SITE CHARACTERIZATION REPORT AND STAGE 1 ABATEMENT PLAN

KAUFMAN NO. 1
HILCORP ENERGY COMPANY
SAN JUAN COUNTY, NEW MEXICO

OCD Incident No.: NCS1833331001

June 17, 2019

Prepared for:

HILCORP ENERGY COMPANY

382 Road 3100
Aztec, New Mexico 87410
505-599-3400

Prepared by:

TIMBERWOLF ENVIRONMENTAL, LLC

691 CR 233, Suite B4
Durango, Colorado 81301
970-516-8419

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At the request of Hilcorp Energy Company (Hilcorp), Timberwolf Environmental, LLC (Timberwolf) presents this site characterization report and stage 1 abatement plan for the Kaufman No. 1 (Site). This document was prepared by the following Timberwolf personnel:

6/17/19

Preston Kocian
Project Manager

Date

6/17/19

Ryan S. Mersmann, P.G., CPSS
Vice President of Operations

Date

6/17/19

Jim Foster
President

Date

Timberwolf Project No. HEC-180061

State of New Mexico
Energy, Minerals and Natural Resources Department

Michelle Lujan Grisham
Governor

Sarah Cottrell Propst
Cabinet Secretary

Todd E. Leahy, JD, PhD
Deputy Secretary

Adrienne Sandoval
Director, Oil Conservation Division

August 29, 2019

Jennifer Deal
Hilcorp Energy Company
382 Road 3100
Aztec, New Mexico 87401
jdeal@hilcorp.com

RE: Determination of Administrative Completeness for Stage 1 Abatement Plan (AP-138) Concerning Groundwater Contamination Associated with the Kaufman #1 Production Well (API #30-045-10174)

Ms. Deal,

On June 18, 2019 the New Mexico Oil Conservation Division (OCD) received a Stage 1 Abatement Plan associated with a release at the Kaufman #1. We have preliminarily reviewed the plan and determined it to be administratively complete. The required written and public notice should now proceed under the provisions of 19.15.30.15 A and B NMAC with proof of notice provided to the OCD.

The OCD will provide notice of the plan's filing as well as continue our review and either approve the plan or notify Hilcorp of any deficiencies.

If you have any questions, please contact Cory Smith of my staff at (505) 334-6178 extension 115 or by email at *cory.smith@state.nm.us*. On behalf of the Oil Conservation Division, I wish to thank you and your staff for your cooperation during this process.

Respectfully,

Adrienne Sandoval
Director

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1.0 Overview

1.1 Introduction

At the request of Hilcorp Energy Company (Hilcorp), Timberwolf Environmental, LLC (Timberwolf) presents this site characterization report and stage 1 abatement plan for the Kaufman No. 1 (Site). The Site is located approximately 9.1 miles north of Farmington in San Juan County, New Mexico (Figures 1 – 3).

The assessment and characterization activities were intended to:

1) evaluate the effectiveness of initial response actions
2) delineate the horizontal and vertical extents of constituents of concern (COCs),
3) determine if groundwater had been impacted and, if necessary, delineate the horizontal extent of groundwater impacts, and
4) collect sufficient geotechnical data from the saturated zone to determine suitable remedial techniques for the Site (if required).

1.2 Site Description

The Site is situated on Federal land (managed by the Bureau of Land Management (BLM)) and is immediately adjacent to the La Plata River (Figures 2 and 3). The Site is comprised of approximately 1 acre, all of which is located within the La Plata River flood plain.

The Site has been temporarily abandoned following a release in November 2018. Most of the equipment has been taken out of service, including: storage tanks, separators, and a glycol dehydrator. Other surface equipment at the Site includes a well head and gas meter.

The Site is situated in a rural area and surrounding land use is predominantly recreational and oil and gas production. According to the U.S. Department of Agriculture – Natural Resources Conservation Service (USDA-NRCS), the Site soil consists of Walrees loam, 0 to 2 percent slope – texture consists of loam underlain by stratified gravelly sand; native salinity is very slightly saline to moderately saline (2.0 to 8.0 millimhos per centimeter (mmhos/cm)).

The average elevation at the Site is approximately 5,537 feet above mean sea level. Area topography is flat with a slight dip west, toward the La Plata River.

1.3 Site History

On 11/16/18, field personnel were on Site conducting routine well operations at the Kaufman No. 1. The well produced an unexpected and substantial volume of water, resulting in a tank overflow. The resultant release of approximately 8 barrels (bbls) of oil and 10 bbls of produced water was contained by the facility's secondary containment. The well was shut-in and initial cleanup operations commenced. Released fluids were recovered with a vacuum truck.

Enduring Resources was the operator of record at the time of the release; Hilcorp assumed operations of the Site on or about December 1, 2018. After Hilcorp assumed operations, the well was temporarily abandoned. All surface equipment within the tank battery was removed, and impacted soil within the battery was excavated and disposed. The excavated soil was primarily along the eastern and southern portion of the tank battery. A safety fence was constructed along the perimeter of the excavation.

1.4 Initial Soil Assessment

In November 2018 and prior to Hilcorp assuming operations, Timberwolf conducted an initial sampling event to: 1) evaluate the effectiveness of initial response actions, 2) characterize the nature of the release (i.e., identify constituents of concern (COCs)) 3) determine the concentrations of COCs at the horizontal and vertical extents of the excavation, and 4) develop recommendations for further action to address remaining impacts.

The initial soil assessment revealed COCs at the Site were petroleum hydrocarbons and that COCs were not delineated horizontally or vertically.

1.5 Soil Investigation

In January 2019, Timberwolf returned to the Site to collect additional data in an effort to better characterize the extent of soil and groundwater contamination. The activity included additional soil sampling, installation of groundwater monitoring wells, and groundwater sampling. Based on the site characterization activities, COCs present in Site soil included the following:

- Total BTEX (i.e., benzene, toluene, ethylbenzene, and xylene)
- Total petroleum hydrocarbons

Soil assessment activities are documented in Sections 3 and 4.

1.6 Groundwater Assessment

The groundwater assessment revealed the following COC present in Site groundwater:

- Benzene

Groundwater assessment activities are documented in Section 5.

1.7 Stage 1 Abatement Plan

A stage 1 abatement plan that outlines proposed additional site assessment activities which is included in Section 6. The stage 1 abatement plan is presented to achieve the following objectives:

1) horizontally delineate historical soil impacts located south, southwest, and west of the former tank battery
2) assess of the vadose zone to determine the leachability of Site soil
3) conduct an ecological risk assessment to ensure that risk to area threaten and endangered species is mitigated
4) conduct additional groundwater sampling and analysis to determine if elevated total dissolved solids (TDS) observed in a monitor well located near the point of release is a native condition of Site groundwater or is related to the release
5) conduct a receptor survey to identify water wells within a one-mile radius of the Site and sensitive features within a quarter-mile of the Site
6) conform with New Mexico Administrative Code (NMAC) 19.15.30 Remediation and provide sufficient data to present a stage 2 abatement plan

2.0 Regulatory Limits

2.1 Introduction

Regulatory oversight of soil and groundwater remediation associated with oil and gas exploration and production (E&P) activities is under the jurisdiction of the New Mexico Oil Conservation Division (NMOCD).

2.2 Regulatory Limits for Soil

The NMOCD has established remedial action levels for soils impacted by oilfield products or wastes which are documented under New Mexico Administrative Code (NMAC) Rule 19.15.29. The Rule was repealed and replaced by *Oil Conservation Commission Order No.: R-14751*, dated June 21, 2018.

Under Rule 19.15.29, soil cleanup criteria is determined primarily on the basis of the distance between the base of impacted soil and the depth to usable groundwater. However, sites with groundwater greater than 50 feet (ft) may be subject to the most stringent standard when surface water bodies and/or sensitive features (e.g., playa lakes, wetlands, or public areas) are present. NMOCD laboratory methodology and soil closure criteria are presented in Table 1.

Table 1. Closure Criteria for Soils Impacted by a Release

Depth to Groundwater[1]	Constituent	Method[2]	Regulatory Limit[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 base of impact 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]Established limits or natural background level, whichever is greater
[4]Applies to produced water releases or other fluids which may contain chloride prior to site abandonment
TPH – total petroleum hydrocarbons (TPH = GRO + DRO + MRO)
GRO – gasoline range organics
DRO – diesel range organics
MRO – motor oil range organics
mg/kg – milligrams per kilograms
Total BTEX = Benzene + Toluene + Ethylbenzene + Xylene

Groundwater at the Kaufman No. 1 is less than 50 ft below ground surface (bgs); applicable regulatory limits for soil are presented in Table 2.

Table 2. Soil Regulatory Criteria – Kaufman No. 1

Constituents	Chloride mg/kg	GRO + DRO mg/kg	TPH mg/kg	Benzene mg/kg	Total BTEX mg/kg
Regulatory Criteria for Soil	600	100	100	10	50

mg/kg– milligrams per kilogram
GRO – gasoline range organics
DRO – diesel range organics
TPH – total petroleum hydrocarbons (TPH = GRO + DRO + MRO)
Total BTEX = Benzene + Toluene + Ethylbenzene + Xylene

2.3 Regulatory Limits for Groundwater

Human health standards for usable groundwater (i.e., total dissolved solids (TDS) less than 10,000 milligrams per kilograms (mg/L)) are established under NMAC 20.6.2§3103. Additionally, this statute provides standards for domestic water supply. These criteria provide standards for a variety of constituents, including: metals, anions, volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), certain radioactive isotopes, salinity, and pH.

Based on process knowledge, a constituent list prepared for the Site includes: VOCs, SVOCs, arsenic, barium, cadmium, chromium, mercury, lead, selenium, and silver (i.e., Resource Conservation and Recovery Act (RCRA)-8 metals), anions, TDS, and pH. The regulatory criteria for human health or domestic water supply for these constituents are provided in Table 3.

Table 3. Groundwater Regulatory Criteria – Kaufman No. 1

Constituent	Regulatory Criteria (mg/L)
Metals	
Arsenic	0.10[1]
Barium	1.00[1]
Cadmium	0.01[1]
Chromium	0.05[1]
Lead	0.05[1]
Mercury	0.0002[1]
Selenium	0.05[1]
Silver	0.05[1]
VOCs	
Benzene	0.01[1]
Toluene	0.75[1]
Ethylbenzene	0.75[1]
Xylenes	0.62[1]
PAHs (Total Naphthalene)	0.03[1]
SVOCs	
Phenols	0.005[2]
General Water Chemistry	
Total Dissolved Solids	1,000[2]
Chloride	250[2]
Sulfate	600[2]
pH (units – s.u.)	6 – 9[2]

[1]New Mexico human health standard
[2]New Mexico Standard for domestic water supply wells
mg/L – milligrams per liter
s.u. – standard units
VOCs – volatile organic compounds
SVOCs – semi-volatile organic compounds

3.0 Soil Assessment Methodology

3.1 Introduction

Timberwolf conducted two soil assessment events at the Site (i.e., initial assessment and site characterization) in an attempt to 1) verify if soil impacts are present, 2) to identify the COCs at the Site, 3) determine the magnitude and extent of soil impacts, and 4) sufficiently characterize site soil to evaluate various remedial techniques. Information obtained from the assessment activities was used to develop a remedial action plan or abatement plan. Soil assessment methodology is presented below.

3.2 Environmental Soil Sampling Methodology

A total of 26 soil samples were collected from either an excavation, pothole, or soil boring installed using a rotary rig equipped with a hollow stem auger and split spoon barrel. Excavations and potholes did not extend below 3 ft bgs. Soil borings were advanced to depths ranging from 12 ft to 15 ft bgs. Prior to soil boring installation, clearance requests were submitted to New Mexico 811 (i.e., One Call).

During boring installation, soil samples were continuously logged for morphological characteristics and field screened for volatile organic compounds (VOCs) using a photoionization detector (PID).

At least two intervals were selected from each boring for laboratory analysis. The selected samples included the depth interval exhibiting the highest PID reading, groundwater interface and/or boring terminus. Sample locations from the initial assessment are presented in Figure 4; soil borings installed during the site characterization are shown in Figure 5.

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 using the described method:

- Benzene, toluene, ethylbenzene, and xylenes (BTEX) by USEPA Method 8021B
- TPH by EPA SW-846 Method 8015M/D
- Chloride by EPA Method 300

Laboratory results, analytical methods, and chain-of-custody documents are included in Appendix B and are discussed in subsequent sections of this report.

3.3 Geotechnical Soil Sampling Methodology

Geotechnical samples were collected into a steel ring tube by driving the tube into the sample interval using a geotechnical hammer. Two soil samples were collected from one boring (i.e., MW4) from depth intervals were 5.5- 6.0 ft and 13.5-14.0 ft. The 5.5- 6.0 ft interval represent the top of the groundwater sand which appeared highly transmissive; the 13.5-14.0 ft interval represents the lower unit of that sand comprised of silty or clayey sand and appeared to be marginally transmissive.

The samples were submitted to Goemat, Inc. for the following geotechnical parameters:

- volumetric water content
- bulk density
- hydraulic conductivity

Testing results and methods are included in Appendix C and are discussed in subsequent sections of this report.

4.0 Soil Assessment and Site Characterization Findings

4.1 Introduction

A total of 26 soil samples were collected from the Site for chemical analysis. Two samples were collected for geotechnical evaluation. Analytical results from all soil assessment events are presented in the sections below.

4.2 Initial Assessment (11/29/18)

The initial assessment event was intended to characterize the presence, magnitude, and horizontal extent of potential COCs at the Site. Eleven soil samples were collected from excavation sidewalls or pothole locations (Figure 4). The depths of samples ranged from 1 ft to 3 ft bgs. Laboratory results from the initial assessment are summarized in Table 4.

Table 4. Soil Analytical Results – Initial Assessment (11/29/18)

Sample ID	Volatile Organic Compounds (mg/kg)				Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	MRO (mg/kg)	TPH (mg/kg)
	B	T	E	X					
N Sidewall	< 0.016	0.031	0.061	0.37	0.462	17	< 9.8	< 49	17.0
N Sidewall 2	< 0.099	< 0.20	< 0.20	< 0.40	0	< 20	380	< 49	380.0
SW Sidewall	< 0.026	< 0.052	0.08	< 0.10	0.08	15	120	< 48	135.0
SE Sidewall	1.7	29	6.4	85	122.1	1,300	220	< 48	1,520.0
N Pothole	< 0.016	< 0.032	< 0.032	< 0.064	< 0.064	< 3.2	< 9.4	< 47	< 47
NW Pothole	< 0.018	< 0.035	< 0.035	< 0.071	< 0.071	< 3.5	< 9.3	< 49	< 49
W Pothole	< 0.094	< 0.19	2.1	17	19.1	790	210	< 49	1,000.0
W Pothole 2	< 0.02	< 0.039	< 0.039	< 0.079	< 0.079	< 3.9	< 9.6	< 48	< 48
E Pothole	< 0.014	< 0.028	< 0.028	< 0.055	< 0.055	< 2.8	< 9.8	< 49	< 49
SE Pothole	< 0.017	< 0.035	< 0.035	< 0.07	< 0.07	< 3.5	< 9.6	< 48	< 48
River Grab	< 0.017	< 0.033	< 0.033	< 0.067	< 0.067	< 3.3	< 10	< 50	< 50
Regulatory Criteria	**10**	**--**	**--**	**--**	**50**	**--**	**--**	**--**	**100**

TPH – total petroleum hydrocarbons
BTEX – benzene, toluene, ethylbenzene, and xylenes
mg/kg – milligrams per kilogram
– exceeds regulatory criteria

GRO – gasoline range organics
DRO – diesel range organics
MRO – motor oil range organics

4.3 Soil Investigation (01/14/19 – 01/15/19)

The purpose of the soil investigation was to: 1) characterize Site soil, 2) delineate the horizontal and vertical extents of COCs in the soil, and 3) collect sufficient geotechnical data from the saturated and unsaturated zones to determine suitable remedial techniques for the Site (if required).

Fifteen soil samples were collected from 6 soil borings (Figure 5). The depths of samples ranged from 2.5 ft to 15.5 ft bgs. Groundwater was encountered between 4.0 ft and 5.0 ft bgs. Laboratory results from this assessment are summarized in Table 5.

Table 5. Soil Analytical Results – Soil Investigation (01/14/19 and 01/15/19)

Sample ID	Volatile Organic Compounds (mg/kg)				Total BTEX (mg/kg)	Chloride (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	MRO (mg/kg)	TPH (mg/kg)
	B	T	E	X						
MW1 2.5-3.5'	0.96	22	7	92	121.96	< 30	1,200	600	< 49	1,800
MW1 4.5-5.5'	< 0.025	< 0.049	< 0.049	0.12	0.12	< 30	< 4.9	31	< 46	31
MW1 6.5-7.5'	< 0.023	< 0.046	< 0.046	< 0.092	< 0.0092	< 30	4.7	20	48	72.7
MW1 14-15'	< 0.025	< 0.05	< 0.05	< 0.1	< 0.1	< 30	< 5.0	< 9.3	< 47	<47
MW2 5'	< 0.024	< 0.048	< 0.048	< 0.096	< 0.096	< 30	< 4.8	< 9.2	< 46	<46
MW2 6.5-7.5'	< 0.024	< 0.048	< 0.048	< 0.096	< 0.096	< 30	< 4.8	18	< 49	18
MW3 5.0-5.5'	< 0.024	< 0.049	< 0.049	< 0.098	< 0.098	< 30	< 4.9	< 9.8	< 49	< 49
MW3 6.5-7.5'	< 0.024	< 0.049	< 0.049	< 0.097	< 0.097	< 30	< 4.9	< 9.4	< 47	< 47
MW4 5-6'	< 0.024	< 0.048	< 0.048	< 0.096	< 0.096	< 30	< 4.8	< 9.8	< 49	< 49
MW4 8-9'	< 0.024	< 0.047	< 0.047	< 0.094	< 0.094	< 30	< 4.7	130	< 50	130
MW5 4.5-5.5'	< 0.024	< 0.048	< 0.048	< 0.097	< 0.097	< 30	< 4.8	< 9.8	< 49	< 49
MW5 8-9'	< 0.024	< 0.049	< 0.049	< 0.098	< 0.098	< 30	29	86	< 47	115
MW5 14.5-15.5'	< 0.023	< 0.046	< 0.046	< 0.093	< 0.093	< 30	< 4.6	< 9.5	< 47	< 47
MW6 5.0-5.5'	< 0.025	< 0.05	< 0.05	< 0.099	< 0.099	< 30	10	10	< 49	20
MW6 7.5-8.5'	< 0.025	0.057	< 0.05	< 0.1	< 0.1	< 30	120	110	< 49	230
Regulatory Criteria	**10**	**--**	**--**	**--**	**50**	**600**		**--**	**--**	**100**

TPH – total petroleum hydrocarbons (TPH = GRO+DRO+MRO)
BTEX – benzene, toluene, ethylbenzene, and xylenes
mg/kg – milligrams per kilogram
– exceeds regulatory criteria
GRO – gasoline range organics
DRO – diesel range organics
MRO – motor oil range organics

PID readings are recorded on soil boring logs, which are included in Appendix A.

4.4 Geotechnical Data

The collected sample intervals for geotechnical analysis were tested for volumetric water content, bulk density (wet and dry), and hydraulic conductivity. The results are summarized in Table 6.

Table 6. Results of Geotechnical Testing

Sample ID	Volumetric Water Content (%)	Bulk Density-Wet[1] (g/cc)	Bulk Density-Dry[1] (g/cc)	Hydraulic Conductivity (cm/sec)
MW1 5.5-6.0'	9.4	2.09	1.92	1.0 E^{-03}
MW4 13.5-14.0'	15.3	1.91	1.65	2.4 E^{-03}

% - percent
g/cc – grams per cubic centimeter
cm/sec – centimeters per second
[1]Laboratory reports acknowledge a reporting bias due to insufficient sample volume and gravel inclusions in sample

4.5 Soil Investigation Summary

The soil assessments revealed that soils at the Site were comprised of interbedded sand, silt, and clay. A typical soil profile for the Site consists of clayey silty from the surface to approximately 0.5 ft, underlain by a firm clay to a depth of approximately 3.5 to 5.0 ft bgs. The clay was underlain by a medium or coarse grain groundwater sand to approximately 10 ft bgs, which was underlain by a clayey or silty groundwater sand. Groundwater was encountered across the Site between 4.0 ft and 5.0 ft bgs.

Of the 26 soil samples collected for laboratory analysis, 8 samples exceeded the regulatory criteria for TPH and 2 samples exceeded the regulatory criteria for Total BTEX. All other COCs were below NMOCD regulatory criteria.

Contaminated soil was observed in two different zones, the vadose zone (i.e., MW1 2.5-3.5') and within the saturated zone (i.e., MW4 8-9', MW5 8-9, MW6 7.5-8.5'). The nature of the constituents differs between the two zones, which implies two separate releases. The vadose zone has a high percentage of volatiles evidenced by the total BTEX and the 2:1 ratio of GRO to DRO. Impacted soil within the saturated zone exhibited no measurable quantities of total BTEX and the GRO to DRO ratios range from .038 to 1.1. Furthermore, the hydrocarbon impacted soil within the saturated zone was observed approximately 3.5 ft below the groundwater interface. This suggests that the release observed within the saturated zone occurred at a time when the aquifer reserves were much lower.

5.0 Groundwater Assessment

5.1 Introduction

Soil assessment activities indicated that the release reached the upper groundwater-bearing unit. Therefore, all six soil borings installed at the Site were converted into groundwater monitor wells (i.e., MW1 – MW6). Each monitor well was permitted by the New Mexico Office of State Engineer (Permit No.: SJ-4327 POD1-POD6). Groundwater assessment activities are documented below.

5.2 Monitoring Well Installation

MW1 was situated adjacent and downgradient from the point of release. MW2 – MW6 were installed along the perimeter of the Site for horizontal delineation. Monitor well locations are shown in Figure 6.

Groundwater sand was typically encountered between 4.0 and 5.0 ft bgs across the Site. Monitor wells were drilled to depths ranging from 12 ft bgs to 15 ft bgs. Monitoring wells were constructed inside of hollow-stem augers using 2-inch PVC. Each well was constructed with 10-ft of screened pipe at the base of the well. A sand pack consisting of 20/40 silica sand was installed to approximately 1 ft above each well screen. Bentonite seals were installed above each sand pack to ground surface. Surface completions included stick-up wells with protective casing and 2 ft x 2 ft concrete pads. Each well was fitted with 3 protective bollards.

5.3 Well Development and Groundwater Monitoring

Each well was developed using a submersible stainless-steel pump and dedicated tubing. Water was purged from each well until water clarified (approximately 10 gallons per well; greater than 3 well volumes).

Following well development, wells were sampled using EPA low-flow techniques. Five groundwater samples were collected utilizing the EPA low-flow sampling technique (i.e., MW1, MW2, MW3, MW4 and MW5). Water was produced from wells using low-density polyethylene (LDPE) tubing and a stainless-steel submersible pump. The submersible pump was set in the screened interval of each well. The depth to water was monitored as water was removed. Pump rates were adjusted to maintain a static water level and laminar flow in each well.

Purged water was piped to a flow-through cell equipped with a YSI probe to monitor water quality parameters (i.e., temperature, pH, electrical conductivity, dissolved oxygen, and oxidation-reduction potential). Water was purged until all parameters stabilized. Stabilized parameters for wells that were sampled using EPA low flow methodology are documented in attached Table D-1 (Appendix D).

One well (i.e., MW6) pumped dry during well development. This well was allowed to recharge and was sampled within 24 hours of well development and purging.

All samples were placed directly into laboratory-provided sample containers, stored on ice, and transported under proper chain-of-custody protocol to Hall Environmental Analytical Laboratory in Albuquerque, New Mexico for the following chemical analysis:

- BTEX by EPA SW-846 Method 8260
- TPH by EPA SW-846 Method 8015M/D
- Chloride by EPA Method 300.0

5.4 Groundwater Analytical Results

Groundwater analytical results for chloride and petroleum hydrocarbons are shown in Table 7. Laboratory reports containing analytical methods, results, and chain-of-custody documents are attached.

Table 7. Groundwater Analytical Results

Sample ID	Date	Volatile Organic Compounds (mg/L)				Chloride (mg/L)	GRO (mg/L)	DRO (mg/L)	MRO (mg/L)	TPH (mg/L)
		B	T	E	X					
MW1	01/18/19	0.074	0.35	0.027	0.33	130	2.0	< 1.0	< 5.0	2.0
MW2	01/17/19	< 0.001	< 0.001	< 0.001	< 0.0015	150	< 0.05	< 1.0	< 5.0	< 5.0
MW3	01/17/19	< 0.001	< 0.001	< 0.001	< 0.0015	140	< 0.05	< 1.0	< 5.0	< 5.0
MW4	01/17/19	< 0.001	< 0.001	< 0.001	< 0.0015	140	< 0.05	< 1.0	< 5.0	< 5.0
MW5	01/17/19	< 0.001	< 0.001	< 0.001	< 0.0015	130	0.32	< 1.0	< 5.0	0.32
MW6	01/18/19	< 0.001	< 0.001	< 0.001	< 0.0015	180	1.1	< 1.0	< 5.0	1.1
Regulatory Criteria		**0.01**	**0.75**	**0.75**	**0.62**	**250**	**--**	**--**	**--**	**--**

TPH – total petroleum hydrocarbons (TPH=GRO+DRO+MRO)
BTEX – benzene, toluene, ethylbenzene, and xylenes
mg/L – milligrams per liter
– exceeds regulatory criteria

GRO – gasoline range organics
DRO – diesel range organics
MRO – motor oil range organics

Additionally, each groundwater sample was analyzed for full list of VOCs by EPA SW-846 Method 8260B; laboratory results are presented in the attached Table D-4. The monitor well located immediately adjacent to the point of release (i.e., MW1) was also analyzed for the following additional constituents:

- TDS by Standard Method 2540C
- Anions by EPA Method 300.0
- RCRA 8 Metals by EPA SW-846 Method 6010B and 7470
- SVOCs by EPA SW-846 Method 8270

Laboratory results as well as applicable standards for human health standards and/or domestic water supply are presented in the attached tables (Tables A-2 through A-5). Analytical results of the additional constituents for the MW1 sample are summarized below:

- TDS exceeded the domestic water supply criteria (Table D-2)
- Except for sulfate, all anions were below the domestic water supply criteria (Table D-2)
- All RCRA-8 metals were below human health standards (Table D-3)
- Except for benzene as noted in Table 7, all VOCs were below human health standards (Table D-4)
- All SVOC were below standards for human health, domestic water supply or laboratory detection limits (Table D-5)

5.5 Well Gauging and Survey

Each well was gauged to determine the depth to water using an oil-water interface probe capable of measuring to the nearest one-hundredth foot. No phase separated hydrocarbons (PSH) were observed. An elevation survey was conducted on the tops of monitor well casings using a survey rod and laser level transit. Depths to groundwater were subtracted from the corresponding monitor well elevation to determine the depth of groundwater above mean sea level in each well.

Using this data, Timberwolf prepared a potentiometric surface elevation (PSE) map as shown in Figure 7. The PSE map reveals the groundwater gradient to be west-southwesterly across the Site.

5.6 Findings of Groundwater Assessment

The Site is underlain by a confined, yet seasonal, groundwater aquifer. The top of the groundwater sand was encountered between 4.0 ft and 5.0 ft bgs. At the time of Timberwolf's assessment, groundwater was typically encountered a foot below the top of sand. The groundwater sand is characterized as stratified gravelly sand, with medium and coarse grain sand in the upper portion of the unit and silty and clayey sands in the lower portion of the unit. Gravel inclusions ranged in size from 0.25 to 2.0 inches in diameter and were distributed through the groundwater unit.

Benzene was the only COC identified within Site groundwater. Benzene was observed in only 1 well (i.e., MW1) situated immediately adjacent and downgradient of the point of release. Benzene was horizontally delineated. A benzene plume map is provided in Figure 7. Groundwater samples collected from MW5 and MW6 exceeded laboratory detection limits for GRO (i.e., 0.32 mg/L and 1.1 mg/L, respectively); however, neither the NMOCD nor NMDEQ has established criteria for petroleum hydrocarbons (i.e., TPH) in groundwater.

The PSE map reveals groundwater gradient is to the west-southwest, toward the La Plata River.

6.0 Stage 1 Abatement Plan

6.1 Introduction

The proposed further actions are based on the subsurface investigations conducted by Timberwolf in 2018 and 2019. The stage 1 abatement plan presented in this section is intended to assess impacted soil within the vadose and saturated zone, mitigate ecological risk to threatened and endangered species, and provide addition groundwater characterization, and to collect additional data to facilitate the select and design an effective abatement option.

6.2 Horizontal Delineation – Soil

The soil assessment revealed TPH was not horizontally delineated to the south, southwest or west relative to the point of release. Additional soil borings are required to horizontally delineate TPH in soil. Timberwolf will installation of 5 soil borings to approximately 10 ft bgs to achieve horizontal delineation of TPH in soil.

Soil borings will be installed using a hollow-stem auger. Samples will be collected continuously from the surface to the total depth of each boring. Samples will be logged for morphological characteristics, and field screened for VOCs using a PID. At least two intervals will be selected from each boring for laboratory analysis. The selected samples will include the depth interval exhibiting the highest PID reading, groundwater interface and/or boring terminus. The proposed boring locations and paths of ingress and egress are shown in Figure 9.

Selected soil samples will be placed directly into laboratory provided sample containers, labeled, stored on ice, and transported under proper chain-of-custody protocol to certified environmental laboratory for chemical analysis. Laboratory analyzes to include one or more of the following using the described method:

- Benzene, toluene, ethylbenzene, and xylenes (BTEX) by USEPA Method 8021B
- TPH by EPA SW-846 Method 8015M/D

Additionally, one soil boring will be deepened to determine the base of the aquifer base. This data will be used to calculate the aquifer storage coefficient.

6.3 Vadose Zone Assessment and Abatement

The soil assessments revealed soil within and adjacent to the former tank battery with elevated Total BTEX and TPH. Further evaluation of impacted soil from the vadose zone (i.e., unsaturated zone) is required to determine if constituents are capable of migrating to the underlying groundwater (as required under NMAC 20.6.2§4103).

The following plan is presented to assess and mitigate soil in the vadose zone:

1. Delineate the horizontal extent of impacted soil within the vadose zone
2. Determine the leachability of impacted soil by analyzing select soil samples, including samples exhibiting the highest concentrations of TPH, for synthetic precipitation leaching procedure (SPLP) by EPA SW-846 Method 1312
3. Mitigate risk to groundwater by excavating soil that has the potential to leach constituents with concentrations that exceed groundwater criteria
4. Transport and dispose of excavated soil at a permitted commercial disposal facility
5. Backfill the excavation with clean fill

The proposed leachate study area is presented in Figure 10.

