

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-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	
District RP	
Facility ID	
Application ID	

Release Notification

NMOC

Responsible Party

APR 16 2019

DISTRICT III

Responsible Party Hilcorp Energy	OGRID 372171
Contact Name Clara Cardoza	Contact Telephone 505-564-0733
Contact email ccardoza@hilcorp.com	Incident # (assigned by OCD) nCS1901627746
Contact mailing address 382 CR 3100 Aztec NM 87410	

Location of Release Source

Latitude 36.5982819 Longitude -107.5212479
(NAD 83 in decimal degrees to 5 decimal places)

Site Name San Juan 28-7 Unit 183M	Site Type Well Site
Date Release Discovered 01/15/2019	API# (if applicable) 30-039-25660

Unit Letter	Section	Township	Range	County
O	01	27N	07W	Rio Arriba

Surface Owner: ☐ State ☒ Federal ☐ Tribal ☐ Private (Name: _____)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

<input checked="" type="checkbox"/> Crude Oil	Volume Released (bbls) 150	Volume Recovered (bbls) 0
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 7	Volume Recovered (bbls) 0
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

Leak in bottom of tank due to corrosion. Visible signs of the leak on surface are estimated to be 10 feet wide and 25 -30 feet across. Had visited location 1-11-19 and saw no signs of the leak. When operator returned on the 15th noticed


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Oil Conservation Division

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Was this a major release as defined by 19.15.29.7(A) NMAC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release? Per 19.15.29.7 A - "Major release" means an unauthorized release of a volume, excluding gases, of 25 barrels or more
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Cory Smith given by Clara Cardoza @ 7:15 a.m. on 1/16/2018 via phone and follow-up email (copied Vanessa Fields and Jim Griswold) Left voicemail for Whitney Thomas with BLMFFO @ 7:20 a.m. (government shutdown) and follow-up email (copied Emmanuel Adeloye)	

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.
If all the actions described above have <u>not</u> been undertaken, explain why:
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.
Printed Name: <u>Clara Cardoza</u> Title: <u>Environmental Specialist</u> Signature: <u></u> Date: <u>1/28/2019</u> email: <u>ccardoza@hilcorp.com</u> Telephone: <u>505-564-0733</u>
<u>OCD Only</u> Received by: _____ Date: _____

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Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	<u>>100 ft</u> (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release 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?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas not on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: *Each of the following items must be included in the report.*

- ☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- ☒ Field data
- ☒ Data table of soil contaminant concentration data
- ☒ Depth to water determination
- ☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
- ☒ Boring or excavation logs
- ☒ Photographs including date and GIS information
- ☒ Topographic/Aerial maps
- ☒ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

State of New Mexico
Oil Conservation Division

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Printed Name: Clara Cardoza Title: Environmental Specialist

Signature:  Date: 3/5/2019

email: ccardoza@hilcorp.com Telephone: 505.564.0733

OCD Only

Received by: _____ Date: _____

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Remediation Plan


Remediation Plan Checklist: *Each of the following items must be included in the plan.*

- ☒ Detailed description of proposed remediation technique
- ☒ Scaled sitemap with GPS coordinates showing delineation points
- ☒ Estimated volume of material to be remediated
- ☒ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- ☒ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

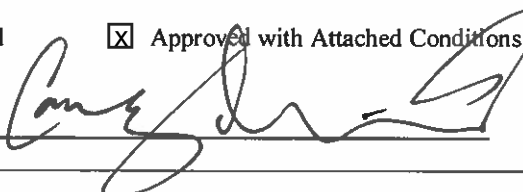
Deferral Requests Only: *Each of the following items must be confirmed as part of any request for deferral of remediation.*

- ☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
- ☐ Extents of contamination must be fully delineated.
- ☐ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Clara Cardoza Title: Environmental Specialist
 Signature:  Date: 4/15/2019
 email: ccardoza@hilcorp.com Telephone: 505.564.0733

OCD Only

Received by: GCD Date: 4/16/19 16-13-19
☐ Approved ☒ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved
 Signature:  Date: 6/24/19

Smith, Cory, EMNRD

From: Smith, Cory, EMNRD
Sent: Monday, June 24, 2019 2:02 PM
To: ccardoza@hilcorp.com
Cc: Kevin Cole; Ryan Mersmann; Powell, Brandon, EMNRD; 'Jim Foster'
Subject: RE: San Juan 28-7 Unit 183M Site Characterization Report and RAP

Clara,

OCD has reviewed the remediation plan for the San Juan 28-7 #183M received on April 16, 2019 and modification on June 13, 2019 and have approved the plan with the following conditions of approval:

- HEC will start SVE remediation no later than September 16, 2019
- HEC will achieve a run time of 90% or better of the proposed 12 hours per day.
- HEC will collect an initial gas sample for laboratory analysis shortly after startup of SVE operations after the initial gas sample an annual sample is required. The air sample must be collected prior to the inlet of the vacuum pump but, after the convergence of all SVE wells or alternatively an air sample from each SVE well is acceptable.
 - o The gas sample will be analyzed for EPA Method 8260 Full List and include Carbon Dioxide and Oxygen.
- HEC quarterly report will include at a minimum
 - o Summary of remediation activity for the quarter
 - o SVE Run time
 - o SVE mass removal
 - o Field notes (VOC readings, water/product recovery, inspection dates etc)
 - o Amount of liquids/product recovered if any (This will be recorded from the knock out drum since ground water in not expected to be encountered)
- HEC will submit a closure plan on Form C-141 for OCD approval prior to the collection of any confirmation Borehole samples.

OCD recommends the installation of an additional "Vent" well with fans or even active air sparging well to increase oxygen levels which would promote biodegradation and assist in air movement for sve remediation.

Cory Smith
Environmental Specialist
Oil Conservation Division
Energy, Minerals, & Natural Resources
1000 Rio Brazos, Aztec, NM 87410
(505)334-6178 ext 115
cory.smith@state.nm.us

From: Jim Foster <jim@teamtimberwolf.com>
Sent: Thursday, June 13, 2019 3:39 PM
To: Smith, Cory, EMNRD <Cory.Smith@state.nm.us>; ccardoza@hilcorp.com
Cc: Kevin Cole <kevin@teamtimberwolf.com>; Ryan Mersmann <ryan@teamtimberwolf.com>; Powell, Brandon, EMNRD

Smith, Cory, EMNRD

From: Jim Foster <jim@teamtimberwolf.com>
Sent: Thursday, June 13, 2019 3:39 PM
To: Smith, Cory, EMNRD; ccardoza@hilcorp.com
Cc: Kevin Cole; Ryan Mersmann; Powell, Brandon, EMNRD
Subject: [EXT] RE: San Juan 28-7 Unit 183M Site Characterization Report and RAP

Cory,

I left a message for you this morning; I also tried calling a few times this afternoon but get a busy signal. Your office phone lines may be out.

The minimum runtime for the system will be 12 hours per day. Once we have the system installed, we'll have a better idea on how long those batteries will last into the evening.

Regarding automation – Yes. The system will be equipped with solenoid-actuated valves and timer to provide automated cycling between legs.

Please let me know if you need anything else.

Thanks,

Jim Foster
President



691 CR 233, Suite B-4
Durango, CO 81301
970-516-8419 (O) 979-324-2139 (C)
Teamtimberwolf.com

Jim

From: Smith, Cory, EMNRD <Cory.Smith@state.nm.us>
Sent: Tuesday, June 4, 2019 3:50 PM
To: ccardoza@hilcorp.com
Cc: Kevin Cole <kevin@teamtimberwolf.com>; Ryan Mersmann <ryan@teamtimberwolf.com>; Powell, Brandon, EMNRD <Brandon.Powell@state.nm.us>; Jim Foster <jim@teamtimberwolf.com>
Subject: RE: San Juan 28-7 Unit 183M Site Characterization Report and RAP

Clara,

Any update on the SVE run time? I cant approve the Remediation plan without some basic information like anticipated run time for the SVE.

Cory Smith
Environmental Specialist
Oil Conservation Division
Energy, Minerals, & Natural Resources

1000 Rio Brazos, Aztec, NM 87410
(505)334-6178 ext 115
cory.smith@state.nm.us

From: Smith, Cory, EMNRD
Sent: Thursday, May 30, 2019 1:15 PM
To: 'Jim Foster' <jim@teamtinberwolf.com>; ccardoza@hilcorp.com
Cc: Kevin Cole <kevin@teamtinberwolf.com>; Ryan Mersmann <ryan@teamtinberwolf.com>; Powell, Brandon, EMNRD <Brandon.Powell@state.nm.us>
Subject: RE: San Juan 28-7 Unit 183M Site Characterization Report and RAP

Jim,

If I am reading the provided schedule correctly HEC intends for the SVE system to be functional for 12 hours a day? With the changing of Legs every few hours is HEC design going to having automation on it?

Cory Smith
Environmental Specialist
Oil Conservation Division
Energy, Minerals, & Natural Resources
1000 Rio Brazos, Aztec, NM 87410
(505)334-6178 ext 115
cory.smith@state.nm.us

From: Jim Foster <jim@teamtinberwolf.com>
Sent: Thursday, May 30, 2019 12:58 PM
To: Smith, Cory, EMNRD <Cory.Smith@state.nm.us>; ccardoza@hilcorp.com
Cc: Kevin Cole <kevin@teamtinberwolf.com>; Ryan Mersmann <ryan@teamtinberwolf.com>
Subject: [EXT] RE: San Juan 28-7 Unit 183M Site Characterization Report and RAP

Cory,

Here's an anticipated daily run:

Leg	Runtime
A	7am-11am
B	11am-3pm
C	3pm-7pm
A	7pm-11pm (or until battery discharge)
B	11pm-3am (or until battery discharge)
C	3am-7am (or until battery discharge)

Hope this helps!
Jim

From: Smith, Cory, EMNRD <Cory.Smith@state.nm.us>
Sent: Thursday, May 30, 2019 11:50 AM
To: Jim Foster <jim@teamtinberwolf.com>; ccardoza@hilcorp.com
Cc: Kevin Cole <kevin@teamtinberwolf.com>
Subject: RE: San Juan 28-7 Unit 183M Site Characterization Report and RAP

Jim.

2-6 hours a day? A week? I need more details? Solar powered systems are different and the OCD understand that there are some limitation too them.

Cory Smith
Environmental Specialist
Oil Conservation Division
Energy, Minerals, & Natural Resources
1000 Rio Brazos, Aztec, NM 87410
(505)334-6178 ext 115
cory.smith@state.nm.us

From: Jim Foster <jim@teamtiberwolf.com>
Sent: Thursday, May 30, 2019 10:36 AM
To: Smith, Cory, EMNRD <Cory.Smith@state.nm.us>; ccardoza@hilcorp.com
Cc: Kevin Cole <kevin@teamtiberwolf.com>
Subject: [EXT] RE: San Juan 28-7 Unit 183M Site Characterization Report and RAP

A cycle will be between 2 and 6 hours.

I recall our 90% runtime discussion, but we also discussed that solar powered systems were treated differently due to solar/battery limitations. This Site does not have electrical power.

From: Smith, Cory, EMNRD <Cory.Smith@state.nm.us>
Sent: Thursday, May 30, 2019 11:25 AM
To: Jim Foster <jim@teamtiberwolf.com>; ccardoza@hilcorp.com
Cc: Kevin Cole <kevin@teamtiberwolf.com>
Subject: RE: San Juan 28-7 Unit 183M Site Characterization Report and RAP

Jim,

How longs a Cycle?

I need more information as we discussed in our meeting I need to be able to quantify run time. As SVE have a 90% runtime condition of approval so HEC vague answers gives me nothing to base that percentage on.

Cory Smith
Environmental Specialist
Oil Conservation Division
Energy, Minerals, & Natural Resources
1000 Rio Brazos, Aztec, NM 87410
(505)334-6178 ext 115
cory.smith@state.nm.us

From: Jim Foster <jim@teamtiberwolf.com>
Sent: Thursday, May 30, 2019 10:07 AM
To: Smith, Cory, EMNRD <Cory.Smith@state.nm.us>; ccardoza@hilcorp.com

Cc: Kevin Cole <kevin@teamtinberwolf.com>

Subject: [EXT] RE: San Juan 28-7 Unit 183M Site Characterization Report and RAP

Cory,

Each leg will have a runtime of 2 to 6 hour per cycle.

We will begin SVE system design once NMOCD administrative approval is received. Typically, 3 or 4 weeks is required to complete a system design. We provided 2 months in the schedule to accommodate fluctuating work loads and to allow Hilcorp adequate time to review.

