the Design, Maintenance & Operating and Closure Plan.

The groundwater was previously ranked for this site as:

- < 50'
- 50' – 100'
- > 100'

From: [Whitehead, Christopher , EMNRD](#)
To: [Mandi Walker](#)
Cc: [Kate Kaufman](#)
Subject: RE: [EXTERNAL] FW: RB Sullivan 3F (30-045-34304) C-144 BGT Closure Plan (ApplicationID 73978)
Date: Wednesday, January 26, 2022 10:37:00 AM

Mandi,

Thanks for this information; the additional detail is helpful in resolving this situation. Preferably, the submitted modification would have documented these issues in more detail to allow for an efficient resolution to this matter. The primary complicating issue in this matter is the spill that occurred associated with the now retrofitted BGT. The appropriate procedure was followed resolving the contamination associated with the spill with incidence number NAPP2128435279 due to the BGT approved under Pre-08 regulations as well as current rule requirements. Unfortunately, the data used to justify the spill cleanup does not correlate with the requirements for the C-144B Modification. By retrofitting the historical BGT and modifying the C-144 to bring it up to current standards, in this case, a single composite sample should have been collected independent (and following) the spill response actions demonstrating that after abatement actions were performed, that the location was compliant with closure standards associated with Pre-08 BGTs (even for a modification where there is retrofit). A single sample showing (Wall 6) exceeds the historical values of the C-144B closure/modification. That said, since the closure plan is being updated to demonstrate ground water is greater than 100 feet and since grab samples may indicate point source contamination not correlated with composite sample-based standards, OCD accepts a variance for approval in this case.

Based on the submitted documentation, this modification would typically be rejected since it does not meet the closure standards on file for the BGT prior to the modification request. However, since the only option in rejecting it is to send the exceedance to incidences through the C-141 process, that has already occurred and they have cleared the site for reuse, so there would be no resolution for this outcome.

Note, photo-documentation for modification/closure is requested to be more robust since no OCD environmental representative was on-site for the BGT retrofitting and modification. This was clearly stated in the closure notification issued by HEC so hopefully this is something that can be resolved internally with HEC. Also, as noted previously, please use the final version of sampling data submitted justifying closure (or in this case retrofit modification) compliance; the submitted report looks like it may have been a preliminary report issued by the analytical services company, I will replace it with the final version included in your previous email. In the report justifying the requested OCD action, the results for all grab samples as well as composite samples should be less than the values approved as closure standards for historical BGTs or current ones. If the sampling occurred exceeds standards for C-144B closure as approved, additional sampling should be performed that demonstrates the soil quality at that location and included as the final action for that BGT location.

I will include this communication in the modification approval as the preferred narrative justifying this modifications approval. In the future, for complex modification or closure scenarios such as these, please do include a brief and concise narrative that documents the issues associated with the

requested OCD action including dates, incidence numbers, and actions taken as applicable. This can be similar to the page inserted stating that retrofit occurred at the site. In this particular case, the details of the incidence triggering the modification and the status of that spill response would have allowed for more clarity in the outcome for this BGT.

Christopher Whitehead • Environmental Specialist
Environmental Bureau • EMNRD - OCD

From: Mandi Walker <mwalker@hilcorp.com>
Sent: Tuesday, January 25, 2022 11:43 AM
To: Whitehead, Christopher , EMNRD <Chris.Whitehead@state.nm.us>
Cc: Kate Kaufman <kkaufman@hilcorp.com>
Subject: [EXTERNAL] FW: RB Sullivan 3F (30-045-34304) C-144 BGT Closure Plan (ApplicationID 73978)

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

Good afternoon Chris,

I talked with Kate, and I have our responses listed below. This modification was tied to the questions that I asked about back in October last year if that helps. Let us know if you need anything further from us.

Thanks!
Mandi

From: Whitehead, Christopher , EMNRD <Chris.Whitehead@state.nm.us>
Sent: Monday, January 24, 2022 11:24 AM
To: Mandi Walker <mwalker@hilcorp.com>
Subject: RB Sullivan 3F (30-045-34304) C-144 BGT Closure Plan (ApplicationID 73978)

Mandi

Hello, I am processing the BGT modification with Application ID referenced in the subject heading. There are several issues pertaining to this filing that require corrective action. The modification claims to be a modification but the well site history implies this BGT was removed from service and a new one put in its place. Similarly, the closure part of this document appears to be incomplete as well as the analytical data which contains anomalies pertaining to **analytical reporting including page numbering that is malformed and does not include the report narrative or quality assurance data.**

Additionally, from the sampling it appears that multiple grab samples were collected which is more than acceptable above and beyond a single composited sample; however, at least one of the grab samples exhibited TPH results above the historically approved closure standard of 100 mg/Kg.