6.4 Ecological Risk Assessment

According to the BLM and the United States Fish and Wildlife Service (USFWS), the area surrounding the Site is critical habitat for the Southwestern willow flycatcher *(Empidonax traillii extimus)*. The Southwestern willow flycatcher is listed as a USFWS endangered species.

To ensure preservation of the area ecology, Timberwolf will review toxicological databases to determine the protective concentrations limits for COCs for the Southwestern willow flycatcher. An ecological assessment of soil adjacent to the excavation will include conducted to determine if soil within the upper 2 ft of the soil horizon pose a risk to the Southwestern willow flycatcher. Any soil exceeding the protective concentration limit for COCs will be excavated and removed to mitigate risk to the Southwestern willow flycatcher. Following excavation activities, the excavation will be backfilled.

6.5 Additional Groundwater Assessment

The groundwater assessment revealed that TDS concentrations in the groundwater sample collected from MW1 exceeded the established human health standard. Additional groundwater assessment is required to determine if the elevated TDS is a result of the release or if it is a native condition of Site groundwater.

Timberwolf will collect a groundwater sample from an upgradient monitor well (i.e., MW3) for laboratory analysis of the following constituents:

- TDS
- conductivity
- cations (calcium, magnesium, sodium, and potassium)
- anions (i.e., chloride, sulfate, carbonate, and bicarbonate)

If the constituents in the upgradient groundwater sample are consistent with the analytical results of the groundwater sample collected from MW1, then the elevated TDS will have been proven to be a native condition of Site groundwater and no additional assessment will be

conducted. Otherwise, all perimeter monitoring wells will be sampled and analyzed for the aforementioned constituents to delineate the TDS at the Site.

6.6 Receptor Survey

Conduct a receptor survey to identify all water wells within a one-mile radius of the Site and sensitive features within a one-quarter mile radius of the Site.

6.7 Hydrogeologic Assessment of Groundwater and the La Plata River

Upon approval, Timberwolf will install at least one temporary observation point along the La Plata River. The observation point(s) will consist of a five-eighths steel rod driven into the riverbank until refusal. The top of each rod will be surveyed for elevation.

The observation point(s) will be used measure river levels. Surface water levels will be compared to potentiometric measurements in monitor wells to determine the relationship between surface water and groundwater.

6.8 Quality Assurance Plan

Sampling and analytical techniques will conform with the following:

- *Standard Methods for the Examination of Water and Wastewater,* American Public Health Association
- *Methods for Chemical Analysis of Water and Waste,* Analytical Quality Laboratory, USEPA
- *Techniques of Water Resource Investigation of the U.S. Geological Survey*
- *Test Methods for Evaluating Solid Waste,* USEPA
- *Annual Book of ASTM Standards. Part31. Water*, American Society for Testing and Materials
- *National Handbook of Recommended Methods for Water-Data Acquisition,* U.S. Geological Survey

6.9 Monitoring Program

Site groundwater will be monitored quarterly to evaluate plume stability. Sampling stations included in the monitoring program are MW1 through MW6 as shown in Figure 6. During each monitoring event, groundwater will be analyzed for BTEX, the depth to water in each well will be gauged, surface water levels in the La Plata River will be gauged to evaluate the relationship between groundwater and surface water, and a PSE map will be prepared to monitor the direction of groundwater flow.

Additionally, monitoring activity of any in situ treatment system will be recorded. Quarterly monitoring reports documenting Site monitoring activities and analytical results will be prepared and submitted to division.

Site abatement will be considered complete once 8 consecutive quarterly monitoring events indicate a stable groundwater plume and samples from all monitor wells during that period do not exceed the remedial target (established in stage 2 abatement plan). After the abatement is complete, the monitoring program will terminate and monitor well will be plugged and abandoned.

6.10 Proposed Schedule of Stage 1 Abatement Activities

Upon completion of the stage 1 abatement activities, a stage 2 abatement plan will be prepared submitted to the director. The proposed schedule of stage 1 abatement activities is presented in Table 9 below.

Table 9. Proposed Schedule of Stage 1 Abatement Activities

Stage 1 Abatement Task	June	July	Aug	September
Horizontal Delineation of Soil				
Vadose Zone Assessment and Abatement				
Ecological Risk Assessment				
Additional Groundwater Assessment				
Receptor Survey				
Hydrogeologic Assessment*				
Stage 2 Abatement Plan Submission				

*Contingent upon division approval

Figures

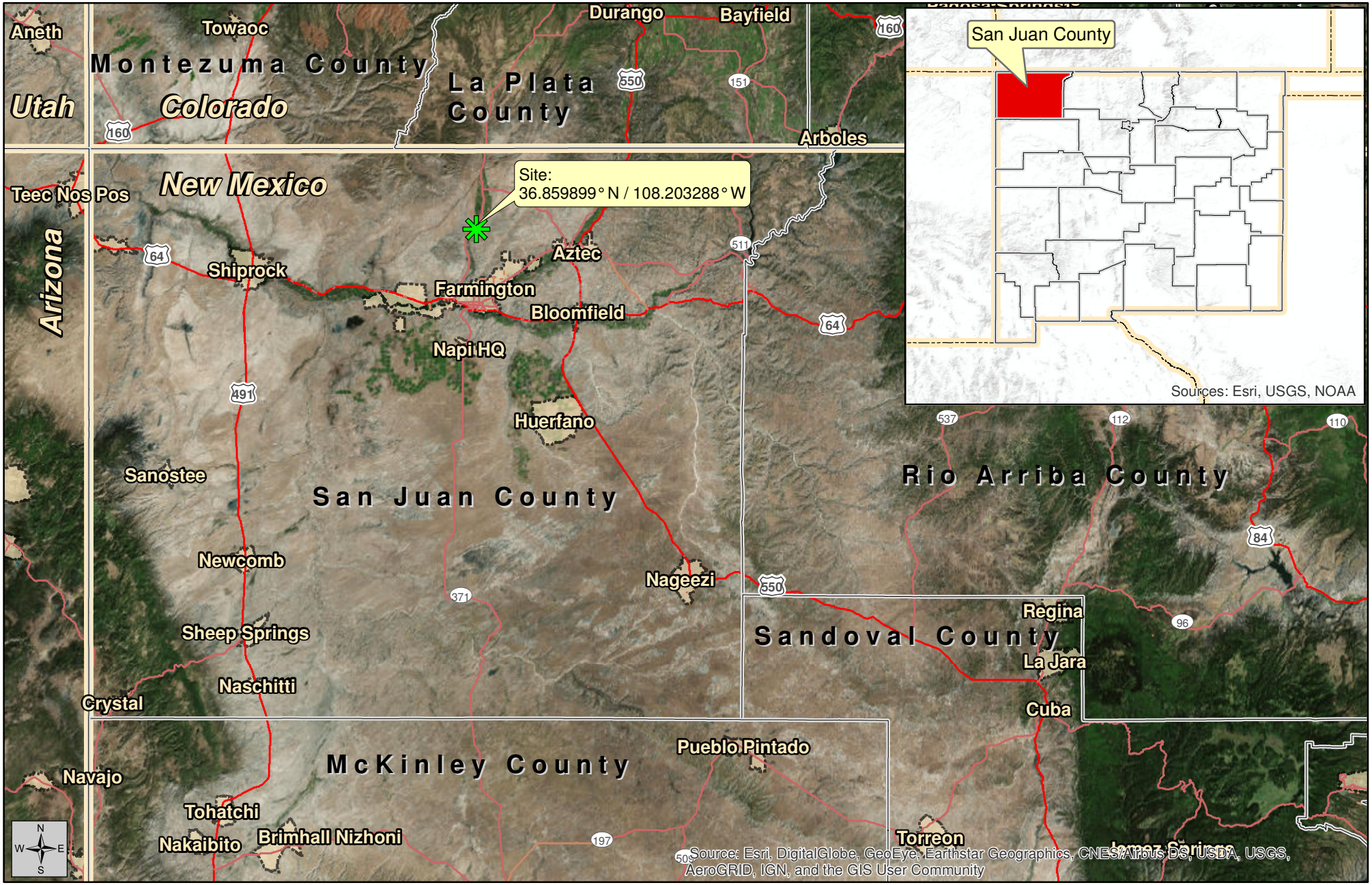


Figure 1 **Site Location Map**	**Site Characterizatiuon Report and Stage 1 Abatement Plan**	**January 25, 2019**
TIMBERWOLF ENVIRONMENTAL	1:1,250,000 0 20 40 60 80 100 120 Miles **Kaufman No. 1 Release** **Hilcorp Energy Company** **San Juan County, New Mexico**	✳ Site
Created By: Russell Greer TE Project No.: HEC-180061	Datum: NAD83 Imagery Source: ESRI Vector Source: ESRI and TE	

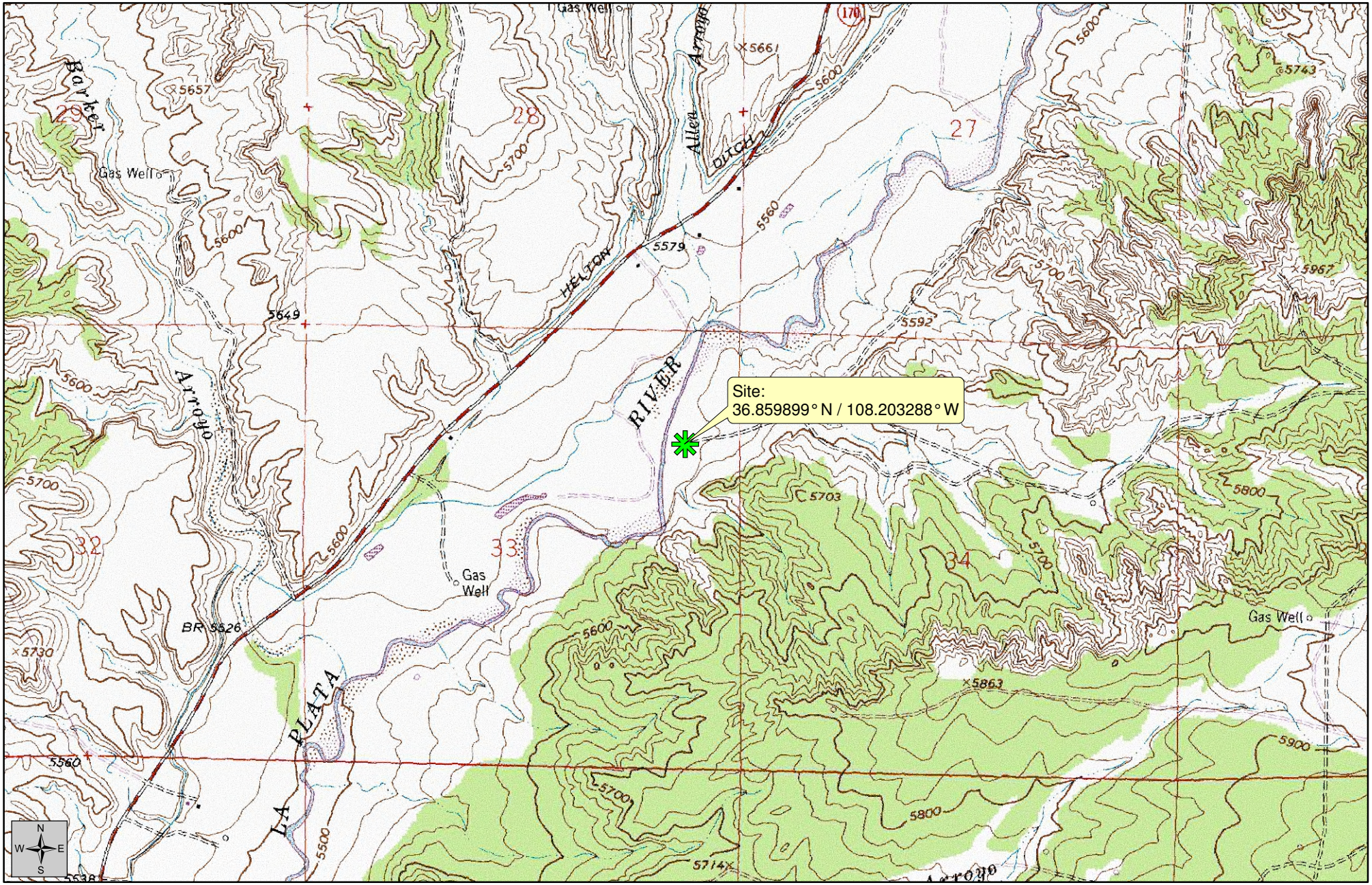


Figure 2 **Topographic Map**	**Site Characterizatiuon Report and Stage 1 Abatement Plan**	**January 25, 2019**

1:24,000

0 0.5 1 1.5 2 2.5 Miles

TIMBERWOLF ENVIRONMENTAL

Created By:
Russell Greer
TE Project No.: HEC-180061

Kaufman No. 1 Release
Hilcorp Energy Company
San Juan County, New Mexico

Datum: NAD83
Imagery Source: USGS
Quad: Farmington North
Vector Source: TE

Site

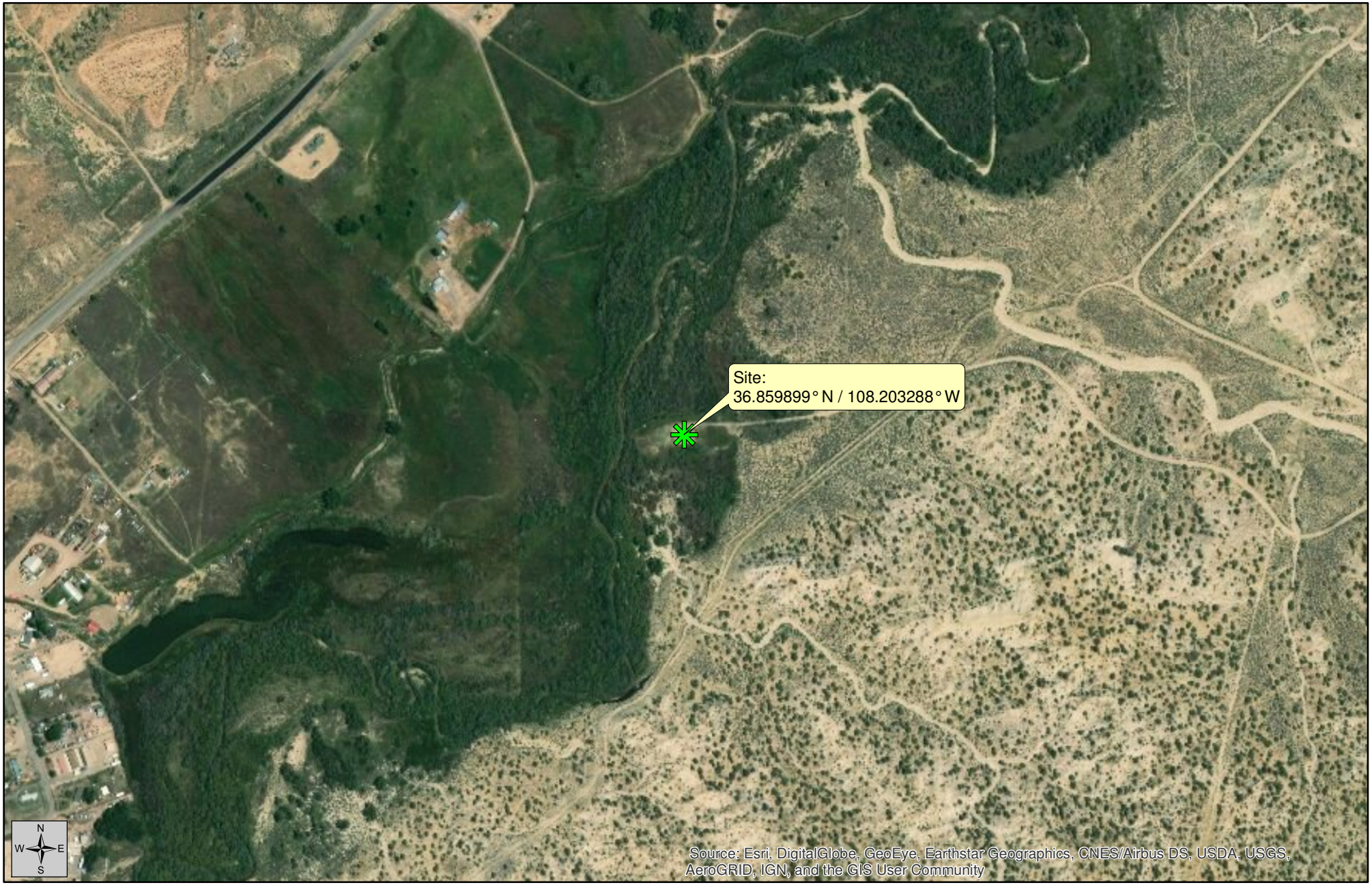


Figure 3
Aerial Map

Site Characterizatiuon Report and Stage 1 Abatement Plan

January 25, 2019

TIMBERWOLF ENVIRONMENTAL

1:8,000

0 1,000 2,000 3,000 4,000 Feet

Kaufman No. 1 Release
Hilcorp Energy Company
San Juan County, New Mexico

Created By:
Russell Greer
TE Project No.: HEC-180061

Datum: NAD83
Imagery Source: ESRI
Vector Source: TE

Site

Sample ID	Volatile Organgic Compounds (mg/kg)				Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	MRO (mg/kg)	Total TPH (mg/kg)
	B	T	E	X					
N Sidewall	< 0.016	0.031	0.061	0.37	0.462	17	< 9.8	< 49	17.0
N Sidewall 2	< 0.099	< 0.20	< 0.20	< 0.40	0	< 20	380	< 49	380.0
SW Sidewall	< 0.026	< 0.052	0.08	< 0.10	0.08	15	120	< 48	135.0
SE Sidewall	1.7	29	6.4	85	122.1	1,300	220	< 48	1,520.0
N Pothole	< 0.016	< 0.032	< 0.032	< 0.064	< 0.064	< 3.2	< 9.4	< 47	< 47
NW Pothole	< 0.018	< 0.035	< 0.035	< 0.071	< 0.071	< 3.5	< 9.3	< 49	< 49
W Pothole	< 0.094	< 0.19	2.1	17	19.1	790	210	< 49	1,000.0
W Pothole 2	< 0.02	< 0.039	< 0.039	< 0.079	< 0.079	< 3.9	< 9.6	< 48	< 48
E Pothole	< 0.014	< 0.028	< 0.028	< 0.055	< 0.055	< 2.8	< 9.8	< 49	< 49
SE Pothole	< 0.017	< 0.035	< 0.035	< 0.07	< 0.07	< 3.5	< 9.6	< 48	< 48
River Grab	< 0.017	< 0.033	< 0.033	< 0.067	< 0.067	< 3.3	< 10	< 50	< 50
Regulatory Criteria	**10**	**--**	**--**	**--**	**50**	**--**	**--**	**--**	**100**

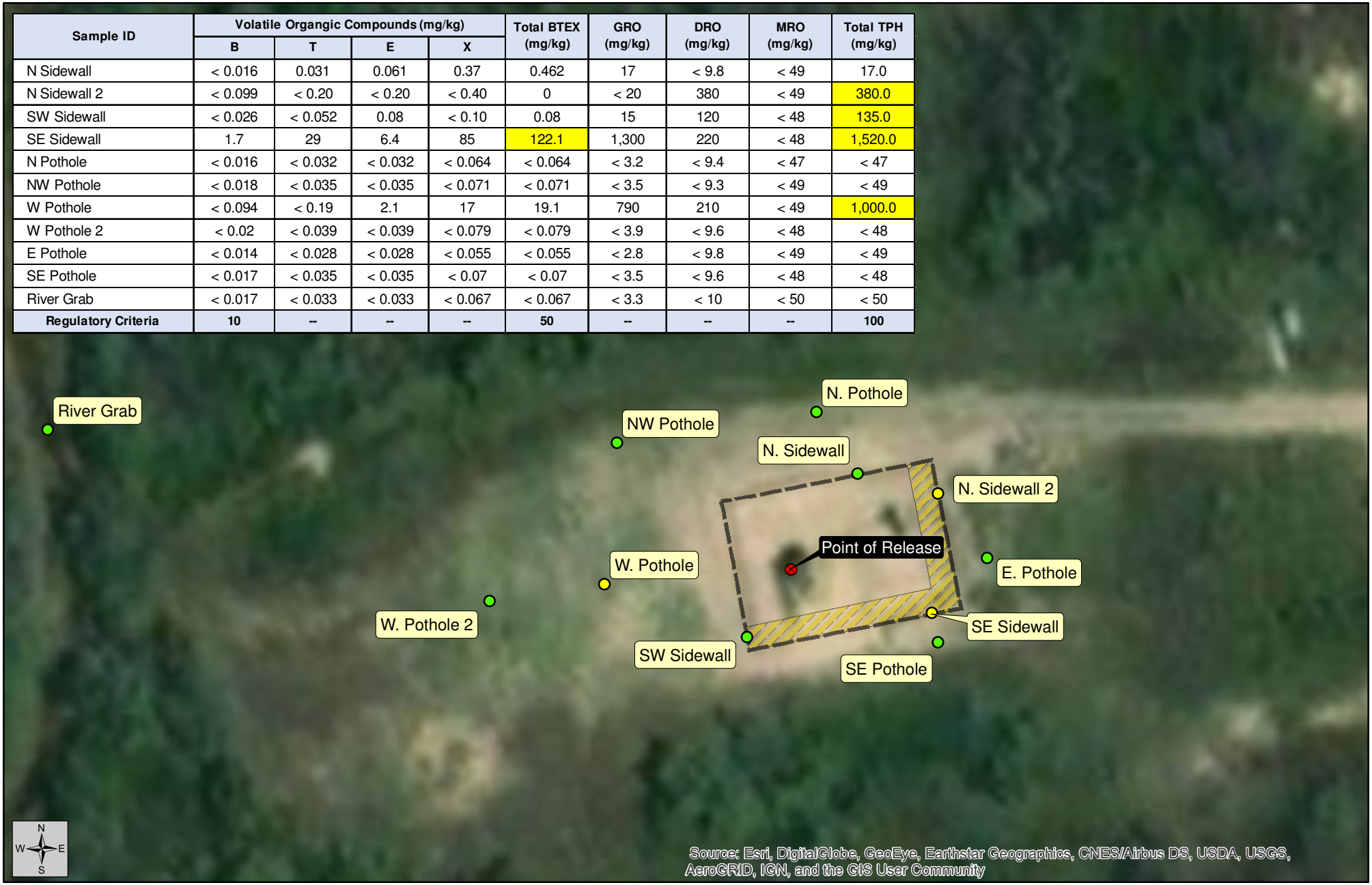


Figure 4
Initial Sample Location Map

Site Characterizatiuon Report and Stage 1 Abatement Plan

Sample Date:
November 29, 2018

TIMBERWOLF ENVIRONMENTAL

1:500

0 50 100 150 200 250 Feet

Created By:
Kevin Cole
November 30, 2018
TE Project No.: HEC-180061

Kaufman No. 1 Release
Hilcorp Energy Company
San Juan County, New Mexico

Datum: NAD83
Imagery Source: ESRI
Vector Source: TE

- Point of Release
- Sample Location (clean)
- Sample Location (elevated)
- Excavation - 0.5 ft deep
- Excavation - 3 ft deep

Sample ID	Date	Volatile Orgnic Compounds (mg/kg)				Total BTEX (mg/kg)	Chloride (mg/kg)	TPH-DRO (mg/kg)	TPH-MRO (mg/kg)	TPH-GRO (mg/kg)	Total TPH (mg/kg)
		Benzene	Toluene	Ethylbenzene	Xylenes						
MW1 2.5-3.5'	01/15/19	0.96	22	7	92	121.96	< 30	600	< 49	1,200	1,800
MW1 4.5-5.5'	01/15/19	< 0.025	< 0.049	< 0.049	0.12	0.12	< 30	31	< 46	< 4.9	31
MW1 6.5-7.5'	01/15/19	< 0.023	< 0.046	< 0.046	< 0.092	< 0.0092	< 30	20	48	4.7	72.7
MW1 14-15'	01/15/19	< 0.025	< 0.05	< 0.05	< 0.1	< 0.1	< 30	< 9.3	< 47	< 5.0	<47
MW2 5'	01/14/19	< 0.024	< 0.048	< 0.048	< 0.096	< 0.096	< 30	< 9.2	< 46	< 4.8	<46
MW2 6.5-7.5'	01/14/19	< 0.024	< 0.048	< 0.048	< 0.096	< 0.096	< 30	18	< 49	< 4.8	18
MW3 5.0-5.5'	01/14/19	< 0.024	< 0.049	< 0.049	< 0.098	< 0.098	< 30	< 9.8	< 49	< 4.9	< 49
MW3 6.5-7.5'	01/14/19	< 0.024	< 0.049	< 0.049	< 0.097	< 0.097	< 30	< 9.4	< 47	< 4.9	< 47
MW4 5-6'	01/15/19	< 0.024	< 0.048	< 0.048	< 0.096	< 0.096	< 30	< 9.8	< 49	< 4.8	< 49
MW4 8-9'	01/15/19	< 0.024	< 0.047	< 0.047	< 0.094	< 0.094	< 30	130	< 50	< 4.7	130
MW5 4.5-5.5'	01/15/19	< 0.024	< 0.048	< 0.048	< 0.097	< 0.097	< 30	< 9.8	< 49	< 4.8	< 49
MW5 8-9'	01/15/19	< 0.024	< 0.049	< 0.049	< 0.098	< 0.098	< 30	86	< 47	29	115
MW5 14.5-15.5'	01/15/19	< 0.023	< 0.046	< 0.046	< 0.093	< 0.093	< 30	< 9.5	< 47	< 4.6	< 47
MW6 5.0-5.5'	01/14/19	< 0.025	< 0.05	< 0.05	< 0.099	< 0.099	< 30	10	< 49	10	20
MW6 7.5-8.5'	01/14/19	< 0.025	0.057	< 0.05	< 0.1	< 0.1	< 30	110	< 49	120	230
Regulatory Criteria		**10**	**--**	**--**	**--**	**50**	**600**	**--**	**--**	**--**	**100**

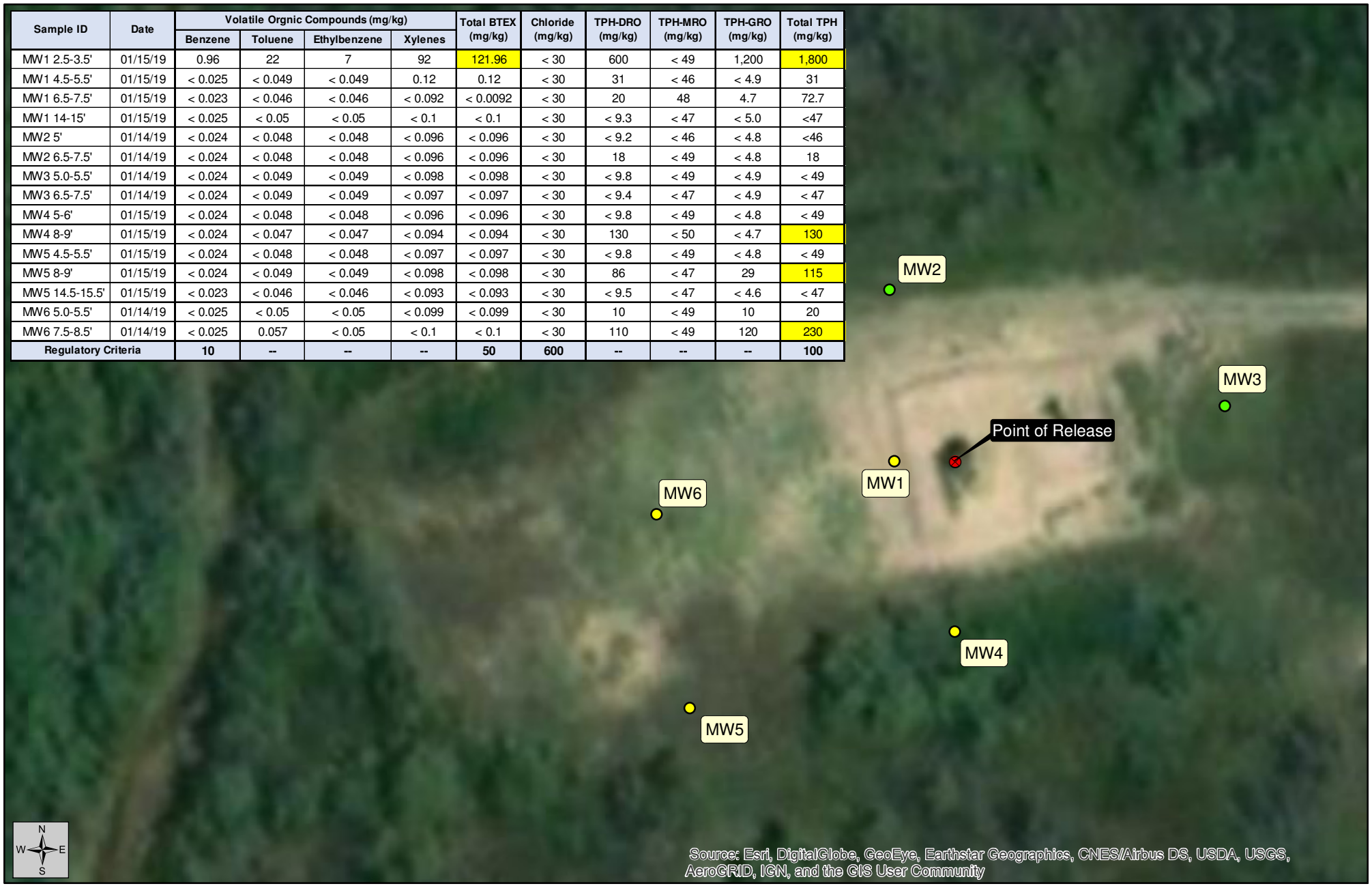


Figure 5
Site Charactorization - Sample Location Map

Site Characterizatiuon Report and Stage 1 Abatement Plan

Sample Dates: 01/14/19 and 01/15/19

TIMBERWOLF ENVIRONMENTAL

1:500

0 50 100 150 200 250 Feet

Created By:
Kevin Cole
January 25, 2019
TE Project No.: HEC-180061

Kaufman No. 1 Release
Hilcorp Energy Company
San Juan County, New Mexico

Datum: NAD83
Imagery Source: ESRI
Vector Source: TE

- Point of Release
- Soil Sample (Clean)
- Soil Sample (Elevated)