Additionally, system installation will be dependent upon: 1) driller availability and 2) compressor/blower will be sized based on the final number of SVE wells and screened intervals. Occasionally, additional information is obtained during SVE well installation which changes the scope of work (i.e., number of SVE wells or depth of impacted media) which correspondingly changes in the compressor size requirements. Too large of a compressor results in preferential pathways; too small of a compressor reduces the radius of influence. The schedule accommodates this sizing issue.

Please let me know if you have any questions.

Thanks,

Jim Foster
President



691 CR 233, Suite B-4
Durango, CO 81301
970-516-8419 (O) 979-324-2139 (C)
Teamtinberwolf.com

From: Smith, Cory, EMNRD <Cory.Smith@state.nm.us>

Sent: Thursday, May 30, 2019 10:23 AM

To: ccardoza@hilcorp.com

Cc: Jim Foster <jim@teamtinberwolf.com>; Kevin Cole <kevin@teamtinberwolf.com>

Subject: RE: San Juan 28-7 Unit 183M Site Characterization Report and RAP

Clara,

Some questions,

- "The runtime for each leg will be between 2 to 6 hours:" a day? a week? a month?
- Why is it going to take HEC 2 months to develop a SVE system when HEC has known the size of impacts since March of 19. The design/installation and start up times seem a bit excessive.

Cory Smith
Environmental Specialist
Oil Conservation Division
Energy, Minerals, & Natural Resources
1000 Rio Brazos, Aztec, NM 87410

(505)334-6178 ext 115
cory.smith@state.nm.us

From: Kevin Cole <kevin@teamtiberwolf.com>
Sent: Tuesday, May 21, 2019 3:59 PM
To: Smith, Cory, EMNRD <Cory.Smith@state.nm.us>
Cc: Jim Foster <jim@teamtiberwolf.com>; ccardoza@hilcorp.com
Subject: [EXT] San Juan 28-7 Unit 183M Site Characterization Report and RAP

Cory,

Attached is the Site Characterization Report and Remedial Action Plan for the San Juan 28-7 Unit 183M. Let us know if you have any questions or concerns.

Thanks,

Kevin Cole



1920 W. Villa Maria, Suite 205 (Box 205)
Bryan, Texas 77807
(979) 571-3205

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961 CR 233, Ste. B-4
Durango, Colorado 81301
979.324.2139
www.teamtimberwolf.com

May 21, 2019

Ms. Clara Cardoza
Environmental Specialist
Hilcorp Energy Company
1111 Travis Street
Houston, Texas 77002

Re: Site Characterization Report and Remedial Action Plan
San Juan 28-7 No. 183M
Hilcorp Energy Company
Rio Arriba County, New Mexico
OCD Incident No.: nCS1901627746

Dear Ms. Cardoza:

At the request of Hilcorp Energy Company (Hilcorp), Timberwolf Environmental, LLC (Timberwolf) presents this site characterization report and remedial action plan for the San Juan 28-7 No. 183M (Site). The Site is located approximately 36.7 miles southwest of Dulce, in Rio Arriba County, New Mexico (Figures 1 – 3).

The purpose of this document is to present Site characterization activities and outline the preferred remedial option to bring the Site to regulatory closure.

Release Description

The Site is a single-well upstream oil and gas facility. Surface equipment includes: a wellhead, oil tank and produced water tank, separator, and gas meter.

Corrosion near the base of the former oil tank resulted in the release of approximately 150 barrels (bbls) of oil and 7 bbls of produced water. All released fluid was contained by the berm. Standing fluid was recovered and the tank removed from service and disposed off-site. Initial field investigation activities identified the area of the former tank battery as the primary area of concern.

Site Characterization Report

Timberwolf characterized the Site which included a field investigation and desktop review of publicly available data. The environmental setting, applicable regulatory criteria, sampling methodology, soil investigation, and conclusions are presented below.

Environmental Setting

The Site is situated on federal land managed by the Bureau of Land Management (BLM). The area consists of sparse vegetative cover, comprised primarily of scrub brush. Area terrain is comprised of plateaus divided by canyons. The primary canyon is the area is Carrizo Canyon, which drains to the northwest into the San Juan River, approximately 19 miles from the Site.

The Site is situated along the rimrock of an unnamed side canyon to Carrizo Canyon. Average elevation at the Site is approximately 6,523 feet (ft) above mean sea level. The closest surface water is a first order tributary of Carrizo Creek, situated 1,500 ft southeast of the site and 330 ft lower in elevation.

According to the U.S. Department of Agriculture – Natural Resources Conservation Service (USDA-NRCS), the Site soil consists of the Vessilla-Menefee-Orlie complex, 2 to 30 percent slopes. The surface horizon is comprised of a sandy loam, underlain by bedrock encountered between 15 to 19 inches below ground surface (bgs). Native salinity of the soil is nonsaline to very slightly saline (0.0 to 2.0 millimhos per centimeter (mmhos/cm)).

Regulatory Criteria

The New Mexico Oil Conservation Division (NMOCD) established remediation action levels for soil impacted by oilfield products or wastes, which are documented under New Mexico Administrative Code (NMAC) Rule 19.15.29. The Rule was officially promulgated by Oil Conservation Commission Order No.: R-14751, dated June 21, 2018.

Under Rule 19.15.29, soil cleanup criteria is determined based on the depth to usable groundwater and distances to surface water resources and sensitive features. Regulated groundwater intervals, required laboratory methodology, and soil closure criteria are presented in the following table.

Table 1. Closure Criteria for Soil Impacted by a Release

Depth to Groundwater ¹	Constituent	Method ²	Regulatory Criteria ³ (mg/kg)
≤ 50 feet	Chloride ⁴	EPA 300.0	600
	TPH	EPA SW-846 Method 8015M	100
	Total BTEX	EPA SW-846 Method 8021B or 8260B	50
	Benzene	EPA SW-846 Method 8021B or 8015M	10
51 feet-100 feet	Chloride ⁴	EPA 300.0	10,000
	TPH	EPA SW-846 Method 8015M	2,500
	GRO+DRO	EPA SW-846 Method 8015M	1,000
	Total BTEX	EPA SW-846 Method 8021B or 8260B	50
	Benzene	EPA SW-846 Method 8021B or 8260B	10
> 100 feet	Chloride ⁴	EPA 300.0	20,000
	TPH	EPA SW-846 Method 8015M	2,500
	GRO+DRO	EPA SW-846 Method 8015M	1,000
	Total BTEX	EPA SW-846 Method 8021B or 8260B	50
	Benzene	EPA SW-846 Method 8021B or 8015M	10

¹ From surface to useable groundwater (i.e., less than 10,000 milligrams per liter (mg/L) total dissolved solids (TDS))

² Or other test methods approved by the division

³ Regulatory limits or background level, whichever is greater
mg/kg – milligrams per kilogram
GRO – gasoline range organics

⁴ Applies to produced water and fluids containing chloride
TPH = GRO + DRO + ORO
ORO – motor oil range organics

DRO – diesel range organics

Additionally, the most stringent closure criteria as presented in Table 1 (i.e., ≤ 50 feet) are applicable for releases within a municipal boundary, 100-year floodplain, overlying a mine or unstable area, or within the specified protective distances from sensitive features as shown in Table 2.

Table 2. Protective Distances for Sensitive Features

Sensitive Feature	Protective Distance (ft)
Continuously flowing watercourse and its first order tributaries	300
Lakebed, sinkhole, or playa lake	200
Residence, school, hospital, or church	300
Spring or water well for private domestic/livestock water source	500
Any spring or fresh water well	1,000
Wetland	300

ft - feet

Review of well records maintained by the New Mexico Office of the State Engineer (NMOSE) revealed the closest water well is 1.36 miles west of the Site adjacent to Carrizo Creek. The differential elevation between the Site and the depth to water in the referenced water well provides a depth to groundwater of the Site 385 ft. The Site is not situated within a municipal boundary, floodplain, mine or unstable area, or within 1,000 ft of any sensitive feature; therefore, soil closure criteria at the Site is as follows:

- Chloride < 20,000 mg/kg
- Total petroleum hydrocarbons (TPH) < 2,500 mg/kg
- GRO + DRO < 1,000 mg/kg
- Total BTEX < 50 mg/kg
- Benzene < 10 mg/kg

Sampling Methodology

A total of 13 soil samples were collected from five borings installed using a rotary rig equipped with a hollow stem auger and split spoon barrel. Prior to soil boring installation, clearance requests were submitted to New Mexico 811 (i.e., One Call).

During boring installation, soil samples were continuously sampled, logged for morphological characteristics, and field screened for volatile organic compounds (VOCs) using a photoionization detector (PID). PID readings are recorded on the attached soil boring logs.

Samples from each boring exhibiting the highest PID reading were selected for chemical analysis along with the boring terminus. Each boring was plugged with a bentonite seal to prevent vertical migration of contaminants. Sample locations are presented in Figure 4.

Soil samples were placed directly into laboratory provided sample containers, labeled, stored on ice, and transported under proper chain-of-custody protocol to Hall Environmental Analysis Laboratory in

Albuquerque, New Mexico for chemical analysis. Selected soil samples were analyzed for one or more of the following constituents of concern (COCs) using the described method:

- Benzene, toluene, ethylbenzene, and xylene (BTEX) by EPA Method 8260B
- TPH by EPA SW-846 Method 8015M/D
- Chloride by EPA Method 300

Laboratory results, analytical methods, and chain-of-custody documents are provided in the attached laboratory reports.

Soil Investigation

On 03/18/19 and 03/19/19, Timberwolf contracted with GeoMat, Inc. of Farmington, New Mexico to install soil borings at the Site. Five soil borings (i.e. SB1 – SB5) were installed at and surrounding the former tank battery to determine the magnitude and extent of any petroleum hydrocarbon and/or chloride impacted soil. Thirteen soil samples were collected from the borings; sample depths ranged from 9 ft bgs to 41 ft bgs. The analytical results from the Site characterization are summarized in Table 3 below and presented on Figure 4.

Table 3. Soil Analytical Results – BTEX, TPH, and Chloride

Sample ID	Volatile Organic Compounds (mg/kg)					Total Petroleum Hydrocarbons (mg/kg)					Chloride (mg/kg)
	B	T	E	X	Total	GRO	DRO	MRO	GRO + DRO	TPH	
SB1 9-10'	4.1	77	15	180	276.1	2,700	350	< 47	3,050	3,097	N/A
SB1 20-21'	1.2	34	8.1	97	140.3	2,100	450	52	2,550	2,602	< 60
SB1 30-31'	< 0.024	< 0.048	< 0.048	< 0.095	< 0.215	< 4.8	26	< 49	30.8	79.8	N/A
SB1 40-41'	< 0.019	0.039	< 0.038	< 0.076	< 0.172	< 3.8	13	< 49	16.8	65.8	< 60
SB2 9-10'	< 0.024	< 0.048	< 0.048	< 0.095	< 0.215	< 4.8	65	< 49	69.8	118.8	N/A
SB2 20-21'	< 0.023	< 0.047	< 0.047	< 0.094	< 0.211	< 4.7	220	87	224.7	311.7	N/A
SB3 9-10'	< 0.023	< 0.047	< 0.047	< 0.094	< 0.211	< 4.7	< 10	< 50	< 14.7	< 64.7	N/A
SB3 20-21'	< 0.023	< 0.047	< 0.047	< 0.094	< 0.211	< 4.7	< 9.5	< 47	< 14.2	< 61.2	N/A
SB4 9-10'	< 0.023	< 0.046	< 0.046	< 0.092	< 0.207	< 4.6	20	< 49	24.6	73.6	N/A
SB4 20-21'	< 0.024	< 0.047	< 0.047	< 0.095	< 0.213	< 4.7	19	< 47	23.7	70.7	N/A
SB5 10-11'	< 0.025	< 0.049	< 0.049	< 0.098	< 0.221	< 4.9	28	< 49	32.9	81.9	N/A
SB5 20-21'	< 0.024	0.26	0.17	1.8	2.23	49	41	< 50	90	140	< 60
SB5 30-31'	< 0.025	< 0.049	< 0.049	< 0.099	< 0.222	< 4.9	25	< 48	29.9	77.9	N/A
Remedial Target	10	--	--	--	50	--	--	--	1,000	2,500	20,000

TPH – total petroleum hydrocarbons (TPH = GRO+DRO+MRO)

BTEX – benzene, toluene, ethylbenzene, and xylenes

mg/kg – milligrams per kilogram

N/A – constituent not analyzed

— – exceeds regulatory criteria

GRO – gasoline range organics

DRO – diesel range organics

MRO – motor oil range organics

-- -- no applicable regulatory criteria

Conclusions of Site Characterization

Based on the Site characterization, the NMOCD regulatory criteria, and analytical results, the following is concluded:

- Corrosion at a former oil tank resulted in the release of approximately 150 bbls of oil and 7 bbls of produced water
- Chloride concentrations were below NMOCD regulatory criteria
- Petroleum hydrocarbon concentrations (i.e., total BTEX, GRO + DRO, and TPH) exceeded NMOCD regulatory criteria in two soil samples (i.e., SB1 9-10' and SB1 20-21')
 - Total BTEX concentrations in the samples were of 276.1 mg/kg and 140.3 mg/kg, respectively
 - GRO + DRO concentrations in the samples were 3,050 mg/kg and 2,550 mg/kg, respectively
 - TPH concentrations in the samples were 3,097 mg/kg and 2,602 mg/kg, respectively
 - Samples with elevated COC concentrations were collected from SB1 installed immediately adjacent to the point of release
- Soil is vertically and horizontally delineated for all COC
 - The horizontal extent of impacted soil are the same approximate dimensions of the earthen berm (i.e., 33 ft by 45 ft)
 - The vertical extent of impacted soil is approximately 27 ft bgs
 - The volume of impacted soil is estimated to be 1,500 cubic yards (yds³)

Remedial Action Plan

The Site assessment revealed the COCs at the Site include total BTEX, GRO + DRO, and TPH; most of the TPH was observed in the gasoline range (i.e., C₆-C₁₀). Because GRO and BTEX have high volatilization and degradation rates, bioremediation and volatilization can be achieved in-situ with a soil-vapor extraction (SVE) system.