Please answer the following questions pertaining to this filing:

- Was the previous BGT at this location removed from service as noted in the inspection that occurred on 11/22/21? The BGT was retrofitted and repaired
- Was a new BGT put into service at this location after 11/22/21? The original BGT was repaired and retrofitted to bring up to current standards
- Is a complete analytical data package available for this closure? Attached is the analytical package that was submitted to OCD for the spill cleanup/C-141 closure.
- Was the contamination identified managed in any way? Contaminated soil was excavated and hauled away to a third party for disposal. Samples were collected to meet spill cleanup criteria. Number of samples was dictated by the excavation area (spill cleanup summary attached).
- What is the operators intention regarding the identification of historical contamination? There was no historic contamination – soil contamination was due to a release from the BGT.
- An inspection at the well site from 11/22/21 indicates that contamination was also identified at a compressor and near the well pad, is this known or suspected to be related to the BGT contamination in anyway? The BGT is in a bermed area, the INC is being worked as we speak by our Field guys and should be resolved by the due date of 2/22/22.
- Does photo-documentation of the historical BGT exist, the modification actions performed, and is there any narrative as to what the submitted photos are documenting? I don't have any photos of the BGT that was retrofitted, the photos that were submitted were to show that the BGT was repaired and retrofitted

Thanks,

Christopher Whitehead • Environmental Specialist

Environmental Bureau

EMNRD - Oil Conservation Division

1220 St Francis Dr | Santa Fe, NM 87505

505.490.3894 | chris.whitehead@state.nm.us

<http://www.emnrd.state.nm.us/OCD/>



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R B Sullivan 3F (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. Geo-membrane Liner

- 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 5×10^{-14} 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.



New Mexico Office of the State Engineer

Point of Diversion Summary

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

(quarters are smallest to largest)

(NAD83 UTM in meters)

Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
	SJ 04045 POD1	1	4	2	11	27N	10W	244148	4053538

Driller License: 717		Driller Company: WESTERN WATER WELLS	
Driller Name: HOOD, TERRY			
Drill Start Date: 09/15/2013	Drill Finish Date: 09/25/2013	Plug Date:	
Log File Date: 10/01/2013	PCW Rcv Date:	Source: Shallow	
Pump Type:	Pipe Discharge Size:	Estimated Yield: 7 GPM	
Casing Size: 5.00	Depth Well: 310 feet	Depth Water: 50 feet	

Water Bearing Stratifications:	Top	Bottom	Description
	145	180	Sandstone/Gravel/Conglomerate
	240	285	Sandstone/Gravel/Conglomerate

Casing Perforations:	Top	Bottom
	0	3
	3	12
	12	48
	48	80
	80	145
	145	180
	180	240
	240	285
	285	310