Sample ID	Date	Volatile Organic Compounds (mg/L)				Chloride (mg/L)	TPH-GRO (mg/L)	TPH-DRO (mg/L)	TPH-MRO (mg/L)	Total TPH (mg/L)
		B	T	E	X					
MW1	01/18/19	0.074	0.35	0.027	0.33	130	2.0	< 1.0	< 5.0	2.0
MW2	01/17/19	< 0.001	< 0.001	< 0.001	< 0.0015	150	< 0.05	< 1.0	< 5.0	< 5.0
MW3	01/17/19	< 0.001	< 0.001	< 0.001	< 0.0015	140	< 0.05	< 1.0	< 5.0	< 5.0
MW4	01/17/19	< 0.001	< 0.001	< 0.001	< 0.0015	140	< 0.05	< 1.0	< 5.0	< 5.0
MW5	01/17/19	< 0.001	< 0.001	< 0.001	< 0.0015	130	0.32	< 1.0	< 5.0	0.32
MW6	01/18/19	< 0.001	< 0.001	< 0.001	< 0.0015	180	1.1	< 1.0	< 5.0	1.1
Regulatory Criteria		**0.01**	**0.75**	**0.75**	**0.62**	**250**	**--**	**--**	**--**	**--**

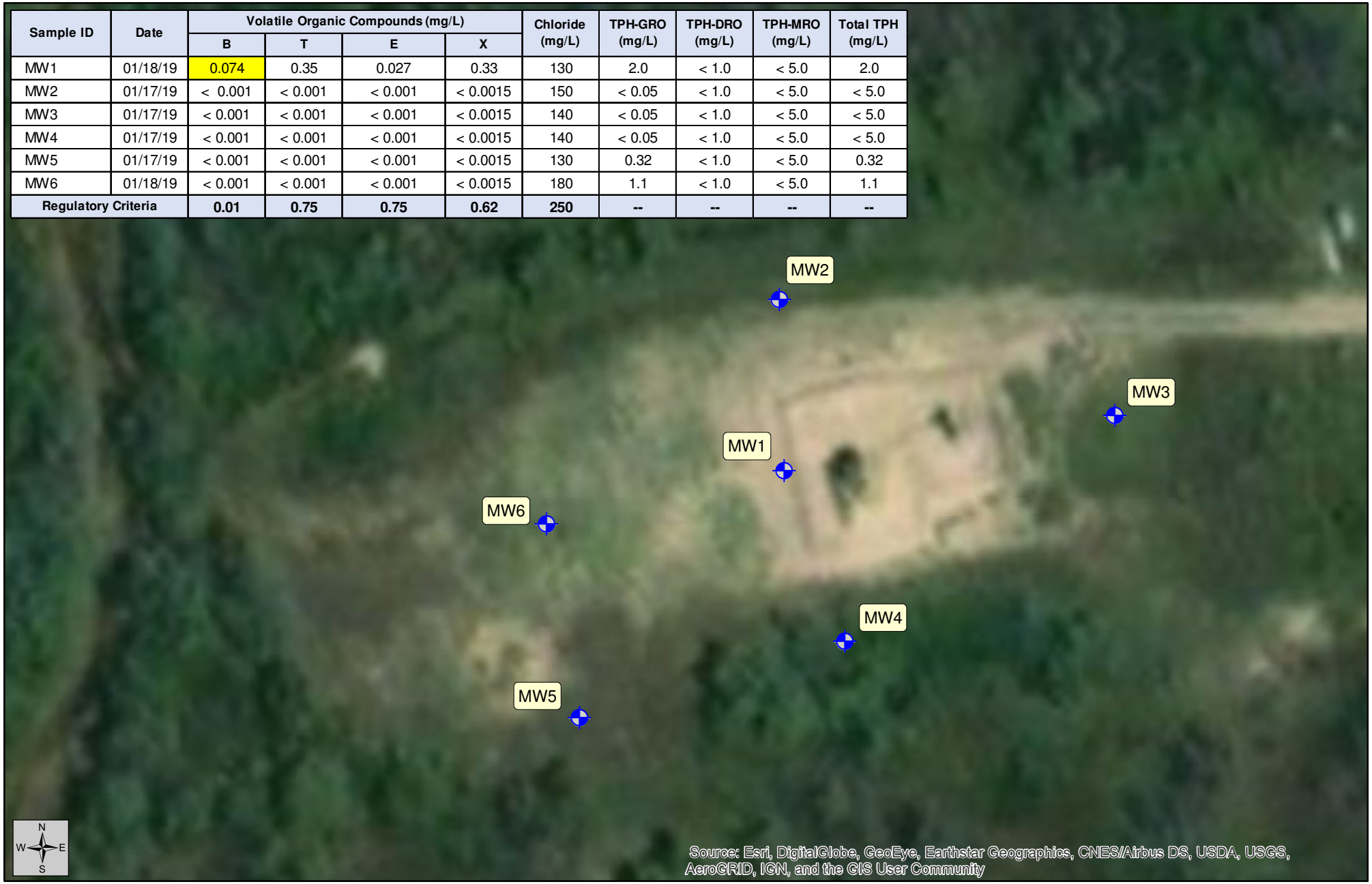


Figure 6
Monitor Well Location Map

Site Characterizatiuon Report and Stage 1 Abatement Plan

Sample Dates:
01/17/19 and 01/18/19

TIMBERWOLF ENVIRONMENTAL

1:500

0 50 100 150 200 250 Feet

Created By:
Kevin Cole
January 25, 2019
TE Project No.: HEC-180061

Kaufman No. 1 Release
Hilcorp Energy Company
San Juan County, New Mexico

Datum: NAD83
Imagery Source: ESRI
Vector Source: TE

Monitor Well

Figure 7
Bezene Plume Map

Site Characterizatiuon Report and Stage 1 Abatement Plan

Sample Dates:
01/17/19 and 01/18/19

TIMBERWOLF ENVIRONMENTAL

1:500

0 50 100 150 200 250 Feet

Created By:
Kevin Cole
January 25, 2019
TE Project No.: HEC-180061

Kaufman No. 1 Release
Hilcorp Energy Company
San Juan County, New Mexico

Datum: NAD83
Imagery Source: ESRI
Vector Source: TE

Monitor Well
Benzene: ≥ 0.01 mg/L
Benzene: ≥ 0.05 mg/L

Figure 8
Potentiometric Surface Map

Site Characterizatiuon Report and Stage 1 Abatement Plan

Sample Dates:
01/17/19 and 01/18/19

TIMBERWOLF ENVIRONMENTAL

1:500

0 50 100 150 200 250 Feet

Created By:
Kevin Cole
January 25, 2019
TE Project No.: HEC-180061

Kaufman No. 1 Release
Hilcorp Energy Company
San Juan County, New Mexico

Datum: NAD83
Imagery Source: ESRI
Vector Source: TE

Monitor Well
Groundwater Gradient
Groundwater Flow

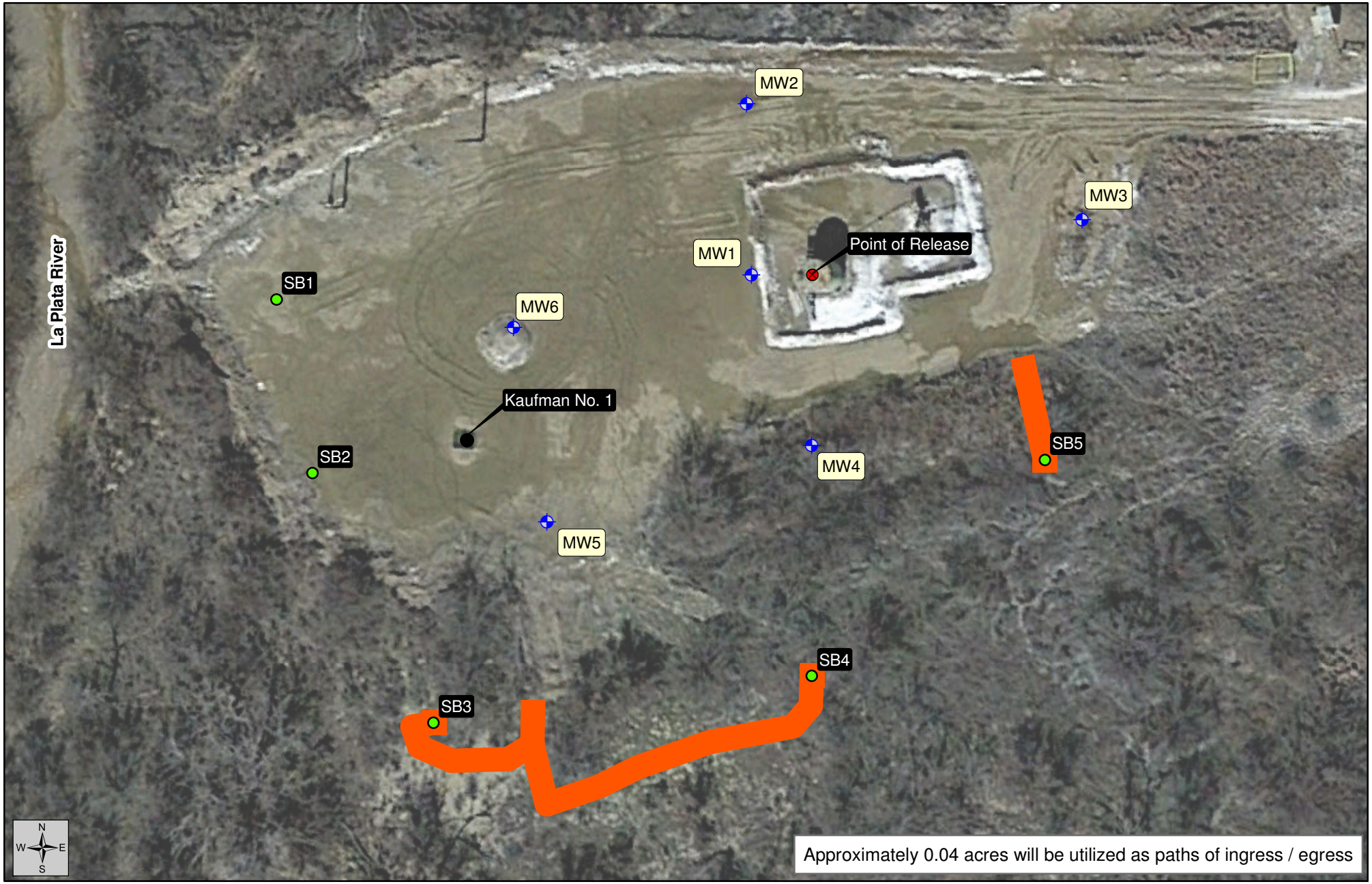


Figure 9
Proposed Soil Boring Locations

Site Characterizatiuon Report and Stage 1 Abatement Plan

May 9, 2019

TIMBERWOLF ENVIRONMENTAL

1:500

0 50 100 150 200 250 Feet

Kaufman No. 1 Release (SE1/4 NE1/4, Sec. 33, T31N, R13W)
Hilcorp Energy Company
San Juan County, New Mexico

Created By:
Kevin Cole
TE Project No.: HEC-180061

Datum: NAD83
Imagery Source: Google Earth
Vector Source: TE

- Point of Release
- Monitor Well
- Proposed Soil Boring
- Kaufman No. 1 Well Head
- Paths of Ingress / Egress

Figure 10
Proposed Leachate Study Area

Site Characterizatiuon Report and Stage 1 Abatement Plan

January 25, 2019

TIMBERWOLF ENVIRONMENTAL

1:500

0 50 100 150 200 250 Feet

Kaufman No. 1 Release
Hilcorp Energy Company
San Juan County, New Mexico

Created By:
Kevin Cole
TE Project No.: HEC-180061

Datum: NAD83
Imagery Source: ESRI
Vector Source: TE

Monitor Well
Current Excavation
Area for Leachate Study
Hilcorp Lines

Appendix A

Soil Boring Logs

MONITORING WELL INSTALLATION REPORT

MW-1

TIMBERWOLF ENVIRONMENTAL

Client: Hilcorp Energy Company	Completion Date: 01/15/19
Project Name: Kaufman No. 1	Logged By: Jim Foster
Site Location: Farmington, New Mexico	Drilled By: Geomat, Inc.
Project Number: 180061	Drilling Method & Boring Diameter: Hollow Stem Auger 5.5'
Boring Coordinates: 36.85988, -108.20337	Total Depth (ft): 15'
Ground Surface Elevation (ft, msl): 5,537 ft	First Water Encountered (ft): 5'

Depth (feet)	USCS	PID Reading (ppm)	Soil Sample	Soil Description
				Excavated, void
	CH	589		FIRM CLAY
	SC			CLAYEY SAND
	SW			MEDIUM SAND
	CL			SANDY CLAY
	SC			CLAYEY SAND
5	SW	371		QUARTZ SAND, brown; groundwater
	SW	86.4		QUARTZ SAND, grey
10	SW			QUARTZ SAND, brown
15		258		TD = 15'
20				

Well Completion

Notes:
Well Completion: Well Screen: 4-14 ft bgs. Sand packed to 3 ft bgs, sealed to surface with bentonite. Well completed with 2-inch PVC, surface completion is stick up.

- groundwater
- sand pack
- screened interval
- bentonite seal

MONITORING WELL INSTALLATION REPORT

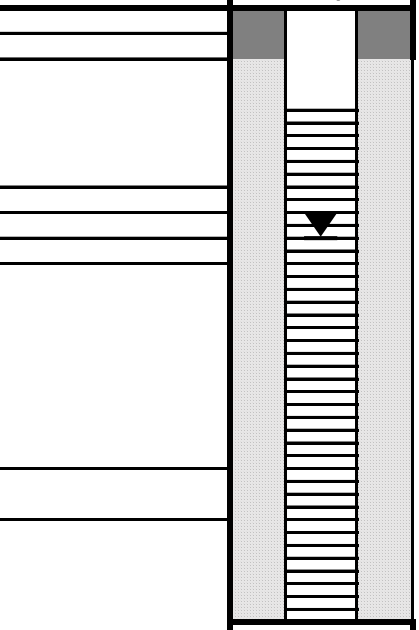
MW-2

TIMBERWOLF ENVIRONMENTAL

Client: Hilcorp Energy Company	Completion Date: 01/14/19
Project Name: Kaufman No. 1	Logged By: Jim Foster
Site Location: Farmington, New Mexico	Drilled By: Geomat, Inc.
Project Number: 180061	Drilling Method & Boring Diameter: Hollow Stem Auger 5.5"
Boring Coordinates: 36.86007, -108.2034	Total Depth (ft): 13'
Ground Surface Elevation (ft, msl): 5,536ft	First Water Encountered (ft): 4.33'

Depth (feet)	USCS	PID Reading (ppm)	Soil Sample	Soil Description
	ML			CLAYEY SILT
	CH			FIRM CLAY, brown
	CH			CLAY, brown
	SW	0.35		COARSE SAND, brown
	CH			CLAY, highly plastic
	SW	0.4		MEDIUM SAND, groundwater
5	SW			QUARTZ SAND, pea gravel and 1.5" gravel inclusions
				hydrocarbon staining 6-8'
		0.8		
	SM			CLAYEY SILTY FINE SAND
10				NO RETURN
15				TD = 13'
20				

Well Completion



Notes:
Well Completion: Well Screen: 2-12 ft bgs. Sand packed to 1 ft bgs, sealed to surface with bentonite. Well completed with 2-inch PVC, surface completion is stick up.

- groundwater
- sand pack
- screened interval
- bentonite seal

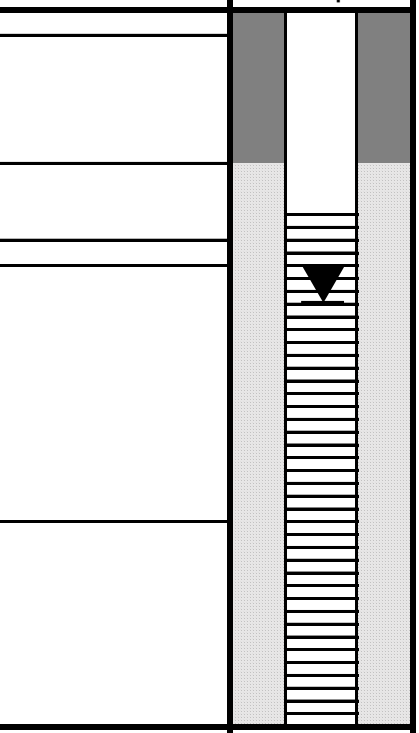
MONITORING WELL INSTALLATION REPORT

MW-3

TIMBERWOLF ENVIRONMENTAL

Client: Hilcorp Energy Company	Completion Date: 01/14/19
Project Name: Kaufman No. 1	Logged By: Jim Foster
Site Location: Farmington, New Mexico	Drilled By: Geomat, Inc.
Project Number: 180061	Drilling Method & Boring Diameter: Hollow Stem Auger 5.5"
Boring Coordinates: 36.85995, -108.20309	Total Depth (ft): 13'
Ground Surface Elevation (ft, msl): 5,536ft	First Water Encountered (ft): 4.33'

Depth (feet)	USCS	PID Reading (ppm)	Soil Sample	Soil Description
	ML			CLAYEY SILT
	CL			SILTY CLAY
	CH			CLAY, firm brown
5	CL	0.45		SANDY CLAY
	SW	0.5		QUARTZ SAND, pea gravel and 1.5" gravel inclusions - groundwater
		0.55		- sandstone
10				NO RETURN
15				TD = 14'
20				



Notes:
Well Completion: Well Screen: 4-14 ft bgs. Sand packed to 3 ft bgs, sealed to surface with bentonite. Well completed with 2-inch PVC, surface completion is stick up.

- groundwater
- sand pack
- screened interval
- bentonite seal

MONITORING WELL INSTALLATION REPORT

MW-4

TIMBERWOLF ENVIRONMENTAL

Client: Hilcorp Energy Company	Completion Date: 01/15/19
Project Name: Kaufman No. 1	Logged By: Jim Foster
Site Location: Farmington, New Mexico	Drilled By: Geomat, Inc.
Project Number: 180061	Drilling Method & Boring Diameter: Hollow Stem Auger 5.5"
Boring Coordinates: 36.85973, -108.20333	Total Depth (ft): 14'
Ground Surface Elevation (ft, msl): 5,539ft	First Water Encountered (ft): 5

Depth (feet)	USCS	PID Reading (ppm)	Soil Sample	Soil Description	Well Completion
	CH	ML		FIRM CLAY, brown	
	SC			CLAYEY SANDY SILT	
	CH			FIRM CLAY, brown	
	CL	SW		SILTY CLAY	
	CL			SANDY SILTY CLAY	
5	SW	340		QUARTZ SAND, pea gravel and 1.5" gravel inclusions	
		249		- possible hydrocarbon staining	
10				NO RETURN	
15				TD = 14'	
20					

CLAYEY SILT

MEDIUM SAND

Notes:

Well Completion: Well Screen: 4-14 ft bgs. Sand packed to 3 ft bgs, sealed to surface with bentonite. Well completed with 2-inch PVC, surface completion is stick up.

- groundwater
- sand pack
- screened interval
- bentonite seal

MONITORING WELL INSTALLATION REPORT

MW-5

TIMBERWOLF ENVIRONMENTAL

Client: Hilcorp Energy Company	Completion Date: 01/15/18
Project Name: Kaufman No. 1	Logged By: Jim Foster
Site Location: Farmington, New Mexico	Drilled By: Geomat, Inc.
Project Number: 180061	Drilling Method & Boring Diameter: Hollow Stem Auger 5.5"
Boring Coordinates: 36.85966, -108.20358	Total Depth (ft): 15'
Ground Surface Elevation (ft, msl): 5,536ft	First Water Encountered (ft): 4.5'

Depth (feet)	USCS	PID Reading (ppm)	Soil Sample	Soil Description	Well Completion
	CH	SC		FIRM CLAY, brown with calcarious inclusions — CLAYEY SAND	
	SW			MEDIUM SAND, brown	
	SC			CLAYEY SAND	
	SW			MEDIUM SAND, brown	
	CL			SANDY CLAY	
	SW			MEDIUM SAND, groundwater	
5	SW	363		QUARTZ SAND, saturated with 1.5" gravel inclusion	
	SW	16.3		MEDIUM SAND, with 1.5" gravel inclusions - hydrocarbon stainig	
10	SC	342		CLAYEY QUARTZ SAND, hydrocarbon odor	
	SC	CL		CLAYEY QUARTZ SAND — SANDY CLAY	
	CL			SILTY CLAY	
	CH			CLAY, highly plastic	
15	SC	8.05		CLAYEY SAND	
				TD = 15'	
20					

Notes:
Well Completion: Well Screen: 4-14 ft bgs. Sand packed to 3 ft bgs, sealed to surface with bentonite. Well completed with 2-inch PVC, surface completion is stick up.

- groundwater
- sand pack
- screened interval
- bentonite seal

MONITORING WELL INSTALLATION REPORT

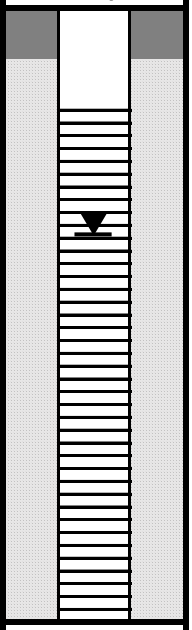
MW-6

TIMBERWOLF ENVIRONMENTAL

Client: Hilcorp Energy Company	Completion Date: 01/14/19
Project Name: Kaufman No. 1	Logged By: Jim Foster
Site Location: Farmington, New Mexico	Drilled By: Geomat, Inc.
Project Number: 180061	Drilling Method & Boring Diameter: Hollow Stem Auger
Boring Coordinates: 36.85984, -108.20366	Total Depth (ft): 13'
Ground Surface Elevation (ft, msl): 5,536ft	First Water Encountered (ft): 4.5'

Depth (feet)	USCS	PID Reading (ppm)	Soil Sample	Soil Description
	ML			CLAYEY SILT
	CH	3.15		FIRM CLAY, brown
	CH	CH		FIRM CLAY, brown
	CH	ML		SILT / CLAY STONE
	ML	2.1		CLAYEY SILT, groundwater
				NO RETURN
5	SW			QUARTZ SAND, pea gravel and 1-2" gravel inclusions
		9.7		
	SP	183		MEDIUM SAND
				- 1-2" gravel inclusions
10				NO RETURN
15				TD = 13'
20				

Well Completion



Notes:
Well Completion: Well Screen: 2-12 ft bgs. Sand packed to 1 ft bgs, sealed to surface with bentonite. Well completed with 2-inch PVC, surface completion is stick up.

- groundwater
- sand pack
- screened interval
- bentonite seal

Appendix B

Laboratory Reports and Chain-of-Custody Documents

Analytical Report
Lab Order **1811E73**
Date Reported:

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Timberwolf Environmental
Client Sample ID: N. Sidewall
Project: Kaufman No 1
Collection Date: 11/29/2018 9:25:00 AM
Lab ID: 1811E73-001
Matrix: MEOH (SOIL)
Received Date: 11/30/2018 8:25:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	11/30/2018 11:25:53 AM	41813
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/30/2018 11:25:53 AM	41813
Surr: DNOP	97.8	50.6-138		%Rec	1	11/30/2018 11:25:53 AM	41813
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	17	3.1		mg/Kg	1	11/30/2018 9:58:17 AM	R55986
Surr: BFB	284	73.8-119	S	%Rec	1	11/30/2018 9:58:17 AM	R55986
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.016		mg/Kg	1	11/30/2018 9:58:17 AM	R55986
Toluene	0.031	0.031		mg/Kg	1	11/30/2018 9:58:17 AM	R55986
Ethylbenzene	0.061	0.031		mg/Kg	1	11/30/2018 9:58:17 AM	R55986
Xylenes, Total	0.37	0.063		mg/Kg	1	11/30/2018 9:58:17 AM	R55986
Surr: 4-Bromofluorobenzene	91.7	80-120		%Rec	1	11/30/2018 9:58:17 AM	R55986

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative 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 t

Analytical Report
Lab Order **1811E73**
Date Reported:

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Timberwolf Environmental
Client Sample ID: N. Sidewall 2
Project: Kaufman No 1
Collection Date: 11/29/2018 9:30:00 AM
Lab ID: 1811E73-002
Matrix: MEOH (SOIL)
Received Date: 11/30/2018 8:25:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	380	9.8		mg/Kg	1	11/30/2018 11:48:03 AM	41813
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/30/2018 11:48:03 AM	41813
Surr: DNOP	102	50.6-138		%Rec	1	11/30/2018 11:48:03 AM	41813
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	20		mg/Kg	5	11/30/2018 10:21:03 AM	R55986
Surr: BFB	117	73.8-119		%Rec	5	11/30/2018 10:21:03 AM	R55986
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.099		mg/Kg	5	11/30/2018 10:21:03 AM	R55986
Toluene	ND	0.20		mg/Kg	5	11/30/2018 10:21:03 AM	R55986
Ethylbenzene	ND	0.20		mg/Kg	5	11/30/2018 10:21:03 AM	R55986
Xylenes, Total	ND	0.40		mg/Kg	5	11/30/2018 10:21:03 AM	R55986
Surr: 4-Bromofluorobenzene	85.0	80-120		%Rec	5	11/30/2018 10:21:03 AM	R55986

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative 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 t

Analytical Report
Lab Order **1811E73**
Date Reported:

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Timberwolf Environmental
Client Sample ID: SE Sidewall
Project: Kaufman No 1
Collection Date: 11/29/2018 9:35:00 AM
Lab ID: 1811E73-003
Matrix: MEOH (SOIL)
Received Date: 11/30/2018 8:25:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	220	9.7		mg/Kg	1	11/30/2018 12:10:08 PM	41813
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/30/2018 12:10:08 PM	41813
Surr: DNOP	100	50.6-138		%Rec	1	11/30/2018 12:10:08 PM	41813
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	1300	180		mg/Kg	50	11/30/2018 10:43:42 AM	R55986
Surr: BFB	192	73.8-119	S	%Rec	50	11/30/2018 10:43:42 AM	R55986
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	1.7	0.88		mg/Kg	50	11/30/2018 10:43:42 AM	R55986
Toluene	29	1.8		mg/Kg	50	11/30/2018 10:43:42 AM	R55986
Ethylbenzene	6.4	1.8		mg/Kg	50	11/30/2018 10:43:42 AM	R55986
Xylenes, Total	85	3.5		mg/Kg	50	11/30/2018 10:43:42 AM	R55986
Surr: 4-Bromofluorobenzene	93.7	80-120		%Rec	50	11/30/2018 10:43:42 AM	R55986

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative 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 t

Analytical Report
Lab Order **1811E73**
Date Reported:

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Timberwolf Environmental
Client Sample ID: SE Pothole
Project: Kaufman No 1
Collection Date: 11/29/2018 9:38:00 AM
Lab ID: 1811E73-004
Matrix: MEOH (SOIL)
Received Date: 11/30/2018 8:25:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	11/30/2018 12:32:20 PM	41813
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/30/2018 12:32:20 PM	41813
Surr: DNOP	94.4	50.6-138		%Rec	1	11/30/2018 12:32:20 PM	41813
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.5		mg/Kg	1	11/30/2018 11:06:28 AM	R55986
Surr: BFB	91.1	73.8-119		%Rec	1	11/30/2018 11:06:28 AM	R55986
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.017		mg/Kg	1	11/30/2018 11:06:28 AM	R55986
Toluene	ND	0.035		mg/Kg	1	11/30/2018 11:06:28 AM	R55986
Ethylbenzene	ND	0.035		mg/Kg	1	11/30/2018 11:06:28 AM	R55986
Xylenes, Total	ND	0.070		mg/Kg	1	11/30/2018 11:06:28 AM	R55986
Surr: 4-Bromofluorobenzene	87.9	80-120		%Rec	1	11/30/2018 11:06:28 AM	R55986

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative 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 t

Analytical Report
Lab Order **1811E73**
Date Reported:

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Timberwolf Environmental
Client Sample ID: E Pothole
Project: Kaufman No 1
Collection Date: 11/29/2018 9:46:00 AM
Lab ID: 1811E73-005
Matrix: MEOH (SOIL)
Received Date: 11/30/2018 8:25:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	11/30/2018 12:54:27 PM	41813
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/30/2018 12:54:27 PM	41813
Surr: DNOP	94.4	50.6-138		%Rec	1	11/30/2018 12:54:27 PM	41813
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	2.8		mg/Kg	1	11/30/2018 11:29:07 AM	R55986
Surr: BFB	88.9	73.8-119		%Rec	1	11/30/2018 11:29:07 AM	R55986
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.014		mg/Kg	1	11/30/2018 11:29:07 AM	R55986
Toluene	ND	0.028		mg/Kg	1	11/30/2018 11:29:07 AM	R55986
Ethylbenzene	ND	0.028		mg/Kg	1	11/30/2018 11:29:07 AM	R55986
Xylenes, Total	ND	0.055		mg/Kg	1	11/30/2018 11:29:07 AM	R55986
Surr: 4-Bromofluorobenzene	84.9	80-120		%Rec	1	11/30/2018 11:29:07 AM	R55986

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative 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 t

Analytical Report
Lab Order **1811E73**
Date Reported:

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Timberwolf Environmental
Client Sample ID: N Pothole
Project: Kaufman No 1
Collection Date: 11/29/2018 9:48:00 AM
Lab ID: 1811E73-006
Matrix: MEOH (SOIL)
Received Date: 11/30/2018 8:25:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	11/30/2018 1:16:39 PM	41813
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	11/30/2018 1:16:39 PM	41813
Surr: DNOP	96.0	50.6-138		%Rec	1	11/30/2018 1:16:39 PM	41813
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.2		mg/Kg	1	11/30/2018 11:51:59 AM	R55986
Surr: BFB	92.4	73.8-119		%Rec	1	11/30/2018 11:51:59 AM	R55986
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.016		mg/Kg	1	11/30/2018 11:51:59 AM	R55986
Toluene	ND	0.032		mg/Kg	1	11/30/2018 11:51:59 AM	R55986
Ethylbenzene	ND	0.032		mg/Kg	1	11/30/2018 11:51:59 AM	R55986
Xylenes, Total	ND	0.064		mg/Kg	1	11/30/2018 11:51:59 AM	R55986
Surr: 4-Bromofluorobenzene	89.9	80-120		%Rec	1	11/30/2018 11:51:59 AM	R55986

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative 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 t

Analytical Report
Lab Order **1811E73**
Date Reported:

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Timberwolf Environmental
Client Sample ID: NW Pothole
Project: Kaufman No 1
Collection Date: 11/29/2018 9:50:00 AM
Lab ID: 1811E73-007
Matrix: MEOH (SOIL)
Received Date: 11/30/2018 8:25:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	11/30/2018 1:38:42 PM	41813
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	11/30/2018 1:38:42 PM	41813
Surr: DNOP	96.6	50.6-138		%Rec	1	11/30/2018 1:38:42 PM	41813
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.5		mg/Kg	1	11/30/2018 12:14:48 PM	R55986
Surr: BFB	89.3	73.8-119		%Rec	1	11/30/2018 12:14:48 PM	R55986
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.018		mg/Kg	1	11/30/2018 12:14:48 PM	R55986
Toluene	ND	0.035		mg/Kg	1	11/30/2018 12:14:48 PM	R55986
Ethylbenzene	ND	0.035		mg/Kg	1	11/30/2018 12:14:48 PM	R55986
Xylenes, Total	ND	0.071		mg/Kg	1	11/30/2018 12:14:48 PM	R55986
Surr: 4-Bromofluorobenzene	85.3	80-120		%Rec	1	11/30/2018 12:14:48 PM	R55986

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative 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 t

Analytical Report
Lab Order **1811E73**
Date Reported:

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Timberwolf Environmental
Client Sample ID: River Grab
Project: Kaufman No 1
Collection Date: 11/29/2018 9:55:00 AM
Lab ID: 1811E73-008
Matrix: MEOH (SOIL)
Received Date: 11/30/2018 8:25:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	11/30/2018 2:00:58 PM	41813
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/30/2018 2:00:58 PM	41813
Surr: DNOP	98.1	50.6-138		%Rec	1	11/30/2018 2:00:58 PM	41813
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.3		mg/Kg	1	11/30/2018 10:51:42 AM	R55985
Surr: BFB	87.6	73.8-119		%Rec	1	11/30/2018 10:51:42 AM	R55985
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.017		mg/Kg	1	11/30/2018 10:51:42 AM	R55985
Toluene	ND	0.033		mg/Kg	1	11/30/2018 10:51:42 AM	R55985
Ethylbenzene	ND	0.033		mg/Kg	1	11/30/2018 10:51:42 AM	R55985
Xylenes, Total	ND	0.067		mg/Kg	1	11/30/2018 10:51:42 AM	R55985
Surr: 4-Bromofluorobenzene	93.4	80-120		%Rec	1	11/30/2018 10:51:42 AM	R55985

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative 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 t

Analytical Report
Lab Order **1811E73**
Date Reported:

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Timberwolf Environmental
Client Sample ID: W. Pothole
Project: Kaufman No 1
Collection Date: 11/29/2018 10:06:00 AM
Lab ID: 1811E73-009
Matrix: MEOH (SOIL)
Received Date: 11/30/2018 8:25:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	210	9.7		mg/Kg	1	11/30/2018 2:23:12 PM	41813
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/30/2018 2:23:12 PM	41813
Surr: DNOP	108	50.6-138		%Rec	1	11/30/2018 2:23:12 PM	41813
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	790	19		mg/Kg	5	11/30/2018 11:15:22 AM	R55985
Surr: BFB	875	73.8-119	S	%Rec	5	11/30/2018 11:15:22 AM	R55985
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.094		mg/Kg	5	11/30/2018 11:15:22 AM	R55985
Toluene	ND	0.19		mg/Kg	5	11/30/2018 11:15:22 AM	R55985
Ethylbenzene	2.1	0.19		mg/Kg	5	11/30/2018 11:15:22 AM	R55985
Xylenes, Total	17	0.38		mg/Kg	5	11/30/2018 11:15:22 AM	R55985
Surr: 4-Bromofluorobenzene	133	80-120	S	%Rec	5	11/30/2018 11:15:22 AM	R55985

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative 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 t

Analytical Report
Lab Order **1811E73**
Date Reported:

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Timberwolf Environmental
Client Sample ID: W. Pothole 2
Project: Kaufman No 1
Collection Date: 11/29/2018 10:10:00 AM
Lab ID: 1811E73-010
Matrix: MEOH (SOIL)
Received Date: 11/30/2018 8:25:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	11/30/2018 2:45:26 PM	41813
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/30/2018 2:45:26 PM	41813
Surr: DNOP	97.0	50.6-138		%Rec	1	11/30/2018 2:45:26 PM	41813
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.9		mg/Kg	1	11/30/2018 12:02:27 PM	R55985
Surr: BFB	91.4	73.8-119		%Rec	1	11/30/2018 12:02:27 PM	R55985
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.020		mg/Kg	1	11/30/2018 12:02:27 PM	R55985
Toluene	ND	0.039		mg/Kg	1	11/30/2018 12:02:27 PM	R55985
Ethylbenzene	ND	0.039		mg/Kg	1	11/30/2018 12:02:27 PM	R55985
Xylenes, Total	ND	0.079		mg/Kg	1	11/30/2018 12:02:27 PM	R55985
Surr: 4-Bromofluorobenzene	95.8	80-120		%Rec	1	11/30/2018 12:02:27 PM	R55985

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative 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 t

Analytical Report
Lab Order **1811E73**
Date Reported:

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Timberwolf Environmental
Client Sample ID: SW Sidewall
Project: Kaufman No 1
Collection Date: 11/29/2018 10:15:00 AM
Lab ID: 1811E73-011
Matrix: MEOH (SOIL)
Received Date: 11/30/2018 8:25:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	120	9.7		mg/Kg	1	11/30/2018 3:07:31 PM	41813
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/30/2018 3:07:31 PM	41813
Surr: DNOP	103	50.6-138		%Rec	1	11/30/2018 3:07:31 PM	41813
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	15	5.2		mg/Kg	1	11/30/2018 12:25:54 PM	R55985
Surr: BFB	213	73.8-119	S	%Rec	1	11/30/2018 12:25:54 PM	R55985
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.026		mg/Kg	1	11/30/2018 12:25:54 PM	R55985
Toluene	ND	0.052		mg/Kg	1	11/30/2018 12:25:54 PM	R55985
Ethylbenzene	0.080	0.052		mg/Kg	1	11/30/2018 12:25:54 PM	R55985
Xylenes, Total	ND	0.10		mg/Kg	1	11/30/2018 12:25:54 PM	R55985
Surr: 4-Bromofluorobenzene	104	80-120		%Rec	1	11/30/2018 12:25:54 PM	R55985

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative 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 t

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

February 05, 2019

Jim Foster

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

RE: Kaufman #1 OrderNo.: 1901785

Dear Jim Foster:

Hall Environmental Analysis Laboratory received 11 sample(s) on 1/19/2019 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,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **1901785**
Date Reported: **2/5/2019**

CLIENT: Timberwolf Environmental
Client Sample ID: MW-2 5'
Project: Kaufman #1
Collection Date: 1/14/2019 1:45:00 PM
Lab ID: 1901785-001 **Matrix:** SOIL **Received Date:** 1/19/2019 11:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
WALKLEY BLACK TOC/FOC/OM						Analyst: **JRR**	
TOC	ND	0.13		% C	1	2/1/2019 9:10:00 AM	42930
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	ND	30		mg/Kg	20	1/22/2019 10:01:27 PM	42748
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	1/22/2019 12:25:59 PM	42722
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	1/22/2019 12:25:59 PM	42722
Surr: DNOP	100	50.6-138		%Rec	1	1/22/2019 12:25:59 PM	42722
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	1/22/2019 11:05:56 AM	42717
Surr: BFB	103	73.8-119		%Rec	1	1/22/2019 11:05:56 AM	42717
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	1/22/2019 11:05:56 AM	42717
Toluene	ND	0.048		mg/Kg	1	1/22/2019 11:05:56 AM	42717
Ethylbenzene	ND	0.048		mg/Kg	1	1/22/2019 11:05:56 AM	42717
Xylenes, Total	ND	0.096		mg/Kg	1	1/22/2019 11:05:56 AM	42717
Surr: 4-Bromofluorobenzene	104	80-120		%Rec	1	1/22/2019 11:05:56 AM	42717

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative 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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Timberwolf Environmental
Client Sample ID: MW2 6.5-7.5'
Project: Kaufman #1
Collection Date: 1/14/2019 1:50:00 PM
Lab ID: 1901785-002 **Matrix:** SOIL
Received Date: 1/19/2019 11:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	ND	30		mg/Kg	20	1/22/2019 10:13:52 PM	42748
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	18	9.7		mg/Kg	1	1/22/2019 12:48:09 PM	42722
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	1/22/2019 12:48:09 PM	42722
Surr: DNOP	104	50.6-138		%Rec	1	1/22/2019 12:48:09 PM	42722
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	1/22/2019 12:16:18 PM	42717
Surr: BFB	103	73.8-119		%Rec	1	1/22/2019 12:16:18 PM	42717
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	1/22/2019 12:16:18 PM	42717
Toluene	ND	0.048		mg/Kg	1	1/22/2019 12:16:18 PM	42717
Ethylbenzene	ND	0.048		mg/Kg	1	1/22/2019 12:16:18 PM	42717
Xylenes, Total	ND	0.096		mg/Kg	1	1/22/2019 12:16:18 PM	42717
Surr: 4-Bromofluorobenzene	103	80-120		%Rec	1	1/22/2019 12:16:18 PM	42717

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative 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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Timberwolf Environmental
Client Sample ID: MW3 5.0-5.5'
Project: Kaufman #1
Collection Date: 1/14/2019 3:30:00 PM
Lab ID: 1901785-003 **Matrix:** SOIL **Received Date:** 1/19/2019 11:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	ND	30		mg/Kg	20	1/23/2019 11:32:59 AM	42757
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	1/22/2019 1:10:09 PM	42722
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	1/22/2019 1:10:09 PM	42722
Surr: DNOP	101	50.6-138		%Rec	1	1/22/2019 1:10:09 PM	42722
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	1/22/2019 1:26:40 PM	42717
Surr: BFB	103	73.8-119		%Rec	1	1/22/2019 1:26:40 PM	42717
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	1/22/2019 1:26:40 PM	42717
Toluene	ND	0.049		mg/Kg	1	1/22/2019 1:26:40 PM	42717
Ethylbenzene	ND	0.049		mg/Kg	1	1/22/2019 1:26:40 PM	42717
Xylenes, Total	ND	0.098		mg/Kg	1	1/22/2019 1:26:40 PM	42717
Surr: 4-Bromofluorobenzene	105	80-120		%Rec	1	1/22/2019 1:26:40 PM	42717

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative 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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Timberwolf Environmental
Client Sample ID: MW3 6.5-7.5'
Project: Kaufman #1
Collection Date: 1/14/2019 3:45:00 PM
Lab ID: 1901785-004 **Matrix:** SOIL **Received Date:** 1/19/2019 11:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	ND	30		mg/Kg	20	1/23/2019 11:45:24 AM	42757
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	1/22/2019 1:54:46 PM	42722
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	1/22/2019 1:54:46 PM	42722
Surr: DNOP	105	50.6-138		%Rec	1	1/22/2019 1:54:46 PM	42722
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	1/22/2019 1:50:11 PM	42717
Surr: BFB	100	73.8-119		%Rec	1	1/22/2019 1:50:11 PM	42717
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	1/22/2019 1:50:11 PM	42717
Toluene	ND	0.049		mg/Kg	1	1/22/2019 1:50:11 PM	42717
Ethylbenzene	ND	0.049		mg/Kg	1	1/22/2019 1:50:11 PM	42717
Xylenes, Total	ND	0.097		mg/Kg	1	1/22/2019 1:50:11 PM	42717
Surr: 4-Bromofluorobenzene	102	80-120		%Rec	1	1/22/2019 1:50:11 PM	42717

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative 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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Timberwolf Environmental
Client Sample ID: MW6 5.0 5.5'
Project: Kaufman #1
Collection Date: 1/14/2019 12:00:00 PM
Lab ID: 1901785-005 **Matrix:** SOIL **Received Date:** 1/19/2019 11:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	ND	30		mg/Kg	20	1/23/2019 11:57:49 AM	42757
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	10	9.8		mg/Kg	1	1/22/2019 2:16:40 PM	42722
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	1/22/2019 2:16:40 PM	42722
Surr: DNOP	103	50.6-138		%Rec	1	1/22/2019 2:16:40 PM	42722
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	10	5.0		mg/Kg	1	1/22/2019 2:13:35 PM	42717
Surr: BFB	49.3	73.8-119	S	%Rec	1	1/22/2019 2:13:35 PM	42717
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	1/22/2019 2:13:35 PM	42717
Toluene	ND	0.050		mg/Kg	1	1/22/2019 2:13:35 PM	42717
Ethylbenzene	ND	0.050		mg/Kg	1	1/22/2019 2:13:35 PM	42717
Xylenes, Total	ND	0.099		mg/Kg	1	1/22/2019 2:13:35 PM	42717
Surr: 4-Bromofluorobenzene	102	80-120		%Rec	1	1/22/2019 2:13:35 PM	42717

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative 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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Timberwolf Environmental
Client Sample ID: MW6 7.5-8.5'
Project: Kaufman #1
Collection Date: 1/14/2019 12:10:00 PM
Lab ID: 1901785-006 **Matrix:** SOIL
Received Date: 1/19/2019 11:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	ND	30		mg/Kg	20	1/23/2019 12:10:13 PM	42757
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	110	9.8		mg/Kg	1	1/22/2019 2:38:42 PM	42722
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	1/22/2019 2:38:42 PM	42722
Surr: DNOP	105	50.6-138		%Rec	1	1/22/2019 2:38:42 PM	42722
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	120	5.0		mg/Kg	1	1/22/2019 3:00:28 PM	42717
Surr: BFB	382	73.8-119	S	%Rec	1	1/22/2019 3:00:28 PM	42717
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	1/22/2019 3:00:28 PM	42717
Toluene	0.057	0.050		mg/Kg	1	1/22/2019 3:00:28 PM	42717
Ethylbenzene	ND	0.050		mg/Kg	1	1/22/2019 3:00:28 PM	42717
Xylenes, Total	ND	0.10		mg/Kg	1	1/22/2019 3:00:28 PM	42717
Surr: 4-Bromofluorobenzene	103	80-120		%Rec	1	1/22/2019 3:00:28 PM	42717

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative 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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Timberwolf Environmental
Client Sample ID: MW5 4.5-5.5'
Project: Kaufman #1
Collection Date: 1/15/2019 9:10:00 AM
Lab ID: 1901785-007 **Matrix:** SOIL **Received Date:** 1/19/2019 11:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	ND	30		mg/Kg	20	1/23/2019 12:22:38 PM	42757
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	1/22/2019 3:00:56 PM	42722
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	1/22/2019 3:00:56 PM	42722
Surr: DNOP	101	50.6-138		%Rec	1	1/22/2019 3:00:56 PM	42722
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	1/22/2019 3:47:29 PM	42717
Surr: BFB	102	73.8-119		%Rec	1	1/22/2019 3:47:29 PM	42717
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	1/22/2019 3:47:29 PM	42717
Toluene	ND	0.048		mg/Kg	1	1/22/2019 3:47:29 PM	42717
Ethylbenzene	ND	0.048		mg/Kg	1	1/22/2019 3:47:29 PM	42717
Xylenes, Total	ND	0.097		mg/Kg	1	1/22/2019 3:47:29 PM	42717
Surr: 4-Bromofluorobenzene	104	80-120		%Rec	1	1/22/2019 3:47:29 PM	42717

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative 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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Timberwolf Environmental
Client Sample ID: MW5 8-9'
Project: Kaufman #1
Collection Date: 1/15/2019 9:30:00 AM
Lab ID: 1901785-008 **Matrix:** SOIL **Received Date:** 1/19/2019 11:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	ND	30		mg/Kg	20	1/23/2019 12:35:02 PM	42757
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	86	9.5		mg/Kg	1	1/22/2019 3:23:04 PM	42722
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	1/22/2019 3:23:04 PM	42722
Surr: DNOP	103	50.6-138		%Rec	1	1/22/2019 3:23:04 PM	42722
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	29	4.9		mg/Kg	1	1/22/2019 4:11:02 PM	42717
Surr: BFB	79.9	73.8-119		%Rec	1	1/22/2019 4:11:02 PM	42717
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	1/22/2019 4:11:02 PM	42717
Toluene	ND	0.049		mg/Kg	1	1/22/2019 4:11:02 PM	42717
Ethylbenzene	ND	0.049		mg/Kg	1	1/22/2019 4:11:02 PM	42717
Xylenes, Total	ND	0.098		mg/Kg	1	1/22/2019 4:11:02 PM	42717
Surr: 4-Bromofluorobenzene	106	80-120		%Rec	1	1/22/2019 4:11:02 PM	42717

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative 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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Timberwolf Environmental
Client Sample ID: MW5 14.5-15.5'
Project: Kaufman #1
Collection Date: 1/15/2019 10:05:00 AM
Lab ID: 1901785-009 **Matrix:** SOIL **Received Date:** 1/19/2019 11:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	ND	30		mg/Kg	20	1/23/2019 12:47:27 PM	42757
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	1/22/2019 3:45:02 PM	42722
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	1/22/2019 3:45:02 PM	42722
Surr: DNOP	99.5	50.6-138		%Rec	1	1/22/2019 3:45:02 PM	42722
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	1/22/2019 4:57:52 PM	42717
Surr: BFB	99.8	73.8-119		%Rec	1	1/22/2019 4:57:52 PM	42717
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.023		mg/Kg	1	1/22/2019 4:57:52 PM	42717
Toluene	ND	0.046		mg/Kg	1	1/22/2019 4:57:52 PM	42717
Ethylbenzene	ND	0.046		mg/Kg	1	1/22/2019 4:57:52 PM	42717
Xylenes, Total	ND	0.093		mg/Kg	1	1/22/2019 4:57:52 PM	42717
Surr: 4-Bromofluorobenzene	101	80-120		%Rec	1	1/22/2019 4:57:52 PM	42717

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative 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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Timberwolf Environmental
Client Sample ID: MW4 5-6'
Project: Kaufman #1
Collection Date: 1/15/2019 1:35:00 PM
Lab ID: 1901785-010 **Matrix:** SOIL **Received Date:** 1/19/2019 11:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	ND	30		mg/Kg	20	1/23/2019 12:59:52 PM	42757
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	1/22/2019 4:07:07 PM	42722
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	1/22/2019 4:07:07 PM	42722
Surr: DNOP	99.1	50.6-138		%Rec	1	1/22/2019 4:07:07 PM	42722
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	1/22/2019 6:54:48 PM	42717
Surr: BFB	98.2	73.8-119		%Rec	1	1/22/2019 6:54:48 PM	42717
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	1/22/2019 6:54:48 PM	42717
Toluene	ND	0.048		mg/Kg	1	1/22/2019 6:54:48 PM	42717
Ethylbenzene	ND	0.048		mg/Kg	1	1/22/2019 6:54:48 PM	42717
Xylenes, Total	ND	0.096		mg/Kg	1	1/22/2019 6:54:48 PM	42717
Surr: 4-Bromofluorobenzene	100	80-120		%Rec	1	1/22/2019 6:54:48 PM	42717

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative 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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Timberwolf Environmental
Client Sample ID: MW4 8-9'
Project: Kaufman #1
Collection Date: 1/15/2019 1:45:00 PM
Lab ID: 1901785-011 **Matrix:** SOIL **Received Date:** 1/19/2019 11:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	ND	30		mg/Kg	20	1/23/2019 1:37:06 PM	42757
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	130	9.9		mg/Kg	1	1/22/2019 4:28:57 PM	42722
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	1/22/2019 4:28:57 PM	42722
Surr: DNOP	103	50.6-138		%Rec	1	1/22/2019 4:28:57 PM	42722
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	1/22/2019 7:18:06 PM	42717
Surr: BFB	99.4	73.8-119		%Rec	1	1/22/2019 7:18:06 PM	42717
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	1/22/2019 7:18:06 PM	42717
Toluene	ND	0.047		mg/Kg	1	1/22/2019 7:18:06 PM	42717
Ethylbenzene	ND	0.047		mg/Kg	1	1/22/2019 7:18:06 PM	42717
Xylenes, Total	ND	0.094		mg/Kg	1	1/22/2019 7:18:06 PM	42717
Surr: 4-Bromofluorobenzene	101	80-120		%Rec	1	1/22/2019 7:18:06 PM	42717

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative 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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1901785**

05-Feb-19

Client: Timberwolf Environmental

Project: Kaufman #1

Sample ID	**MB-42748**	SampType:	**MBLK**		TestCode:	**EPA Method 300.0: Anions**				
Client ID:	**PBS**	Batch ID:	**42748**		RunNo:	**57179**				
Prep Date:	**1/22/2019**	Analysis Date:	**1/22/2019**		SeqNo:	**1912654**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	**LCS-42748**	SampType:	**LCS**		TestCode:	**EPA Method 300.0: Anions**				
Client ID:	**LCSS**	Batch ID:	**42748**		RunNo:	**57179**				
Prep Date:	**1/22/2019**	Analysis Date:	**1/22/2019**		SeqNo:	**1912655**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.2	90	110			

Sample ID	**MB-42757**	SampType:	**MBLK**		TestCode:	**EPA Method 300.0: Anions**				
Client ID:	**PBS**	Batch ID:	**42757**		RunNo:	**57220**				
Prep Date:	**1/23/2019**	Analysis Date:	**1/23/2019**		SeqNo:	**1914002**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	**LCS-42757**	SampType:	**LCS**		TestCode:	**EPA Method 300.0: Anions**				
Client ID:	**LCSS**	Batch ID:	**42757**		RunNo:	**57220**				
Prep Date:	**1/23/2019**	Analysis Date:	**1/23/2019**		SeqNo:	**1914003**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	97.5	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative 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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1901785**

05-Feb-19

Client: Timberwolf Environmental

Project: Kaufman #1

Sample ID **MB-42722**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **42722**	RunNo: **57155**
Prep Date: **1/21/2019**	Analysis Date: **1/22/2019**	SeqNo: **1912133** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		101	50.6	138			

Sample ID **LCS-42722**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **42722**	RunNo: **57155**
Prep Date: **1/21/2019**	Analysis Date: **1/22/2019**	SeqNo: **1912134** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	54	10	50.00	0	107	63.9	124			
Surr: DNOP	4.8		5.000		96.4	50.6	138			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative 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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1901785**

05-Feb-19

Client: Timberwolf Environmental

Project: Kaufman #1

Sample ID	**MB-42717**	SampType: **MBLK**		TestCode: **EPA Method 8015D: Gasoline Range**					
Client ID:	**PBS**	Batch ID: **42717**		RunNo: **57168**					
Prep Date:	**1/21/2019**	Analysis Date: **1/22/2019**		SeqNo: **1912285**		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	1100		1000		106	73.8	119			

Sample ID	**LCS-42717**	SampType: **LCS**		TestCode: **EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSS**	Batch ID: **42717**		RunNo: **57168**					
Prep Date:	**1/21/2019**	Analysis Date: **1/22/2019**		SeqNo: **1912286**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	28	5.0	25.00	0	114	80.1	123			
Surr: BFB	1200		1000		120	73.8	119			S

Sample ID	**1901785-001AMS**	SampType: **MS**		TestCode: **EPA Method 8015D: Gasoline Range**					
Client ID:	**MW-2 5'**	Batch ID: **42717**		RunNo: **57168**					
Prep Date:	**1/21/2019**	Analysis Date: **1/22/2019**		SeqNo: **1912289**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	24.93	0	99.1	69.1	142			
Surr: BFB	1200		997.0		116	73.8	119			

Sample ID	**1901785-001AMSD**	SampType: **MSD**		TestCode: **EPA Method 8015D: Gasoline Range**					
Client ID:	**MW-2 5'**	Batch ID: **42717**		RunNo: **57168**					
Prep Date:	**1/21/2019**	Analysis Date: **1/22/2019**		SeqNo: **1912290**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	4.7	23.47	0	96.2	69.1	142	9.02	20	
Surr: BFB	1100		939.0		116	73.8	119	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative 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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1901785**

05-Feb-19

Client: Timberwolf Environmental

Project: Kaufman #1

Sample ID	**MB-42717**	SampType: **MBLK**		TestCode: **EPA Method 8021B: Volatiles**					
Client ID:	**PBS**	Batch ID: **42717**		RunNo: **57168**					
Prep Date:	**1/21/2019**	Analysis Date: **1/22/2019**		SeqNo: **1912310**		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	1.0		1.000		105	80	120			

Sample ID	**LCS-42717**	SampType: **LCS**		TestCode: **EPA Method 8021B: Volatiles**					
Client ID:	**LCSS**	Batch ID: **42717**		RunNo: **57168**					
Prep Date:	**1/21/2019**	Analysis Date: **1/22/2019**		SeqNo: **1912311**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.92	0.025	1.000	0	92.2	80	120			
Toluene	0.95	0.050	1.000	0	95.0	80	120			
Ethylbenzene	0.96	0.050	1.000	0	95.8	80	120			
Xylenes, Total	2.9	0.10	3.000	0	97.6	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		107	80	120			

Sample ID	**1901785-002AMS**	SampType: **MS**		TestCode: **EPA Method 8021B: Volatiles**					
Client ID:	**MW2 6.5-7.5'**	Batch ID: **42717**		RunNo: **57168**					
Prep Date:	**1/21/2019**	Analysis Date: **1/22/2019**		SeqNo: **1912314**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.83	0.023	0.9363	0	89.2	63.9	127			
Toluene	0.88	0.047	0.9363	0.009693	92.9	69.9	131			
Ethylbenzene	0.89	0.047	0.9363	0	95.6	71	132			
Xylenes, Total	2.7	0.094	2.809	0	96.1	71.8	131			
Surr: 4-Bromofluorobenzene	0.99		0.9363		106	80	120			

Sample ID	**1901785-002AMSD**	SampType: **MSD**		TestCode: **EPA Method 8021B: Volatiles**					
Client ID:	**MW2 6.5-7.5'**	Batch ID: **42717**		RunNo: **57168**					
Prep Date:	**1/21/2019**	Analysis Date: **1/22/2019**		SeqNo: **1912315**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.79	0.024	0.9497	0	82.8	63.9	127	5.94	20	
Toluene	0.82	0.047	0.9497	0.009693	85.5	69.9	131	6.82	20	
Ethylbenzene	0.84	0.047	0.9497	0	88.0	71	132	6.87	20	
Xylenes, Total	2.5	0.095	2.849	0	89.0	71.8	131	6.24	20	
Surr: 4-Bromofluorobenzene	1.0		0.9497		105	80	120	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative 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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1901785**

05-Feb-19

Client: Timberwolf Environmental

Project: Kaufman #1

Sample ID	**MB-42930**	SampType:	**MBLK**		TestCode:	**Walkley Black TOC/FOC/OM**				
Client ID:	**PBS**	Batch ID:	**42930**		RunNo:	**57408**				
Prep Date:	**2/1/2019**	Analysis Date:	**2/1/2019**		SeqNo:	**1920834**	Units:	**% C**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
TOC	ND	0.14								

Sample ID	**LCS-42930**	SampType:	**LCS**		TestCode:	**Walkley Black TOC/FOC/OM**				
Client ID:	**LCSS**	Batch ID:	**42930**		RunNo:	**57408**				
Prep Date:	**2/1/2019**	Analysis Date:	**2/1/2019**		SeqNo:	**1920835**	Units:	**% C**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
TOC	3.2	0.13	2.740	0	118	80	120			

Sample ID	**1901785-001AMS**	SampType:	**MS**		TestCode:	**Walkley Black TOC/FOC/OM**				
Client ID:	**MW-2 5'**	Batch ID:	**42930**		RunNo:	**57408**				
Prep Date:	**2/1/2019**	Analysis Date:	**2/1/2019**		SeqNo:	**1920837**	Units:	**% C**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
TOC	3.3	0.13	2.740	0	119	75	125			

Sample ID	**1901785-001AMSD**	SampType:	**MSD**		TestCode:	**Walkley Black TOC/FOC/OM**				
Client ID:	**MW-2 5'**	Batch ID:	**42930**		RunNo:	**57408**				
Prep Date:	**2/1/2019**	Analysis Date:	**2/1/2019**		SeqNo:	**1920838**	Units:	**% C**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
TOC	3.2	0.13	2.740	0	118	75	125	0.924	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative 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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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: **1901785** RcptNo: **1**

Received By: **Victoria Zellar** **1/19/2019 11:10:00 AM** Victoria Zellar

Completed By: **Leah Baca** **1/21/2019 9:01:44 AM** Leah Baca

Reviewed By: VV 1/21/19

LB : DAD 1/21/19

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° 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: DAD 1/21/19

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 °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.7	Good	Yes			
2	4.3	Good	Yes			

Chain-of-Custody Record

Client: Timberwolf Environmental

Mailing Address:

Phone #: 979-324-2139

email or Fax#:

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other
☐ EDD (Type)

Turn-Around Time:
☑ Standard ☐ Rush

Project Name: Kaufman #1

Project #: 180061

Project Manager:

Sampler:

On Ice: ☒ Yes ☐ No

# of Coolers: 2

Cooler Temp (including CF): 3.7°C, 4.3°C

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 1901795	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	BTEX	Cl	Total Organic Carbon
1/14/19	1345	S	BMW2 5'	Varies	Varian	-001		✓									✓	✓	✓
1/14/19	1350	S	MW2 6.5-7.5'			-002		✓									✓	✓	
1/14/19	1530	S	MW3 5.0-5.5'			-003		✓									✓	✓	
1/14/19	1545	S	MW3 6.5-7.5'			-004		✓									✓	✓	
1/14/19	1200	S	MW6 5.0-5.5'			-005		✓									✓	✓	
1/14/19	1210	S	MW6 7.5-8.5'			-006		✓									✓	✓	
1/15/19	0910	S	MW5 4.5-5.5'			-007		✓									✓	✓	
1/15/19	0930	S	MW5 8-9'			-008		✓									✓	✓	
1/15/19	1005	S	MW5 14.5-15.5'			-009		✓									✓	✓	
1/15/19	1335	S	MW4 5-6'			-010		✓									✓	✓	
	1345	S	MW4 8-9'			-011		✓									✓	✓	

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
1/18/19	1800				1/18/19	1800
1/18/19	1841			Courier	1/19/19	1110

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

January 25, 2019

Jim Foster

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

RE: Kaufman #1 OrderNo.: 1901788

Dear Jim Foster:

Hall Environmental Analysis Laboratory received 4 sample(s) on 1/19/2019 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,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1901788**
Date Reported: **1/25/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Timberwolf Environmental
Client Sample ID: MW1 2.5-3.5'
Project: Kaufman #1
Collection Date: 1/15/2019 11:30:00 AM
Lab ID: 1901788-001 **Matrix:** SOIL **Received Date:** 1/19/2019 11:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	ND	30		mg/Kg	20	1/23/2019 1:49:31 PM	42757
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	600	9.8		mg/Kg	1	1/23/2019 12:54:33 PM	42722
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	1/23/2019 12:54:33 PM	42722
Surr: DNOP	105	50.6-138		%Rec	1	1/23/2019 12:54:33 PM	42722
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	1200	99		mg/Kg	20	1/22/2019 7:41:28 PM	42717
Surr: BFB	298	73.8-119	S	%Rec	20	1/22/2019 7:41:28 PM	42717
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	0.96	0.50		mg/Kg	20	1/22/2019 7:41:28 PM	42717
Toluene	22	0.99		mg/Kg	20	1/22/2019 7:41:28 PM	42717
Ethylbenzene	7.0	0.99		mg/Kg	20	1/22/2019 7:41:28 PM	42717
Xylenes, Total	92	2.0		mg/Kg	20	1/22/2019 7:41:28 PM	42717
Surr: 4-Bromofluorobenzene	117	80-120		%Rec	20	1/22/2019 7:41:28 PM	42717

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative 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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Timberwolf Environmental
Client Sample ID: MW1 4.5-5.5'
Project: Kaufman #1
Collection Date: 1/15/2019 11:40:00 AM
Lab ID: 1901788-002 **Matrix:** SOIL
Received Date: 1/19/2019 11:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	ND	30		mg/Kg	20	1/23/2019 2:26:45 PM	42757
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	31	9.3		mg/Kg	1	1/23/2019 1:16:42 PM	42722
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	1/23/2019 1:16:42 PM	42722
Surr: DNOP	104	50.6-138		%Rec	1	1/23/2019 1:16:42 PM	42722
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	1/22/2019 8:28:12 PM	42717
Surr: BFB	114	73.8-119		%Rec	1	1/22/2019 8:28:12 PM	42717
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	1/22/2019 8:28:12 PM	42717
Toluene	ND	0.049		mg/Kg	1	1/22/2019 8:28:12 PM	42717
Ethylbenzene	ND	0.049		mg/Kg	1	1/22/2019 8:28:12 PM	42717
Xylenes, Total	0.12	0.099		mg/Kg	1	1/22/2019 8:28:12 PM	42717
Surr: 4-Bromofluorobenzene	103	80-120		%Rec	1	1/22/2019 8:28:12 PM	42717

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative 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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Timberwolf Environmental
Client Sample ID: MW1 6.5-7.5'
Project: Kaufman #1
Collection Date: 1/15/2019 11:50:00 AM
Lab ID: 1901788-003 **Matrix:** SOIL
Received Date: 1/19/2019 11:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	ND	30		mg/Kg	20	1/23/2019 2:39:10 PM	42757
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	200	9.6		mg/Kg	1	1/23/2019 2:22:37 PM	42722
Motor Oil Range Organics (MRO)	48	48		mg/Kg	1	1/23/2019 2:22:37 PM	42722
Surr: DNOP	105	50.6-138		%Rec	1	1/23/2019 2:22:37 PM	42722
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	4.7	4.6		mg/Kg	1	1/22/2019 9:14:43 PM	42717
Surr: BFB	125	73.8-119	S	%Rec	1	1/22/2019 9:14:43 PM	42717
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.023		mg/Kg	1	1/22/2019 9:14:43 PM	42717
Toluene	ND	0.046		mg/Kg	1	1/22/2019 9:14:43 PM	42717
Ethylbenzene	ND	0.046		mg/Kg	1	1/22/2019 9:14:43 PM	42717
Xylenes, Total	ND	0.092		mg/Kg	1	1/22/2019 9:14:43 PM	42717
Surr: 4-Bromofluorobenzene	100	80-120		%Rec	1	1/22/2019 9:14:43 PM	42717

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative 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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Timberwolf Environmental
Client Sample ID: MW1 14-15'
Project: Kaufman #1
Collection Date: 1/15/2019 12:25:00 PM
Lab ID: 1901788-004 **Matrix:** SOIL **Received Date:** 1/19/2019 11:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	ND	30		mg/Kg	20	1/23/2019 2:51:34 PM	42757
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	1/22/2019 6:18:59 PM	42722
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	1/22/2019 6:18:59 PM	42722
Surr: DNOP	105	50.6-138		%Rec	1	1/22/2019 6:18:59 PM	42722
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	1/22/2019 10:01:13 PM	42717
Surr: BFB	99.0	73.8-119		%Rec	1	1/22/2019 10:01:13 PM	42717
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	1/22/2019 10:01:13 PM	42717
Toluene	ND	0.050		mg/Kg	1	1/22/2019 10:01:13 PM	42717
Ethylbenzene	ND	0.050		mg/Kg	1	1/22/2019 10:01:13 PM	42717
Xylenes, Total	ND	0.10		mg/Kg	1	1/22/2019 10:01:13 PM	42717
Surr: 4-Bromofluorobenzene	94.3	80-120		%Rec	1	1/22/2019 10:01:13 PM	42717

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative 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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1901788**

25-Jan-19

Client: Timberwolf Environmental

Project: Kaufman #1

Sample ID	**MB-42757**	SampType:	**MBLK**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**42757**	RunNo:	**57220**					
Prep Date:	**1/23/2019**	Analysis Date:	**1/23/2019**	SeqNo:	**1914002**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	**LCS-42757**	SampType:	**LCS**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**42757**	RunNo:	**57220**					
Prep Date:	**1/23/2019**	Analysis Date:	**1/23/2019**	SeqNo:	**1914003**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	97.5	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative 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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1901788**

25-Jan-19

Client: Timberwolf Environmental

Project: Kaufman #1

Sample ID **MB-42722**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **42722**	RunNo: **57155**
Prep Date: **1/21/2019**	Analysis Date: **1/22/2019**	SeqNo: **1912133** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		101	50.6	138			

Sample ID **LCS-42722**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **42722**	RunNo: **57155**
Prep Date: **1/21/2019**	Analysis Date: **1/22/2019**	SeqNo: **1912134** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	54	10	50.00	0	107	63.9	124			
Surr: DNOP	4.8		5.000		96.4	50.6	138			

Sample ID **1901788-004AMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **MW1 14-15'**	Batch ID: **42722**	RunNo: **57173**
Prep Date: **1/21/2019**	Analysis Date: **1/23/2019**	SeqNo: **1913196** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	50	9.6	48.17	0	104	53.5	126			
Surr: DNOP	4.6		4.817		96.5	50.6	138			

Sample ID **1901788-004AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **MW1 14-15'**	Batch ID: **42722**	RunNo: **57173**
Prep Date: **1/21/2019**	Analysis Date: **1/23/2019**	SeqNo: **1913238** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	9.7	48.73	0	104	53.5	126	1.09	21.7	
Surr: DNOP	4.6		4.873		95.0	50.6	138	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative 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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1901788**

25-Jan-19

Client: Timberwolf Environmental

Project: Kaufman #1

Sample ID	**MB-42717**	SampType: **MBLK**		TestCode: **EPA Method 8015D: Gasoline Range**					
Client ID:	**PBS**	Batch ID: **42717**		RunNo: **57168**					
Prep Date:	**1/21/2019**	Analysis Date: **1/22/2019**		SeqNo: **1912285**		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	1100		1000		106	73.8	119			

Sample ID	**LCS-42717**	SampType: **LCS**		TestCode: **EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSS**	Batch ID: **42717**		RunNo: **57168**					
Prep Date:	**1/21/2019**	Analysis Date: **1/22/2019**		SeqNo: **1912286**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	28	5.0	25.00	0	114	80.1	123			
Surr: BFB	1200		1000		120	73.8	119			S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative 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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1901788**

25-Jan-19

Client: Timberwolf Environmental

Project: Kaufman #1

Sample ID	**MB-42717**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID:	**PBS**	Batch ID: **42717**	RunNo: **57168**
Prep Date:	**1/21/2019**	Analysis Date: **1/22/2019**	SeqNo: **1912310** 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	1.0		1.000		105	80	120			

Sample ID	**LCS-42717**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID:	**LCSS**	Batch ID: **42717**	RunNo: **57168**
Prep Date:	**1/21/2019**	Analysis Date: **1/22/2019**	SeqNo: **1912311** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.92	0.025	1.000	0	92.2	80	120			
Toluene	0.95	0.050	1.000	0	95.0	80	120			
Ethylbenzene	0.96	0.050	1.000	0	95.8	80	120			
Xylenes, Total	2.9	0.10	3.000	0	97.6	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		107	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative 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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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: **1901788** RcptNo: **1**

Received By: **Victoria Zellar** **1/19/2019 11:10:00 AM** Victoria Zellar

Completed By: **Leah Baca** **1/21/2019 10:02:30 AM** Leah Baca

Reviewed By: VV 1/21/19

Labeled by DAD 1/21/19

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° 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: DAD 1/21/19

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 °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.7	Good	Yes			
2	4.3	Good	Yes			

Chain-of-Custody Record

Client: Timberwolf Env

Mailing Address:

Phone #:

email or Fax#:

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: Kaufman #1

Project #: 180061

Project Manager:

Sampler:

On Ice: ☒ Yes ☐ No

# of Coolers: 2

Cooler Temp(including CF): 3.7, 4.3 °C

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 1901789	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	BTEX	Cl				
1/15/19	1130	S	MW1 2.5-3.5'	Varius	Varius	-001		✓									✓	✓				
1/15/19	1140	S	MW1 4.5-5.5'			-002		✓									✓	✓				
1/15/19	1150	S	MW1 6.5-7.5'			-003		✓									✓	✓				
1/15/19	1225	S	MW2 14-15'			-004		✓									✓	✓				

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
1/18/19	1800				1/18/19	1600
1/18/19	1841			Courier	1/19/19	1110

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

June 14, 2019

Jim Foster

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

RE: Kaufman No1 OrderNo.: 1901789

Dear Jim Foster:

Hall Environmental Analysis Laboratory received 6 sample(s) on 1/19/2019 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued February 1, 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,

Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Timberwolf Environmental
Client Sample ID: MW2
Project: Kaufman No1
Collection Date: 1/17/2019 10:26:00 AM
Lab ID: 1901789-001 **Matrix:** AQUEOUS **Received Date:** 1/19/2019 11:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	150	5.0		mg/L	10	1/21/2019 9:47:54 PM	R57149
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **AG**	
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	1/22/2019 11:56:31 AM	R57171
Surr: BFB	98.6	70-130		%Rec	1	1/22/2019 11:56:31 AM	R57171
EPA METHOD 8015M/D: DIESEL RANGE						Analyst: **CLP**	
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	1/23/2019 9:58:20 AM	42745
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	1/23/2019 9:58:20 AM	42745
Surr: DNOP	110	70-130		%Rec	1	1/23/2019 9:58:20 AM	42745
EPA METHOD 8260B: VOLATILES						Analyst: **AG**	
Benzene	ND	1.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
Toluene	ND	1.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
Ethylbenzene	ND	1.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
Naphthalene	ND	2.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
1-Methylnaphthalene	ND	4.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
2-Methylnaphthalene	ND	4.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
Acetone	ND	10		µg/L	1	1/22/2019 11:56:31 AM	B57171
Bromobenzene	ND	1.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
Bromodichloromethane	ND	1.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
Bromoform	ND	1.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
Bromomethane	ND	3.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
2-Butanone	ND	10		µg/L	1	1/22/2019 11:56:31 AM	B57171
Carbon disulfide	ND	10		µg/L	1	1/22/2019 11:56:31 AM	B57171
Carbon Tetrachloride	ND	1.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
Chlorobenzene	ND	1.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
Chloroethane	ND	2.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
Chloroform	ND	1.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
Chloromethane	ND	3.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
2-Chlorotoluene	ND	1.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
4-Chlorotoluene	ND	1.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
cis-1,2-DCE	ND	1.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
Dibromochloromethane	ND	1.0		µg/L	1	1/22/2019 11:56:31 AM	B57171

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Timberwolf Environmental
Client Sample ID: MW2
Project: Kaufman No1
Collection Date: 1/17/2019 10:26:00 AM
Lab ID: 1901789-001 **Matrix:** AQUEOUS **Received Date:** 1/19/2019 11:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **AG**	
Dibromomethane	ND	1.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
1,2-Dichlorobenzene	ND	1.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
1,3-Dichlorobenzene	ND	1.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
1,4-Dichlorobenzene	ND	1.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
Dichlorodifluoromethane	ND	1.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
1,1-Dichloroethane	ND	1.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
1,1-Dichloroethene	ND	1.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
1,2-Dichloropropane	ND	1.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
1,3-Dichloropropane	ND	1.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
2,2-Dichloropropane	ND	2.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
1,1-Dichloropropene	ND	1.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
Hexachlorobutadiene	ND	1.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
2-Hexanone	ND	10		µg/L	1	1/22/2019 11:56:31 AM	B57171
Isopropylbenzene	ND	1.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
4-Isopropyltoluene	ND	1.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
4-Methyl-2-pentanone	ND	10		µg/L	1	1/22/2019 11:56:31 AM	B57171
Methylene Chloride	ND	3.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
n-Butylbenzene	ND	3.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
n-Propylbenzene	ND	1.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
sec-Butylbenzene	ND	1.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
Styrene	ND	1.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
tert-Butylbenzene	ND	1.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
trans-1,2-DCE	ND	1.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
1,1,1-Trichloroethane	ND	1.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
1,1,2-Trichloroethane	ND	1.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
Trichloroethene (TCE)	ND	1.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
Trichlorofluoromethane	ND	1.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
1,2,3-Trichloropropane	ND	2.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
Vinyl chloride	ND	1.0		µg/L	1	1/22/2019 11:56:31 AM	B57171
Xylenes, Total	ND	1.5		µg/L	1	1/22/2019 11:56:31 AM	B57171
Surr: 1,2-Dichloroethane-d4	108	70-130		%Rec	1	1/22/2019 11:56:31 AM	B57171
Surr: 4-Bromofluorobenzene	108	70-130		%Rec	1	1/22/2019 11:56:31 AM	B57171
Surr: Dibromofluoromethane	107	70-130		%Rec	1	1/22/2019 11:56:31 AM	B57171

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Timberwolf Environmental
Client Sample ID: MW2
Project: Kaufman No1
Collection Date: 1/17/2019 10:26:00 AM
Lab ID: 1901789-001
Matrix: AQUEOUS
Received Date: 1/19/2019 11:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **AG**	
Surr: Toluene-d8	103	70-130		%Rec	1	1/22/2019 11:56:31 AM	B57171

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Timberwolf Environmental
Client Sample ID: MW3
Project: Kaufman No1
Collection Date: 1/17/2019 12:15:00 PM
Lab ID: 1901789-002 **Matrix:** AQUEOUS **Received Date:** 1/19/2019 11:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	140	5.0		mg/L	10	1/21/2019 10:13:38 PM	R57149
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **AG**	
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	1/22/2019 1:22:09 PM	R57171
Surr: BFB	97.0	70-130		%Rec	1	1/22/2019 1:22:09 PM	R57171
EPA METHOD 8015M/D: DIESEL RANGE						Analyst: **CLP**	
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	1/23/2019 11:04:31 AM	42745
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	1/23/2019 11:04:31 AM	42745
Surr: DNOP	102	70-130		%Rec	1	1/23/2019 11:04:31 AM	42745
EPA METHOD 8260B: VOLATILES						Analyst: **AG**	
Benzene	ND	1.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
Toluene	ND	1.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
Ethylbenzene	ND	1.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
Naphthalene	ND	2.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
1-Methylnaphthalene	ND	4.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
2-Methylnaphthalene	ND	4.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
Acetone	ND	10		µg/L	1	1/22/2019 1:22:09 PM	B57171
Bromobenzene	ND	1.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
Bromodichloromethane	ND	1.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
Bromoform	ND	1.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
Bromomethane	ND	3.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
2-Butanone	ND	10		µg/L	1	1/22/2019 1:22:09 PM	B57171
Carbon disulfide	ND	10		µg/L	1	1/22/2019 1:22:09 PM	B57171
Carbon Tetrachloride	ND	1.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
Chlorobenzene	ND	1.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
Chloroethane	ND	2.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
Chloroform	ND	1.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
Chloromethane	ND	3.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
2-Chlorotoluene	ND	1.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
4-Chlorotoluene	ND	1.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
cis-1,2-DCE	ND	1.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
Dibromochloromethane	ND	1.0		µg/L	1	1/22/2019 1:22:09 PM	B57171

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Timberwolf Environmental
Client Sample ID: MW3
Project: Kaufman No1
Collection Date: 1/17/2019 12:15:00 PM
Lab ID: 1901789-002 **Matrix:** AQUEOUS **Received Date:** 1/19/2019 11:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **AG**	
Dibromomethane	ND	1.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
1,2-Dichlorobenzene	ND	1.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
1,3-Dichlorobenzene	ND	1.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
1,4-Dichlorobenzene	ND	1.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
Dichlorodifluoromethane	ND	1.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
1,1-Dichloroethane	ND	1.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
1,1-Dichloroethene	ND	1.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
1,2-Dichloropropane	ND	1.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
1,3-Dichloropropane	ND	1.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
2,2-Dichloropropane	ND	2.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
1,1-Dichloropropene	ND	1.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
Hexachlorobutadiene	ND	1.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
2-Hexanone	ND	10		µg/L	1	1/22/2019 1:22:09 PM	B57171
Isopropylbenzene	ND	1.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
4-Isopropyltoluene	ND	1.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
4-Methyl-2-pentanone	ND	10		µg/L	1	1/22/2019 1:22:09 PM	B57171
Methylene Chloride	ND	3.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
n-Butylbenzene	ND	3.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
n-Propylbenzene	ND	1.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
sec-Butylbenzene	ND	1.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
Styrene	ND	1.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
tert-Butylbenzene	ND	1.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
trans-1,2-DCE	ND	1.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
1,1,1-Trichloroethane	ND	1.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
1,1,2-Trichloroethane	ND	1.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
Trichloroethene (TCE)	ND	1.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
Trichlorofluoromethane	ND	1.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
1,2,3-Trichloropropane	ND	2.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
Vinyl chloride	ND	1.0		µg/L	1	1/22/2019 1:22:09 PM	B57171
Xylenes, Total	ND	1.5		µg/L	1	1/22/2019 1:22:09 PM	B57171
Surr: 1,2-Dichloroethane-d4	108	70-130		%Rec	1	1/22/2019 1:22:09 PM	B57171
Surr: 4-Bromofluorobenzene	109	70-130		%Rec	1	1/22/2019 1:22:09 PM	B57171
Surr: Dibromofluoromethane	111	70-130		%Rec	1	1/22/2019 1:22:09 PM	B57171

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Timberwolf Environmental
Client Sample ID: MW3
Project: Kaufman No1
Collection Date: 1/17/2019 12:15:00 PM
Lab ID: 1901789-002 **Matrix:** AQUEOUS **Received Date:** 1/19/2019 11:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **AG**	
Surr: Toluene-d8	101	70-130		%Rec	1	1/22/2019 1:22:09 PM	B57171

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Timberwolf Environmental
Client Sample ID: MW4
Project: Kaufman No1
Collection Date: 1/17/2019 1:30:00 PM
Lab ID: 1901789-003 **Matrix:** AQUEOUS **Received Date:** 1/19/2019 11:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	140	5.0		mg/L	10	1/21/2019 10:39:21 PM	R57149
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **AG**	
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	1/22/2019 2:47:49 PM	R57171
Surr: BFB	97.8	70-130		%Rec	1	1/22/2019 2:47:49 PM	R57171
EPA METHOD 8015M/D: DIESEL RANGE						Analyst: **CLP**	
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	1/23/2019 11:26:23 AM	42745
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	1/23/2019 11:26:23 AM	42745
Surr: DNOP	106	70-130		%Rec	1	1/23/2019 11:26:23 AM	42745
EPA METHOD 8260B: VOLATILES						Analyst: **AG**	
Benzene	ND	1.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
Toluene	ND	1.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
Ethylbenzene	ND	1.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
Naphthalene	ND	2.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
1-Methylnaphthalene	ND	4.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
2-Methylnaphthalene	ND	4.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
Acetone	ND	10		µg/L	1	1/22/2019 2:47:49 PM	B57171
Bromobenzene	ND	1.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
Bromodichloromethane	ND	1.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
Bromoform	ND	1.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
Bromomethane	ND	3.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
2-Butanone	ND	10		µg/L	1	1/22/2019 2:47:49 PM	B57171
Carbon disulfide	ND	10		µg/L	1	1/22/2019 2:47:49 PM	B57171
Carbon Tetrachloride	ND	1.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
Chlorobenzene	ND	1.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
Chloroethane	ND	2.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
Chloroform	ND	1.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
Chloromethane	ND	3.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
2-Chlorotoluene	ND	1.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
4-Chlorotoluene	ND	1.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
cis-1,2-DCE	ND	1.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
Dibromochloromethane	ND	1.0		µg/L	1	1/22/2019 2:47:49 PM	B57171

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Timberwolf Environmental
Client Sample ID: MW4
Project: Kaufman No1
Collection Date: 1/17/2019 1:30:00 PM
Lab ID: 1901789-003 **Matrix:** AQUEOUS **Received Date:** 1/19/2019 11:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **AG**	
Dibromomethane	ND	1.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
1,2-Dichlorobenzene	ND	1.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
1,3-Dichlorobenzene	ND	1.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
1,4-Dichlorobenzene	ND	1.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
Dichlorodifluoromethane	ND	1.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
1,1-Dichloroethane	ND	1.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
1,1-Dichloroethene	ND	1.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
1,2-Dichloropropane	ND	1.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
1,3-Dichloropropane	ND	1.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
2,2-Dichloropropane	ND	2.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
1,1-Dichloropropene	ND	1.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
Hexachlorobutadiene	ND	1.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
2-Hexanone	ND	10		µg/L	1	1/22/2019 2:47:49 PM	B57171
Isopropylbenzene	ND	1.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
4-Isopropyltoluene	ND	1.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
4-Methyl-2-pentanone	ND	10		µg/L	1	1/22/2019 2:47:49 PM	B57171
Methylene Chloride	ND	3.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
n-Butylbenzene	ND	3.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
n-Propylbenzene	ND	1.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
sec-Butylbenzene	ND	1.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
Styrene	ND	1.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
tert-Butylbenzene	ND	1.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
trans-1,2-DCE	ND	1.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
1,1,1-Trichloroethane	ND	1.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
1,1,2-Trichloroethane	ND	1.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
Trichloroethene (TCE)	ND	1.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
Trichlorofluoromethane	ND	1.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
1,2,3-Trichloropropane	ND	2.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
Vinyl chloride	ND	1.0		µg/L	1	1/22/2019 2:47:49 PM	B57171
Xylenes, Total	ND	1.5		µg/L	1	1/22/2019 2:47:49 PM	B57171
Surr: 1,2-Dichloroethane-d4	108	70-130		%Rec	1	1/22/2019 2:47:49 PM	B57171
Surr: 4-Bromofluorobenzene	107	70-130		%Rec	1	1/22/2019 2:47:49 PM	B57171
Surr: Dibromofluoromethane	110	70-130		%Rec	1	1/22/2019 2:47:49 PM	B57171

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Timberwolf Environmental
Client Sample ID: MW4
Project: Kaufman No1
Collection Date: 1/17/2019 1:30:00 PM
Lab ID: 1901789-003
Matrix: AQUEOUS
Received Date: 1/19/2019 11:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **AG**	
Surr: Toluene-d8	104	70-130		%Rec	1	1/22/2019 2:47:49 PM	B57171

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Timberwolf Environmental
Client Sample ID: MW5
Project: Kaufman No1
Collection Date: 1/17/2019 2:45:00 PM
Lab ID: 1901789-004 **Matrix:** AQUEOUS **Received Date:** 1/19/2019 11:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	130	5.0		mg/L	10	1/21/2019 11:05:04 PM	R57149
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **AG**	
Gasoline Range Organics (GRO)	0.32	0.050		mg/L	1	1/22/2019 3:16:21 PM	R57171
Surr: BFB	95.8	70-130		%Rec	1	1/22/2019 3:16:21 PM	R57171
EPA METHOD 8015M/D: DIESEL RANGE						Analyst: **CLP**	
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	1/23/2019 11:48:26 AM	42745
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	1/23/2019 11:48:26 AM	42745
Surr: DNOP	107	70-130		%Rec	1	1/23/2019 11:48:26 AM	42745
EPA METHOD 8260B: VOLATILES						Analyst: **AG**	
Benzene	ND	1.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
Toluene	ND	1.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
Ethylbenzene	ND	1.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
Naphthalene	ND	2.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
1-Methylnaphthalene	ND	4.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
2-Methylnaphthalene	ND	4.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
Acetone	ND	10		µg/L	1	1/22/2019 3:16:21 PM	B57171
Bromobenzene	ND	1.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
Bromodichloromethane	ND	1.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
Bromoform	ND	1.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
Bromomethane	ND	3.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
2-Butanone	ND	10		µg/L	1	1/22/2019 3:16:21 PM	B57171
Carbon disulfide	ND	10		µg/L	1	1/22/2019 3:16:21 PM	B57171
Carbon Tetrachloride	ND	1.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
Chlorobenzene	ND	1.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
Chloroethane	ND	2.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
Chloroform	ND	1.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
Chloromethane	ND	3.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
2-Chlorotoluene	ND	1.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
4-Chlorotoluene	ND	1.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
cis-1,2-DCE	ND	1.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
Dibromochloromethane	ND	1.0		µg/L	1	1/22/2019 3:16:21 PM	B57171

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Timberwolf Environmental
Client Sample ID: MW5
Project: Kaufman No1
Collection Date: 1/17/2019 2:45:00 PM
Lab ID: 1901789-004 **Matrix:** AQUEOUS **Received Date:** 1/19/2019 11:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **AG**	
Dibromomethane	ND	1.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
1,2-Dichlorobenzene	ND	1.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
1,3-Dichlorobenzene	ND	1.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
1,4-Dichlorobenzene	ND	1.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
Dichlorodifluoromethane	ND	1.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
1,1-Dichloroethane	ND	1.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
1,1-Dichloroethene	ND	1.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
1,2-Dichloropropane	ND	1.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
1,3-Dichloropropane	ND	1.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
2,2-Dichloropropane	ND	2.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
1,1-Dichloropropene	ND	1.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
Hexachlorobutadiene	ND	1.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
2-Hexanone	ND	10		µg/L	1	1/22/2019 3:16:21 PM	B57171
Isopropylbenzene	ND	1.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
4-Isopropyltoluene	ND	1.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
4-Methyl-2-pentanone	ND	10		µg/L	1	1/22/2019 3:16:21 PM	B57171
Methylene Chloride	ND	3.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
n-Butylbenzene	ND	3.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
n-Propylbenzene	ND	1.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
sec-Butylbenzene	ND	1.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
Styrene	ND	1.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
tert-Butylbenzene	ND	1.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
trans-1,2-DCE	ND	1.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
1,1,1-Trichloroethane	ND	1.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
1,1,2-Trichloroethane	ND	1.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
Trichloroethene (TCE)	ND	1.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
Trichlorofluoromethane	ND	1.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
1,2,3-Trichloropropane	ND	2.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
Vinyl chloride	ND	1.0		µg/L	1	1/22/2019 3:16:21 PM	B57171
Xylenes, Total	ND	1.5		µg/L	1	1/22/2019 3:16:21 PM	B57171
Surr: 1,2-Dichloroethane-d4	106	70-130		%Rec	1	1/22/2019 3:16:21 PM	B57171
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	1/22/2019 3:16:21 PM	B57171
Surr: Dibromofluoromethane	111	70-130		%Rec	1	1/22/2019 3:16:21 PM	B57171

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Timberwolf Environmental
Client Sample ID: MW5
Project: Kaufman No1
Collection Date: 1/17/2019 2:45:00 PM
Lab ID: 1901789-004 **Matrix:** AQUEOUS **Received Date:** 1/19/2019 11:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **AG**	
Surr: Toluene-d8	99.5	70-130		%Rec	1	1/22/2019 3:16:21 PM	B57171

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Timberwolf Environmental
Client Sample ID: MW6
Project: Kaufman No1
Collection Date: 1/18/2019 1:35:00 PM
Lab ID: 1901789-005 **Matrix:** AQUEOUS **Received Date:** 1/19/2019 11:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	180	5.0		mg/L	10	1/21/2019 11:30:46 PM	R57149
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **AG**	
Gasoline Range Organics (GRO)	1.1	0.050		mg/L	1	1/22/2019 3:44:54 PM	R57171
Surr: BFB	95.5	70-130		%Rec	1	1/22/2019 3:44:54 PM	R57171
EPA METHOD 8015M/D: DIESEL RANGE						Analyst: **CLP**	
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	1/23/2019 12:10:26 PM	42745
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	1/23/2019 12:10:26 PM	42745
Surr: DNOP	103	70-130		%Rec	1	1/23/2019 12:10:26 PM	42745
EPA METHOD 8260B: VOLATILES						Analyst: **AG**	
Benzene	ND	1.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
Toluene	ND	1.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
Ethylbenzene	ND	1.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
Naphthalene	ND	2.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
1-Methylnaphthalene	ND	4.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
2-Methylnaphthalene	ND	4.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
Acetone	ND	10		µg/L	1	1/22/2019 3:44:54 PM	B57171
Bromobenzene	ND	1.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
Bromodichloromethane	ND	1.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
Bromoform	ND	1.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
Bromomethane	ND	3.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
2-Butanone	ND	10		µg/L	1	1/22/2019 3:44:54 PM	B57171
Carbon disulfide	ND	10		µg/L	1	1/22/2019 3:44:54 PM	B57171
Carbon Tetrachloride	ND	1.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
Chlorobenzene	ND	1.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
Chloroethane	ND	2.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
Chloroform	ND	1.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
Chloromethane	ND	3.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
2-Chlorotoluene	ND	1.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
4-Chlorotoluene	ND	1.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
cis-1,2-DCE	ND	1.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
Dibromochloromethane	ND	1.0		µg/L	1	1/22/2019 3:44:54 PM	B57171