To bring Site soils into compliance, Hilcorp will install a SVE system to include approximately 7 SVE wells. Each SVE well will be constructed of 4-inch PVC and screened across the impacted intervals. Wells will be piped to a manifold system in a manner to provide multiple legs. The system will be powered by a vacuum pump or blower. Since electrical power is not available at the Site, the vacuum/blower motors will be powered by a solar panel and battery storage system.

The runtime for each leg will be between 2 to 6 hours to prevent preferential pathways from developing. The leg runtimes will be largely dependent on the solar panel power system. The SVE system will be designed and operated in a manner capable of treating the estimated 1,500 yds³ of impacted soil.

Upon NMOCD approval, system design will begin immediately. The total system runtime is projected to be approximately 24 months. The anticipated timeline for system design, installation, treatment period, soil monitoring schedule, and quarterly monitoring reports and site closure are presented in Table 4.

Table 4. Projected Remedial Tasks and Timeline

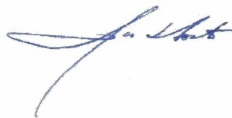
Task	2018				2019				2020			
	June-July	Aug	Sept	4Q18	1Q19	2Q19	3Q19	4Q19	1Q19	2Q19	3Q19	4Q19
System Design & O&M Schedule	■											
System Install		■	■									
Start-up, Automation & Initial Monitoring			■	■								
System Run-time			■	■	■	■	■	■	■	■	■	■
Soil Monitoring						■			■		■	
Monitoring Reports			■	■	■	■	■	■	■	■	■	■
Site Closure Report												■

Once regulatory compliance is achieved, the SVE system will be discontinued and dismantled.

Timberwolf appreciates the opportunity to provide Hilcorp with our professional consulting services. If you have any questions regarding this proposal, please contact us at (979) 324-2139.

Sincerely,
Timberwolf Environmental, LLC


Preston Kocian
Project Manager


Jim Foster
President

Attachments: Figures
NMOSE Well Log
Soil Boring Logs
Laboratory Reports and Chain-of-Custody Documents

Figures

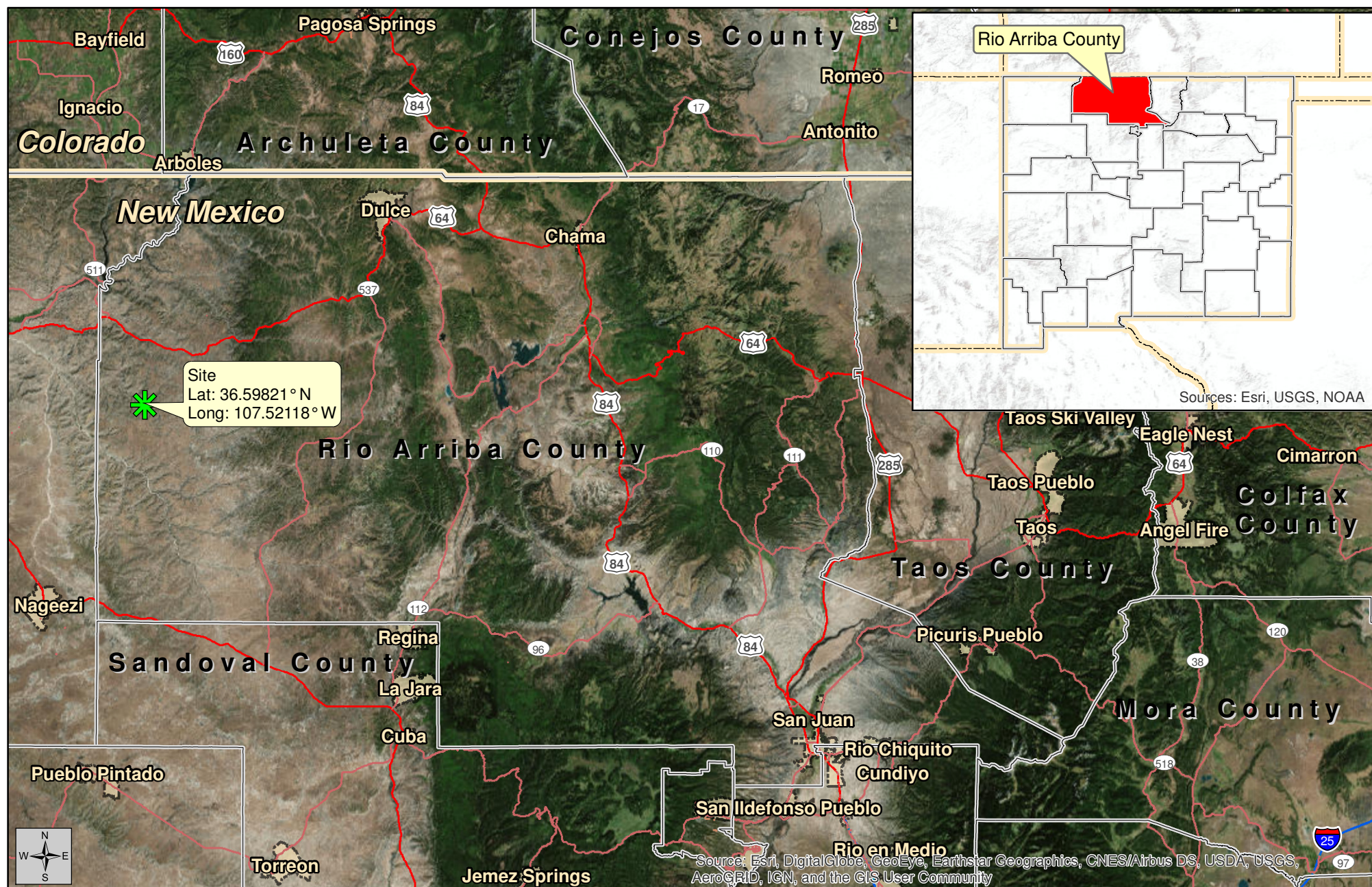


Figure 1
Site Location Map

Site Characterization Report and Remedial Action Plan


April 12, 2019



Created By:
Russell Greer
TE Project No.: HEC-190007

1:1,250,000
0 20 40 60 80 100 120 Miles
San Juan 28-7 No. 183M (OCD Incident No. NCS1901627746)
Hilcorp Energy Company
Rio Arriba County, New Mexico

Datum: NAD83
Imagery Source: ESRI
Vector Source: ESRI and TE

 Site

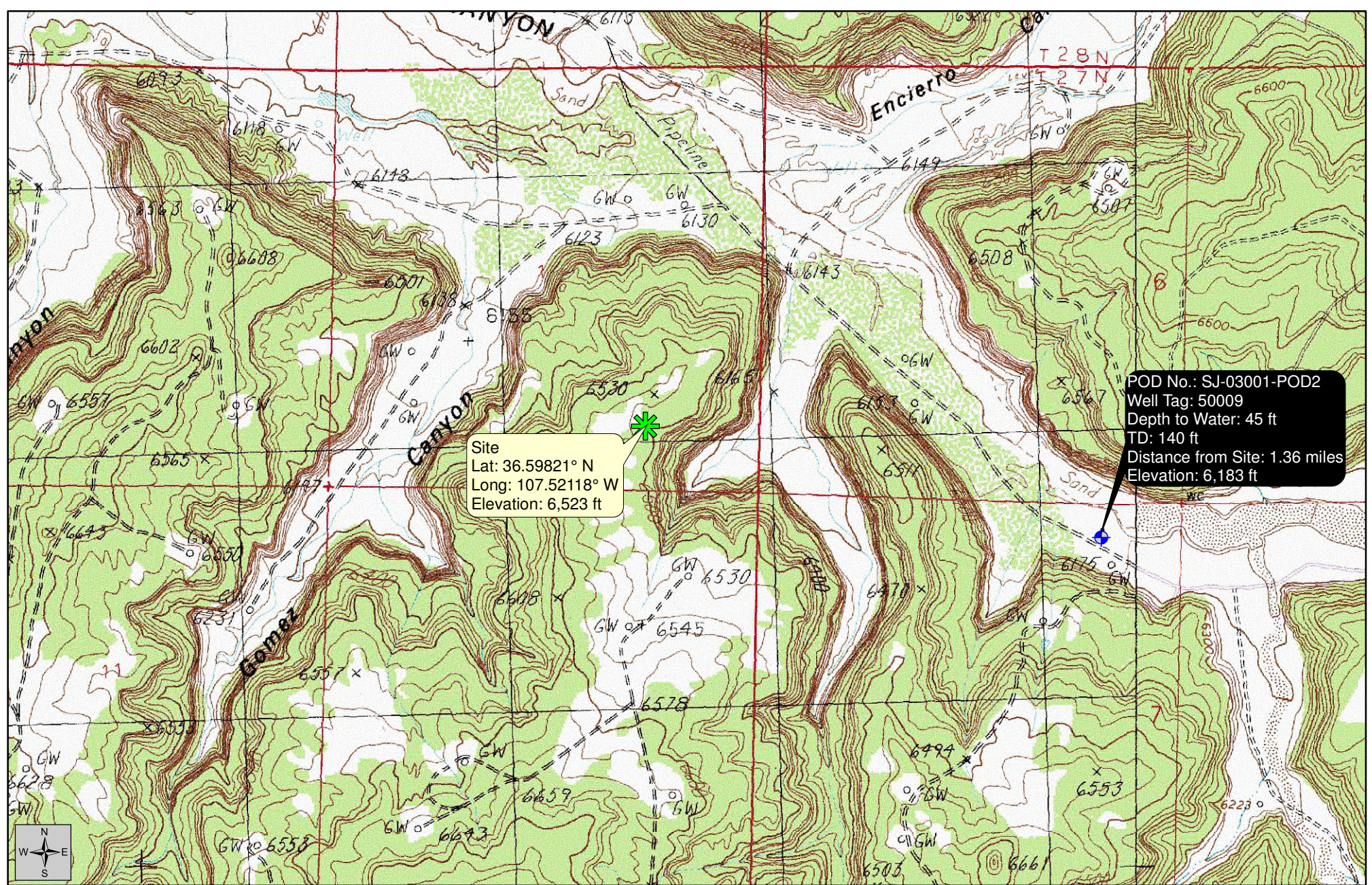


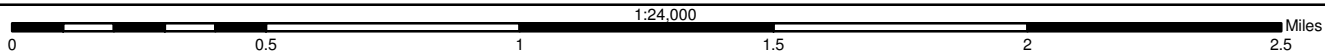
Figure 2
Topographic Map

Site Characterization Report and Remedial Action Plan

April 12, 2019




Created By:
Russell Greer
TE Project No.: HEC-190007



San Juan 28-7 No. 183M (OCD Incident No. NCS1901627746)
 Hilcorp Energy Company
 Rio Arriba County, New Mexico

Datum: NAD83
 Imagery Source: USGS
 Quads: Gould Pass and Santos Peak
 Vector Source: TE