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

1/20/22 1:59 PM

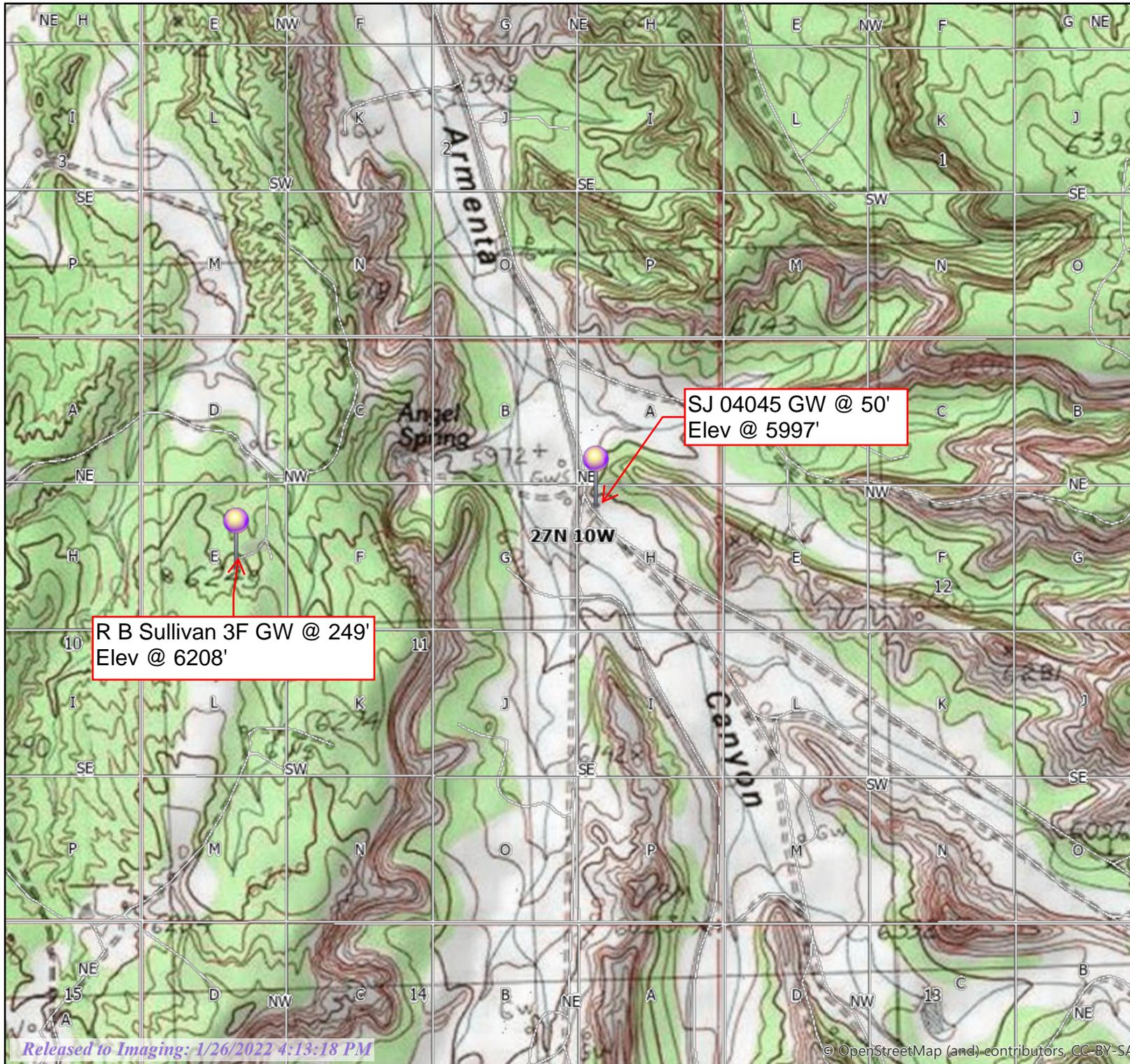
POINT OF DIVERSION SUMMARY

R B Sullivan 3F - Topo

Date: 1/20/2022
 Scale: 1:18,056 mi
 0.0 0.1 0.2 0.3 0.4

Townships and Sections

- Townships
- Sections
- Qtr Sections
- Unit Letters



R B Sullivan 3F - Aerial

Date: 1/20/2022
 Scale: 1:18,056 mi
 0.0 0.1 0.2 0.3 0.4

Townships and Sections

- Townships
- Sections
- Qtr Sections
- Unit Letters



R B Sullivan 3F GW @ 249'
 Elev @ 6208'

SJ 04045 GW @ 50'
 Elev @ 5997'

27N 10W

Hydrogeological Report for R B Sullivan 3F

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 et 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 conducive 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., Craig, 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.

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 5×10^{-14} 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