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Timberwolf Environmental
Client Sample ID: MW6
Project: Kaufman No1
Collection Date: 1/18/2019 1:35:00 PM
Lab ID: 1901789-005 **Matrix:** AQUEOUS **Received Date:** 1/19/2019 11:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **AG**	
Dibromomethane	ND	1.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
1,2-Dichlorobenzene	ND	1.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
1,3-Dichlorobenzene	ND	1.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
1,4-Dichlorobenzene	ND	1.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
Dichlorodifluoromethane	ND	1.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
1,1-Dichloroethane	ND	1.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
1,1-Dichloroethene	ND	1.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
1,2-Dichloropropane	ND	1.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
1,3-Dichloropropane	ND	1.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
2,2-Dichloropropane	ND	2.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
1,1-Dichloropropene	ND	1.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
Hexachlorobutadiene	ND	1.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
2-Hexanone	ND	10		µg/L	1	1/22/2019 3:44:54 PM	B57171
Isopropylbenzene	ND	1.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
4-Isopropyltoluene	ND	1.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
4-Methyl-2-pentanone	ND	10		µg/L	1	1/22/2019 3:44:54 PM	B57171
Methylene Chloride	ND	3.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
n-Butylbenzene	ND	3.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
n-Propylbenzene	ND	1.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
sec-Butylbenzene	ND	1.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
Styrene	ND	1.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
tert-Butylbenzene	2.2	1.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
trans-1,2-DCE	ND	1.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
1,1,1-Trichloroethane	ND	1.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
1,1,2-Trichloroethane	ND	1.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
Trichloroethene (TCE)	ND	1.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
Trichlorofluoromethane	ND	1.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
1,2,3-Trichloropropane	ND	2.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
Vinyl chloride	ND	1.0		µg/L	1	1/22/2019 3:44:54 PM	B57171
Xylenes, Total	ND	1.5		µg/L	1	1/22/2019 3:44:54 PM	B57171
Surr: 1,2-Dichloroethane-d4	107	70-130		%Rec	1	1/22/2019 3:44:54 PM	B57171
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	1/22/2019 3:44:54 PM	B57171
Surr: Dibromofluoromethane	109	70-130		%Rec	1	1/22/2019 3:44:54 PM	B57171

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Timberwolf Environmental
Client Sample ID: MW6
Project: Kaufman No1
Collection Date: 1/18/2019 1:35:00 PM
Lab ID: 1901789-005 **Matrix:** AQUEOUS **Received Date:** 1/19/2019 11:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **AG**	
Surr: Toluene-d8	96.1	70-130		%Rec	1	1/22/2019 3:44:54 PM	B57171

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Timberwolf Environmental
Client Sample ID: MW1
Project: Kaufman No1
Collection Date: 1/18/2019 3:15:00 PM
Lab ID: 1901789-006 **Matrix:** AQUEOUS **Received Date:** 1/19/2019 11:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Fluoride	ND	1.0		mg/L	10	1/22/2019 12:22:13 AM	R57149
Chloride	130	5.0		mg/L	10	1/22/2019 12:22:13 AM	R57149
Nitrogen, Nitrite (As N)	ND	1.0	H	mg/L	10	1/22/2019 12:22:13 AM	R57149
Bromide	ND	1.0		mg/L	10	1/22/2019 12:22:13 AM	R57149
Nitrogen, Nitrate (As N)	ND	1.0	H	mg/L	10	1/22/2019 12:22:13 AM	R57149
Phosphorus, Orthophosphate (As P)	ND	5.0	H	mg/L	10	1/22/2019 12:22:13 AM	R57149
Sulfate	1700	50	*	mg/L	100	1/22/2019 12:35:04 AM	R57149
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **MRA**	
Conductivity	3600	5.0		µmhos/c	1	1/21/2019 9:31:21 PM	R57160
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	3130	40.0	*D	mg/L	1	1/23/2019 3:44:00 PM	42739
EPA METHOD 7470: MERCURY						Analyst: **pmf**	
Mercury	ND	0.00020		mg/L	1	1/23/2019 5:51:24 PM	42731
EPA 6010B: TOTAL RECOVERABLE METALS						Analyst: **rde**	
Arsenic	ND	0.020		mg/L	1	1/29/2019 2:53:21 PM	42806
Barium	0.079	0.020		mg/L	1	1/28/2019 5:31:55 PM	42806
Cadmium	ND	0.0020		mg/L	1	1/28/2019 5:31:55 PM	42806
Calcium	430	5.0		mg/L	5	1/28/2019 6:52:17 PM	42806
Chromium	ND	0.0060		mg/L	1	1/28/2019 5:31:55 PM	42806
Lead	ND	0.0050		mg/L	1	1/28/2019 6:47:08 PM	42806
Magnesium	88	1.0		mg/L	1	1/28/2019 5:31:55 PM	42806
Potassium	3.3	1.0		mg/L	1	1/28/2019 5:31:55 PM	42806
Selenium	ND	0.050		mg/L	1	1/28/2019 5:31:55 PM	42806
Silver	0.0068	0.0050		mg/L	1	1/28/2019 5:31:55 PM	42806
Sodium	370	5.0		mg/L	5	1/28/2019 6:52:17 PM	42806
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **AG**	
Gasoline Range Organics (GRO)	2.4	0.050		mg/L	1	1/22/2019 4:13:29 PM	R57171
Surr: BFB	98.5	70-130		%Rec	1	1/22/2019 4:13:29 PM	R57171
EPA METHOD 8015M/D: DIESEL RANGE						Analyst: **CLP**	
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	1/23/2019 12:32:30 PM	42745
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	1/23/2019 12:32:30 PM	42745
Surr: DNOP	111	70-130		%Rec	1	1/23/2019 12:32:30 PM	42745
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Acenaphthene	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
Acenaphthylene	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
Aniline	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755

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

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Timberwolf Environmental
Client Sample ID: MW1
Project: Kaufman No1
Collection Date: 1/18/2019 3:15:00 PM
Lab ID: 1901789-006 **Matrix:** AQUEOUS **Received Date:** 1/19/2019 11:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Anthracene	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
Azobenzene	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
Benz(a)anthracene	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
Benzo(a)pyrene	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
Benzo(b)fluoranthene	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
Benzo(g,h,i)perylene	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
Benzo(k)fluoranthene	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
Benzoic acid	ND	20		µg/L	1	1/28/2019 4:34:16 PM	42755
Benzyl alcohol	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
Bis(2-chloroethyl)ether	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
4-Bromophenyl phenyl ether	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
Butyl benzyl phthalate	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
Carbazole	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
4-Chloro-3-methylphenol	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
4-Chloroaniline	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
2-Chloronaphthalene	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
2-Chlorophenol	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
Chrysene	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
Di-n-butyl phthalate	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
Di-n-octyl phthalate	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
Dibenz(a,h)anthracene	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
Dibenzofuran	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
1,2-Dichlorobenzene	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
1,3-Dichlorobenzene	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
1,4-Dichlorobenzene	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
3,3´-Dichlorobenzidine	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
Diethyl phthalate	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
Dimethyl phthalate	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
2,4-Dichlorophenol	ND	20		µg/L	1	1/28/2019 4:34:16 PM	42755
2,4-Dimethylphenol	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	1/28/2019 4:34:16 PM	42755
2,4-Dinitrophenol	ND	20		µg/L	1	1/28/2019 4:34:16 PM	42755
2,4-Dinitrotoluene	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
2,6-Dinitrotoluene	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
Fluoranthene	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755

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

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Timberwolf Environmental
Client Sample ID: MW1
Project: Kaufman No1
Collection Date: 1/18/2019 3:15:00 PM
Lab ID: 1901789-006 **Matrix:** AQUEOUS **Received Date:** 1/19/2019 11:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Fluorene	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
Hexachlorobenzene	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
Hexachlorobutadiene	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
Hexachlorocyclopentadiene	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
Hexachloroethane	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
Isophorone	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
1-Methylnaphthalene	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
2-Methylnaphthalene	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
2-Methylphenol	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
3+4-Methylphenol	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
N-Nitrosodimethylamine	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
N-Nitrosodiphenylamine	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
Naphthalene	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
2-Nitroaniline	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
3-Nitroaniline	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
4-Nitroaniline	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
Nitrobenzene	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
2-Nitrophenol	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
4-Nitrophenol	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
Pentachlorophenol	ND	20		µg/L	1	1/28/2019 4:34:16 PM	42755
Phenanthrene	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
Phenol	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
Pyrene	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
Pyridine	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
1,2,4-Trichlorobenzene	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
2,4,5-Trichlorophenol	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
2,4,6-Trichlorophenol	ND	10		µg/L	1	1/28/2019 4:34:16 PM	42755
Surr: 2-Fluorophenol	32.4	15-74.1		%Rec	1	1/28/2019 4:34:16 PM	42755
Surr: Phenol-d5	30.0	15-59.8		%Rec	1	1/28/2019 4:34:16 PM	42755
Surr: 2,4,6-Tribromophenol	52.1	22.1-112		%Rec	1	1/28/2019 4:34:16 PM	42755
Surr: Nitrobenzene-d5	47.5	33.2-94		%Rec	1	1/28/2019 4:34:16 PM	42755
Surr: 2-Fluorobiphenyl	39.3	34-90.9		%Rec	1	1/28/2019 4:34:16 PM	42755
Surr: 4-Terphenyl-d14	44.3	15-149		%Rec	1	1/28/2019 4:34:16 PM	42755
EPA METHOD 8260B: VOLATILES						Analyst: **AG**	
Benzene	74	1.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
Toluene	350	10		µg/L	10	1/23/2019 4:08:15 PM	R57206
Ethylbenzene	27	1.0		µg/L	1	1/22/2019 4:13:29 PM	B57171

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

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Timberwolf Environmental
Client Sample ID: MW1
Project: Kaufman No1
Collection Date: 1/18/2019 3:15:00 PM
Lab ID: 1901789-006 **Matrix:** AQUEOUS **Received Date:** 1/19/2019 11:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **AG**	
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
1,2,4-Trimethylbenzene	32	1.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
1,3,5-Trimethylbenzene	15	1.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
Naphthalene	3.2	2.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
1-Methylnaphthalene	ND	4.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
2-Methylnaphthalene	ND	4.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
Acetone	ND	10		µg/L	1	1/22/2019 4:13:29 PM	B57171
Bromobenzene	ND	1.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
Bromodichloromethane	ND	1.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
Bromoform	ND	1.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
Bromomethane	ND	3.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
2-Butanone	ND	10		µg/L	1	1/22/2019 4:13:29 PM	B57171
Carbon disulfide	ND	10		µg/L	1	1/22/2019 4:13:29 PM	B57171
Carbon Tetrachloride	ND	1.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
Chlorobenzene	ND	1.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
Chloroethane	ND	2.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
Chloroform	ND	1.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
Chloromethane	ND	3.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
2-Chlorotoluene	ND	1.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
4-Chlorotoluene	ND	1.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
cis-1,2-DCE	ND	1.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
Dibromochloromethane	ND	1.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
Dibromomethane	ND	1.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
1,2-Dichlorobenzene	ND	1.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
1,3-Dichlorobenzene	ND	1.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
1,4-Dichlorobenzene	ND	1.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
Dichlorodifluoromethane	ND	1.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
1,1-Dichloroethane	ND	1.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
1,1-Dichloroethene	ND	1.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
1,2-Dichloropropane	ND	1.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
1,3-Dichloropropane	ND	1.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
2,2-Dichloropropane	ND	2.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
1,1-Dichloropropene	ND	1.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
Hexachlorobutadiene	ND	1.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
2-Hexanone	ND	10		µg/L	1	1/22/2019 4:13:29 PM	B57171

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Timberwolf Environmental
Client Sample ID: MW1
Project: Kaufman No1
Collection Date: 1/18/2019 3:15:00 PM
Lab ID: 1901789-006 **Matrix:** AQUEOUS **Received Date:** 1/19/2019 11:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **AG**	
Isopropylbenzene	3.1	1.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
4-Isopropyltoluene	ND	1.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
4-Methyl-2-pentanone	ND	10		µg/L	1	1/22/2019 4:13:29 PM	B57171
Methylene Chloride	ND	3.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
n-Butylbenzene	ND	3.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
n-Propylbenzene	3.9	1.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
sec-Butylbenzene	ND	1.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
Styrene	ND	1.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
tert-Butylbenzene	ND	1.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
trans-1,2-DCE	ND	1.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
1,1,1-Trichloroethane	ND	1.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
1,1,2-Trichloroethane	ND	1.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
Trichloroethene (TCE)	ND	1.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
Trichlorofluoromethane	ND	1.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
1,2,3-Trichloropropane	ND	2.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
Vinyl chloride	ND	1.0		µg/L	1	1/22/2019 4:13:29 PM	B57171
Xylenes, Total	330	15		µg/L	10	1/23/2019 4:08:15 PM	R57206
Surr: 1,2-Dichloroethane-d4	108	70-130		%Rec	1	1/22/2019 4:13:29 PM	B57171
Surr: 4-Bromofluorobenzene	98.0	70-130		%Rec	1	1/22/2019 4:13:29 PM	B57171
Surr: Dibromofluoromethane	108	70-130		%Rec	1	1/22/2019 4:13:29 PM	B57171
Surr: Toluene-d8	104	70-130		%Rec	1	1/22/2019 4:13:29 PM	B57171

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1901789**

14-Jun-19

Client: Timberwolf Environmental

Project: Kaufman No1

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R57149**	RunNo: **57149**
Prep Date:	Analysis Date: **1/21/2019**	SeqNo: **1911765** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Bromide	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Phosphorus, Orthophosphate (As P	ND	0.50								
Sulfate	ND	0.50								

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R57149**	RunNo: **57149**
Prep Date:	Analysis Date: **1/21/2019**	SeqNo: **1911766** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.48	0.10	0.5000	0	96.4	90	110			
Chloride	4.8	0.50	5.000	0	95.5	90	110			
Nitrogen, Nitrite (As N)	0.96	0.10	1.000	0	95.9	90	110			
Bromide	2.4	0.10	2.500	0	96.5	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	100	90	110			
Phosphorus, Orthophosphate (As P	4.8	0.50	5.000	0	95.7	90	110			
Sulfate	9.7	0.50	10.00	0	96.8	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1901789**

14-Jun-19

Client: Timberwolf Environmental

Project: Kaufman No1

Sample ID: **MB-42745**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **PBW**	Batch ID: **42745**	RunNo: **57173**
Prep Date: **1/22/2019**	Analysis Date: **1/23/2019**	SeqNo: **1913176** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	0.98		1.000		98.2	70	130			

Sample ID: **LCS-42745**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **LCSW**	Batch ID: **42745**	RunNo: **57173**
Prep Date: **1/22/2019**	Analysis Date: **1/23/2019**	SeqNo: **1913177** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.6	1.0	5.000	0	112	71.8	135			
Surr: DNOP	0.50		0.5000		99.8	70	130			

Sample ID: **1901789-001BMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **MW2**	Batch ID: **42745**	RunNo: **57173**
Prep Date: **1/22/2019**	Analysis Date: **1/23/2019**	SeqNo: **1913184** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.6	1.0	5.000	0	112	68.1	137			
Surr: DNOP	0.50		0.5000		99.3	70	130			

Sample ID: **1901789-001BMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **MW2**	Batch ID: **42745**	RunNo: **57173**
Prep Date: **1/22/2019**	Analysis Date: **1/23/2019**	SeqNo: **1913185** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.7	1.0	5.000	0	114	68.1	137	2.02	20	
Surr: DNOP	0.50		0.5000		99.4	70	130	0	0	

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1901789**
14-Jun-19

Client: Timberwolf Environmental
Project: Kaufman No1

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **B57171**	RunNo: **57171**
Prep Date:	Analysis Date: **1/22/2019**	SeqNo: **1912422** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	104	70	130			
Toluene	20	1.0	20.00	0	99.3	70	130			
Chlorobenzene	21	1.0	20.00	0	104	70	130			
1,1-Dichloroethene	20	1.0	20.00	0	101	70	130			
Trichloroethene (TCE)	19	1.0	20.00	0	93.1	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		105	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		107	70	130			
Surr: Dibromofluoromethane	11		10.00		106	70	130			
Surr: Toluene-d8	10		10.00		103	70	130			

Sample ID: **rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **B57171**	RunNo: **57171**
Prep Date:	Analysis Date: **1/22/2019**	SeqNo: **1912429** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1901789**
14-Jun-19

Client: Timberwolf Environmental
Project: Kaufman No1

Sample ID: **rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **B57171**	RunNo: **57171**
Prep Date:	Analysis Date: **1/22/2019**	SeqNo: **1912429** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1901789**

14-Jun-19

Client: Timberwolf Environmental

Project: Kaufman No1

Sample ID: **rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **B57171**	RunNo: **57171**
Prep Date:	Analysis Date: **1/22/2019**	SeqNo: **1912429** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		107	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		107	70	130			
Surr: Dibromofluoromethane	11		10.00		109	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R57206**	RunNo: **57206**
Prep Date:	Analysis Date: **1/23/2019**	SeqNo: **1913462** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Toluene	19	1.0	20.00	0	93.0	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		104	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		108	70	130			
Surr: Dibromofluoromethane	11		10.00		109	70	130			
Surr: Toluene-d8	9.8		10.00		97.8	70	130			

Sample ID: **rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R57206**	RunNo: **57206**
Prep Date:	Analysis Date: **1/23/2019**	SeqNo: **1913486** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Toluene	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		105	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		109	70	130			
Surr: Dibromofluoromethane	11		10.00		106	70	130			
Surr: Toluene-d8	10		10.00		103	70	130			

Sample ID: **1901789-001ams**	SampType: **MS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **MW2**	Batch ID: **B57171**	RunNo: **57171**
Prep Date:	Analysis Date: **1/22/2019**	SeqNo: **2052598** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	108	70	130			
Toluene	20	1.0	20.00	0	99.8	70	130			
Chlorobenzene	21	1.0	20.00	0	105	70	130			
1,1-Dichloroethene	20	1.0	20.00	0	102	67.6	130			
Trichloroethene (TCE)	19	1.0	20.00	0	93.2	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1901789**

14-Jun-19

Client: Timberwolf Environmental

Project: Kaufman No1

Sample ID: **1901789-001ams**	SampType: **MS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **MW2**	Batch ID: **B57171**	RunNo: **57171**
Prep Date:	Analysis Date: **1/22/2019**	SeqNo: **2052598** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	11		10.00		106	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		111	70	130			
Surr: Dibromofluoromethane	11		10.00		109	70	130			
Surr: Toluene-d8	10		10.00		99.6	70	130			

Sample ID: **1901789-001amsd**	SampType: **MSD**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **MW2**	Batch ID: **B57171**	RunNo: **57171**
Prep Date:	Analysis Date: **1/22/2019**	SeqNo: **2052599** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	105	70	130	2.37	20	
Toluene	19	1.0	20.00	0	93.6	70	130	6.39	20	
Chlorobenzene	20	1.0	20.00	0	97.6	70	130	7.50	20	
1,1-Dichloroethene	20	1.0	20.00	0	101	67.6	130	1.08	20	
Trichloroethene (TCE)	18	1.0	20.00	0	89.6	70	130	3.89	20	
Surr: 1,2-Dichloroethane-d4	11		10.00		107	70	130	0	0	
Surr: 4-Bromofluorobenzene	11		10.00		108	70	130	0	0	
Surr: Dibromofluoromethane	11		10.00		109	70	130	0	0	
Surr: Toluene-d8	9.8		10.00		97.7	70	130	0	0	

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1901789**
14-Jun-19

Client: Timberwolf Environmental
Project: Kaufman No1

Sample ID: **MB-42755**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **42755**	RunNo: **57311**
Prep Date: **1/23/2019**	Analysis Date: **1/28/2019**	SeqNo: **1917305** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	ND	20								
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	ND	10								
4-Bromophenyl phenyl ether	ND	10								
Butyl benzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3´-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1901789**
14-Jun-19

Client: Timberwolf Environmental
Project: Kaufman No1

Sample ID: **MB-42755**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **42755**	RunNo: **57311**
Prep Date: **1/23/2019**	Analysis Date: **1/28/2019**	SeqNo: **1917305** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N-Nitrosodiphenylamine	ND	10								
Naphthalene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	180		200.0		91.9	15	74.1			S
Surr: Phenol-d5	150		200.0		75.8	15	59.8			S
Surr: 2,4,6-Tribromophenol	190		200.0		97.3	22.1	112			
Surr: Nitrobenzene-d5	99		100.0		99.4	33.2	94			S
Surr: 2-Fluorobiphenyl	91		100.0		91.4	34	90.9			S
Surr: 4-Terphenyl-d14	97		100.0		97.5	15	149			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1901789**

14-Jun-19

Client: Timberwolf Environmental

Project: Kaufman No1

Sample ID: **LCS-42755**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **42755**	RunNo: **57311**
Prep Date: **1/23/2019**	Analysis Date: **1/28/2019**	SeqNo: **1917306** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	81	10	100.0	0	80.8	55.1	104			
4-Chloro-3-methylphenol	200	10	200.0	0	101	57	115			
2-Chlorophenol	180	10	200.0	0	89.2	43.4	112			
1,4-Dichlorobenzene	80	10	100.0	0	79.7	38	95.2			
2,4-Dinitrotoluene	75	10	100.0	0	74.7	55.1	96.7			
N-Nitrosodi-n-propylamine	95	10	100.0	0	94.6	55	112			
4-Nitrophenol	170	10	200.0	0	84.3	16.6	93			
Pentachlorophenol	160	20	200.0	0	79.3	43.2	104			
Phenol	160	10	200.0	0	78.6	21.3	85.7			
Pyrene	87	10	100.0	0	86.8	64.9	105			
1,2,4-Trichlorobenzene	84	10	100.0	0	84.2	42.6	107			
Surr: 2-Fluorophenol	160		200.0		81.7	15	74.1			S
Surr: Phenol-d5	150		200.0		74.6	15	59.8			S
Surr: 2,4,6-Tribromophenol	190		200.0		93.5	22.1	112			
Surr: Nitrobenzene-d5	89		100.0		89.2	33.2	94			
Surr: 2-Fluorobiphenyl	76		100.0		76.0	34	90.9			
Surr: 4-Terphenyl-d14	95		100.0		94.8	15	149			

Sample ID: **lcsd-42755**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **42755**	RunNo: **57332**
Prep Date: **1/23/2019**	Analysis Date: **1/29/2019**	SeqNo: **1918063** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	64	10	100.0	0	63.8	55.1	104	23.5	34.9	
4-Chloro-3-methylphenol	160	10	200.0	0	81.2	57	115	22.0	30.2	
2-Chlorophenol	140	10	200.0	0	72.4	43.4	112	20.7	49.5	
1,4-Dichlorobenzene	58	10	100.0	0	58.3	38	95.2	31.0	43.2	
2,4-Dinitrotoluene	61	10	100.0	0	61.1	55.1	96.7	20.1	49.9	
N-Nitrosodi-n-propylamine	73	10	100.0	0	73.1	55	112	25.5	42.1	
4-Nitrophenol	100	10	200.0	0	50.8	16.6	93	49.5	31.5	R
Pentachlorophenol	120	20	200.0	0	58.0	43.2	104	31.1	52.5	
Phenol	120	10	200.0	0	60.3	21.3	85.7	26.5	54.4	
Pyrene	70	10	100.0	0	70.1	64.9	105	21.3	30.7	
1,2,4-Trichlorobenzene	68	10	100.0	0	67.6	42.6	107	22.0	48.1	
Surr: 2-Fluorophenol	98		200.0		48.8	15	74.1	0	0	
Surr: Phenol-d5	92		200.0		46.0	15	59.8	0	0	
Surr: 2,4,6-Tribromophenol	120		200.0		62.3	22.1	112	0	0	
Surr: Nitrobenzene-d5	60		100.0		59.7	33.2	94	0	0	
Surr: 2-Fluorobiphenyl	50		100.0		49.6	34	90.9	0	0	

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1901789**
14-Jun-19

Client: Timberwolf Environmental
Project: Kaufman No1

Sample ID: **lcsd-42755**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **42755**	RunNo: **57332**
Prep Date: **1/23/2019**	Analysis Date: **1/29/2019**	SeqNo: **1918063** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	57		100.0		56.5	15	149	0	0	

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1901789**
14-Jun-19

Client: Timberwolf Environmental
Project: Kaufman No1

Sample ID: **lcs-1 99.0uS eC**	SampType: **lcs**	TestCode: **SM2510B: Specific Conductance**
Client ID: **LCSW**	Batch ID: **R57160**	RunNo: **57160**
Prep Date:	Analysis Date: **1/21/2019**	SeqNo: **1911988** Units: **µmhos/cm**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Conductivity	98	5.0	99.00	0	98.9	80	120			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1901789**

14-Jun-19

Client: Timberwolf Environmental

Project: Kaufman No1

Sample ID: **MB-42731**	SampType: **MBLK**	TestCode: **EPA Method 7470: Mercury**
Client ID: **PBW**	Batch ID: **42731**	RunNo: **57210**
Prep Date: **1/21/2019**	Analysis Date: **1/23/2019**	SeqNo: **1913735** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID: **LCS-42731**	SampType: **LCS**	TestCode: **EPA Method 7470: Mercury**
Client ID: **LCSW**	Batch ID: **42731**	RunNo: **57210**
Prep Date: **1/21/2019**	Analysis Date: **1/23/2019**	SeqNo: **1913736** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0053	0.00020	0.005000	0	106	80	120			

Sample ID: **1901789-006EMS**	SampType: **MS**	TestCode: **EPA Method 7470: Mercury**
Client ID: **MW1**	Batch ID: **42731**	RunNo: **57210**
Prep Date: **1/21/2019**	Analysis Date: **1/23/2019**	SeqNo: **1913738** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0057	0.00020	0.005000	.00006954	113	75	125			

Sample ID: **1901789-006EMSD**	SampType: **MSD**	TestCode: **EPA Method 7470: Mercury**
Client ID: **MW1**	Batch ID: **42731**	RunNo: **57210**
Prep Date: **1/21/2019**	Analysis Date: **1/23/2019**	SeqNo: **1913739** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0059	0.00020	0.005000	.00006954	116	75	125	2.56	20	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1901789**

14-Jun-19

Client: Timberwolf Environmental

Project: Kaufman No1

Sample ID: **MB-42806** SampType: **MBLK** TestCode: **EPA 6010B: Total Recoverable Metals**

Client ID: **PBW** Batch ID: **42806** RunNo: **57316**

Prep Date: **1/24/2019** Analysis Date: **1/28/2019** SeqNo: **1917487** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.020								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Magnesium	ND	1.0								
Potassium	ND	1.0								
Selenium	ND	0.050								
Silver	ND	0.0050								
Sodium	ND	1.0								

Sample ID: **LCS-42806** SampType: **LCS** TestCode: **EPA 6010B: Total Recoverable Metals**

Client ID: **LCSW** Batch ID: **42806** RunNo: **57316**

Prep Date: **1/24/2019** Analysis Date: **1/28/2019** SeqNo: **1917488** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.020	0.5000	0	99.6	80	120			
Cadmium	0.51	0.0020	0.5000	0	102	80	120			
Calcium	50	1.0	50.00	0	99.7	80	120			
Chromium	0.51	0.0060	0.5000	0	101	80	120			
Magnesium	50	1.0	50.00	0	99.3	80	120			
Potassium	49	1.0	50.00	0	98.2	80	120			
Selenium	0.48	0.050	0.5000	0	96.8	80	120			
Silver	0.10	0.0050	0.1000	0	101	80	120			
Sodium	49	1.0	50.00	0	98.7	80	120			

Sample ID: **1901789-006EMS** SampType: **MS** TestCode: **EPA 6010B: Total Recoverable Metals**

Client ID: **MW1** Batch ID: **42806** RunNo: **57316**

Prep Date: **1/24/2019** Analysis Date: **1/28/2019** SeqNo: **1917493** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.55	0.020	0.5000	0.07931	93.9	75	125			
Cadmium	0.50	0.0020	0.5000	0	101	75	125			
Chromium	0.49	0.0060	0.5000	0.001728	97.0	75	125			
Potassium	54	1.0	50.00	3.337	101	75	125			
Selenium	0.48	0.050	0.5000	0	96.6	75	125			
Silver	0.11	0.0050	0.1000	0.006835	103	75	125			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1901789**

14-Jun-19

Client: Timberwolf Environmental

Project: Kaufman No1

Sample ID: **1901789-006EMSD**	SampType: **MSD**	TestCode: **EPA 6010B: Total Recoverable Metals**
Client ID: **MW1**	Batch ID: **42806**	RunNo: **57316**
Prep Date: **1/24/2019**	Analysis Date: **1/28/2019**	SeqNo: **1917494** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.54	0.020	0.5000	0.07931	92.9	75	125	0.888	20	
Cadmium	0.50	0.0020	0.5000	0	100	75	125	0.552	20	
Chromium	0.48	0.0060	0.5000	0.001728	96.3	75	125	0.713	20	
Potassium	54	1.0	50.00	3.337	102	75	125	0.989	20	
Selenium	0.53	0.050	0.5000	0	106	75	125	9.27	20	
Silver	0.11	0.0050	0.1000	0.006835	102	75	125	1.70	20	

Sample ID: **MB-42806**	SampType: **MBLK**	TestCode: **EPA 6010B: Total Recoverable Metals**
Client ID: **PBW**	Batch ID: **42806**	RunNo: **57316**
Prep Date: **1/24/2019**	Analysis Date: **1/28/2019**	SeqNo: **1917519** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0								
Lead	ND	0.0050								
Sodium	ND	1.0								

Sample ID: **LCS-42806**	SampType: **LCS**	TestCode: **EPA 6010B: Total Recoverable Metals**
Client ID: **LCSW**	Batch ID: **42806**	RunNo: **57316**
Prep Date: **1/24/2019**	Analysis Date: **1/28/2019**	SeqNo: **1917520** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	49	1.0	50.00	0	97.7	80	120			
Lead	0.48	0.0050	0.5000	0	95.1	80	120			
Sodium	50	1.0	50.00	0	99.2	80	120			

Sample ID: **1901789-006EMS**	SampType: **MS**	TestCode: **EPA 6010B: Total Recoverable Metals**
Client ID: **MW1**	Batch ID: **42806**	RunNo: **57316**
Prep Date: **1/24/2019**	Analysis Date: **1/28/2019**	SeqNo: **1917523** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.46	0.0050	0.5000	0	91.7	75	125			

Sample ID: **1901789-006EMSD**	SampType: **MSD**	TestCode: **EPA 6010B: Total Recoverable Metals**
Client ID: **MW1**	Batch ID: **42806**	RunNo: **57316**
Prep Date: **1/24/2019**	Analysis Date: **1/28/2019**	SeqNo: **1917524** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.46	0.0050	0.5000	0	92.2	75	125	0.519	20	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1901789**

14-Jun-19

Client: Timberwolf Environmental

Project: Kaufman No1

Sample ID: **MB-42806**	SampType: **MBLK**	TestCode: **EPA 6010B: Total Recoverable Metals**
Client ID: **PBW**	Batch ID: **42806**	RunNo: **57326**
Prep Date: **1/24/2019**	Analysis Date: **1/29/2019**	SeqNo: **1917932** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.020								

Sample ID: **LCS-42806**	SampType: **LCS**	TestCode: **EPA 6010B: Total Recoverable Metals**
Client ID: **LCSW**	Batch ID: **42806**	RunNo: **57326**
Prep Date: **1/24/2019**	Analysis Date: **1/29/2019**	SeqNo: **1917933** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.47	0.020	0.5000	0	93.6	80	120			

