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

State of New Mexico
Energy Minerals and Natural Resources Department

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

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

Incident ID	NRM2006560641
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: Hilcorp Energy	OGRID: 372171
Contact Name: Lindsay Dumas	Contact Telephone: 832-839-4585
Contact email: Ldumas@hilcorp.com	Incident # *(assigned by OCD)*
Contact mailing address: 1111 Travis St. Houston, TX 77002	

Location of Release Source

Latitude 36.62278 Longitude -107.37089
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: San Juan 28-5 Unit 68M	Site Type: Gas well
Date Release Discovered: 3/4/20	API# *(if applicable)* 30-039-25831

Unit Letter	Section	Township	Range	County
D	33	28N	05W	Rio Arriba

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

Nature and Volume of Release

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

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☒ Produced Water	Volume Released (bbls) 10 bbls	Volume Recovered (bbls) 0 bbls
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☒ Condensate	Volume Released (bbls) 67.79 bbls	Volume Recovered (bbls) 0 bbls
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

The release was the result of a BS&W drain valve failure. The valve failed due to ice/freezing conditions and allowed the contents of the tanks to drain out on the ground inside of the bermed area.

Form C-141
Page 2

State of New Mexico
Oil Conservation Division

Incident ID	NRM2006560641
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? ☒ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? Per 19.15.29.7 (A)(a) an unauthorized release of a volume, excluding gas, of 25 barrels or more.
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Yes, by Clayton Hamilton (HEC – Foreman) to NMOCD (Cory Smith) and BLM (Whitney Thomas and Emmanuel Adeloye) by email on 3/4/20 at 4:53 pm. Email attached.	

Initial Response

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

☒ The source of the release has been stopped.

☒ The impacted area has been secured to protect human health and the environment.

☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.

☒ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:

Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.

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

Printed Name: Lindsay Dumas Title: Environmental Specialist

Signature: Lindsay Dumas Date: 3/5/20

email: LDumas@Hilcorp.com Telephone: 832-839-4585

OCD Only

Received by: Ramona Marcus Date: 3/5/2020

NRM2006560641

Lindsay Dumas

From: Clayton Hamilton
Sent: Wednesday, March 4, 2020 4:53 PM
To: 'cory.smith@state.nm.us'; Lindsay Dumas; Brian Roth; Matthew Henderson; Lee Murphy; 'l1thomas@blm.gov'; 'aadeloye@blm.gov'; 'Vanessa.fields@state.nm.us'
Cc: Trevor Coleman
Subject: Hilcorp Release - San Juan 28-5 Unit 68M

On 03/04/2020 at 10:40AM, Hilcorp Energy discovered a release on the San Juan 28-5 Unit 68M, API# 3003925830, Lat. 36.622776 , -107.3708878, Unit D, Section 33, Township 028N, Range 005W. The release was 67.79bbls of condensate and 10bbls of produced water from the condensate production tank. The release was the result of a BS&W drain valve failure. The valve failed due to ice/freezing conditions and allowed the contents of the tank to drain out on to the ground inside of the bermed area. The release remained on location and inside the bermed area.

Hilcorp Environmental will submit an Initial C-141 within 15 days, and follow up with spill assessment.

Please let me know if there are any questions.

Clayton Hamilton
Area 13 Production Foreman
Hilcorp Energy Company – San Juan East
Office – 505-324-5137
Cell – 505-419-3455

"Looking back is a bad habit" ~Rooster Cogburn

State of New Mexico
Oil Conservation Division

Incident ID	NRM2006560641
District RP	
Facility ID	
Application ID	

Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: *Each of the following items must be included in the closure report.*

☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC

☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

☒ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Lindsay Dumas Title: Environmental Specialist

Signature: Lindsay Dumas Date: May 3, 2021

email: ldumas@hilcorp.com Telephone: 832-839-4585

OCD Only

Received by: _____ Date: _____

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: Nelson Velez Date: 01/21/2022

Printed Name: Nelson Velez Title: Environmental Specialist – Adv

January 19, 2020

New Mexico Energy, Minerals, and Natural Resources Department
New Mexico Oil Conservation Division
1000 Rio Brazos Road
Aztec, New Mexico 87410

Subject: **Site Remediation Report**
San Juan 28-5 Unit 68M
Rio Arriba County, New Mexico
NMOCD Incident Number: NRM2006560641

To Whom it May Concern:

WSP USA Inc. (WSP), formerly LT Environmental, Inc. (LTE), has prepared this *Site Remediation Report* for the San Juan 28-5 Unit 68M natural gas production well (Site) on behalf of Hilcorp Energy Company (Hilcorp). The Site is located in Unit D of Section 33, Township 28 North, Range 05 West, in Rio Arriba County, New Mexico (Figure 1). This report details the remedial excavation and confirmation sampling of petroleum-impacted soil at the Site.