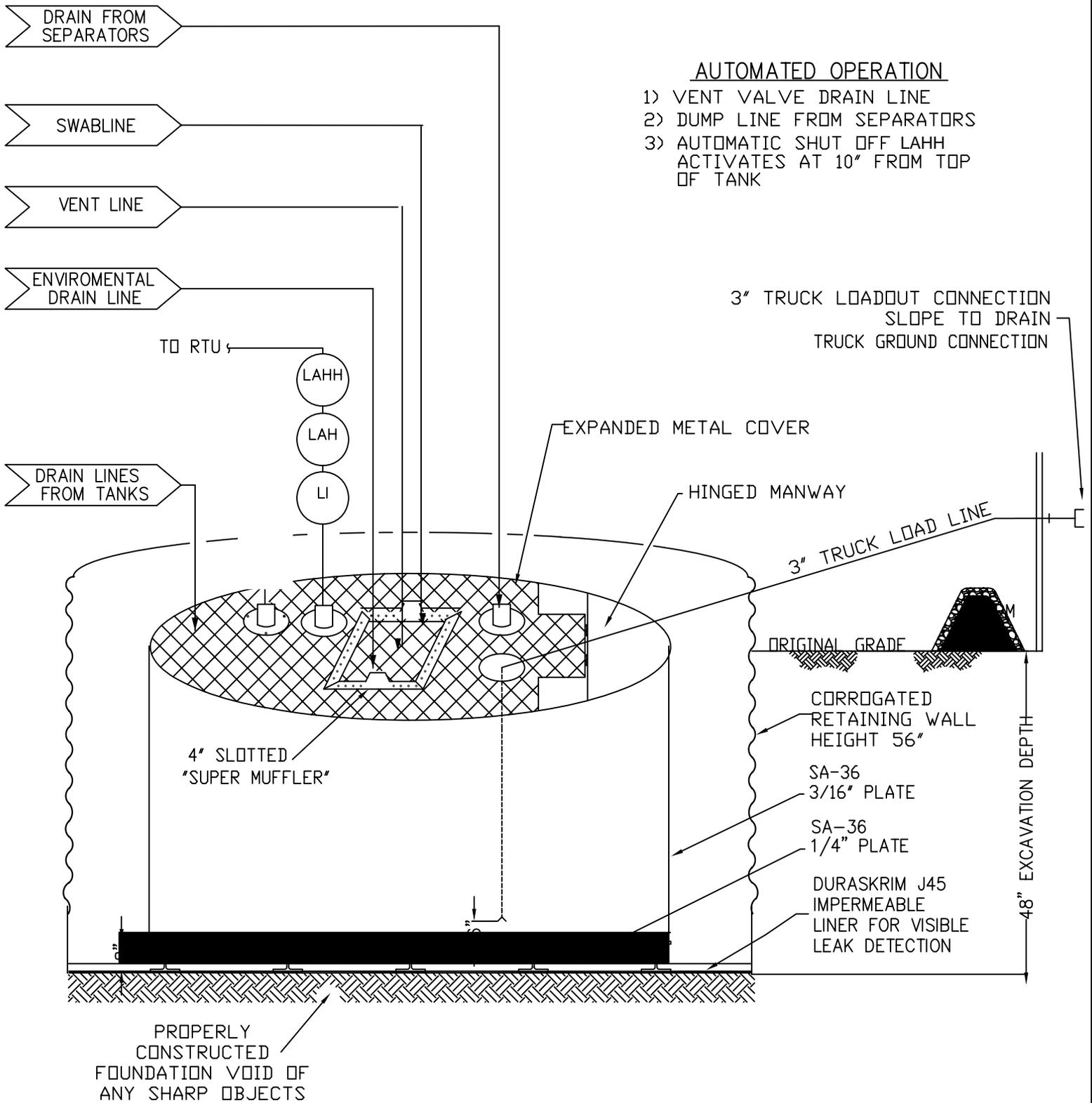
1/20/2022

MANUAL OPERATION

- 1) PRODUCTION TANKS DRAINLINE
- 2) SWABLINE DRAIN LINE
- 3) ENVIROMENTAL DRAIN LINE FROM COMPRESSOR SKID

AUTOMATED OPERATION

- 1) VENT VALVE DRAIN LINE
- 2) DUMP LINE FROM SEPARATORS
- 3) AUTOMATIC SHUT OFF LAHH ACTIVATES AT 10" FROM TOP OF TANK



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



SuperScrim™ H Product Specifications

This product meets GRI GM 25 Specifications

Properties	Test Method	Frequency	Minimum Average Values		
			H30	H36	H45
Thickness, Nominal (mils) Min. Ave. (mils)	ASTM D5199	Per roll	30 27	36 32	45 40
Weight Nominal (lb/1000, ft ²) Min. Ave. (lb/1000, ft ²)	ASTM D5261	Per roll	140 125	168 151	210 189
Grab Tensile Strength (lb), min. ave. Elongation (%), min. ave.	ASTM D7004 (each direction)	30,000 lb	300 25	310 25	320 25
Tongue Tear (lb), min. ave.	ASTM D5884 (each direction)	30,000 lb	130	130	130
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 Or (b) High Pressure OIT	ASTM D3895 ASTM D5885	Formulation	>100 >1000	>100 >1000	>100 >1000
Standard Roll Dimensions					
Roll Width ⁽³⁾ , ft			11.83	11.83	11.83
Roll Length ⁽³⁾ , ft			1500	1230	1000
Roll Area, ft ²			17,745	14,551	11,830

⁽¹⁾Alternatively, an acceptable ply adhesion is to have a film tearing bond occur within the sheet material.

⁽²⁾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 ± 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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8615 Golden Spike Ln
Houston, TX . 77086
800.364.7688
281.272.1660

SE HABLA ESPAÑOL

www.brawler.com

SuperScrim™ 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 ²	5.7 oz/yd ²	7.2 oz/yd ²	9.6 oz/yd ²	11.5 oz/yd ²	13.4 oz/yd ²
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 Dimensions							
Roll Length ⁽²⁾ , 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 ²		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

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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 allow 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:
 - 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 groundwater less than 10,000 mg/l TDS	Constituent	Method*	Limit**
≤50 feet	Chloride	EPA 300.0	600 mg/kg
	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
51 feet-100 feet	Chloride	EPA 300.0	10,000 mg/kg
	TPH	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
	TPH	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

*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





Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

December 07, 2021

Kate Kaufman
HILCORP ENERGY
PO Box 4700
Farmington, NM 87499
TEL: (505) 564-0733
FAX:

RE: RB Sullivan 3F

OrderNo.: 2111C11

Dear Kate Kaufman:

Hall Environmental Analysis Laboratory received 9 sample(s) on 11/24/2021 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a white background.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report

Lab Order 2111C11

Date Reported: 12/7/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY

Client Sample ID: Base 1

Project: RB Sullivan 3F

Collection Date: 11/23/2021 9:25:00 AM

Lab ID: 2111C11-001

Matrix: SOIL

Received Date: 11/24/2021 7:43:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: SB
Diesel Range Organics (DRO)	12	9.4		mg/Kg	1	12/1/2021 12:59:55 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	12/1/2021 12:59:55 PM
Surr: DNOP	93.9	70-130		%Rec	1	12/1/2021 12:59:55 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	11/30/2021 8:08:50 PM
Surr: BFB	100	70-130		%Rec	1	11/30/2021 8:08:50 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.023		mg/Kg	1	11/30/2021 8:08:50 PM
Toluene	ND	0.046		mg/Kg	1	11/30/2021 8:08:50 PM
Ethylbenzene	ND	0.046		mg/Kg	1	11/30/2021 8:08:50 PM
Xylenes, Total	ND	0.093		mg/Kg	1	11/30/2021 8:08:50 PM
Surr: 4-Bromofluorobenzene	100	70-130		%Rec	1	11/30/2021 8:08:50 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	180	60		mg/Kg	20	12/2/2021 12:24:27 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report

Lab Order 2111C11

Date Reported: 12/7/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY

Client Sample ID: Base 2

Project: RB Sullivan 3F

Collection Date: 11/23/2021 9:30:00 AM

Lab ID: 2111C11-002

Matrix: SOIL

Received Date: 11/24/2021 7:43:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: SB
Diesel Range Organics (DRO)	110	9.3		mg/Kg	1	12/1/2021 1:10:37 PM
Motor Oil Range Organics (MRO)	270	47		mg/Kg	1	12/1/2021 1:10:37 PM
Surr: DNOP	126	70-130		%Rec	1	12/1/2021 1:10:37 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/30/2021 10:29:54 PM
Surr: BFB	95.5	70-130		%Rec	1	11/30/2021 10:29:54 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	11/30/2021 10:29:54 PM
Toluene	ND	0.048		mg/Kg	1	11/30/2021 10:29:54 PM
Ethylbenzene	ND	0.048		mg/Kg	1	11/30/2021 10:29:54 PM
Xylenes, Total	ND	0.096		mg/Kg	1	11/30/2021 10:29:54 PM
Surr: 4-Bromofluorobenzene	95.1	70-130		%Rec	1	11/30/2021 10:29:54 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	160	60		mg/Kg	20	12/2/2021 12:36:47 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report