-  Site
-  Water Well

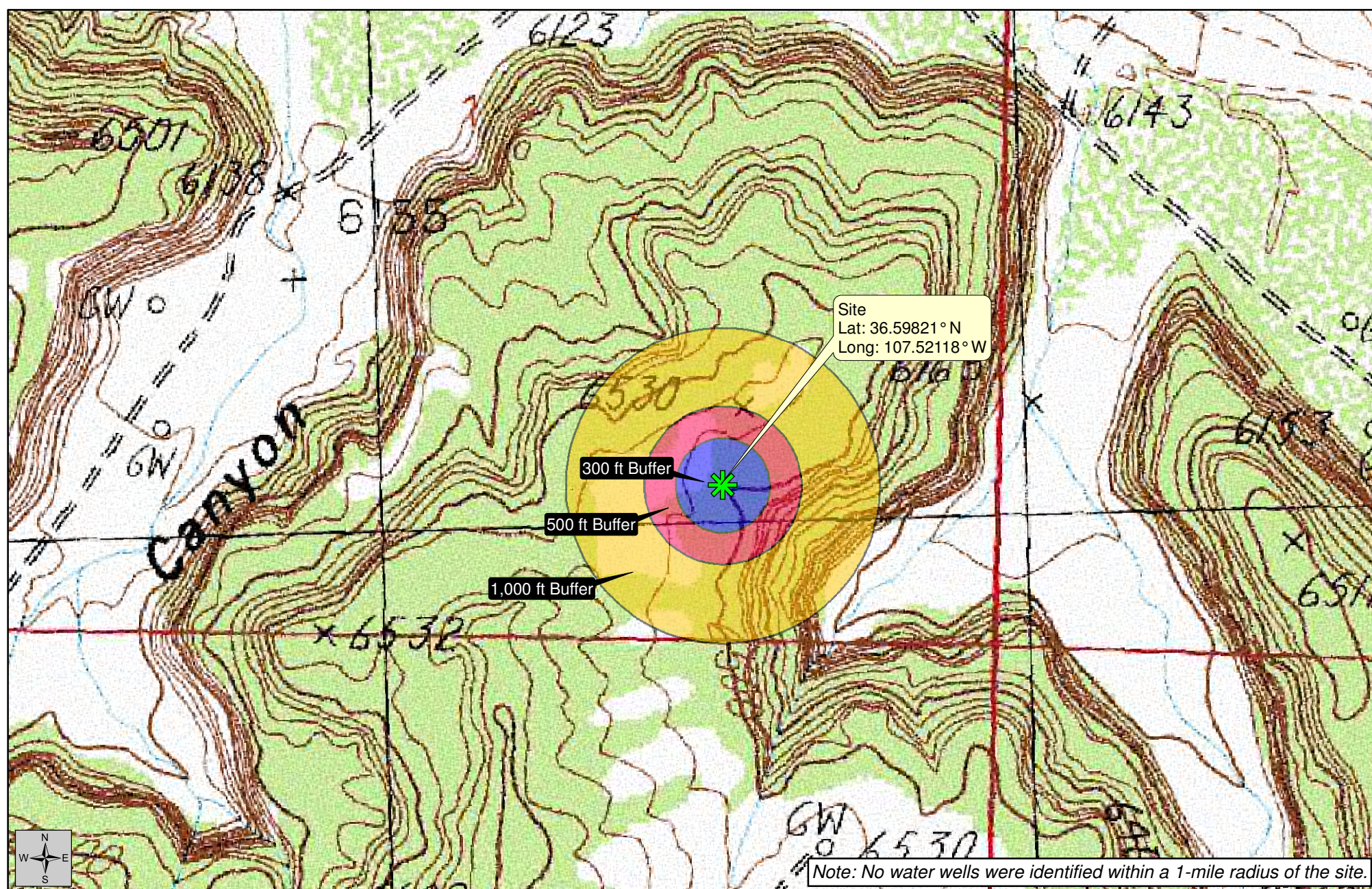


Figure 3
Buffer Map

Site Characterization Report and Remedial Action Plan

April 12, 2019



Created By:
Russell Greer
TE Project No.: HEC-190007

San Juan 28-7 No. 183M (OCD Incident No. NCS1901627746)
Hilcorp Energy Company
Rio Arriba County, New Mexico

Datum: NAD83
Imagery Source: USGS
Quads: Gould Pass and Santos Peak
Vector Source: TE

- Site
- 1,000 ft Buffer
- 500 ft Buffer
- 300 ft Buffer

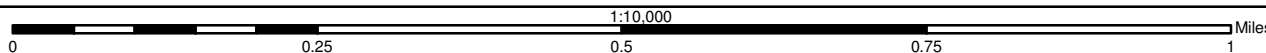




Figure 4
Aerial Map

Site Characterization Report and Remedial Action Plan

April 12, 2019



Created By:
Russell Greer
TE Project No.: HEC-190007

1:10,000
0 0.25 0.5 0.75 1 Miles
San Juan 28-7 No. 183M (OCD Incident No. NCS1901627746)
Hilcorp Energy Company
Rio Arriba County, New Mexico

Datum: NAD83
Imagery Source: ESRI
Vector Source: TE

 Site



Figure 5
Site Diagram Map

Site Characterization Report and Remedial Action Plan

May 7, 2019

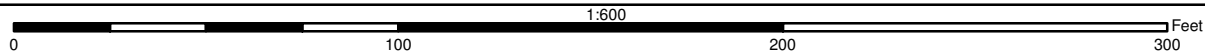


Created By:
Russell Greer
TE Project No.: HEC-190007

San Juan 28-7 No. 183M (OCD Incident No. NCS1901627746)
Hilcorp Energy Company
Rio Arriba County, New Mexico

Datum: NAD83
Imagery Source: ESRI
Vector Source: TE

- Above Ground Storage Tank
- ▭ Tank Battery Berm
- ▨ Potentially Impacted Area




NMOSE Well Log



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	Tw	Rng	X	Y
50009	SJ 03001 POD2	1	2	2	07	27N	06W	276178	4052801 

Driller License:	1357	Driller Company:	BAILEY DRILLING COMPANY	
Driller Name:	BAILEY, MARK			
Drill Start Date:	12/28/2017	Drill Finish Date:	01/05/2018	Plug Date:
Log File Date:	01/10/2018	PCW Rev Date:		Source: Shallow
Pump Type:		Pipe Discharge Size:		Estimated Yield: 10 GPM
Casing Size:	5.00	Depth Well:	140 feet	Depth Water: 45 feet

Water Bearing Stratifications:	Top	Bottom	Description
	0	20	Shallow Alluvium/Basin Fill
	20	140	Sandstone/Gravel/Conglomerate

Casing Perforations:	Top	Bottom
	0	70
	0	123
	123	140

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.

5/21/19 2:26 PM

POINT OF DIVERSION SUMMARY

Soil Boring Logs

SOIL BORING INSTALLATION

SB1

Page 1 of 2



TIMBERWOLF
ENVIRONMENTAL

Client: Hilcorp Energy Company	Completion Date: 03/18/19
Project Name: San Juan 28-7 #183M	Logged By: Preston Kocian
Site Location: Bloomfield, Rio Arriba, New Mexico	Drilled By: Geomat, Inc.
Project Number: 190007	Drilling Method & Boring Diameter: Hollow Stem Auger
Boring Coordinates: 36.59821, -107.52118	Total Depth (ft): 46'
Ground Surface Elevation (ft, msl): 6,520 ft	First Water Encountered (ft): NA

Depth (feet)	USCS	PID Reading (ppm)	Soil Sample	Soil Description	Well Completion
				YELLOWISH BROWN SAND	
5	SW	1,475			
				REDDISH BROWN SILTY CLAY	
	SC	1,201			
		1,111			
10		1,198		LIGHT YELLOWISH BROWN SANDSTONE	
	SW				
15					
20		1,964			
25		350			

Notes:

SOIL BORING INSTALLATION

SB1

Page 2 of 2



Client: Hilcorp Energy Company	Completion Date: 03/18/19
Project Name: San Juan 28-7 #183M	Logged By: Preston Kocian
Site Location: Bloomfield, Rio Arriba, New Mexico	Drilled By: Geomat, Inc.
Project Number: 190007	Drilling Method & Boring Diameter: Hollow Stem Auger
Boring Coordinates: 36.59821, -107.52118	Total Depth (ft): 46'
Ground Surface Elevation (ft, msl): 6,520 ft	First Water Encountered (ft): NA

Depth (feet)	USCS	PID Reading (ppm)	Soil Sample	Soil Description	Well Completion
30	SW	502		LIGHT YELLOWISH BROWN SANDSTONE	
35					
40	SC	556		YELLOWISH BROWN SILTY CLAY	
45				YELLOWISH BROWN SILTY CLAY WITH COARSE GRAINED SAND INCLUSIONS; REFUSAL AT 46'	
		66		TD = 46'	

Notes:	
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SOIL BORING INSTALLATION

SB2

Page 1 of 2



TIMBERWOLF
ENVIRONMENTAL

Client: Hilcorp Energy Company	Completion Date: 03/18/19
Project Name: San Juan 28-7 #183M	Logged By: Preston Kocian
Site Location: Bloomfield, Rio Arriba, New Mexico	Drilled By: Geomat, Inc.
Project Number: 190007	Drilling Method & Boring Diameter: Hollow Stem Auger
Boring Coordinates: 36.59830, -107.52106	Total Depth (ft): 30'
Ground Surface Elevation (ft, msl): 6,520 ft	First Water Encountered (ft): NA

Depth (feet)	USCS	PID Reading (ppm)	Soil Sample	Soil Description	Well Completion
	SW			YELLOWISH BROWN SAND	
5					
	SC			REDDISH BROWN SILTY CLAY	
10		2.8		LIGHT YELLOWISH BROWN SANDSTONE	
15	SW				
20		10.8			
25					

Notes:

SOIL BORING INSTALLATION

Page 2 of 2

SB2



Client: Hilcorp Energy Company	Completion Date: 03/18/19
Project Name: San Juan 28-7 #183M	Logged By: Preston Kocian
Site Location: Bloomfield, Rio Arriba, New Mexico	Drilled By: Geomat, Inc.
Project Number: 190007	Drilling Method & Boring Diameter: Hollow Stem Auger
Boring Coordinates: 36.59830, -107.52106	Total Depth (ft): 30'
Ground Surface Elevation (ft, msl): 6,520 ft	First Water Encountered (ft): NA

Depth (feet)	USCS	PID Reading (ppm)	Soil Sample	Soil Description	Well Completion
	SW			LIGHT YELLOWISH BROWN SANDSTONE	
30	SC	4.1		YELLOWISH BROWN SILTY CLAY; REFUSAL AT 30'	
				TD = 30'	
35					
40					
45					

Notes:	
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SOIL BORING INSTALLATION

SB4

Page 1 of 2



TIMBERWOLF
ENVIRONMENTAL

Client: Hilcorp Energy Company	Completion Date: 03/19/19
Project Name: San Juan 28-7 #183M	Logged By: Preston Kocian
Site Location: Bloomfield, Rio Arriba, New Mexico	Drilled By: Geomat, Inc.
Project Number: 190007	Drilling Method & Boring Diameter: Hollow Stem Auger
Boring Coordinates: 36.59810, -107.52126	Total Depth (ft): 39'
Ground Surface Elevation (ft, msl): 6,520 ft	First Water Encountered (ft): NA

Depth (feet)	USCS	PID Reading (ppm)	Soil Sample	Soil Description	Well Completion
	SW			YELLOWISH BROWN SAND	
5					
	SC			REDDISH BROWN SILTY CLAY	
10		0.5		LIGHT YELLOWISH BROWN SANDSTONE	
15	SW				
20		1.2			
25					

Notes:	
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SOIL BORING INSTALLATION

Page 2 of 2

SB4



Client: Hilcorp Energy Company	Completion Date: 03/19/19
Project Name: San Juan 28-7 #183M	Logged By: Preston Kocian
Site Location: Bloomfield, Rio Arriba, New Mexico	Drilled By: Geomat, Inc.
Project Number: 190007	Drilling Method & Boring Diameter: Hollow Stem Auger
Boring Coordinates: 36.59810, -107.52126	Total Depth (ft): 39'
Ground Surface Elevation (ft, msl): 6,520 ft	First Water Encountered (ft): NA

Depth (feet)	USCS	PID Reading (ppm)	Soil Sample	Soil Description	Well Completion
30	SW	0.8		LIGHT YELLOWISH BROWN SANDSTONE	
35	SC	4.1		YELLOWISH BROWN SILTY CLAY; REFUSAL AT 39'	
40				TD = 39'	
45					

Notes:	
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SOIL BORING INSTALLATION