SITE CHARACTERIZATION AND BACKGROUND

As outlined in the Site *Remediation Work Plan* (dated April 15, 2020), the Site is characterized according to *Table 1, Closure Criteria for Soils Impacted by a Release*, of 19.15.29.12 New Mexico Administrative Code (NMAC). The Site is approximately 470 feet northwest of an unnamed first-order tributary to Muñoz Creek and approximately 3,200 feet northeast of Muñoz Creek. Multiple first-, second-, and third-order tributaries to Muñoz Creek are located within one mile of the Site (Figure 2). The Site is greater than 200 feet from any lakebed, natural spring, sinkhole, or playa lake. The Site is also greater the 300 feet from any wetland and greater than 1,000 feet from any freshwater well or spring. The closest water well to the Site is the Magnum Well No. 1 (SJ-00036), located approximately 2,100 feet north of the Site (Figure 2). Depth to water is reported at 243 feet below ground surface (bgs) and total depth of the well is 303 feet bgs.

Geology at the Site was determined through observations during excavation of impacted soil and a review of the geologic data available for the area. Based on United States Geological Survey (USGS) geologic mapping, the Site is located within the Tertiary San Jose Formation. Near surface sediments consist mainly of sand with minor occurrences of fine-grained soils (silt and clay). Below the surface grade, compacted and lithified sandstones and claystone are the dominant lithology.

Land use surrounding the Site consists of natural gas development and livestock grazing areas. No occupied permanent residences, schools, hospitals, institutions, or churches are within 300 feet of the Site. The nearest residence is located approximately 3.5 miles northwest of the Site. The Site is not within the area of a subsurface mine or unstable area and is not within the 100-year flood plain.

SITE CLOSURE CRITERIA

Due to the Site having a depth to groundwater greater than 100 feet, the following New Mexico Oil Conservation Division (NMOCD) Table 1 Closure Criteria apply: 10 milligrams per kilogram (mg/kg) benzene; 50 mg/kg total benzene, toluene, ethylbenzene, and total xylenes (BTEX); 2,500 mg/kg total petroleum hydrocarbons (TPH); 1,000 mg/kg gasoline range organics (GRO) + diesel range organics (DRO); and 20,000 mg/kg chloride.

WSP USA
848 EAST 2ND AVENUE
DURANGO CO 81301

Tel.: 970-385-1096
wsp.com

SITE HISTORY AND REMEDIATION ACTIVITIES

On March 4, 2020, Hilcorp discovered a release of approximately 69.79 barrels (bbl) of condensate and 10 bbl of produced water at the Site. The release was a result of a drain valve failure. Specifically, the drain valve froze and allowed the contents of the tank to release onto the ground inside the bermed area, surrounding well equipment. Hilcorp notified the NMOCD and the United States Bureau of Land Management (BLM) of the release on March 4, 2020 via email. Hilcorp submitted an initial *Release Notification and Corrective Action Form C-141* to NMOCD on March 5, 2020, and the release was assigned incident number NRM2006560641.

In response to the release, Hilcorp began excavating impacted soil. The final excavation measured approximately 48 feet by 80 feet (Figure 3) and ranged in depth from 1.5 feet bgs in the shallow portion to 15 feet bgs in the deeper portion. Impacted material was identified and delineated during the remedial excavation using a photo-ionization detector (PID). The highest field-screening results observed during the excavation were approximately 3,500 parts per million of volatile organic compounds. Hilcorp ultimately removed approximately 830 cubic yards of impacted soil and stockpiled the material onsite.

Final confirmation soil sampling was completed on April 1, 2020 with the collection of a total of 18 confirmation soil samples. Confirmation sample locations were approved by the NMOCD prior to collection. Confirmation sampling was not witnessed by the NMOCD; however, the Bureau of Land Management (BLM) witnessed the collection of samples. Laboratory analytics results from the confirmation sampling indicated that all collected samples complied with NMOCD closure criteria. Confirmation soil sample results are presented in Table 1, displayed on Figure 3, and the complete laboratory analytical reports are included as Enclosure A.