Lab Order 2111C11

Date Reported: 12/7/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY

Client Sample ID: Base 3

Project: RB Sullivan 3F

Collection Date: 11/23/2021 9:38:00 AM

Lab ID: 2111C11-003

Matrix: SOIL

Received Date: 11/24/2021 7:43:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: SB
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	12/1/2021 1:21:19 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	12/1/2021 1:21:19 PM
Surr: DNOP	91.8	70-130		%Rec	1	12/1/2021 1:21:19 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/30/2021 10:53:14 PM
Surr: BFB	103	70-130		%Rec	1	11/30/2021 10:53:14 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	11/30/2021 10:53:14 PM
Toluene	ND	0.048		mg/Kg	1	11/30/2021 10:53:14 PM
Ethylbenzene	ND	0.048		mg/Kg	1	11/30/2021 10:53:14 PM
Xylenes, Total	ND	0.096		mg/Kg	1	11/30/2021 10:53:14 PM
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	11/30/2021 10:53:14 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	60		mg/Kg	20	12/2/2021 12:49:07 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Limit
	S % Recovery outside of range due to dilution or matrix interference	

Analytical Report

Lab Order 2111C11

Date Reported: 12/7/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY

Client Sample ID: Wall 5

Project: RB Sullivan 3F

Collection Date: 11/23/2021 9:43:00 AM

Lab ID: 2111C11-004

Matrix: SOIL

Received Date: 11/24/2021 7:43:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: SB
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	12/1/2021 1:32:04 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/1/2021 1:32:04 PM
Surr: DNOP	126	70-130		%Rec	1	12/1/2021 1:32:04 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/30/2021 11:16:42 PM
Surr: BFB	97.1	70-130		%Rec	1	11/30/2021 11:16:42 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.023		mg/Kg	1	11/30/2021 11:16:42 PM
Toluene	ND	0.047		mg/Kg	1	11/30/2021 11:16:42 PM
Ethylbenzene	ND	0.047		mg/Kg	1	11/30/2021 11:16:42 PM
Xylenes, Total	ND	0.093		mg/Kg	1	11/30/2021 11:16:42 PM
Surr: 4-Bromofluorobenzene	98.6	70-130		%Rec	1	11/30/2021 11:16:42 PM
EPA METHOD 300.0: ANIONS						Analyst: LRN
Chloride	ND	60		mg/Kg	20	12/2/2021 1:10:51 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Limit
	S % Recovery outside of range due to dilution or matrix interference	

Analytical Report

Lab Order 2111C11

Date Reported: 12/7/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY

Client Sample ID: Wall 6

Project: RB Sullivan 3F

Collection Date: 11/23/2021 9:48:00 AM

Lab ID: 2111C11-005

Matrix: SOIL

Received Date: 11/24/2021 7:43:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: SB
Diesel Range Organics (DRO)	120	9.3		mg/Kg	1	12/1/2021 1:42:59 PM
Motor Oil Range Organics (MRO)	230	46		mg/Kg	1	12/1/2021 1:42:59 PM
Surr: DNOP	99.9	70-130		%Rec	1	12/1/2021 1:42:59 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/30/2021 11:40:07 PM
Surr: BFB	98.3	70-130		%Rec	1	11/30/2021 11:40:07 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	11/30/2021 11:40:07 PM
Toluene	ND	0.048		mg/Kg	1	11/30/2021 11:40:07 PM
Ethylbenzene	ND	0.048		mg/Kg	1	11/30/2021 11:40:07 PM
Xylenes, Total	ND	0.095		mg/Kg	1	11/30/2021 11:40:07 PM
Surr: 4-Bromofluorobenzene	95.9	70-130		%Rec	1	11/30/2021 11:40:07 PM
EPA METHOD 300.0: ANIONS						Analyst: LRN
Chloride	230	60		mg/Kg	20	12/2/2021 11:19:41 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report

Lab Order 2111C11

Date Reported: 12/7/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY

Client Sample ID: Wall 1

Project: RB Sullivan 3F

Collection Date: 11/23/2021 9:53:00 AM

Lab ID: 2111C11-006

Matrix: SOIL

Received Date: 11/24/2021 7:43:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: SB
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	12/1/2021 9:21:24 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	12/1/2021 9:21:24 PM
Surr: DNOP	82.1	70-130		%Rec	1	12/1/2021 9:21:24 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	12/1/2021 12:03:38 AM
Surr: BFB	102	70-130		%Rec	1	12/1/2021 12:03:38 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.023		mg/Kg	1	12/1/2021 12:03:38 AM
Toluene	ND	0.046		mg/Kg	1	12/1/2021 12:03:38 AM
Ethylbenzene	ND	0.046		mg/Kg	1	12/1/2021 12:03:38 AM
Xylenes, Total	ND	0.092		mg/Kg	1	12/1/2021 12:03:38 AM
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	12/1/2021 12:03:38 AM
EPA METHOD 300.0: ANIONS						Analyst: LRN
Chloride	ND	59		mg/Kg	20	12/2/2021 11:32:03 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Limit
	S % Recovery outside of range due to dilution or matrix interference	