SB3

Page 1 of 2



TIMBERWOLF
ENVIRONMENTAL

Client: Hilcorp Energy Company	Completion Date: 03/19/19
Project Name: San Juan 28-7 #183M	Logged By: Preston Kocian
Site Location: Bloomfield, Rio Arriba, New Mexico	Drilled By: Geomat, Inc.
Project Number: 190007	Drilling Method & Boring Diameter: Hollow Stem Auger
Boring Coordinates: 36.59829, -107.52129	Total Depth (ft): 37'
Ground Surface Elevation (ft, msl): 6,520 ft	First Water Encountered (ft): NA

Depth (feet)	USCS	PID Reading (ppm)	Soil Sample	Soil Description	Well Completion
				YELLOWISH BROWN SAND	
5	SW				
	SC			REDDISH BROWN SILTY CLAY	
				LIGHT YELLOWISH BROWN SANDSTONE	
10		3.1			
15	SW				
20		1.1			
25					

Notes:

SOIL BORING INSTALLATION

Page 2 of 2

SB3



Client: Hilcorp Energy Company	Completion Date: 03/19/19
Project Name: San Juan 28-7 #183M	Logged By: Preston Kocian
Site Location: Bloomfield, Rio Arriba, New Mexico	Drilled By: Geomat, Inc.
Project Number: 190007	Drilling Method & Boring Diameter: Hollow Stem Auger
Boring Coordinates: 36.59829, -107.52129	Total Depth (ft): 37'
Ground Surface Elevation (ft, msl): 6,520 ft	First Water Encountered (ft): NA

Depth (feet)	USCS	PID Reading (ppm)	Soil Sample	Soil Description	Well Completion
30	SW	1.4		LIGHT YELLOWISH BROWN SANDSTONE	
35	SC	2.9		YELLOWISH BROWN SILTY CLAY; REFUSAL AT 37'	
40				TD = 37'	
45					

Notes:	
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SOIL BORING INSTALLATION

SB5

Page 1 of 2



TIMBERWOLF
ENVIRONMENTAL

Client: Hilcorp Energy Company	Completion Date: 03/19/19
Project Name: San Juan 28-7 #183M	Logged By: Preston Kocian
Site Location: Bloomfield, Rio Arriba, New Mexico	Drilled By: Geomat, Inc.
Project Number: 190007	Drilling Method & Boring Diameter: Hollow Stem Auger
Boring Coordinates: 36.59811, -107.52107	Total Depth (ft): 35'
Ground Surface Elevation (ft, msl): 6,520 ft	First Water Encountered (ft): NA

Depth (feet)	USCS	PID Reading (ppm)	Soil Sample	Soil Description	Well Completion
	SW			YELLOWISH BROWN SAND	
5		2.2		REDDISH BROWN SILTY CLAY	
	SC				
10		0.8		LIGHT YELLOWISH BROWN SANDSTONE	
15		1.1			
	SW				
20		585			
25		229			

Notes:

SOIL BORING INSTALLATION

Page 2 of 2

SB5



Client: Hilcorp Energy Company	Completion Date: 03/19/19
Project Name: San Juan 28-7 #183M	Logged By: Preston Kocian
Site Location: Bloomfield, Rio Arriba, New Mexico	Drilled By: Geomat, Inc.
Project Number: 190007	Drilling Method & Boring Diameter: Hollow Stem Auger
Boring Coordinates: 36.59811, -107.52107	Total Depth (ft): 35'
Ground Surface Elevation (ft, msl): 6,520 ft	First Water Encountered (ft): NA

Depth (feet)	USCS	PID Reading (ppm)	Soil Sample	Soil Description	Well Completion
		229		LIGHT YELLOWISH BROWN SANDSTONE; REFUSAL AT 35'	
30	SW	127			
35		112			
				TD = 35'	
40					
45					

Notes:	
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Laboratory Reports and Chain-of-Custody Documents



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

April 02, 2019

Preston Kocian

Timberwolf Environmental
1920 W Villa Maria Ste 205
Bryan, TX 77807
TEL: (979) 324-2139
FAX:

RE: 190007

OrderNo.: 1903831

Dear Preston Kocian:

Hall Environmental Analysis Laboratory received 5 sample(s) on 3/19/2019 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued March 22, 2019.

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. 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. All samples are reported as received unless otherwise indicated.

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

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a horizontal line.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1903831**Date Reported: **4/2/2019****CLIENT:** Timberwolf Environmental**Client Sample ID:** SB1 9-10'**Project:** 190007**Collection Date:** 3/18/2019 10:45:00 AM**Lab ID:** 1903831-001**Matrix:** SOIL**Received Date:** 3/19/2019 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: Irm
Diesel Range Organics (DRO)	350	9.5		mg/Kg	1	3/30/2019 6:55:14 PM	43965
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	3/30/2019 6:55:14 PM	43965
Surr: DNOP	95.5	70-130		%Rec	1	3/30/2019 6:55:14 PM	43965
EPA METHOD 8015D: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	2700	480		mg/Kg	100	4/1/2019 12:47:15 PM	43962
Surr: BFB	156	73.8-119	S	%Rec	100	4/1/2019 12:47:15 PM	43962
EPA METHOD 8021B: VOLATILES							Analyst: RAA
Benzene	4.1	2.4		mg/Kg	100	4/1/2019 12:47:15 PM	43962
Toluene	77	4.8		mg/Kg	100	4/1/2019 12:47:15 PM	43962
Ethylbenzene	15	4.8		mg/Kg	100	4/1/2019 12:47:15 PM	43962
Xylenes, Total	180	9.6		mg/Kg	100	4/1/2019 12:47:15 PM	43962
Surr: 4-Bromofluorobenzene	98.9	80-120		%Rec	100	4/1/2019 12:47:15 PM	43962

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

Qualifiers:	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified at testcode

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1903831**Date Reported: **4/2/2019****CLIENT:** Timberwolf Environmental**Client Sample ID:** SB1 20-21'**Project:** 190007**Collection Date:** 3/18/2019 11:05:00 AM**Lab ID:** 1903831-002**Matrix:** SOIL**Received Date:** 3/19/2019 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	60		mg/Kg	20	3/19/2019 11:26:46 AM	43755
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	2100	350		mg/Kg	100	3/19/2019 11:33:54 AM	G58448
Surr: BFB	99.7	70-130		%Rec	100	3/19/2019 11:33:54 AM	G58448
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: Irm
Diesel Range Organics (DRO)	450	9.6		mg/Kg	1	3/19/2019 10:51:16 AM	43753
Motor Oil Range Organics (MRO)	52	48		mg/Kg	1	3/19/2019 10:51:16 AM	43753
Surr: DNOP	99.8	70-130		%Rec	1	3/19/2019 10:51:16 AM	43753
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	1.2	0.089		mg/Kg	5	3/19/2019 10:36:53 AM	SLS5844
Toluene	34	3.5		mg/Kg	100	3/19/2019 11:33:54 AM	SLS5844
Ethylbenzene	8.1	0.18		mg/Kg	5	3/19/2019 10:36:53 AM	SLS5844
Xylenes, Total	97	7.1		mg/Kg	100	3/19/2019 11:33:54 AM	SLS5844
Surr: 4-Bromofluorobenzene	106	70-130		%Rec	5	3/19/2019 10:36:53 AM	SLS5844
Surr: Toluene-d8	99.3	70-130		%Rec	5	3/19/2019 10:36:53 AM	SLS5844

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

Qualifiers:	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified at testcode

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1903831**Date Reported: **4/2/2019****CLIENT:** Timberwolf Environmental**Client Sample ID:** SB1 30-31'**Project:** 190007**Collection Date:** 3/18/2019 11:30:00 AM**Lab ID:** 1903831-003**Matrix:** SOIL**Received Date:** 3/19/2019 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: CLP
Diesel Range Organics (DRO)	26	9.7		mg/Kg	1	3/21/2019 4:52:31 PM	43793
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/21/2019 4:52:31 PM	43793
Surr: DNOP	95.6	70-130		%Rec	1	3/21/2019 4:52:31 PM	43793
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/20/2019 11:26:49 AM	43765
Surr: BFB	104	73.8-119		%Rec	1	3/20/2019 11:26:49 AM	43765
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	3/20/2019 11:26:49 AM	43765
Toluene	ND	0.048		mg/Kg	1	3/20/2019 11:26:49 AM	43765
Ethylbenzene	ND	0.048		mg/Kg	1	3/20/2019 11:26:49 AM	43765
Xylenes, Total	ND	0.095		mg/Kg	1	3/20/2019 11:26:49 AM	43765
Surr: 4-Bromofluorobenzene	105	80-120		%Rec	1	3/20/2019 11:26:49 AM	43765

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

Qualifiers:	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified at testcode

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1903831**Date Reported: **4/2/2019****CLIENT:** Timberwolf Environmental**Client Sample ID:** SB1 40-41'**Project:** 190007**Collection Date:** 3/18/2019 12:15:00 PM**Lab ID:** 1903831-004**Matrix:** SOIL**Received Date:** 3/19/2019 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	60		mg/Kg	20	3/19/2019 11:39:10 AM	43755
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	3.8		mg/Kg	1	3/19/2019 10:08:11 AM	G58448
Surr: BFB	102	70-130		%Rec	1	3/19/2019 10:08:11 AM	G58448
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: Irm
Diesel Range Organics (DRO)	13	9.7		mg/Kg	1	3/19/2019 11:15:27 AM	43753
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/19/2019 11:15:27 AM	43753
Surr: DNOP	94.9	70-130		%Rec	1	3/19/2019 11:15:27 AM	43753
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.019		mg/Kg	1	3/19/2019 10:08:11 AM	SLS5844
Toluene	0.039	0.038		mg/Kg	1	3/19/2019 10:08:11 AM	SLS5844
Ethylbenzene	ND	0.038		mg/Kg	1	3/19/2019 10:08:11 AM	SLS5844
Xylenes, Total	ND	0.076		mg/Kg	1	3/19/2019 10:08:11 AM	SLS5844
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	3/19/2019 10:08:11 AM	SLS5844
Surr: Toluene-d8	96.8	70-130		%Rec	1	3/19/2019 10:08:11 AM	SLS5844

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

Qualifiers:	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified at testcode

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1903831

02-Apr-19

Client: Timberwolf Environmental

Project: 190007

Sample ID: MB-43755	SampType: MBLK	TestCode: EPA Method 300.0: Anions								
Client ID: PBS	Batch ID: 43755	RunNo: 58466								
Prep Date: 3/19/2019	Analysis Date: 3/19/2019	SeqNo: 1963057	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-43755	SampType: LCS	TestCode: EPA Method 300.0: Anions								
Client ID: LCSS	Batch ID: 43755	RunNo: 58466								
Prep Date: 3/19/2019	Analysis Date: 3/19/2019	SeqNo: 1963058	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.3	90	110			

Qualifiers:

H Holding times for preparation or analysis exceeded
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

ND Not Detected at the Reporting Limit
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified at testcode

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1903831

02-Apr-19

Client: Timberwolf Environmental

Project: 190007

Sample ID: LCS-43753	SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: LCSS	Batch ID: 43753		RunNo: 58455							
Prep Date: 3/19/2019	Analysis Date: 3/19/2019		SeqNo: 1962097		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	10	50.00	0	88.3	63.9	124			
Surr: DNOP	4.8		5.000		96.9	70	130			

Sample ID: MB-43753	SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: PBS	Batch ID: 43753		RunNo: 58455							
Prep Date: 3/19/2019	Analysis Date: 3/19/2019		SeqNo: 1962099		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	9.6		10.00		95.7	70	130			

Sample ID: MB-43793	SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: PBS	Batch ID: 43793		RunNo: 58556							
Prep Date: 3/20/2019	Analysis Date: 3/21/2019		SeqNo: 1965940		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	9.1		10.00		91.1	70	130			

Sample ID: LCS-43793	SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: LCSS	Batch ID: 43793		RunNo: 58556							
Prep Date: 3/20/2019	Analysis Date: 3/21/2019		SeqNo: 1965942		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	10	50.00	0	96.9	63.9	124			
Surr: DNOP	4.8		5.000		95.9	70	130			

Sample ID: LCS-43965	SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: LCSS	Batch ID: 43965		RunNo: 58759							
Prep Date: 3/29/2019	Analysis Date: 3/30/2019		SeqNo: 1974126		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	85.8	63.9	124			
Surr: DNOP	4.2		5.000		83.9	70	130			

Qualifiers:

H Holding times for preparation or analysis exceeded
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

ND Not Detected at the Reporting Limit
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified at testcode