Sample ID: **1901789-006EMS**	SampType: **MS**	TestCode: **EPA 6010B: Total Recoverable Metals**
Client ID: **MW1**	Batch ID: **42806**	RunNo: **57326**
Prep Date: **1/24/2019**	Analysis Date: **1/29/2019**	SeqNo: **1917936** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.49	0.020	0.5000	0	99.0	75	125			

Sample ID: **1901789-006EMSD**	SampType: **MSD**	TestCode: **EPA 6010B: Total Recoverable Metals**
Client ID: **MW1**	Batch ID: **42806**	RunNo: **57326**
Prep Date: **1/24/2019**	Analysis Date: **1/29/2019**	SeqNo: **1917937** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.49	0.020	0.5000	0	98.0	75	125	0.972	20	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1901789**

14-Jun-19

Client: Timberwolf Environmental

Project: Kaufman No1

Sample ID: **1901789-002ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **MW3**	Batch ID: **R57171**	RunNo: **57171**
Prep Date:	Analysis Date: **1/22/2019**	SeqNo: **1912400** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.52	0.050	0.5000	0	104	63.4	130			
Surr: BFB	9.8		10.00		97.7	70	130			

Sample ID: **1901789-002amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **MW3**	Batch ID: **R57171**	RunNo: **57171**
Prep Date:	Analysis Date: **1/22/2019**	SeqNo: **1912401** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.49	0.050	0.5000	0	98.2	63.4	130	5.62	20	
Surr: BFB	9.7		10.00		96.8	70	130	0	0	

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **R57171**	RunNo: **57171**
Prep Date:	Analysis Date: **1/22/2019**	SeqNo: **1912406** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.53	0.050	0.5000	0	106	70	130			
Surr: BFB	9.8		10.00		98.0	70	130			

Sample ID: **rb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **R57171**	RunNo: **57171**
Prep Date:	Analysis Date: **1/22/2019**	SeqNo: **1912407** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	9.7		10.00		96.6	70	130			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1901789**
14-Jun-19

Client: Timberwolf Environmental
Project: Kaufman No1

Sample ID: **MB-42739**	SampType: **MBLK**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **PBW**	Batch ID: **42739**	RunNo: **57198**
Prep Date: **1/22/2019**	Analysis Date: **1/23/2019**	SeqNo: **1913205** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID: **LCS-42739**	SampType: **LCS**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **LCSW**	Batch ID: **42739**	RunNo: **57198**
Prep Date: **1/22/2019**	Analysis Date: **1/23/2019**	SeqNo: **1913206** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1010	20.0	1000	0	101	80	120			

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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: **1901789** RcptNo: **1**

Received By: **Victoria Zellar** **1/19/2019 11:10:00 AM** Victoria Zellar

Completed By: **Leah Baca** **1/21/2019 10:24:02 AM** Leah Baca

Reviewed By: ENM 1/21/19

Labeled by VNZ 1/21/19

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° 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: 1

(<2 or >12 unless noted)

Adjusted? NO

Checked by: VNZ 1/21/19

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 °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.7	Good	Yes			
2	4.3	Good	Yes			

Chain-of-Custody Record

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Client: Timberwolf Env

Mailing Address:

Phone #: 979 324-2139

email or Fax#: jim@teamtimberwolf.com

QA/QC Package:

☒ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance ☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time: ☒ Standard ☐ Rush

Project Name: Kaufman No1

Project #: 180061

Project Manager:

Sampler: J. Foster

On Ice: ☒ Yes ☐ No

# of Coolers: 2

Cooler Temp(including CF): 3.7°C, 4.3°C

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 1901789	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	BTEX only	Cl	TDS, Conductivity	Ca, Mg, K, Na			
1/17/19	1026	W	MW2	Various	Various	-001		✓	✓								✓	✓	✓	✓			
1/17/19	1215	W	MW3			-002		✓									✓	✓					
1/17/19	1330	W	MW4			-003		✓									✓	✓					
1/17/19	1445	W	MW5			-004		✓									✓	✓					
1/18/19	1335	W	MW6			-005		✓									✓	✓	✓	✓			
1/18/19	1515	W	MW1			-006		✓				✓	✓	✓	✓				✓	✓			

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
1/18/19	1800				1/18/19	1800
1/18/19	1841			Courier	1/19/19	1110

Remarks: Hold MW-1 for additional analysis per J Foster

~~MW-1 did not receive VOAs cannot run GRO or MRO 5035 LB~~

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

1/24/19

Appendix C

Geotechnical Reports

GEOMAT INC
915 Malta Avenue ◆ Farmington, NM 87401 ◆ Tel (505) 327-7928 ◆ Fax (505) 326-5721

February 11, 2019

Jim Foster, President
Timberwolf Environmental
691 CR233, Suite B-4
Durango, Colorado 81301

RE: Kaufman #1 - Laboratory Results
San Juan County, New Mexico
GEOMAT Project No. 185-3187

Dear Mr. Foster,

GEOMAT Inc. (GEOMAT) has completed the laboratory testing services for the Kaufman #1 environmental exploration work performed on January 18, 2019. As requested, after installing six (6) monitor wells at the site, GEOMAT collected two (2) ring samples, Lab Nos. 7698 and 7699 from 5.5'-6' and 13.5'-14' below ground surface, respectively.

The single test boring sampled, MW-04-D, is the twin of MW-04 and presented minor difficulties with respect to recovery due to site conditions. However, sufficient sample was retrieved such that we were able to perform moisture-density analysis locally at our lab while conveying the majority of the sample recovered by the rings to an outside laboratory for the hydraulic conductivity (ASTM D5084) and specific gravity analysis. Results from both of these analyses are attached for your use.

Thank you for the opportunity to be of service to you on this project. We appreciate your business and look forward to assisting you further in the future. Should you have any questions regarding the attached data, please do not hesitate to contact us.

Sincerely yours,
GEOMAT Inc.

Robert "Bob" Flegal, P.E.
Senior Engineer/Drilling Manager

Copies to: Addressee (1) via email.

GEOMAT INC.
915 Malta Avenue ◆ Farmington, NM 87401 ◆ Tel (505) 327-7928 ◆ Fax (505) 326-5721

MOISTURE - DENSITY WORKSHEET

Project Number: 185-3187 **Project Name: La Plata Delineation - Timberwolf**

Lab Number	Borehole No.	Sample Depth (ft.)	Density		Moisture			Moisture (%)	Soil Wet Density (pcf)	Soil Dry Density (pcf)
			# of Rings	Wt of Rings + Soil (gm)	Tare	Tare & Wet Soil	Tare & Dry Soil			
7698	B-1	5.5 - 6.0	6	1224.8	178.98	315.08	303.37	9.4%	131.0	119.7
7699	B-1	13.5 - 14.0	6	1138.52	190.64	289.06	276.02	15.3%	119.1	103.3
NOTE: Densities are understated due to rings not being completely full										
Samples contain gravel thus unable to trim ends flush										

wood.

Client:	GEOMAT, Inc. 915 Malta Avenue Farmington, NM 87401-	**Report Date:**	February 05, 2019
		Project #:	18-519-01996
		Work Order #:	13
Attn:	Nathan Compton	**Lab #:**	19-0030-01
Project Name:	2018-19 Geomat Inc. Misc. Testing	**Sampled By:**	Client - F. Enriquez
		Date Sampled:	1/17/2019
	Albuquerque, NM	**Visual Description of Material:**	GEOMAT Lab # 7698
		Sample Source:	B-1 @ 5.5-6.0
Project Manager:	Jesse Boam	**SOILS / AGGREGATES**	

Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter (ASTM D5084-16)

Method: C

Sample Preparation: Ring Sample
Compaction Method: Insitu

Initial Diameter (cm):	6.07	**Final Diameter (cm):**	6.07
Initial Length (cm):	7.75	**Final Length (cm):**	7.67
Initial Moisture:	5.4%	**Final Moisture:**	11.1%
Initial Unit Weight (pcf):	127.0	**Final Unit Weight (pcf):**	128.3
Initial Volume (in³):	13.7	**Final Volume (in³):**	13.5
Initial Degree of Saturation:	46%	**Final Degree of Saturation:**	97%

Permeant Liquid:	City Water
Magnitude of Total Backpressure:	18.0
Effective Stress:	2.0
Range of Hydraulic Gradient Used:	1.85 **To** 2.44
Specific Gravity(ASTM D854):	2.686

Time Interval (sec)	Corrected Hydraulic Conductivity (cm/sec)
8	1.04E-03
6	1.07E-03
7	1.03E-03
9	9.98E-04
Average:	1.0E-03

Note: All final sample dimensions are subject to sample deformation caused by exsolution of air in pore water and handling during removal from cell.

Reviewed By:_____

Distribution: **Client:** ☐ **File:** ☐ **Supplier:** ☐ **Email:** ☐ **Other:**

AMEC Environment & Infrastructure, Inc.
8519 Jefferson NE
Albuquerque, NM 87113
Tel 5058211801
Fax 5058217371 www.amec.com

wood.

Client:	GEOMAT, Inc. 915 Malta Avenue Farmington, NM 87401-	**Report Date:**	February 06, 2019
		Project #:	18-519-01996
		Work Order #:	13
Attn:	Nathan Compton	**Lab #:**	19-0030-02
Project Name:	2018-19 Geomat Inc. Misc. Testing	**Sampled By:**	Client - F. Enriquez
		Date Sampled:	1/17/2019
	Albuquerque, NM	**Visual Description of Material:**	GEOMAT Lab # 7699
		Sample Source:	B-1 @ 13.5-14.0
Project Manager:	Jesse Boam	**SOILS / AGGREGATES**	

Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter (ASTM D5084-16)

Method: C

Sample Preparation: Ring Sample
Compaction Method: Insitu

Initial Diameter (cm):	6.13	**Final Diameter (cm):**	6.13
Initial Length (cm):	7.71	**Final Length (cm):**	7.71
Initial Moisture:	16.5%	**Final Moisture:**	18.8%
Initial Unit Weight (pcf):	109.2	**Final Unit Weight (pcf):**	109.2
Initial Volume (in³):	13.9	**Final Volume (in³):**	13.9
Initial Degree of Saturation:	85%	**Final Degree of Saturation:**	97%

Permeant Liquid:	City Water
Magnitude of Total Backpressure:	33.0
Effective Stress:	2.0
Range of Hydraulic Gradient Used:	1.70 **To** 2.10
Specific Gravity(ASTM D854):	2.643

Time Interval (sec)	Corrected Hydraulic Conductivity (cm/sec)
6	2.41E-03
8	2.44E-03
6	2.34E-03
6	2.25E-03
Average:	2.4E-03

Note: All final sample dimensions are subject to sample deformation caused by exsolution of air in pore water and handling during removal from cell.

Reviewed By:_____

Distribution: **Client:** ☐ **File:** ☐ **Supplier:** ☐ **Email:** ☐ **Other:**

AMEC Environment & Infrastructure, Inc.
8519 Jefferson NE
Albuquerque, NM 87113
Tel 5058211801
Fax 5058217371 www.amec.com

Appendix D

Attached Tables

Table D-1. Groundwater Stabilization Parameters
Table D-2. Groundwater Analytical Results – General Chemistry
Table D-3. Groundwater Analytical Results – RCRA-8 Metals
Table D-4. Groundwater Analytical Results – Volatile Organic Compounds
Table D-5. Groundwater Analytical Results – Semi-volatile Organic Compounds

Table D-1. Groundwater Stabilization Parameters
Kaufman No. 1 Release
Hilcorp Energy Company
San Juan County, New Mexico

Well ID	Amount Purged (gallons) *	Depth to Water (ft bgs)	Temperature (˚C)	Disolved Oxygen (mg/L)	Electric Conductivity (mS/cm)	pH	Oxidation Reduction Potential (mV)
MW1	25	4.74	12.2	0.21	3.84	6.91	74.8
	26	4.68	12.2	0.2	3.84	6.92	74.4
	27	4.68	12.2	0.21	3.85	6.9	74
MW2	21	5.95	6.8	0.84	4.49	6.92	104.1
	22	5.94	6.8	0.86	4.49	6.92	103.3
	23	5.95	6.8	0.88	4.49	6.92	102.2
MW3	22	5.58	9.4	0.28	4.63	7.14	-24.8
	23	5.58	9.5	0.25	4.62	7.13	-28.4
	24	5.58	9.5	0.24	4.62	7.13	-31.6
MW4	16	6.45	9.6	0.31	4.01	6.96	37
	17	6.46	9.6	0.28	4	6.96	34
	18	6.46	9.6	0.27	4	6.96	32.1
MW5	13	6.78	9.2	0.26	3.94	7.13	-2.7
	14	6.78	8.7	0.22	3.94	7.12	-4.6
	15	6.74	8.6	0.21	3.94	7.11	-5.6
MW6	Initial DTW: 5.34 ft; Well pumped dry at 11.5 gallons, allowed to recharge to 5.82 ft and sampled @ 1335.						

* - 10 gallons were purged prior to low flow to develop the monitor wells

ft bgs - feet below ground surface

˚C - degrees celsius

mg/L - milligrams per liter

mS/cm - millisiemens per centimeter

mV - millivolts

Table D-2. Groundwater Analytical Results - General Chemistry
Kaufman No. 1 Release
Hilcorp Energy Company
San Juan County, New Mexico

Sample ID	Date	Total Disolved Solids (mg/kg)	Specific Conductance (mmhos/cm)	Anions						
				Fluoride	Chloride	Nitrate	Bromide	Nitrogen	Phosphorus	Sulfate
MW1	01/18/19	3,130	3.6	< 1.0	130	< 1.0[H]	< 1.0	< 1.0[H]	< 5.0[H]	1,700
Regulatory Criteria*		**1,000[2]**	**--**	**1.6[1]**	**--**	**10[1]**	**--**	**--**	**--**	**600[2]**

[1] Human health standard

[2] Domestic Water Suppy Standard

[H] Sample analyzed out of hold time

-- no applicable criteria

Table D-3. Groundwater Analytical Data - RCRA 8 Metals
Kaufman No. 1 Release
Hilcorp Energy Company
San Juan County, New Mexico

Sample ID	Date	RCRA-8 (mg/L)							
		Arsenic	Barium	Cadium	Chromium	Lead	Mercury	Selenium	Silver
MW1	01/18/19	< 0.02	0.079	< 0.002	< 0.006	< 0.005	< 0.0002	< 0.05	0.0068
Regulatory Criteria[1]		**0.10**	**1.00**	**0.01**	**0.05**	**0.05**	**0.002**	**0.05**	**0.05**

RCRA - Resouce Conservation and Recovery Act
mg/L - milligrams per liter
[1] Human health standard

Table D-4. Groundwater Analytical Data - Volatile Organic Compounds
Kaufman No. 1
Hilcorp Energy Company
San Juan County, New Mexico

Volatile Organic Compounds	MW-1 (mg/L)	MW-2 (mg/L)	MW-3 (mg/L)	MW-4 (mg/L)	MW-5 (mg/L)	MW-6 (mg/L)	Regulatory Criteria[1] (mg/L)
Benzene	0.074	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.01
Toluene	0.35	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.75
Ethylbenzene	0.027	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.75
Methyl tert-butyl ether (MTBE)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
1,2,4-Trimethylbenzene	0.032	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
1,3,5,-Trimethylbenzene	0.015	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
1,2-Dichloroethane (EDC)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.01
1,2-Dibromoethane (EDB)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
Naphthalene	0.0032	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	--
1-Methylnaphthalene	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	--
2-Methylnaphthalene	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	--
Acetone	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	--
Bromobenzene	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
Bromodichloromethane	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
Bromoform	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
Bromomethane	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	--
2-Butanone	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	--
Carbon disulfide	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	--
Carbon Tetrachloride	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.01
Chlorobenzene	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
Chloroethane	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	--
Chloroform	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.1
Chloromethane	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	--
2-Chlorotoluene	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
4-Chlorotoluene	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
cis-1,2-DCE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
cis-1,3- Dichloropropene	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
1,2-Dibromo-3-chloropropane	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	--
Dibromochloromethane	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
Dibromomethane	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
1,2-Dichlorobenzene	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--

Table D-4. Groundwater Analytical Data - Volatile Organic Compounds
Kaufman No. 1
Hilcorp Energy Company
San Juan County, New Mexico

Volatile Organic Compounds	MW-1 (mg/L)	MW-2 (mg/L)	MW-3 (mg/L)	MW-4 (mg/L)	MW-5 (mg/L)	MW-6 (mg/L)	Regulatory Criteria[1] (mg/L)
1,3-Dichlorobenzene	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
1,4-Dichlorobenzene	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
Dichlorodifluoromethane	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
1,1-Dichloroethane	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.025
1,1-Dichloroethene	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
1,2-Dichloropropane	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
1,3-Dichloropropane	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
2,2-Dichloropropane	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	--
1,1-Dichloropropene	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
Hexachlorobutadiene	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
2-Hexanone	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	--
Isopropylbenzene	0.0031	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
4-Isopropyltoluene	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
4-Methyl-2-pentanone	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	--
Methylene Chloride	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.1
n-Butylbenzene	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	--
n-Propylbenzene	0.0039	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
sec-Butylbenzene	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
Styrene	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
tert-Butylbenzene	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.0022	--
1,1,1,2-Tetrachloroethane	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
1,1,2,2-Tetrachloroethane	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.01
Tetrachloroethene (PCE)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.02
trans-1,2- DCE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
trans-1,3-Dichloropropene	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
1,2,3-Trichlorobenzene	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
1,2,4-Trichlorobenzene	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
1,1,1-Trichloroethane	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.06
1,1,2-Trichloroethane	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.01
Trichloroethene	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
Trichlorofluoromethane	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
1,2,3-Trichloropropane	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	--
Vinyl Chloride	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.001
Xylenes, Total	0.33	< 0.0015	< 0.0015	< 0.0015	< 0.0015	< 0.0015	0.62

mg/L - milligrams per liter

[1] Human health standard

Table D-5. Groundwater Analytical Data - Semi-volatile Organic Compounds
Kaufman No. 1
Hilcorp Energy Company
San Juan County, New Mexico

Semi-Volatile Organic Compounds	MW-1 (mg/L)	Regulatory Criteria
Acenaphthene	< 0.01	--
Acenaphthylene	< 0.01	--
Aniline	< 0.01	--
Anthracene	< 0.01	--
Azobenzene	< 0.01	--
Benz(a)anthracene	< 0.01	--
Benzo(a)pyrene	< 0.01	0.0007[1]
Benzo(b)fluoranthene	< 0.01	--
Benzo(g,h,i)perylene	< 0.01	--
Benzo(k)fluoranthene	< 0.01	--
Benzoic acid	< 0.02	--
Benzyl alcohol	< 0.01	--
Bis(2-chloroethoxy)methane	< 0.01	--
Bis(2-chloroethyl)ether	< 0.01	--
Bis(2-chloroisopropyl)ether	< 0.01	--
Bis(2-ethylhexyl)phthalate	< 0.01	--
4-Bromophenyl phenyl ether	< 0.01	--
Butyl benzyl phthalate	< 0.01	--
Carbazole	< 0.01	--
4-Chloro-3-methylphenol	< 0.01	--
4-Chloraniline	< 0.01	--
2-Chloronaphthalene	< 0.01	--
2-Chlorophenol	< 0.01	--
4-Chlorophenyl phenyl ether	< 0.01	--
Chrysene	< 0.01	--
Di-n-butyl phthalate	< 0.01	--
Di-n-octyl phthalate	< 0.01	--
Dibenz(a,h)anthracene	< 0.01	--
Dibezofuran	< 0.01	--
1,2-Dichlorobenzene	< 0.01	--
1,3-Dichlorobenzene	< 0.01	--
1,4-Dichlorobenzene	< 0.01	--
3,3'-Dichlorobenzidine	< 0.01	--
Diethyl phthalate	< 0.01	--
Dimethyl phthalate	< 0.01	--
2,4-Dichlorophenol	< 0.02	--
2,4-Dimethylphenol	< 0.01	--
4,6-Dinitro-2-methylphenol	< 0.02	--

Table D-5. Groundwater Analytical Data - Semi-volatile Organic Compounds
Kaufman No. 1
Hilcorp Energy Company
San Juan County, New Mexico

Semi-Volatile Organic Compounds	MW-1 (mg/L)	Regulatory Criteria
2,4-Dinitrophenol	< 0.02	--
2,4-Dinitrotoluene	< 0.01	--
2,6-Dinitrotoluene	< 0.01	--
Fluoranthene	< 0.01	--
Fluorene	< 0.01	--
Hexachlorobenzene	< 0.01	--
Hexachlorobutadiene	< 0.01	--
Hexachlorocyclopentadiene	< 0.01	--
Hexachloroethane	< 0.01	--
Indeno(1,2,3-cd)pyrene	< 0.01	--
Isophorone	< 0.01	--
1-Methylnaphthalene	< 0.01	--
2-Methylnaphthalene	< 0.01	--
2-Methylphenol	< 0.01	--
3+4-Methylphenol	< 0.01	--
N-Nitrosodi-n-propylamine	< 0.01	--
N-Nitrosodimethylamine	< 0.01	--
N-Nitrosodiphenylamine	< 0.01	--
Naphthalene	< 0.01	--
2-Nitroaniline	< 0.01	--
3-Nitroaniline	< 0.01	--
4Nitroaniline	< 0.01	--
Nitrobenzene	< 0.01	--
2-Nitrophenol	< 0.01	--
4-Nitrophenol	< 0.01	--
Pentachlorophenol	< 0.02	--
Phenanthrene	< 0.01	--
Phenol	< 0.01	0.005[2]
Pyrnen	< 0.01	--
Pyridine	< 0.01	--
1,2,4-Trichlorobenzene	< 0.01	--
2,4,5-Tricholrophenol	< 0.01	--
2,4,6-Trichlorophenol	< 0.01	--

mg/L - milligrams per liter

[1] Human health standard

[2] Domestic water suppy santdard

Appendix D

Attached Tables

Table D-1. Groundwater Stabilization Parameters
Table D-2. Groundwater Analytical Results – General Chemistry
Table D-3. Groundwater Analytical Results – RCRA-8 Metals
Table D-4. Groundwater Analytical Results – Volatile Organic Compounds
Table D-5. Groundwater Analytical Results – Semi-volatile Organic Compounds

Table D-1. Groundwater Stabilization Parameters
Kaufman No. 1 Release
Hilcorp Energy Company
San Juan County, New Mexico

Well ID	Amount Purged (gallons) *	Depth to Water (ft bgs)	Temperature (˚C)	Disolved Oxygen (mg/L)	Electric Conductivity (mS/cm)	pH	Oxidation Reduction Potential (mV)
MW1	25	4.74	12.2	0.21	3.84	6.91	74.8
	26	4.68	12.2	0.2	3.84	6.92	74.4
	27	4.68	12.2	0.21	3.85	6.9	74
MW2	21	5.95	6.8	0.84	4.49	6.92	104.1
	22	5.94	6.8	0.86	4.49	6.92	103.3
	23	5.95	6.8	0.88	4.49	6.92	102.2
MW3	22	5.58	9.4	0.28	4.63	7.14	-24.8
	23	5.58	9.5	0.25	4.62	7.13	-28.4
	24	5.58	9.5	0.24	4.62	7.13	-31.6
MW4	16	6.45	9.6	0.31	4.01	6.96	37
	17	6.46	9.6	0.28	4	6.96	34
	18	6.46	9.6	0.27	4	6.96	32.1
MW5	13	6.78	9.2	0.26	3.94	7.13	-2.7
	14	6.78	8.7	0.22	3.94	7.12	-4.6
	15	6.74	8.6	0.21	3.94	7.11	-5.6
MW6	Initial DTW: 5.34 ft; Well pumped dry at 11.5 gallons, allowed to recharge to 5.82 ft and sampled @ 1335.						

* - 10 gallons were purged prior to low flow to develop the monitor wells

ft bgs - feet below ground surface

˚C - degrees celsius

mg/L - milligrams per liter

mS/cm - millisiemens per centimeter

mV - millivolts

Table D-2. Groundwater Analytical Results - General Chemistry
Kaufman No. 1 Release
Hilcorp Energy Company
San Juan County, New Mexico

Sample ID	Date	Total Disolved Solids (mg/kg)	Specific Conductance (mmhos/cm)	Anions						
				Fluoride	Chloride	Nitrate	Bromide	Nitrogen	Phosphorus	Sulfate
MW1	01/18/19	3,130	3.6	< 1.0	130	< 1.0[H]	< 1.0	< 1.0[H]	< 5.0[H]	1,700
Regulatory Criteria*		**1,000[2]**	**--**	**1.6[1]**	**--**	**10[1]**	**--**	**--**	**--**	**600[2]**

[1] Human health standard

[2] Domestic Water Suppy Standard

[H] Sample analyzed out of hold time

-- no applicable criteria

Table D-3. Groundwater Analytical Data - RCRA 8 Metals
Kaufman No. 1 Release
Hilcorp Energy Company
San Juan County, New Mexico

Sample ID	Date	RCRA-8 (mg/L)							
		Arsenic	Barium	Cadium	Chromium	Lead	Mercury	Selenium	Silver
MW1	01/18/19	< 0.02	0.079	< 0.002	< 0.006	< 0.005	< 0.0002	< 0.05	0.0068
Regulatory Criteria[1]		**0.10**	**1.00**	**0.01**	**0.05**	**0.05**	**0.002**	**0.05**	**0.05**

RCRA - Resouce Conservation and Recovery Act
mg/L - milligrams per liter
[1] Human health standard

Table D-4. Groundwater Analytical Data - Volatile Organic Compounds
Kaufman No. 1
Hilcorp Energy Company
San Juan County, New Mexico

Volatile Organic Compounds	MW-1 (mg/L)	MW-2 (mg/L)	MW-3 (mg/L)	MW-4 (mg/L)	MW-5 (mg/L)	MW-6 (mg/L)	Regulatory Criteria[1] (mg/L)
Benzene	0.074	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.01
Toluene	0.35	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.75
Ethylbenzene	0.027	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.75
Methyl tert-butyl ether (MTBE)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
1,2,4-Trimethylbenzene	0.032	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
1,3,5,-Trimethylbenzene	0.015	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
1,2-Dichloroethane (EDC)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.01
1,2-Dibromoethane (EDB)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
Naphthalene	0.0032	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	--
1-Methylnaphthalene	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	--
2-Methylnaphthalene	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	--
Acetone	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	--
Bromobenzene	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
Bromodichloromethane	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
Bromoform	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
Bromomethane	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	--
2-Butanone	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	--
Carbon disulfide	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	--
Carbon Tetrachloride	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.01
Chlorobenzene	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
Chloroethane	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	--
Chloroform	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.1
Chloromethane	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	--
2-Chlorotoluene	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
4-Chlorotoluene	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
cis-1,2-DCE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
cis-1,3- Dichloropropene	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
1,2-Dibromo-3-chloropropane	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	--
Dibromochloromethane	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
Dibromomethane	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
1,2-Dichlorobenzene	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--

Table D-4. Groundwater Analytical Data - Volatile Organic Compounds
Kaufman No. 1
Hilcorp Energy Company
San Juan County, New Mexico

Volatile Organic Compounds	MW-1 (mg/L)	MW-2 (mg/L)	MW-3 (mg/L)	MW-4 (mg/L)	MW-5 (mg/L)	MW-6 (mg/L)	Regulatory Criteria[1] (mg/L)
1,3-Dichlorobenzene	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
1,4-Dichlorobenzene	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
Dichlorodifluoromethane	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
1,1-Dichloroethane	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.025
1,1-Dichloroethene	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
1,2-Dichloropropane	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
1,3-Dichloropropane	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
2,2-Dichloropropane	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	--
1,1-Dichloropropene	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
Hexachlorobutadiene	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
2-Hexanone	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	--
Isopropylbenzene	0.0031	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
4-Isopropyltoluene	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
4-Methyl-2-pentanone	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	--
Methylene Chloride	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.1
n-Butylbenzene	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	--
n-Propylbenzene	0.0039	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
sec-Butylbenzene	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
Styrene	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
tert-Butylbenzene	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.0022	--
1,1,1,2-Tetrachloroethane	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
1,1,2,2-Tetrachloroethane	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.01
Tetrachloroethene (PCE)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.02
trans-1,2- DCE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
trans-1,3-Dichloropropene	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
1,2,3-Trichlorobenzene	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
1,2,4-Trichlorobenzene	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
1,1,1-Trichloroethane	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.06
1,1,2-Trichloroethane	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.01
Trichloroethene	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
Trichlorofluoromethane	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--
1,2,3-Trichloropropane	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	--
Vinyl Chloride	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.001
Xylenes, Total	0.33	< 0.0015	< 0.0015	< 0.0015	< 0.0015	< 0.0015	0.62

mg/L - milligrams per liter

[1] Human health standard

Table D-5. Groundwater Analytical Data - Semi-volatile Organic Compounds
Kaufman No. 1
Hilcorp Energy Company
San Juan County, New Mexico

Semi-Volatile Organic Compounds	MW-1 (mg/L)	Regulatory Criteria
Acenaphthene	< 0.01	--
Acenaphthylene	< 0.01	--
Aniline	< 0.01	--
Anthracene	< 0.01	--
Azobenzene	< 0.01	--
Benz(a)anthracene	< 0.01	--
Benzo(a)pyrene	< 0.01	0.0007[1]
Benzo(b)fluoranthene	< 0.01	--
Benzo(g,h,i)perylene	< 0.01	--
Benzo(k)fluoranthene	< 0.01	--
Benzoic acid	< 0.02	--
Benzyl alcohol	< 0.01	--
Bis(2-chloroethoxy)methane	< 0.01	--
Bis(2-chloroethyl)ether	< 0.01	--
Bis(2-chloroisopropyl)ether	< 0.01	--
Bis(2-ethylhexyl)phthalate	< 0.01	--
4-Bromophenyl phenyl ether	< 0.01	--
Butyl benzyl phthalate	< 0.01	--
Carbazole	< 0.01	--
4-Chloro-3-methylphenol	< 0.01	--
4-Chloraniline	< 0.01	--
2-Chloronaphthalene	< 0.01	--
2-Chlorophenol	< 0.01	--
4-Chlorophenyl phenyl ether	< 0.01	--
Chrysene	< 0.01	--
Di-n-butyl phthalate	< 0.01	--
Di-n-octyl phthalate	< 0.01	--
Dibenz(a,h)anthracene	< 0.01	--
Dibezofuran	< 0.01	--
1,2-Dichlorobenzene	< 0.01	--
1,3-Dichlorobenzene	< 0.01	--
1,4-Dichlorobenzene	< 0.01	--
3,3'-Dichlorobenzidine	< 0.01	--
Diethyl phthalate	< 0.01	--
Dimethyl phthalate	< 0.01	--
2,4-Dichlorophenol	< 0.02	--
2,4-Dimethylphenol	< 0.01	--
4,6-Dinitro-2-methylphenol	< 0.02	--

Table D-5. Groundwater Analytical Data - Semi-volatile Organic Compounds
Kaufman No. 1
Hilcorp Energy Company
San Juan County, New Mexico

Semi-Volatile Organic Compounds	MW-1 (mg/L)	Regulatory Criteria
2,4-Dinitrophenol	< 0.02	--
2,4-Dinitrotoluene	< 0.01	--
2,6-Dinitrotoluene	< 0.01	--
Fluoranthene	< 0.01	--
Fluorene	< 0.01	--
Hexachlorobenzene	< 0.01	--
Hexachlorobutadiene	< 0.01	--
Hexachlorocyclopentadiene	< 0.01	--
Hexachloroethane	< 0.01	--
Indeno(1,2,3-cd)pyrene	< 0.01	--
Isophorone	< 0.01	--
1-Methylnaphthalene	< 0.01	--
2-Methylnaphthalene	< 0.01	--
2-Methylphenol	< 0.01	--
3+4-Methylphenol	< 0.01	--
N-Nitrosodi-n-propylamine	< 0.01	--
N-Nitrosodimethylamine	< 0.01	--
N-Nitrosodiphenylamine	< 0.01	--
Naphthalene	< 0.01	--
2-Nitroaniline	< 0.01	--
3-Nitroaniline	< 0.01	--
4Nitroaniline	< 0.01	--
Nitrobenzene	< 0.01	--
2-Nitrophenol	< 0.01	--
4-Nitrophenol	< 0.01	--
Pentachlorophenol	< 0.02	--
Phenanthrene	< 0.01	--
Phenol	< 0.01	0.005[2]
Pyrnen	< 0.01	--
Pyridine	< 0.01	--
1,2,4-Trichlorobenzene	< 0.01	--
2,4,5-Tricholrophenol	< 0.01	--
2,4,6-Trichlorophenol	< 0.01	--

mg/L - milligrams per liter

[1] Human health standard

[2] Domestic water suppy santdard

PUBLIC NOTICE OF STAGE 1 ABATEMENT PLAN (AP-138)

Operator: Hilcorp Energy Company
382 Road 3100
Aztec, New Mexico 87410

Site name and location: Kaufman No. 1 (AP-138)
API: 30-045-10174
Legal Description: SE¼, NE¼, Sec. 33, T31N, R13W
Latitude: 36.8598137 Longitude: -108.2037506
The Kaufman No. 1 ("Site") is situated on federal land that is managed by the Bureau of Land Management. The Site is located east of the La Plata River, approximately 9.1 miles north of Farmington in San Juan County, New Mexico.