The Site *Remediation Work Plan* (dated April 15, 2020) was submitted to the NMOCD and the BLM summarizing the excavation confirmation sampling and proposed remediation plan for the impacted soil. In the work plan, biopiling was recommended to remediate impacted soils excavated at the Site. The BLM subsequently approved the remediation plan, however, the NMOCD required the Site to be registered as a “small landfarm” through the NMOCD (as defined by 19.15.36.7 NMAC). Considering the amount of time since the soil had been excavated, NMOCD and BLM allowed Hilcorp to sample the stockpiled soil to assess if landfarming was still necessary at the Site. The stockpile sampling performed at the Site is further discussed below.

STOCKPILE CONFIRMATION SAMPLING

Soil removed from the remedial excavation was placed in two stockpiles (Stockpile 1, or SP1, and Stockpile 2, or SP2, shown on Figure 4) at the Site. After several phone and email conversations, Hilcorp and NMOCD agreed on a confirmation sampling plan for the two stockpiles (Enclosure B). Specifically, 5-point composite samples would be collected from the stockpiles at a frequency of one every 100 cubic yards. Assuming favorable results, the stockpiled soil could be reused as backfill of the onsite excavation.

Notice to sample the stockpiles was given to the NMOCD and BLM on November 18, 2020. WSP conducted the confirmation soil sampling on November 24, 2020. Sampling frequency was based on the size of the two stockpiles; as such, two composite samples were collected from SP1 (approximately 200 cubic yards) and seven samples were collected from SP2 (approximately 630 cubic yards). Sampling areas are shown on Figure 4. To collect representative 5-point composite samples, an excavator was used to trench into the stockpiles and expose soil at different depths within each sampling area. Because the stockpiles were approximately 8 to 10 feet tall, samples were collected from depths within the stockpile (starting at the top) of 6 inches, 2 feet, 3.5 feet, 5 feet, and 7 feet. Photographs 1 through 4 show the stockpiles and several sampling areas.

The five soil aliquots from each area were collected into a 1-gallon sealable plastic bag and thoroughly mixed. Samples were field screened for the presence of organic vapors using a PID. Each sample was then placed into a pre-cleaned jar and labeled with location, date, time, sampler, and method of analysis and immediately placed on ice. Strict chain-of-custody procedures were followed during transport of the samples to Hall Environmental Analysis Laboratory, Inc. (HEAL) in Albuquerque, New Mexico. Soil samples were submitted for laboratory analysis of BTEX by United States Environmental Protection Agency (EPA) Method 8021, TPH-GRO, TPH-DRO, and TPH-motor-oil range organics (MRO) by EPA Method 8015, and chloride by EPA method 300.0.

Based on the laboratory analytical results, all collected stockpile soil samples were below the NMOCD Table 1 Closure Criteria or were below laboratory detection limits for the listed parameters. The soil analytical results, as compared with the NMOCD Closure Criteria, are summarized in Table 2 and presented on Figure 4. The laboratory analytical reports are included as Enclosure C.

REQUEST FOR SITE CLOSURE AND PROPOSED RECLAMATION

Based on laboratory analytical results from stockpile sampling presented in this report, natural attenuation of the excavated soil has occurred and additional remediation is no longer needed. Hilcorp is formally requesting a No Further Action determination from the NMOCD for the San Juan 28-5 Unit 68M Site, NMOCD Incident Number NRM2006560641. Once granted, Hilcorp will backfill the excavation using the stockpiled soil, reclaim the well pad to its pre-release condition, and reinstall well-production equipment in its original location.

WSP appreciates the opportunity to provide this report to the NMOCD. If you have any questions or comments regarding this report, do not hesitate to contact Stuart Hyde at (970) 903-1607 or stuart.hyde@wsp.com, or Lindsay Dumas at (281) 794-9159 or ldumas@hilcorp.com.