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1903831

02-Apr-19

Client: Timberwolf Environmental

Project: 190007

Sample ID: MB-43965	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 43965	RunNo: 58759								
Prep Date: 3/29/2019	Analysis Date: 3/30/2019	SeqNo: 1974127	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	8.9		10.00		89.4	70	130			

Qualifiers:

H Holding times for preparation or analysis exceeded
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

ND Not Detected at the Reporting Limit
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified at testcode

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1903831

02-Apr-19

Client: Timberwolf Environmental

Project: 190007

Sample ID: MB-43765	SampType: MBLK	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: PBS	Batch ID: 43765	RunNo: 58498								
Prep Date: 3/19/2019	Analysis Date: 3/20/2019	SeqNo: 1963949			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	1000		1000		101	73.8	119			

Sample ID: LCS-43765	SampType: LCS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: LCSS	Batch ID: 43765	RunNo: 58498								
Prep Date: 3/19/2019	Analysis Date: 3/20/2019	SeqNo: 1963950			Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	101	80.1	123			
Surr: BFB	1100		1000		111	73.8	119			

Sample ID: 1903831-003AMS	SampType: MS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: SB1 30-31'	Batch ID: 43765	RunNo: 58498								
Prep Date: 3/19/2019	Analysis Date: 3/20/2019	SeqNo: 1963952			Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	28	4.9	24.53	0	114	69.1	142			
Surr: BFB	1100		981.4		116	73.8	119			

Sample ID: 1903831-003AMSD	SampType: MSD	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: SB1 30-31'	Batch ID: 43765	RunNo: 58498								
Prep Date: 3/19/2019	Analysis Date: 3/20/2019	SeqNo: 1963953			Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	4.7	23.58	0	106	69.1	142	10.8	20	
Surr: BFB	1000		943.4		110	73.8	119	0	0	

Sample ID: LCS-43962	SampType: LCS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: LCSS	Batch ID: 43962	RunNo: 58796								
Prep Date: 3/29/2019	Analysis Date: 4/1/2019	SeqNo: 1975696			Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	96.8	80.1	123			
Surr: BFB	1000		1000		101	73.8	119			

Sample ID: LCS-43991	SampType: LCS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: LCSS	Batch ID: 43991	RunNo: 58796								
Prep Date: 3/30/2019	Analysis Date: 4/1/2019	SeqNo: 1975697			Units: %Rec					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)										
Surr: BFB										

Qualifiers:

H Holding times for preparation or analysis exceeded
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

ND Not Detected at the Reporting Limit
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified at testcode

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1903831

02-Apr-19

Client: Timberwolf Environmental

Project: 190007

Sample ID: LCS-43991	SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: LCSS	Batch ID: 43991		RunNo: 58796							
Prep Date: 3/30/2019	Analysis Date: 4/1/2019		SeqNo: 1975697		Units: %Rec					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1000		1000		104	73.8	119			

Sample ID: MB-43962	SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: PBS	Batch ID: 43962		RunNo: 58796							
Prep Date: 3/29/2019	Analysis Date: 4/1/2019		SeqNo: 1975698		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	890		1000		89.3	73.8	119			

Sample ID: MB-43991	SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: PBS	Batch ID: 43991		RunNo: 58796							
Prep Date: 3/30/2019	Analysis Date: 4/1/2019		SeqNo: 1975699		Units: %Rec					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	940		1000		94.0	73.8	119			

Qualifiers:

H Holding times for preparation or analysis exceeded
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

ND Not Detected at the Reporting Limit
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified at testcode

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1903831

02-Apr-19

Client: Timberwolf Environmental

Project: 190007

Sample ID: MB-43765	SampType: MBLK	TestCode: EPA Method 8021B: Volatiles								
Client ID: PBS	Batch ID: 43765	RunNo: 58498								
Prep Date: 3/19/2019	Analysis Date: 3/20/2019	SeqNo: 1963956 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	1.1		1.000		106	80	120			

Sample ID: LCS-43765	SampType: LCS	TestCode: EPA Method 8021B: Volatiles								
Client ID: LCSS	Batch ID: 43765	RunNo: 58498								
Prep Date: 3/19/2019	Analysis Date: 3/20/2019	SeqNo: 1963957 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.99	0.025	1.000	0	98.6	80	120			
Toluene	1.0	0.050	1.000	0	101	80	120			
Ethylbenzene	1.0	0.050	1.000	0	103	80	120			
Xylenes, Total	3.1	0.10	3.000	0	104	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		108	80	120			

Sample ID: 1903831-003AMSA	SampType: MS	TestCode: EPA Method 8021B: Volatiles								
Client ID: SB1 30-31'	Batch ID: 43765	RunNo: 58498								
Prep Date: 3/19/2019	Analysis Date: 3/20/2019	SeqNo: 1963959 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	0.9862	0.01143	103	63.9	127			
Toluene	1.1	0.049	0.9862	0.04114	105	69.9	131			
Ethylbenzene	1.1	0.049	0.9862	0.01505	109	71	132			
Xylenes, Total	3.3	0.099	2.959	0.07562	110	71.8	131			
Surr: 4-Bromofluorobenzene	1.0		0.9862		105	80	120			

Sample ID: 1903831-003AMSDA	SampType: MSD	TestCode: EPA Method 8021B: Volatiles								
Client ID: SB1 30-31'	Batch ID: 43765	RunNo: 58498								
Prep Date: 3/19/2019	Analysis Date: 3/20/2019	SeqNo: 1963960 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.96	0.023	0.9200	0.01143	103	63.9	127	7.38	20	
Toluene	1.0	0.046	0.9200	0.04114	106	69.9	131	6.50	20	
Ethylbenzene	1.0	0.046	0.9200	0.01505	108	71	132	7.54	20	
Xylenes, Total	3.1	0.092	2.760	0.07562	110	71.8	131	6.41	20	
Surr: 4-Bromofluorobenzene	0.96		0.9200		104	80	120	0	0	

Qualifiers:

H Holding times for preparation or analysis exceeded
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

ND Not Detected at the Reporting Limit
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified at testcode

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1903831

02-Apr-19

Client: Timberwolf Environmental

Project: 190007

Sample ID: LCS-43962	SampType: LCS		TestCode: EPA Method 8021B: Volatiles							
Client ID: LCSS	Batch ID: 43962		RunNo: 58796							
Prep Date: 3/29/2019	Analysis Date: 4/1/2019		SeqNo: 1975714		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.94	0.025	1.000	0	93.9	80	120			
Toluene	0.99	0.050	1.000	0	99.4	80	120			
Ethylbenzene	0.97	0.050	1.000	0	96.8	80	120			
Xylenes, Total	2.9	0.10	3.000	0	98.2	80	120			
Surr: 4-Bromofluorobenzene	0.96		1.000		96.1	80	120			

Sample ID: LCS-43991	SampType: LCS		TestCode: EPA Method 8021B: Volatiles							
Client ID: LCSS	Batch ID: 43991		RunNo: 58796							
Prep Date: 3/30/2019	Analysis Date: 4/1/2019		SeqNo: 1975715		Units: %Rec					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.96		1.000		95.6	80	120			

Sample ID: MB-43962	SampType: MBLK		TestCode: EPA Method 8021B: Volatiles							
Client ID: PBS	Batch ID: 43962		RunNo: 58796							
Prep Date: 3/29/2019	Analysis Date: 4/1/2019		SeqNo: 1975716		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	0.93		1.000		92.8	80	120			

Sample ID: MB-43991	SampType: MBLK		TestCode: EPA Method 8021B: Volatiles							
Client ID: PBS	Batch ID: 43991		RunNo: 58796							
Prep Date: 3/30/2019	Analysis Date: 4/1/2019		SeqNo: 1975717		Units: %Rec					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.96		1.000		96.1	80	120			

Qualifiers:

H Holding times for preparation or analysis exceeded
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

ND Not Detected at the Reporting Limit
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified at testcode

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1903831

02-Apr-19

Client: Timberwolf Environmental

Project: 190007

Sample ID: 100ng lcs	SampType: LCS	TestCode: EPA Method 8260B: Volatiles Short List								
Client ID: LCSS	Batch ID: SLS58448	RunNo: 58448								
Prep Date:	Analysis Date: 3/18/2019	SeqNo: 1961815	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.84	0.025	1.000	0	83.6	70	130			
Toluene	0.94	0.050	1.000	0	94.4	70	130			
Surr: 1,2-Dichloroethane-d4	0.46		0.5000		92.2	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		99.8	70	130			
Surr: Dibromofluoromethane	0.44		0.5000		87.6	70	130			
Surr: Toluene-d8	0.50		0.5000		99.0	70	130			

Sample ID: rb	SampType: MBLK	TestCode: EPA Method 8260B: Volatiles Short List								
Client ID: PBS	Batch ID: SLS58448	RunNo: 58448								
Prep Date:	Analysis Date: 3/18/2019	SeqNo: 1961816	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: 1,2-Dichloroethane-d4	0.46		0.5000		92.6	70	130			
Surr: 4-Bromofluorobenzene	0.51		0.5000		101	70	130			
Surr: Dibromofluoromethane	0.44		0.5000		88.1	70	130			
Surr: Toluene-d8	0.50		0.5000		101	70	130			

Qualifiers:

H Holding times for preparation or analysis exceeded
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

ND Not Detected at the Reporting Limit
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified at testcode

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1903831

02-Apr-19

Client: Timberwolf Environmental

Project: 190007

Sample ID: 2.5ug gro lcs	SampType: LCS		TestCode: EPA Method 8015D Mod: Gasoline Range							
Client ID: LCSS	Batch ID: G58448		RunNo: 58448							
Prep Date:	Analysis Date: 3/18/2019		SeqNo: 1961613		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	92.6	70	130			
Surr: BFB	510		500.0		101	70	130			

Sample ID: rb	SampType: MBLK		TestCode: EPA Method 8015D Mod: Gasoline Range							
Client ID: PBS	Batch ID: G58448		RunNo: 58448							
Prep Date:	Analysis Date: 3/18/2019		SeqNo: 1961614		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	510		500.0		102	70	130			

Qualifiers:

H Holding times for preparation or analysis exceeded
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

ND Not Detected at the Reporting Limit
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified at testcode



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

Sample Log-In Check List

Client Name: TIMBERWOLF ENVIRON

Work Order Number: 1903831

RcptNo: 1

Received By: Anne Thorne 3/19/2019 8:15:00 AM

Completed By: Anne Thorne 3/19/2019 8:35:00 AM

Reviewed By: EJM 3/19/19

Labeled by: KTO 3/19/19

Anne Thorne

Anne Thorne

Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ? Yes ☒ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☒ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
8. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
9. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☒
10. Were any sample containers received broken? Yes ☐ No ☒
11. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
13. Is it clear what analyses were requested? Yes ☒ No ☐
14. Were all holding times able to be met?
(If no, notify customer for authorization.) Yes ☒ No ☐

of preserved
bottles checked
for pH:

(<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: _____

Date: _____

By Whom: _____

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.4	Good	Yes			

Chain-of-Custody Record

Client: Timberwolf Environmental LLC

Mailing Address: 1920 W Villa Maria

Ste. 205 Bryan, TX 77807

Phone #: 361-772-8706

email or Fax#: Postmaster@timberwolf.com

QA/QC Package: Cardinal Environmental Corp. Com

☐ Standard ☐ Level 4 (Full Validation)

Accreditation ☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:

☐ Standard ☒ Rush

Project Name:

190007

Project #:

190007

Project Manager:

QA/QC Package: Cardinal Environmental Corp. Com

☐ Standard ☐ Level 4 (Full Validation)

Accreditation ☐ NELAP ☐ Other

☐ EDD (Type)

Sampler:

On Ice: ☒ Yes ☐ No

Sample Temperature: 0400

Container Type and #

402 1 MA

Preservative Type

MA

HEAL No.