Source, impacted media, and Stage 1 Abatement Plan

On or about 11/16/18, a release of approximately 8 barrels of oil and 10 barrels of produced water occurred due to a tank overflow. The release impacted the soil vadose zone and underlying groundwater; no surface water was impacted. Production equipment was removed to facilitate excavation and disposal of affected soil.

The Stage 1 Abatement Plan is proposed to: 1) investigate the vadose zone to ensure that any remaining affected soil does not pose a threat to either the underlying groundwater or any threatened and endangered species, 2) determine the location of area water wells, 3) conduct additional groundwater analysis to determine native salinity levels of groundwater at the Site, 4) conduct a hydrogeologic assessment to study the relationship between the Site's groundwater and the La Plata River, 5) establish a quality assurance plan, and 6) establish a monitoring program for Site groundwater.

Director's procedure for making final determination

The New Mexico Oil and Gas Conservation Division will accept written comments and requests for consideration on the stage 1 abatement plan if received within 30 days of this public notice. The Director will approve or deny the stage 1 abatement plan following the 30 day public notice and within 60 days from receipt of the abatement plan.

Public Availability

A copy of the Stage 1 Abatement Plan can be viewed at the Division's Santa Fe Office located at 1220 South St. Francis Dr., Santa Fe, NM 87505 or the Division's District 3 Office located at 1000 Rio Brazos Road, Aztec, NM 87410. The abatement plan is also viewable online via the NMOCD's website: www.emnrd.state.nm.us/ocd

Public Comments

The division will accept written public comments and requests for consideration if received within 30 days from the date of this publication. Please address any comments or requests to:

Cory Smith, Environmental Specialist
New Mexico Oil Conservation Division – District 3
1000 Rio Brazos Road
Aztec, NM 87410

For additional information, please contact: Jennifer Deal, Environmental Specialist
Hilcorp Energy Company
382 Road 3100
Aztec, New Mexico 87410
(505) 599-3400

Kaufman No. 1 (AP-138)

Surface Owners within a One-Mile Radius of Site

Legal Description	Parcel No.	Last Name	First Name	Prefix	Owner Address	City	State	Zip
NE CORNER OF NE/4 OF SW/4 OF SEC 27	2075181329324	Dunn	Steven and Melinda	Mr.	PO BOX 298	La Plata	NM	87418
NW CORNER OF NW/4 SW/4 OF SEC 27	2075181484217	Shorter	Marilyn	Ms.	1000NM 170	La Plata	NM	87418
NW CORNER OF NW/4 SW/4 OF SEC 27	2075181480242	Long	Billy and Loydeen		PO BOX 516	La Plata	NM	87418
NW CORNER OF NW/4 OF SW/4 OF SEC 27	2075181502231	Williams	Shanna	Ms.	1006 NM 170	La Plata	NM	87418
NW CORNER OF NW/4 OF SW/4 OF SEC 27	2075181515249	Weinstein	Richard and Janet		PO BOX 403	La Plata	NM	87418
SW CORNER OF NW/4 SW/4 OF SEC 27	2075181406182	North	Jim and Colleen		998 NM 170	La Plata	NM	87418
SE CORNER OF SE/4 OF SW/4 OF SEC 28	2075181462066	Myers	Jackie	Ms.	PO BOX 477	La Plata	NM	87418
SE CORNER OF SE/4 OF SW/4 OF SEC 28	2075181462066	Wayne	Jon	Mr.	PO BOX 477	La Plata	NM	87418
NW CORNER OF SE/4 OF SE/4 OF SEC 27	2076181040111	Vogler	Lawrence	Mr.	986 NM 170	La Plata	NM	87418
NW CORNER OF SE/4 OF SE/4 OF SEC 28	2076181077087	Vogler	Lawrence	Mr.	987 NM 170	La Plata	NM	87419
NW CORNER OF SE/4 OF SE/4 OF SEC 28	2076181098059	Marion	Randy	Mr.	970 NM 170	Farmington	NM	87401
SE CORNER OF NW/4 OF SE/4 OF SEC 28	2076181162028	Mntoya	Anthony, Shawn, and Melissa		966 NM 170	Farmington	NM	87402
NE CORNER OF NE/4 OF NE/4 OF SEC 33	2076180160528	Myers	Jackie	Ms.	PO BOX 477	La Plata	NM	87418
NE CORNER OF NE/4 OF NE/4 OF SEC 33	2076180160528	Wayne	Jon	Mr.	PO BOX 477	La Plata	NM	87418
NE CORNER OF NW/4 OF NE/4 OF SEC 33	2076180177518	Baylock	Elizabeth	Ms.	964 HWY 170	Farmington	NM	87401
NE CORNER OF NW/4 OF NE/4 OF SEC 33	2076180177518	Turner	Thad	Mr.	964 HWY 170	Farmington	NM	87401
SE CORNER OF NE/4 OF NE/4 OF SEC 33	2076180096456	Baylock	Elizabeth	Ms.	964 HWY 170	Farmington	NM	87401
SE CORNER OF NE/4 OF NE/4 OF SEC 33	2076180096456	Turner	Thad	Mr.	964 HWY 170	Farmington	NM	87401
SW CORNER OF NW/4 of NE/4 OF SEC 33	2076180229431	Bees	Gary and Marsha		PO BOX 215	La Plata	NM	87401
NE CORNER OF SW/4 OF NE/4 OF SEC 33	2076180174375	Dalton	Harrry and Theresa		1904 Brookside Drive	Farmignton	NM	87401
SW CORNER OF SW/4 OF NE/4 OF SEC 33	2076180208312	Bees	Gary and Marsha		PO BOX 215	La Plata	NM	87401
SE CORNER OF NE/4 OF NW/4 OF SEC 33	2076180325427	Bees	Gary and Marsha		PO BOX 215	La Plata	NM	87401
NE CORNER OF SE/4 OF NW/4 OF SEC 33	2076180316416	Sundquist	Lance	Mr.	5 Road 1634	Farmington	NM	87401
NE CORNER OF SE/4 OF NW/4 OF SEC 33	2076180304402	Powell	Marx and Mary Kathryn		PO BOX 325	Bluff	UT	84512
NE CORNER OF SE/4 OF NW/4 OF SEC 33	2076180294391	Powell	Marx and Mary Kathryn		PO BOX 326	Bluff	UT	84513
NE CORNER OF SE/4 OF NW/4 OF SEC 33	2076180282380	Cage	Bryan	Mr.	15 Road 1634	Farmington	NM	87401
NW CORNER OF SE/4 OF NW/4 OF SEC 33	2076180346392		Fshburn and Father LLC		1816 E Mojave Street	Farmington	NM	87401

Kaufman No. 1 (AP-138)

Surface Owners within a One-Mile Radius of Site

Legal Description	Parcel No.	Last Name	First Name	Prefix	Owner Address	City	State	Zip
NW CORNER OF SE/4 OF NW/4 OF SEC 33	2076180357382	Bees	Gary and Marsha		PO BOX 386	La Plata	NM	87401
NE CORNER OF SE/4 OF NW/4 OF SEC 33	2076180341379	Montoya	Sally	Ms.	2605 W Main Street SP 7	Farmington	NM	87401
NE CORNER OF SE/4 OF NW/4 OF SEC 33	2076180326364	Montoya	Sally	Ms.	2605 W Main Street SP 7	Farmington	NM	87401
NE CORNER OF SE/4 OF NW/4 OF SEC 33	2076180320334	Fowler	Brent	Mr.	PO BOX 405	La Plata	NM	87418
NE CORNER OF SE/4 OF NW/4 OF SEC 33	2076180297327	Fowler	Brent	Mr.	PO BOX 405	La Plata	NM	87418
NE CORNER OF SE/4 OF NW/4 OF SEC 33	2076180371355	Montoya	Clifford	Mr.	898 NM 170	Farmington	NM	87401
NE CORNER OF SE/4 OF NW/4 OF SEC 33	2076180350339	Montoya	Evangeline	Ms.	898 NM 170	Farmington	NM	87401
SE CORNER OF SE/4 OF NW/4 OF SEC 33	2076180332304	Ridlon	Kenneth	Mr.	16 Road 1636	Farmington	NM	87401
SE CORNER OF SE/4 OF NW/4 OF SEC 33	2076180324293	Kuchera	Jeremy and Rebecca		20 Road 1636	Farmington	NM	87401
SE CORNER OF SE/4 OF NW/4 OF SEC 33	2076180318280	Kuchera	Katherine	Ms.	605 W 24th Street	Farmington	NM	87401
SE CORNER OF SE/4 OF NW/4 OF SEC 33	2076180312269	Watson	David	Mr.	26 Road 1636	Farmington	NM	87401
NE CORNER OF NE/4 OF SW/4 OF SEC 33	2076180308254	Brice	Joe	Mr.	28 Road 1636	Farmington	NM	87401
NE CORNER OF NE/4 OF SW/4 OF SEC 33	2076180308254	Griffith	Lynett	Ms.	28 Road 1636	Farmington	NM	87401
NE CORNER OF NE/4 OF SW/4 OF SEC 33	2076180304244	Gordon	Crystal	Ms.	30 Road 1636	Farmington	NM	87401
SE CORNER OF NE/4 OF SW/4 OF SEC 33	2076180300190	Andrews	Frank and Renee		32 Road 1636	Farmington	NM	87401
NW CORNER OF NW/4 OF SW/4 OF SEC 33	2076180341212		Nickles Brothers Inc		1412 HWY 170	La Plata	NM	87418
SW CORNER OF NW/4 OF SW/4 OF SEC 33	2076180351170	Haley	Michael or Loretta		38 Road 1636	Farmington	NM	87401
SW CORNER OF NW/4 OF SW/4 OF SEC 33	2076180381180	Klitzke	Donald III and Brook		40 Road 1636	Farmington	NM	87401
SW CORNER OF NW/4 OF SW/4 OF SEC 33	2076180389206	Malone	Michael and Virginia		42 Road 1636	Farmington	NM	87401
NW CORNER OF NE/4 OF SW/4 OF SEC 33	2076180395222	Stevens	Jerry	Mr.	46 Road 1636	Farmington	NM	87401
NW CORNER OF NE/4 OF SW/4 OF SEC 33	2076180395222	McCormack	Mary	Ms.	46 Road 1636	Farmington	NM	87401
NW CORNER OF NE/4 OF SW/4 OF SEC 33	2076180401240	Benally	Chester and Elovonee		50 Road 1636	Farmington	NM	87401
NW CORNER OF NE/4 OF SW/4 OF SEC 33	2076180406257	Stockton	Jefferey and Cindy		54 Road 1636	Farmington	NM	87401
NE CORNER OF NE/4 OF SW/4 OF SEC 33	2076180351261	Perkins	Glen and Teresa		PO BOX 1091	Farmington	NM	87499
NE CORNER OF NE/4 OF SW/4 OF SEC 33	2076180346248	Lee	Ginger	Ms.	4108 Saint Michaels Dr	Farmignton	NM	87401
NE CORNER OF NE/4 OF SW/4 OF SEC 33	2076180340232	Murphy	Jennifer	Ms.	27 Road 1636	Farmington	NM	87401
NE CORNER OF NE/4 OF SW/4 OF SEC 33	2076180368231	Opperman	Christopher	Mr.	45 Road 1636	Farmington	NM	87401

Kaufman No. 1 (AP-138)

Surface Owners within a One-Mile Radius of Site

Legal Description	Parcel No.	Last Name	First Name	Prefix	Owner Address	City	State	Zip
NE CORNER OF NE/4 OF SW/4 OF SEC 33	2076180374250	Earp	Ronald and Barbara		49 Road 1636	Farmington	NM	87401
NE CORNER OF NE/4 OF SW/4 OF SEC 33	2076180381270	Vasquez	Fernando and Maria		53 Road 1636	Farmington	NM	87401
SW CORNER OF SE/4 OF NW/4 OF SEC 33	2076180388283		Desert Investments		7 Road 5795	Farmington	NM	87401
SW CORNER OF SE/4 OF NW/4 OF SEC 33	2076180365296	Fuller	Lonnie and Wendy		13 Road 1636	Farmington	NM	87401
SW CORNER OF SE/4 OF NW/4 OF SEC 33	2076180361283	Gould	Shannon	Ms.	17 Road 1636	Farmington	NM	87401
SW CORNER OF SE/4 OF NW/4 OF SEC 33	2076180355271	Buckley	Rebecca	Ms.	19 Road 1636	Farmington	NM	87401
SW CORNER OF SE/4 OF NW/4 OF SEC 33	2076180398348	Truby	Ruth	Ms.	5 Road 1636	Farmington	NM	87401
SW CORNER OF SE/4 OF NW/4 OF SEC 33	2076180386336	Truby	Ruth	Ms.	9 Road 1636	Farmington	NM	87401
SW CORNER OF SE/4 OF NW/4 OF SEC 33	2076180375328	Truby	Ruth	Ms.	62 Road 1636	Farmington	NM	87401
SE CORNER OF SW/4 OF NW/4 OF SEC 33	2076180411302	Martin	Eugene	Mr.	876 HWY 170	Farmington	NM	87401
SE CORNER OF SW/4 OF NW/4 OF SEC 33	2076180431276		P and P Properties		785 NM 170	Farmington	NM	87401
SE CORNER OF SW/4 OF NW/4 OF SEC 33	2076180456251	Asplund	Eric	Mr.	PO BOX 837	Flora Vista	NM	87415
SE CORNER OF SW/4 OF NW/4 OF SEC 33	2076180456251	Curry	Carol	Ms.	PO BOX 837	Flora Vista	NM	87415
SE CORNER OF NW/4 OF SW/4 OF SEC 33	2076180408192	Waybourn	Don and Kathy		PO BOX 326	La Plata	NM	87418
SE CORNER OF NW/4 OF SW/4 OF SEC 33	2076180440191	Waybourn	Don and Kathy		PO BOX 326	La Plata	NM	87418
SE CORNER OF NW/4 OF SW/4 OF SEC 33	2076180471150		R & R Mcgee Holding Company LI		103 Juniper Hill Road	Albuquerque	NM	87122
SW CORNER OF NW/4 OF SW/4 OF SEC 33	2076180504180	Winters	Howell and Vivian		HC62 BOX 809	Aragon	NM	87820
NW CORNER OF NW/4 OF SW/4 OF SEC 33	2076180512247	Symonds	Mathew and Joan		PO BOX 506	Farmington	NM	87499
NE CORNER OF NE/4 OF SE/4 OF SEC 32	2077180066198	Levan	William		444 Long Bow Loop	Los Lunas	NM	87031
NE CORNER OF NE/4 OF SE/4 OF SEC 32	2077180066198	McMillan	Renee		444 Long Bow Loop	Los Lunas	NM	87031
SW CORNER OF SW/4 OF NW/4 OF SEC 33	2076180479288	Symonds	Edward and Margaret		PO BOX 506	Farmington	NM	87499
SW CORNER OF SW/4 OF NW/4 OF SEC 33	2076180518275	Nelson	Raymond and Peggy		17 Road 1639	Farmington	NM	87401
SW CORNER OF SW/4 OF NW/4 OF SEC 33	2076180517300	Emmert	Richard and Kathleen		23 Road 1639	Farmington	NM	87401
SW CORNER OF SW/4 OF NW/4 OF SEC 33	2076180518324	Largent	Willie and Patricia		27 Road 1639	Farmington	NM	87401
SW CORNER OF SW/4 OF NW/4 OF SEC 33	2076180485333	Ashley	Floyd and Dylene		30 Road 1639	Farmington	NM	87401
NE CORNER OF SW/4 OF NW/4 OF SEC 33	2076180518355	Doherty	Cielo and Bryan		36 Road 1639	Farmington	NM	87401
NE CORNER OF SW/4 OF NW/4 OF SEC 33	2076180496364	Doherty	Cielo		36 Road 1639	Farmington	NM	87401

Kaufman No. 1 (AP-138)

Surface Owners within a One-Mile Radius of Site

Legal Description	Parcel No.	Last Name	First Name	Prefix	Owner Address	City	State	Zip
NE CORNER OF SW/4 OF NW/4 OF SEC 33	2076180518385	Dearen	Kenny and Shelly		37 Road 1639	Farmington	NM	87401
NE CORNER OF SW/4 OF NW/4 OF SEC 33	2076180494384	Dearen	Kenny and Shelly		37 Road 1639	Farmington	NM	87401
NE CORNER OF SW/4 OF NW/4 OF SEC 33	2076180473384	Henshaw	Christoher and Suzanne		PO BOX 5442	Famrington	NM	87401
NE CORNER OF SW/4 OF NW/4 OF SEC 33	2076180469364	Emery	Sandra	Ms.	42 Road 1639	Farmington	NM	87401
NW CORNER OF SW/4 OF NW/4 OF SEC 33	2076180451384	Johnson	Traci		45 Road 1639	Farmington	NM	87401
NW CORNER OF SW/4 OF NW/4 OF SEC 33	2076180430384	Thelen	Janet	Ms.	PO BOX 3951	Farmington	NM	87401
NW CORNER OF SW/4 OF NW/4 OF SEC 33	2076180398388	Bailey	Mary	Ms.	PO BOX 1186	Farmington	NM	87401
NW CORNER OF SW/4 OF NW/4 OF SEC 33	2076180447366	Gagnebin	James and Neva		1136 N Vine Ave	Farmington	NM	87401
NW CORNER OF SW/4 OF NW/4 OF SEC 33	2076180413364	Yazzie	David Jr and Bertha		10951 N 91st Ave #104	Peoria	AZ	85345
NW CORNER OF SW/4 OF NW/4 OF SEC 33	2076180420342	Quinn	John	Mr.	53 Road 1639	Farmington	NM	87401
NE/4 OF NW/4 OF SEC 33	2076180330476	Bailey	Marky and Louise		PO BOX 1240	Aztec	NM	87410
SW/4 OF SEC 28	2076181396066		Frame Family Trust		PO BOX 261	La Plata	NM	87418
NW/4 OF SE/4 OF SEC 28	2076185330396		Frame Family Trust		PO BOX 261	La Plata	NM	87418
SW CORNER OF SW/4 OF SE/4 OF SEC 28	2076181183063	Musgrove	Kent and Vivian		7 Road 16330	Farmington	NM	87401
SW CORNER OF SW/4 OF SE/4 OF SEC 28	2076181245017	Musgrove	Kent and Vivian		7 Road 16330	Farmington	NM	87401
SW CORNER OF SW/4 OF SE/4 OF SEC 28	2076181235040	Blaylock	Elizabeth	Ms.	9 Road 1636	Farmington	NM	87401
SW CORNER OF SW/4 OF SE/4 OF SEC 28	2076181235040	Turner	Thad	Mr.	9 Road 1636	Farmington	NM	87401
SW CORNER OF SW/4 OF SE/4 OF SEC 28	2076181210051	Blaylock	Elizabeth	Ms.	9 Road 1636	Farmington	NM	87401
SW CORNER OF SW/4 OF SE/4 OF SEC 28	2076181210051	Turner	Thad	Mr.	9 Road 1636	Farmington	NM	87401
SW CORNER OF SW/4 OF SE/4 OF SEC 28	2076181251049	Kimsey	Carol	Ms.	PO BOX 221	La Plata	NM	87418
NW CORNER OF SW/4 OF SE/4 OF SEC 28	2076181247080	Palmgren	Kevin and Andrea		13 Road 1633	Farmington	NM	87401
NW CORNER OF SW/4 OF SE/4 OF SEC 28	2076181247105	Arn	Sam and Roe		PO BOX 381	La Plata	NM	87418
NW CORNER OF SW/4 OF SE/4 OF SEC 28	2076181217118	Arn	Sam and Roe		PO BOX 381	La Plata	NM	87418
NW CORNER OF SW/4 OF SE/4 OF SEC 28	2076181214087	Haley	Stephen and Linda		10 Road 1633	Farmington	NM	87401
NE CORNER OF NE/4 OF SE/4 OF SEC 28	2076181180100	Barry	Stephen and Susan		2A Road 1633	Farmington	NM	87401
NE CORNER OF NE/4 OF SE/4 OF SEC 28	2076181193118	Spencer	Dennis and Sheryle		18 Road 1633	Farmington	NM	87401
NE CORNER OF NE/4 OF SE/4 OF SEC 28	2076181119144	Risenhoover	Edgar and Donna		665 Road 1191	La Plata	NM	87418

Kaufman No. 1 (AP-138)

Surface Owners within a One-Mile Radius of Site

Legal Description	Parcel No.	Last Name	First Name	Prefix	Owner Address	City	State	Zip
SW CORNER OF NE/4 OF SE/4 OF SEC 28	2076181080166	Rust	Brenda and Larry		670 Road 1191	La Plata	NM	87418
SW CORNER OF NE/4 OF SE/4 OF SEC 28	2076181054171	Gould	Richard	Mr.	985 NM 170	La Plata	NM	87418
SE CORNER OF NE/4 OF SE/4 OF SEC 28	2076181037196		2723 LLC		2725 Isabell Street	Golden	CO	80401
SE CORNER OF NE/4 OF SE/4 OF SEC 28	2076181031219	Bramwell	James and Sandra		PO BOX 55	Chromo	CO	81128
SE CORNER OF NE/4 OF SE/4 OF SEC 28	2076181018205	Wootton	Adelmira and Stephen		2702 Sage Ct	Farmington	NM	87401
NE CORNER OF NE/4 OF SE/4 OF SEC 28	2076181079245	Copia	Alex		1526 S Tower Pl	Chandler	AZ	85249
NE CORNER OF NE/4 OF SE/4 OF SEC 28	2076181042233		2723 LLC		2725 Isabell Street	Golden	CO	80401
NE CORNER OF NE/4 OF SE/4 OF SEC 28	2076181039245		2723 LLC		2725 Isabell Street	Golden	CO	80401
NE CORNER OF NE/4 OF SE/4 OF SEC 28	2076181038257		2723 LLC		2725 Isabell Street	Golden	CO	80401
NE CORNER OF NE/4 OF SE/4 OF SEC 28	2076181035268		2723 LLC		2725 Isabell Street	Golden	CO	80401
NE CORNER OF NE/4 OF SE/4 OF SEC 28	2076181007228	Grimes	Steven and Sharon		PO BOX 532	La Plata	NM	87418
NE CORNER OF NE/4 OF SE/4 OF SEC 28	2076181006252	Rambis	Travis	Mr.	14 Road 1499	La Plata	NM	87418
SE CORNER OF SE/4 OF NE/4 OF SEC 28	2076181038279	Noe	Todd and Jean		231 Snowmass Drive	Livermore	CO	80536
SE CORNER OF SE/4 OF NE/4 OF SEC 28	2076181041290	Gherardini	Joseph and Sandra		PO BOX 1543	Farmington	NM	87499
SE CORNER OF SE/4 OF NE/4 OF SEC 28	2076181040306		2723 LLC		2725 Isabell Street	Golden	CO	80401
SE CORNER OF SE/4 OF NE/4 OF SEC 28	2076181036330		2723 LLC		2725 Isabell Street	Golden	CO	80401
SE CORNER OF SE/4 OF NE/4 OF SEC 28	2076181003350	Holt	Brian and Anna		30 Road 1499	La Plata	NM	87418
SE CORNER OF SE/4 OF NE/4 OF SEC 28	2076181004312	Mosley	Clifford and Sharon		22 Road 1499	La Plata	NM	87418
SE CORNER OF SE/4 OF NE/4 OF SEC 28	2076181007292	Dee	Victor and Virginia		20 Road 1499	La Plata	NM	87418
SE CORNER OF SE/4 OF NE/4 OF SEC 28	2076181006274	Waters	Susan	Ms.	16 Road 1499	La Plata	NM	87418
SE CORNER OF SE/4 OF NE/4 OF SEC 28	2076181006274	Moore	Roxie	Ms.	16 Road 1499	La Plata	NM	87418
SW CORNER OF SE/4 OF NE/4 OF SEC 28	2076181081277	Deal	Amanda	Ms.	PO BOX 271	La Plata	NM	87418
SW CORNER OF SE/4 OF NE/4 OF SEC 28	2076181088302	Deal	Lonnie and Robin		PO BOX 422	La Plata	NM	87418
SW CORNER OF SE/4 OF NE/4 OF SEC 28	2076181116318	Deal	Chancy		201 W 30th Street	Farmington	NM	87401
SW CORNER OF SE/4 OF NE/4 OF SEC 28	2076181078331	Carreon	Jessica	Ms.	PO BOX 474	La Plata	NM	87418
NW CORNER OF SE/4 OF NE/4 OF SEC 28	2076181087367	Williams	Owen and Sheila		634 Road 1191	La Plata	NM	87418
NW CORNER OF SE/4 OF NE/4 OF SEC 28	2076181117392	Rusk	Jim and Elizabeth		634 Road 1191	La Plata	NM	87418

Kaufman No. 1 (AP-138)

Surface Owners within a One-Mile Radius of Site

Legal Description	Parcel No.	Last Name	First Name	Prefix	Owner Address	City	State	Zip
NE CORNER OF SE/4 OF NE/4 OF SEC 28	2076181038346		2723 LLC		2725 Isabell Street	Golden	CO	80401
NE CORNER OF SE/4 OF NE/4 OF SEC 28	2076181040357	Minnehan	Lisa	Ms.	5006 Evergreen Drive	Farmington	NM	87402
NE CORNER OF SE/4 OF NE/4 OF SEC 28	2076181041368	Yeager	Jeremiah and Rebecca		33 Road 1499	La Plata	NM	87418
NE CORNER OF SE/4 OF NE/4 OF SEC 28	2076181045383	Kuzma	Jesse		35 Road	La Plata	NM	87418
NE CORNER OF SE/4 OF NE/4 OF SEC 28	2076181034393	Waipa	Robert and Vicki		PO BOX 558	La Plata	NM	87418
NE CORNER OF SE/4 OF NE/4 OF SEC 28	2076181012393	Garrett	Cole and Heather		38 Road 1499	La Plata	NM	87418
NE CORNER OF SE/4 OF NE/4 OF SEC 28	2076181007376	Flemming	Michael and Dolores		PO BOX 210	La Plata	NM	87418
SW CORNER OF SW/4 OF NW/4 of SEC 27	2075181498333	Lusk	Kenneth and Gwen		5 Road 1497	La Plata	NM	87418
NE CORNER OF SW/4 OF NW/4 OF SEC 27	2075181522395	Brickey	Jefferey and Brnadi		20 Road 1497	La Plata	NM	87418
NE CORNER OF SW/4 OF NW/4 OF SEC 27	2075181519373	Garcia	Ruben	Mr.	22 Road 1497	La Plata	NM	87418
NE CORNER OF SW/4 OF NW/4 OF SEC 27	2075181504394	Harris	Van and Tyra		18 Road 1497	La Plata	NM	87418
NE CORNER OF SW/4 OF NW/4 OF SEC 27	2075181497372	Englert	Lawrence and Kelly		15 Road 1497	La Plata	NM	87418
NE CORNER OF SW/4 OF NW/4 OF SEC 27	2075181485394	Minnehan	Lisa	Ms.	5006 Evergreen Drive	Farmington	NM	87402
NE CORNER OF SW/4 OF NW/4 OF SEC 27	2075181477370	Lamone	Lavina		PO BOX 360	La Plata	NM	87418
NW CORNER OF SW/4 OF NW/4 OF SEC 27	2075181459369	Butt	Jeremey and Shelly		992 S 4th Ave Unit 100	Brighton	CO	80601
NW CORNER OF SW/4 OF NW/4 OF SEC 27	2075181460395	Anderson	Chad and Taffnie		4 Road 1497	La Plata	NM	87418
NW CORNER OF SW/4 OF NW/4 OF SEC 27	2075181443380	Bees	Gary and Marsha		PO BOX 215	La Plata	NM	87418
NE CORNER OF SW/4 OF SW/4 OF SEC 33	2078180198264		Mcgee Ranches LTD		767 NM 170	Farmington	NM	87401