Analytical Report

Lab Order 2111C11

Date Reported: 12/7/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY

Client Sample ID: Wall 2

Project: RB Sullivan 3F

Collection Date: 11/23/2021 9:56:00 AM

Lab ID: 2111C11-007

Matrix: SOIL

Received Date: 11/24/2021 7:43:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: SB
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	12/1/2021 9:31:52 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	12/1/2021 9:31:52 PM
Surr: DNOP	106	70-130		%Rec	1	12/1/2021 9:31:52 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/1/2021 12:26:54 AM
Surr: BFB	102	70-130		%Rec	1	12/1/2021 12:26:54 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.023		mg/Kg	1	12/1/2021 12:26:54 AM
Toluene	ND	0.047		mg/Kg	1	12/1/2021 12:26:54 AM
Ethylbenzene	ND	0.047		mg/Kg	1	12/1/2021 12:26:54 AM
Xylenes, Total	ND	0.094		mg/Kg	1	12/1/2021 12:26:54 AM
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	12/1/2021 12:26:54 AM
EPA METHOD 300.0: ANIONS						Analyst: LRN
Chloride	340	60		mg/Kg	20	12/2/2021 11:44:24 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Limit
	S % Recovery outside of range due to dilution or matrix interference	

Analytical Report

Lab Order 2111C11

Date Reported: 12/7/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY

Client Sample ID: Wall 3

Project: RB Sullivan 3F

Collection Date: 11/23/2021 10:00:00 AM

Lab ID: 2111C11-008

Matrix: SOIL

Received Date: 11/24/2021 7:43:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: SB
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	12/1/2021 9:42:20 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	12/1/2021 9:42:20 PM
Surr: DNOP	132	70-130	S	%Rec	1	12/1/2021 9:42:20 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/1/2021 12:50:18 AM
Surr: BFB	99.7	70-130		%Rec	1	12/1/2021 12:50:18 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/1/2021 12:50:18 AM
Toluene	ND	0.049		mg/Kg	1	12/1/2021 12:50:18 AM
Ethylbenzene	ND	0.049		mg/Kg	1	12/1/2021 12:50:18 AM
Xylenes, Total	ND	0.098		mg/Kg	1	12/1/2021 12:50:18 AM
Surr: 4-Bromofluorobenzene	99.2	70-130		%Rec	1	12/1/2021 12:50:18 AM
EPA METHOD 300.0: ANIONS						Analyst: LRN
Chloride	100	60		mg/Kg	20	12/2/2021 11:56:45 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Limit
	S % Recovery outside of range due to dilution or matrix interference	

Analytical Report

Lab Order 2111C11

Date Reported: 12/7/2021

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY

Client Sample ID: Wall 4

Project: RB Sullivan 3F

Collection Date: 11/23/2021 10:06:00 AM

Lab ID: 2111C11-009

Matrix: SOIL

Received Date: 11/24/2021 7:43:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: SB
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	12/1/2021 9:52:48 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/1/2021 9:52:48 PM
Surr: DNOP	103	70-130		%Rec	1	12/1/2021 9:52:48 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/1/2021 1:13:46 AM
Surr: BFB	102	70-130		%Rec	1	12/1/2021 1:13:46 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.023		mg/Kg	1	12/1/2021 1:13:46 AM
Toluene	ND	0.047		mg/Kg	1	12/1/2021 1:13:46 AM
Ethylbenzene	ND	0.047		mg/Kg	1	12/1/2021 1:13:46 AM
Xylenes, Total	ND	0.094		mg/Kg	1	12/1/2021 1:13:46 AM
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	12/1/2021 1:13:46 AM
EPA METHOD 300.0: ANIONS						Analyst: LRN
Chloride	ND	61		mg/Kg	20	12/2/2021 12:09:06 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Limit
	S % Recovery outside of range due to dilution or matrix interference	

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2111C11

07-Dec-21

Client: HILCORP ENERGY

Project: RB Sullivan 3F

Sample ID: MB-64250	SampType: mblk	TestCode: EPA Method 300.0: Anions								
Client ID: PBS	Batch ID: 64250	RunNo: 83213								
Prep Date: 12/1/2021	Analysis Date: 12/1/2021	SeqNo: 2957146	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-64250	SampType: ics	TestCode: EPA Method 300.0: Anions								
Client ID: LCSS	Batch ID: 64250	RunNo: 83213								
Prep Date: 12/1/2021	Analysis Date: 12/1/2021	SeqNo: 2957147	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.7	90	110			

Sample ID: MB-64264	SampType: mblk	TestCode: EPA Method 300.0: Anions								
Client ID: PBS	Batch ID: 64264	RunNo: 83262								
Prep Date: 12/2/2021	Analysis Date: 12/2/2021	SeqNo: 2958497	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-64264	SampType: ics	TestCode: EPA Method 300.0: Anions								
Client ID: LCSS	Batch ID: 64264	RunNo: 83262								
Prep Date: 12/2/2021	Analysis Date: 12/2/2021	SeqNo: 2958498	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	90.9	90	110			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix interference
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2111C11

07-Dec-21

Client: HILCORP ENERGY

Project: RB Sullivan 3F

Sample ID: 2111C11-006AMS	SampType: MS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: Wall 1	Batch ID: 64225	RunNo: 83211								
Prep Date: 11/30/2021	Analysis Date: 12/2/2021	SeqNo: 2956863	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	10	50.40	5.478	82.8	39.3	155			
Surr: DNOP	5.1		5.040		100	70	130			

Sample ID: 2111C11-006AMSD	SampType: MSD	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: Wall 1	Batch ID: 64225	RunNo: 83211								
Prep Date: 11/30/2021	Analysis Date: 12/2/2021	SeqNo: 2956864	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	42	9.6	48.22	5.478	75.8	39.3	155	11.6	23.4	
Surr: DNOP	4.5		4.822		92.8	70	130	0	0	