1903831

Date

3/18/19

Time

1045

Matrix

So.1

Sample Request ID

SB1 9-10'

Date

3/18/19

Time

1105

Matrix

So.1

Sample Request ID

SB1 20-21'

Date

3/18/19

Time

1130

Matrix

So.1

Sample Request ID

SB1 30-31'

Date

3/18/19

Time

1215

Matrix

So.1

Sample Request ID

SB1 40-41'

Date

3/18/19

Time

1250

Matrix

So.1

Sample Request ID

SB1 45-46'

Date

3/18/19

Time

1300

Matrix

So.1

Sample Request ID

SB1 9-10'

Date

3/18/19

Time

1300

Matrix

So.1

Sample Request ID

SB1 20-21'

Date

3/18/19

Time

1300

Matrix

So.1

Sample Request ID

SB1 30-31'

Date

3/18/19

Time

1300

Matrix

So.1

Sample Request ID

SB1 40-41'

Date

3/18/19

Time

1300

Matrix

So.1

Sample Request ID

SB1 45-46'

Date

3/18/19

Time

1300

Matrix

So.1

Sample Request ID

SB1 9-10'

Date

3/18/19

Time

1300

Matrix

So.1

Sample Request ID

SB1 20-21'

Date

3/18/19

Time

1300

Matrix

So.1

Sample Request ID

SB1 30-31'

Date

3/18/19

Time

1300

Matrix

So.1

Sample Request ID

SB1 40-41'

Date

3/18/19

Time

1300

Matrix

So.1

Sample Request ID

SB1 45-46'

Date

3/18/19

Time

1300

Matrix

So.1

Sample Request ID

SB1 9-10'

Date

3/18/19

Time

1300

Matrix

So.1

Sample Request ID

SB1 20-21'

Date

3/18/19

Time

1300

Matrix

So.1

Sample Request ID

SB1 30-31'

Date

3/18/19

Time

1300

Matrix

So.1

Sample Request ID

SB1 40-41'

Date

3/18/19

Time

1300

Matrix

So.1

Sample Request ID

SB1 45-46'

Date

3/18/19

Time

1300

Matrix

So.1

Sample Request ID

SB1 9-10'

Date

3/18/19

Time

1300

Matrix

So.1

Sample Request ID

SB1 20-21'

Date

3/18/19

Time

1300

Matrix

So.1

Sample Request ID

SB1 30-31'

Date

3/18/19

Time

1300

Matrix

So.1

Sample Request ID

SB1 40-41'

Date

3/18/19

Time

1300

Matrix

So.1

Sample Request ID

SB1 45-46'

Date

3/18/19

Time

1300

Matrix

So.1

Sample Request ID

SB1 9-10'

Date

3/18/19

Time

1300

Matrix

So.1

Sample Request ID

SB1 20-21'

Date

3/18/19

Time

1300

Matrix

So.1

Sample Request ID

SB1 30-31'

Date

3/18/19

Time

1300

Matrix

So.1

Sample Request ID

SB1 40-41'

Date

3/18/19

Time

1300

Matrix

So.1

Sample Request ID

SB1 45-46'

Date

3/18/19

Time

1300

Matrix

So.1

Sample Request ID

SB1 9-10'

Date

3/18/19

Time

1300

Matrix

So.1

Sample Request ID

SB1 20-21'

Date

3/18/19

Time

1300

Matrix

So.1

Sample Request ID

SB1 30-31'

Date

3/18/19

Time

1300

Matrix

So.1

Sample Request ID

SB1 40-41'



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

April 01, 2019

Preston Kocian

Timberwolf Environmental
1920 W Villa Maria Ste 205
Bryan, TX 77807
TEL: (979) 324-2139
FAX

RE: 190007

OrderNo.: 1903901

Dear Preston Kocian:

Hall Environmental Analysis Laboratory received 18 sample(s) on 3/20/2019 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 horizontal line.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1903901

Date Reported: 4/1/2019

CLIENT: Timberwolf Environmental

Client Sample ID: SB2 9-10'

Project: 190007

Collection Date: 3/18/2019 2:15:00 PM

Lab ID: 1903901-001

Matrix: SOIL

Received Date: 3/20/2019 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: irm
Diesel Range Organics (DRO)	65	9.7		mg/Kg	1	3/25/2019 11:05:49 AM	43819
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/25/2019 11:05:49 AM	43819
Surr: DNOP	88.2	70-130		%Rec	1	3/25/2019 11:05:49 AM	43819
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/24/2019 1:23:00 PM	43810
Surr: BFB	98.9	73.8-119		%Rec	1	3/24/2019 1:23:00 PM	43810
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	3/24/2019 1:23:00 PM	43810
Toluene	ND	0.048		mg/Kg	1	3/24/2019 1:23:00 PM	43810
Ethylbenzene	ND	0.048		mg/Kg	1	3/24/2019 1:23:00 PM	43810
Xylenes, Total	ND	0.095		mg/Kg	1	3/24/2019 1:23:00 PM	43810
Surr: 4-Bromofluorobenzene	97.4	80-120		%Rec	1	3/24/2019 1:23:00 PM	43810

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

Qualifiers:	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified at testcode

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1903901**Date Reported: **4/1/2019****CLIENT:** Timberwolf Environmental**Client Sample ID:** SB2 20-21'**Project:** 190007**Collection Date:** 3/18/2019 2:45:00 PM**Lab ID:** 1903901-002**Matrix:** SOIL**Received Date:** 3/20/2019 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: IRM
Diesel Range Organics (DRO)	220	9.6		mg/Kg	1	3/25/2019 12:18:41 PM	43819
Motor Oil Range Organics (MRO)	87	48		mg/Kg	1	3/25/2019 12:18:41 PM	43819
Surr: DNOP	114	70-130		%Rec	1	3/25/2019 12:18:41 PM	43819
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/24/2019 2:33:25 PM	43810
Surr: BFB	100	73.8-119		%Rec	1	3/24/2019 2:33:25 PM	43810
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.023		mg/Kg	1	3/24/2019 2:33:25 PM	43810
Toluene	ND	0.047		mg/Kg	1	3/24/2019 2:33:25 PM	43810
Ethylbenzene	ND	0.047		mg/Kg	1	3/24/2019 2:33:25 PM	43810
Xylenes, Total	ND	0.094		mg/Kg	1	3/24/2019 2:33:25 PM	43810
Surr: 4-Bromofluorobenzene	99.8	80-120		%Rec	1	3/24/2019 2:33:25 PM	43810

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

Qualifiers:	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified at testcode

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1903901

Date Reported: 4/1/2019

CLIENT: Timberwolf Environmental

Client Sample ID: SB3 9-10'

Project: 190007

Collection Date: 3/19/2019 8:50:00 AM

Lab ID: 1903901-004

Matrix: SOIL

Received Date: 3/20/2019 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: IRM
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	3/25/2019 1:07:25 PM	43819
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	3/25/2019 1:07:25 PM	43819
Surr: DNOP	103	70-130		%Rec	1	3/25/2019 1:07:25 PM	43819
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/24/2019 3:43:32 PM	43810
Surr: BFB	92.8	73.8-119		%Rec	1	3/24/2019 3:43:32 PM	43810
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.023		mg/Kg	1	3/24/2019 3:43:32 PM	43810
Toluene	ND	0.047		mg/Kg	1	3/24/2019 3:43:32 PM	43810
Ethylbenzene	ND	0.047		mg/Kg	1	3/24/2019 3:43:32 PM	43810
Xylenes, Total	ND	0.094		mg/Kg	1	3/24/2019 3:43:32 PM	43810
Surr: 4-Bromofluorobenzene	97.5	80-120		%Rec	1	3/24/2019 3:43:32 PM	43810

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

Qualifiers:	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified at testcode

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1903901

Date Reported: 4/1/2019

CLIENT: Timberwolf Environmental

Client Sample ID: SB3 20-21'

Project: 190007

Collection Date: 3/19/2019 9:05:00 AM

Lab ID: 1903901-005

Matrix: SOIL

Received Date: 3/20/2019 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: IRM
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	3/25/2019 1:31:43 PM	43819
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	3/25/2019 1:31:43 PM	43819
Surr: DNOP	118	70-130		%Rec	1	3/25/2019 1:31:43 PM	43819
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/24/2019 4:06:56 PM	43810
Surr: BFB	91.8	73.8-119		%Rec	1	3/24/2019 4:06:56 PM	43810
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.023		mg/Kg	1	3/24/2019 4:06:56 PM	43810
Toluene	ND	0.047		mg/Kg	1	3/24/2019 4:06:56 PM	43810
Ethylbenzene	ND	0.047		mg/Kg	1	3/24/2019 4:06:56 PM	43810
Xylenes, Total	ND	0.094		mg/Kg	1	3/24/2019 4:06:56 PM	43810
Surr: 4-Bromofluorobenzene	96.5	80-120		%Rec	1	3/24/2019 4:06:56 PM	43810

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

Qualifiers:	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified at testcode

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1903901

Date Reported: 4/1/2019

CLIENT: Timberwolf Environmental

Client Sample ID: SB4 9-10

Project: 190007

Collection Date: 3/19/2019 10:35:00 AM

Lab ID: 1903901-008

Matrix: SOIL

Received Date: 3/20/2019 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: IRM
Diesel Range Organics (DRO)	20	9.8		mg/Kg	1	3/25/2019 2:58:24 PM	43819
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/25/2019 2:58:24 PM	43819
Surr: DNOP	109	70-130		%Rec	1	3/25/2019 2:58:24 PM	43819
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	3/24/2019 4:30:18 PM	43810
Surr: BFB	93.7	73.8-119		%Rec	1	3/24/2019 4:30:18 PM	43810
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.023		mg/Kg	1	3/24/2019 4:30:18 PM	43810
Toluene	ND	0.046		mg/Kg	1	3/24/2019 4:30:18 PM	43810
Ethylbenzene	ND	0.046		mg/Kg	1	3/24/2019 4:30:18 PM	43810
Xylenes, Total	ND	0.092		mg/Kg	1	3/24/2019 4:30:18 PM	43810
Surr: 4-Bromofluorobenzene	98.4	80-120		%Rec	1	3/24/2019 4:30:18 PM	43810

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

Qualifiers:	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified at testcode

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1903901

Date Reported: 4/1/2019

CLIENT: Timberwolf Environmental

Client Sample ID: SB4 20-21'

Project: 190007

Collection Date: 3/19/2019 10:50:00 AM

Lab ID: 1903901-009

Matrix: SOIL

Received Date: 3/20/2019 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: IRM
Diesel Range Organics (DRO)	19	9.5		mg/Kg	1	3/26/2019 6:44:38 PM	43819
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	3/26/2019 6:44:38 PM	43819
Surr: DNOP	90.1	70-130		%Rec	1	3/26/2019 6:44:38 PM	43819
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/24/2019 4:53:41 PM	43810
Surr: BFB	94.4	73.8-119		%Rec	1	3/24/2019 4:53:41 PM	43810
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	3/24/2019 4:53:41 PM	43810
Toluene	ND	0.047		mg/Kg	1	3/24/2019 4:53:41 PM	43810
Ethylbenzene	ND	0.047		mg/Kg	1	3/24/2019 4:53:41 PM	43810
Xylenes, Total	ND	0.095		mg/Kg	1	3/24/2019 4:53:41 PM	43810
Surr: 4-Bromofluorobenzene	98.2	80-120		%Rec	1	3/24/2019 4:53:41 PM	43810

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

Qualifiers:	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified at testcode

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1903901

Date Reported: 4/1/2019

CLIENT: Timberwolf Environmental

Client Sample ID: SB5 10-11'

Project: 190007

Collection Date: 3/19/2019 1:00:00 PM

Lab ID: 1903901-013

Matrix: SOIL

Received Date: 3/20/2019 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: IRM
Diesel Range Organics (DRO)	28	9.8		mg/Kg	1	3/25/2019 5:01:33 PM	43819
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/25/2019 5:01:33 PM	43819
Surr: DNOP	118	70-130		%Rec	1	3/25/2019 5:01:33 PM	43819
EPA METHOD 8015D: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/29/2019 3:55:44 PM	43810
Surr: BFB	93.2	73.8-119		%Rec	1	3/29/2019 3:55:44 PM	43810
EPA METHOD 8021B: VOLATILES							Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	3/29/2019 3:55:44 PM	43810
Toluene	ND	0.049		mg/Kg	1	3/29/2019 3:55:44 PM	43810
Ethylbenzene	ND	0.049		mg/Kg	1	3/29/2019 3:55:44 PM	43810
Xylenes, Total	ND	0.098		mg/Kg	1	3/29/2019 3:55:44 PM	43810
Surr: 4-Bromofluorobenzene	96.0	80-120		%Rec	1	3/29/2019 3:55:44 PM	43810

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

Qualifiers:	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified at testcode

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1903901

Date Reported: 4/1/2019

CLIENT: Timberwolf Environmental

Client Sample ID: SB5 20-21'