Kind regards,

Stuart Hyde, L.G.
Environmental Geologist

Ashley Ager, M.S., P.G.
Managing Director, Geologist

Enclosed:

Figure 1: Site Location Map
Figure 2: Receptor Map
Figure 3: Excavation Soil Samples
Figure 4: Stockpile Soil Samples

Table 1: Excavation Confirmation Soil Analytical Results
Table 2: Stockpile Confirmation Soil Analytical Results

Photographic Log

Enclosure A: Excavation Analytical Laboratory Reports
Enclosure B: NMOCD Correspondence, Confirmation Sampling Approval
Enclosure C: Stockpile Analytical Laboratory Reports

FIGURES

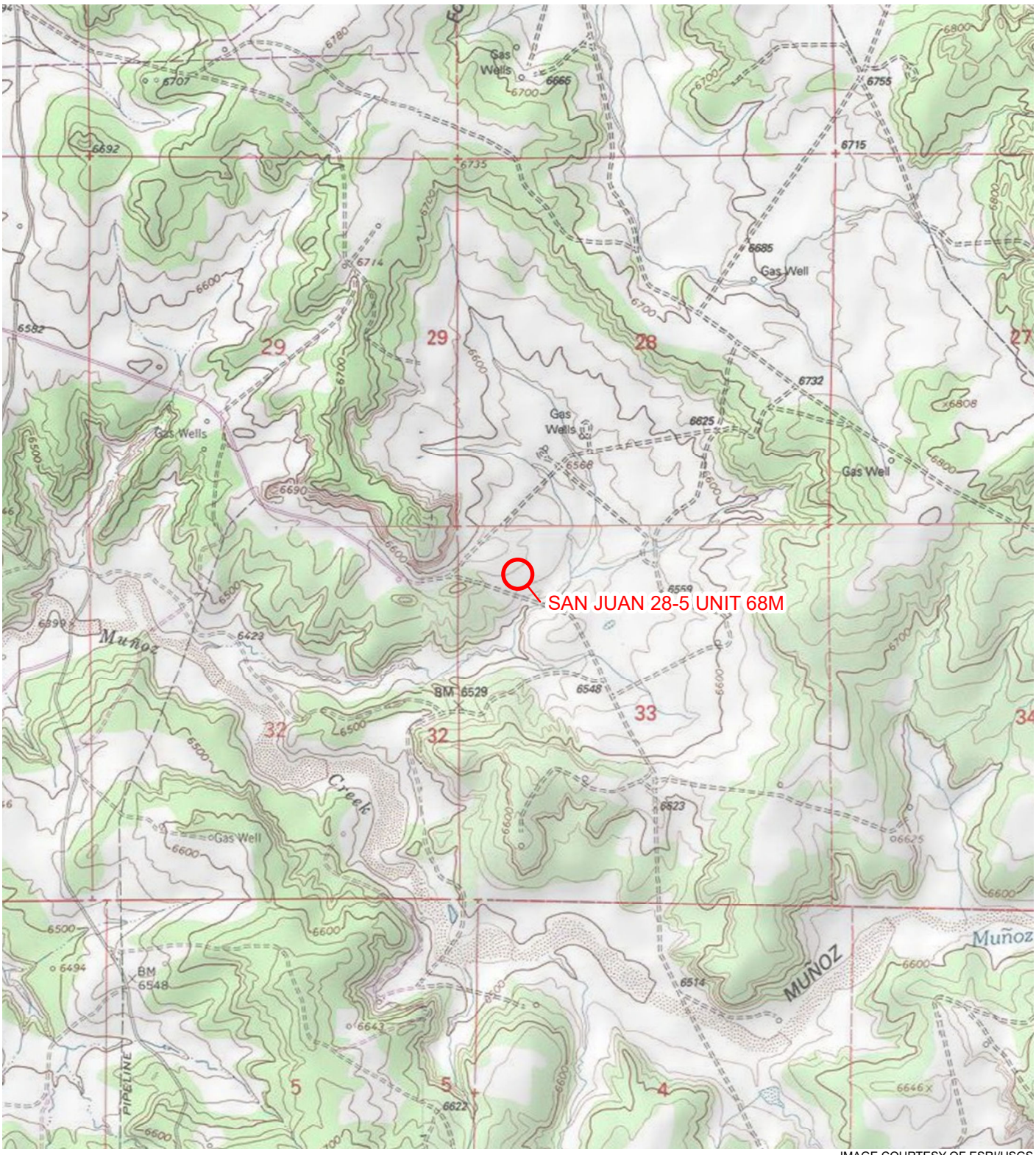

IMAGE COURTESY OF ESRI/USGS

LEGEND

SITE LOCATION

0 2,000 4,000

Feet

N

NEW MEXICO

FIGURE 1
SITE LOCATION MAP
SAN JUAN 28-5 UNIT 68M
NWNW SEC 33-T28N-R5W
RIO ARRIBA COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