Sample ID: LCS-64215	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 64215	RunNo: 83211								
Prep Date: 11/30/2021	Analysis Date: 12/2/2021	SeqNo: 2956906	Units: %Rec							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	3.9		5.000		78.4	70	130			

Sample ID: LCS-64223	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 64223	RunNo: 83211								
Prep Date: 11/30/2021	Analysis Date: 12/1/2021	SeqNo: 2956907	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	10	50.00	0	85.1	68.9	135			
Surr: DNOP	4.2		5.000		83.7	70	130			

Sample ID: LCS-64225	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 64225	RunNo: 83211								
Prep Date: 11/30/2021	Analysis Date: 12/1/2021	SeqNo: 2956908	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	10	50.00	0	85.0	68.9	135			
Surr: DNOP	4.5		5.000		89.3	70	130			

Sample ID: LCS-64239	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 64239	RunNo: 83211								
Prep Date: 12/1/2021	Analysis Date: 12/1/2021	SeqNo: 2956909	Units: %Rec							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	3.8		5.000		76.0	70	130			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix interference
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2111C11

07-Dec-21

Client: HILCORP ENERGY

Project: RB Sullivan 3F

Sample ID: MB-64223	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 64223	RunNo: 83211								
Prep Date: 11/30/2021	Analysis Date: 12/1/2021	SeqNo: 2956910	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	13		10.00		134	70	130			S

Sample ID: MB-64225	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 64225	RunNo: 83211								
Prep Date: 11/30/2021	Analysis Date: 12/1/2021	SeqNo: 2956911	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		104	70	130			

Sample ID: MB-64239	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 64239	RunNo: 83211								
Prep Date: 12/1/2021	Analysis Date: 12/1/2021	SeqNo: 2956912	Units: %Rec							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	11		10.00		113	70	130			

Sample ID: MB-64215	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 64215	RunNo: 83242								
Prep Date: 11/30/2021	Analysis Date: 12/2/2021	SeqNo: 2957749	Units: %Rec							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	12		10.00		124	70	130			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix interference
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

QC SUMMARY REPORT

WO#: 2111C11

Hall Environmental Analysis Laboratory, Inc.

07-Dec-21

Client: HILCORP ENERGY

Project: RB Sullivan 3F

Sample ID: mb-64196	SampType: MBLK	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: PBS	Batch ID: 64196	RunNo: 83185								
Prep Date: 11/29/2021	Analysis Date: 11/30/2021	SeqNo: 2955215	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	970		1000		97.3	70	130			

Sample ID: lcs-64196	SampType: LCS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: LCSS	Batch ID: 64196	RunNo: 83185								
Prep Date: 11/29/2021	Analysis Date: 11/30/2021	SeqNo: 2955216	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	90.6	78.6	131			
Surr: BFB	1100		1000		113	70	130			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix interference
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2111C11

07-Dec-21

Client: HILCORP ENERGY

Project: RB Sullivan 3F

Sample ID: mb-64196	SampType: MBLK	TestCode: EPA Method 8021B: Volatiles								
Client ID: PBS	Batch ID: 64196	RunNo: 83185								
Prep Date: 11/29/2021	Analysis Date: 11/30/2021	SeqNo: 2955257	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.97		1.000		97.2	70	130			

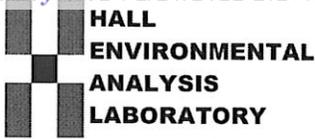
Sample ID: LCS-64196	SampType: LCS	TestCode: EPA Method 8021B: Volatiles								
Client ID: LCSS	Batch ID: 64196	RunNo: 83185								
Prep Date: 11/29/2021	Analysis Date: 11/30/2021	SeqNo: 2955258	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.95	0.025	1.000	0	95.3	80	120			
Toluene	0.93	0.050	1.000	0	93.4	80	120			
Ethylbenzene	0.93	0.050	1.000	0	93.1	80	120			
Xylenes, Total	2.8	0.10	3.000	0	92.7	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		101	70	130			

Sample ID: 2111c11-001ams	SampType: MS	TestCode: EPA Method 8021B: Volatiles								
Client ID: Base 1	Batch ID: 64196	RunNo: 83185								
Prep Date: 11/29/2021	Analysis Date: 11/30/2021	SeqNo: 2955268	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.91	0.024	0.9452	0	96.3	80	120			
Toluene	0.90	0.047	0.9452	0	95.5	80	120			
Ethylbenzene	0.91	0.047	0.9452	0	96.5	80	120			
Xylenes, Total	2.7	0.095	2.836	0	95.9	80	120			
Surr: 4-Bromofluorobenzene	0.93		0.9452		98.8	70	130			

Sample ID: 2111c11-001amsd	SampType: MSD	TestCode: EPA Method 8021B: Volatiles								
Client ID: Base 1	Batch ID: 64196	RunNo: 83185								
Prep Date: 11/29/2021	Analysis Date: 11/30/2021	SeqNo: 2955269	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.96	0.024	0.9662	0	99.1	80	120	5.12	20	
Toluene	0.95	0.048	0.9662	0	98.8	80	120	5.61	20	
Ethylbenzene	0.96	0.048	0.9662	0	99.0	80	120	4.82	20	
Xylenes, Total	2.9	0.097	2.899	0	98.9	80	120	5.25	20	
Surr: 4-Bromofluorobenzene	0.97		0.9662		101	70	130	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix interference
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: HILCORP ENERGY Work Order Number: 2111C11 RcptNo: 1