Project: 190007

Collection Date: 3/19/2019 1:20:00 PM

Lab ID: 1903901-015

Matrix: SOIL

Received Date: 3/20/2019 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	60		mg/Kg	20	3/26/2019 5:30:12 PM	43879
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: Irm
Diesel Range Organics (DRO)	41	10		mg/Kg	1	3/25/2019 5:50:09 PM	43819
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	3/25/2019 5:50:09 PM	43819
Surr: DNOP	106	70-130		%Rec	1	3/25/2019 5:50:09 PM	43819
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	49	4.8		mg/Kg	1	3/24/2019 5:17:11 PM	43810
Surr: BFB	250	73.8-119	S	%Rec	1	3/24/2019 5:17:11 PM	43810
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	3/24/2019 5:17:11 PM	43810
Toluene	0.26	0.048		mg/Kg	1	3/24/2019 5:17:11 PM	43810
Ethylbenzene	0.17	0.048		mg/Kg	1	3/24/2019 5:17:11 PM	43810
Xylenes, Total	1.8	0.096		mg/Kg	1	3/24/2019 5:17:11 PM	43810
Surr: 4-Bromofluorobenzene	108	80-120		%Rec	1	3/24/2019 5:17:11 PM	43810

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

Qualifiers:	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified at testcode

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1903901

Date Reported: 4/1/2019

CLIENT: Timberwolf Environmental

Client Sample ID: SB5 30-31'

Project: 190007

Collection Date: 3/19/2019 2:00:00 PM

Lab ID: 1903901-017

Matrix: SOIL

Received Date: 3/20/2019 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: irm
Diesel Range Organics (DRO)	25	9.6		mg/Kg	1	3/25/2019 6:38:49 PM	43819
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	3/25/2019 6:38:49 PM	43819
Surr: DNOP	112	70-130		%Rec	1	3/25/2019 6:38:49 PM	43819
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/24/2019 5:40:39 PM	43810
Surr: BFB	94.9	73.8-119		%Rec	1	3/24/2019 5:40:39 PM	43810
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	3/24/2019 5:40:39 PM	43810
Toluene	ND	0.049		mg/Kg	1	3/24/2019 5:40:39 PM	43810
Ethylbenzene	ND	0.049		mg/Kg	1	3/24/2019 5:40:39 PM	43810
Xylenes, Total	ND	0.099		mg/Kg	1	3/24/2019 5:40:39 PM	43810
Surr: 4-Bromofluorobenzene	98.1	80-120		%Rec	1	3/24/2019 5:40:39 PM	43810

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

Qualifiers:	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified at testcode

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1903901

01-Apr-19

Client: Timberwolf Environmental

Project: 190007

Sample ID: MB-43879	SampType: MBLK	TestCode: EPA Method 300.0: Anions								
Client ID: PBS	Batch ID: 43879	RunNo: 58632								
Prep Date: 3/26/2019	Analysis Date: 3/26/2019	SeqNo: 1969916	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-43879	SampType: LCS	TestCode: EPA Method 300.0: Anions								
Client ID: LCSS	Batch ID: 43879	RunNo: 58632								
Prep Date: 3/26/2019	Analysis Date: 3/26/2019	SeqNo: 1969917	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.7	90	110			

Qualifiers:

H Holding times for preparation or analysis exceeded
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

ND Not Detected at the Reporting Limit
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified at testcode

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1903901

01-Apr-19

Client: Timberwolf Environmental

Project: 190007

Sample ID: LCS-43819	SampType: LCS			TestCode: EPA Method 8015M/D: Diesel Range Organics						
Client ID: LCSS	Batch ID: 43819			RunNo: 58587						
Prep Date: 3/21/2019	Analysis Date: 3/25/2019			SeqNo: 1967306		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	57	10	50.00	0	114	63.9	124			
Surr: DNOP	5.7		5.000		114	70	130			

Sample ID: MB-43819	SampType: MBLK			TestCode: EPA Method 8015M/D: Diesel Range Organics						
Client ID: PBS	Batch ID: 43819			RunNo: 58587						
Prep Date: 3/21/2019	Analysis Date: 3/25/2019			SeqNo: 1967307		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	9.8		10.00		97.8	70	130			

Sample ID: 1903901-001AMS	SampType: MS			TestCode: EPA Method 8015M/D: Diesel Range Organics						
Client ID: SB2 9-10'	Batch ID: 43819			RunNo: 58587						
Prep Date: 3/21/2019	Analysis Date: 3/25/2019			SeqNo: 1967359		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	61	9.7	48.59	64.90	-8.32	53.5	126			S
Surr: DNOP	4.1		4.859		84.3	70	130			

Sample ID: 1903901-001AMSD	SampType: MSD			TestCode: EPA Method 8015M/D: Diesel Range Organics						
Client ID: SB2 9-10'	Batch ID: 43819			RunNo: 58587						
Prep Date: 3/21/2019	Analysis Date: 3/25/2019			SeqNo: 1967360		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	200	10	49.90	64.90	266	53.5	126	106	21.7	RS
Surr: DNOP	4.7		4.990		94.3	70	130	0	0	

Sample ID: LCS-43863	SampType: LCS			TestCode: EPA Method 8015M/D: Diesel Range Organics						
Client ID: LCSS	Batch ID: 43863			RunNo: 58623						
Prep Date: 3/25/2019	Analysis Date: 3/27/2019			SeqNo: 1969475		Units: %Rec				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	3.5		5.000		69.8	70	130			S

Sample ID: MB-43863	SampType: MBLK			TestCode: EPA Method 8015M/D: Diesel Range Organics						
Client ID: PBS	Batch ID: 43863			RunNo: 58623						
Prep Date: 3/25/2019	Analysis Date: 3/27/2019			SeqNo: 1969476		Units: %Rec				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

H Holding times for preparation or analysis exceeded
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

ND Not Detected at the Reporting Limit
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified at testcode

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1903901

01-Apr-19

Client: Timberwolf Environmental

Project: 190007

Sample ID: MB-43863	SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: PBS	Batch ID: 43863		RunNo: 58623							
Prep Date: 3/25/2019	Analysis Date: 3/27/2019		SeqNo: 1969476		Units: %Rec					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	8.0		10.00		80.4	70	130			

Qualifiers:

H Holding times for preparation or analysis exceeded
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

ND Not Detected at the Reporting Limit
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified at testcode

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1903901

01-Apr-19

Client: Timberwolf Environmental

Project: 190007

Sample ID: MB-43810	SampType: MBLK	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: PBS	Batch ID: 43810	RunNo: 58579								
Prep Date: 3/21/2019	Analysis Date: 3/24/2019	SeqNo: 1966825		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	940		1000		94.5	73.8	119			

Sample ID: LCS-43810	SampType: LCS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: LCSS	Batch ID: 43810	RunNo: 58579								
Prep Date: 3/21/2019	Analysis Date: 3/24/2019	SeqNo: 1966826		Units: mg/Kg						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	98.0	80.1	123			
Surr: BFB	1100		1000		113	73.8	119			

Sample ID: 1903901-001AMS	SampType: MS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: SB2 9-10'	Batch ID: 43810	RunNo: 58579								
Prep Date: 3/21/2019	Analysis Date: 3/24/2019	SeqNo: 1966829		Units: mg/Kg						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	4.7	23.41	0	88.7	69.1	142			
Surr: BFB	1100		936.3		112	73.8	119			

Sample ID: 1903901-001AMSD	SampType: MSD	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: SB2 9-10'	Batch ID: 43810	RunNo: 58579								
Prep Date: 3/21/2019	Analysis Date: 3/24/2019	SeqNo: 1966830		Units: mg/Kg						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	4.8	24.04	0	96.4	69.1	142	11.0	20	
Surr: BFB	1100		961.5		116	73.8	119	0	0	

Sample ID: LCS-43927	SampType: LCS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: LCSS	Batch ID: 43927	RunNo: 58750								
Prep Date: 3/28/2019	Analysis Date: 3/29/2019	SeqNo: 1974381		Units: %Rec						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1100		1000		108	73.8	119			

Sample ID: MB-43927	SampType: MBLK	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: PBS	Batch ID: 43927	RunNo: 58750								
Prep Date: 3/28/2019	Analysis Date: 3/29/2019	SeqNo: 1974382		Units: %Rec						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	930		1000		93.1	73.8	119			

Qualifiers:

H Holding times for preparation or analysis exceeded
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

ND Not Detected at the Reporting Limit
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified at testcode

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1903901

01-Apr-19

Client: Timberwolf Environmental

Project: 190007

Sample ID: MB-43810	SampType: MBLK	TestCode: EPA Method 8021B: Volatiles								
Client ID: PBS	Batch ID: 43810	RunNo: 58579								
Prep Date: 3/21/2019	Analysis Date: 3/24/2019	SeqNo: 1966860	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	0.99		1.000		98.8	80	120			

Sample ID: LCS-43810	SampType: LCS	TestCode: EPA Method 8021B: Volatiles								
Client ID: LCSS	Batch ID: 43810	RunNo: 58579								
Prep Date: 3/21/2019	Analysis Date: 3/24/2019	SeqNo: 1966861	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.97	0.025	1.000	0	97.2	80	120			
Toluene	1.0	0.050	1.000	0	101	80	120			
Ethylbenzene	1.0	0.050	1.000	0	101	80	120			
Xylenes, Total	3.1	0.10	3.000	0	102	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		103	80	120			

Sample ID: 1903901-002AMS	SampType: MS	TestCode: EPA Method 8021B: Volatiles								
Client ID: SB2 20-21'	Batch ID: 43810	RunNo: 58579								
Prep Date: 3/21/2019	Analysis Date: 3/24/2019	SeqNo: 1966865	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.90	0.025	0.9843	0	91.1	63.9	127			
Toluene	0.95	0.049	0.9843	0.01403	95.3	69.9	131			
Ethylbenzene	0.96	0.049	0.9843	0	97.5	71	132			
Xylenes, Total	2.9	0.098	2.953	0.01796	98.3	71.8	131			
Surr: 4-Bromofluorobenzene	0.99		0.9843		100	80	120			

Sample ID: 1903901-002AMSD	SampType: MSD	TestCode: EPA Method 8021B: Volatiles								
Client ID: SB2 20-21'	Batch ID: 43810	RunNo: 58579								
Prep Date: 3/21/2019	Analysis Date: 3/24/2019	SeqNo: 1966866	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.88	0.024	0.9551	0	92.1	63.9	127	1.88	20	
Toluene	0.92	0.048	0.9551	0.01403	95.3	69.9	131	2.91	20	
Ethylbenzene	0.93	0.048	0.9551	0	96.9	71	132	3.65	20	
Xylenes, Total	2.8	0.096	2.865	0.01796	97.5	71.8	131	3.79	20	
Surr: 4-Bromofluorobenzene	0.98		0.9551		102	80	120	0	0	

Qualifiers:

H Holding times for preparation or analysis exceeded
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

ND Not Detected at the Reporting Limit
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified at testcode

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1903901

01-Apr-19

Client: Timberwolf Environmental

Project: 190007

Sample ID: LCS-43927	SampType: LCS			TestCode: EPA Method 8021B: Volatiles						
Client ID: LCSS	Batch ID: 43927			RunNo: 58750						
Prep Date: 3/28/2019	Analysis Date: 3/29/2019			SeqNo: 1974411		Units: %Rec				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.94		1.000		94.3	80	120			

Sample ID: MB-43927	SampType: MBLK			TestCode: EPA Method 8021B: Volatiles						
Client ID: PBS	Batch ID: 43927			RunNo: 58750						
Prep Date: 3/28/2019	Analysis Date: 3/29/2019			SeqNo: 1974412		Units: %Rec				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.96		1.000		96.1	80	120			

Qualifiers:

H Holding times for preparation or analysis exceeded
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

ND Not Detected at the Reporting Limit
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified at testcode

Sample Log-In Check List

Client Name: **TIMBERWOLF ENVIRON**

Work Order Number: **1903901**

RcptNo: **1**

Received By: **Anne Thorne**

3/20/2019 8:00:00 AM

Completed By: **Victoria Zellar**

3/20/2019 9:28:37 AM

Reviewed By: **ENM**

3/20/19

Anne Thorne

Victoria Zellar

*labeled by
Thm 3-20-19*

Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ? Yes ☒ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☒ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
8. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
9. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☒
10. Were any sample containers received broken? Yes ☐ No ☒
11. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
13. Is it clear what analyses were requested? Yes ☒ No ☐
14. Were all holding times able to be met?
(If no, notify customer for authorization.) Yes ☒ No ☐

of preserved bottles checked for pH: _____
(<2 or ≥ 12 unless noted)
Adjusted? _____
Checked by: _____

*Thm
3-20-19*

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:	_____	Date:	_____
By Whom:	_____	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	_____		
Client Instructions:	_____		

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

CHAIN OF CUSTODY RECORD

[illegible]

TAL-8222-560 (0412)

TestAmerica
1733 N. Padre Island Drive
Corpus Christi, TX 78408
Phone: 361-289-2673/Fax: 361-289-2471