Received By: Cheyenne Cason 11/24/2021 7:43:00 AM
Completed By: Isaiah Ortiz 11/24/2021 8:47:49 AM
Reviewed By: [Signature] 11/21

Handwritten initials/signatures: Cason, I-Ort

Chain of Custody

- 1. Is Chain of Custody complete? Yes [checked] No [] Not Present []
2. How was the sample delivered? Courier

Log In

- 3. Was an attempt made to cool the samples? Yes [checked] No [] NA []
4. Were all samples received at a temperature of >0° C to 6.0°C Yes [checked] No [] NA []
5. Sample(s) in proper container(s)? Yes [checked] No []
6. Sufficient sample volume for indicated test(s)? Yes [checked] No []
7. Are samples (except VOA and ONG) properly preserved? Yes [checked] No []
8. Was preservative added to bottles? Yes [] No [checked] NA []
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes [] No [] NA [checked]
10. Were any sample containers received broken? Yes [] No [checked]
11. Does paperwork match bottle labels? Yes [checked] No []
12. Are matrices correctly identified on Chain of Custody? Yes [checked] No []
13. Is it clear what analyses were requested? Yes [checked] No []
14. Were all holding times able to be met? Yes [checked] No []

of preserved bottles checked for pH: (<2 or >12 unless noted) Adjusted? Checked by: [Signature] 11/24/21

Special Handling (if applicable)

- 15. Was client notified of all discrepancies with this order? Yes [] No [] NA [checked]

Person Notified: [] Date: []
By Whom: [] Via: [] eMail [] Phone [] Fax [] In Person []
Regarding: []
Client Instructions: []

16. Additional remarks:

17. Cooler Information

Table with 7 columns: Cooler No, Temp °C, Condition, Seal Intact, Seal No, Seal Date, Signed By. Row 1: 1, 0.4, Good, Not Present, [], [], []

Chain-of-Custody Record

Client: Hilcorp

Mailing Address: 382 CR 3100

APC NM 87410

Phone #: 505.594.3400

email or Fax#: RKraufman@hilcorp.com

QA/QC Package: Standard Level 4 (Full Validation)

Accreditation: Az Compliance NELAC Other

EDD (Type)

Turn-Around Time:

Standard Rush

Project Name:

RB Sullivan 3F

Project #:

Project Manager:

Kate Kraufman

Sampler: C Cardona

On Ice: Yes No

of Coolers: 1

Cooler Temp (including CF): 0.4-0=0.4 (°C)

Container Type and #

Preservative Type

HEAL No.

Date	Time	Matrix	Sample Name
11/23/21	925	Soil	Base 1
11/23/21	930	Soil	Base 2
11/23/21	938	Soil	Base 3
11/23/21	943	Soil	Wall 5
11/23/21	948	Soil	Wall 6
11/23/21	953	Soil	Wall 1
11/23/21	956	Soil	Wall 2
11/23/21	1000	Soil	Wall 3
11/23/21	1006	Soil	Wall 4

Container Type and #	Preservative Type	HEAL No.
Glass 4oz/1	-	601
Glass 4oz/1	-	602
Glass 4oz/1	-	603
Glass 4oz/1	-	604
Glass 4oz/1	-	605
Glass 4oz/1	-	606
Glass 4oz/1	-	607
Glass 4oz/1	-	608
Glass 4oz/1	-	609

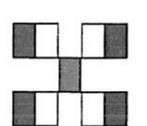
Remarks:	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO ₃ , NO ₂ , PO ₄ , SO ₄	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	Chlorides 300.0
	X	X	X	X	X	X	X	X	X	X	X
	X	X	X	X	X	X	X	X	X	X	X
	X	X	X	X	X	X	X	X	X	X	X
	X	X	X	X	X	X	X	X	X	X	X
	X	X	X	X	X	X	X	X	X	X	X
	X	X	X	X	X	X	X	X	X	X	X
	X	X	X	X	X	X	X	X	X	X	X
	X	X	X	X	X	X	X	X	X	X	X
	X	X	X	X	X	X	X	X	X	X	X
	X	X	X	X	X	X	X	X	X	X	X

Relinquished by: [Signature] Date: 11/23/21 Time: 1450

Received by: [Signature] Date: 11/23/21 Time: 1450

Relinquished by: [Signature] Date: 11/23/21 Time: 1746

Received by: [Signature] Date: 11/24/21 Time: 0743



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

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 1625 N. French Dr., Hobbs, NM 88240
 Phone:(575) 393-6161 Fax:(575) 393-0720
District II
 811 S. First St., Artesia, NM 88210
 Phone:(575) 748-1283 Fax:(575) 748-9720
District III
 1000 Rio Brazos Rd., Aztec, NM 87410
 Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
 1220 S. St Francis Dr., Santa Fe, NM 87505
 Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS
 Action 73978

CONDITIONS

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 73978
	Action Type: [C-144] Below Grade Tank Plan (C-144B)

CONDITIONS

Created By	Condition	Condition Date
cwhitehead	Modification by retrofit approved conditional on maintained integrity of the BGT; if BGT integrity is shown to be compromised in the future, registration of this BGT is rescinded.	1/26/2022