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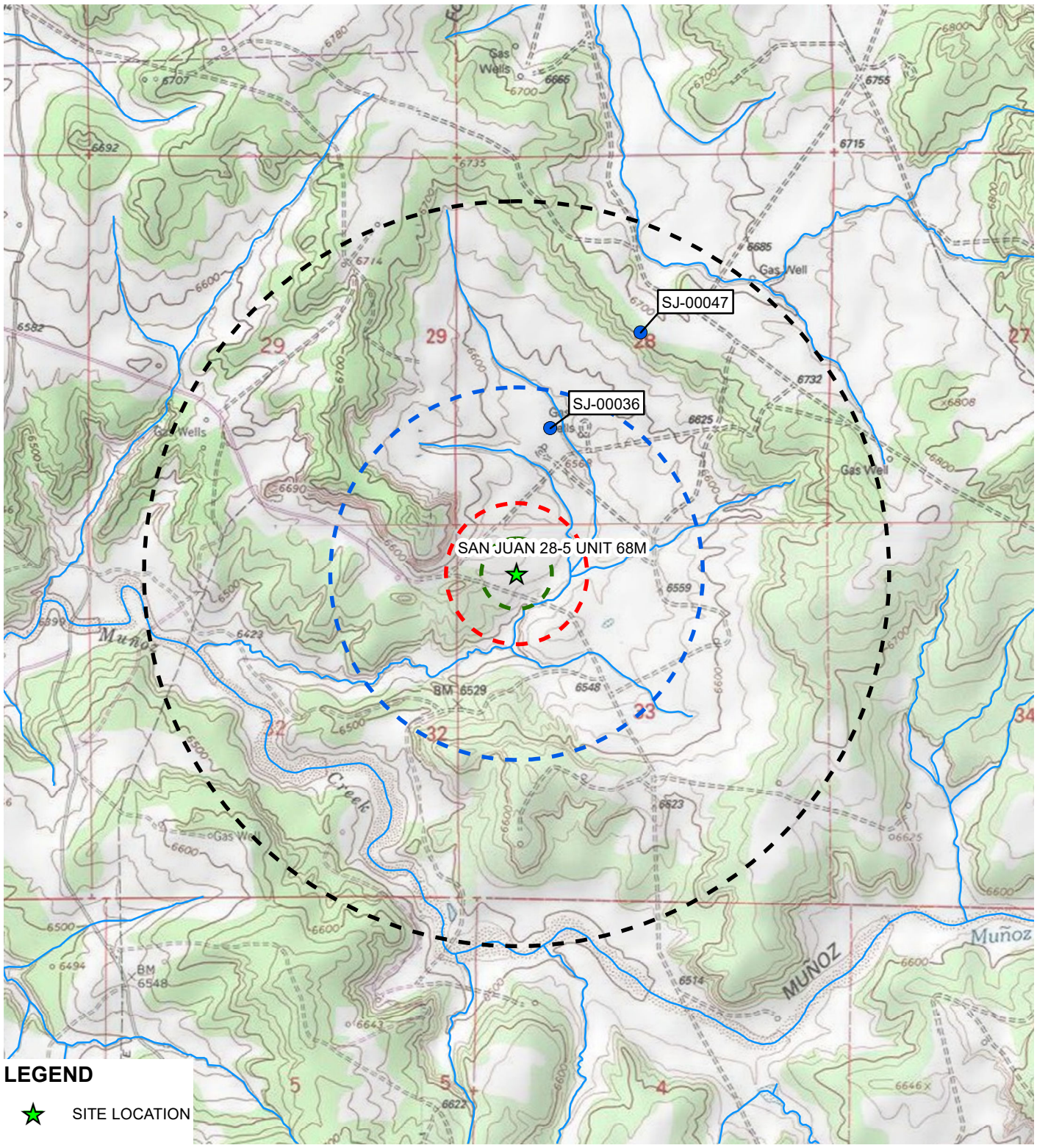


LEGEND

- SITE LOCATION
- WATER WELL
- NATIONAL HYDROGRAPHY DATASET SURFACE WATER FEATURE
- 500-FOOT RADIUS
- 1,000-FOOT RADIUS
- HALF-MILE RADIUS
- 1-MILE RADIUS

IMAGE COURTESY OF ESRI/USGS

0 2,000 4,000
Feet

N

FIGURE 2
RECEPTOR MAP
SAN JUAN 28-5 UNIT 68M
NWNW SEC 33-T28N-R5W
RIO ARRIBA COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

P:\Hilcorp\GIS\MXD\017820014_SJ 28-5 #68M\017820014_FIG02_RECEPTOR_MAP.mxd

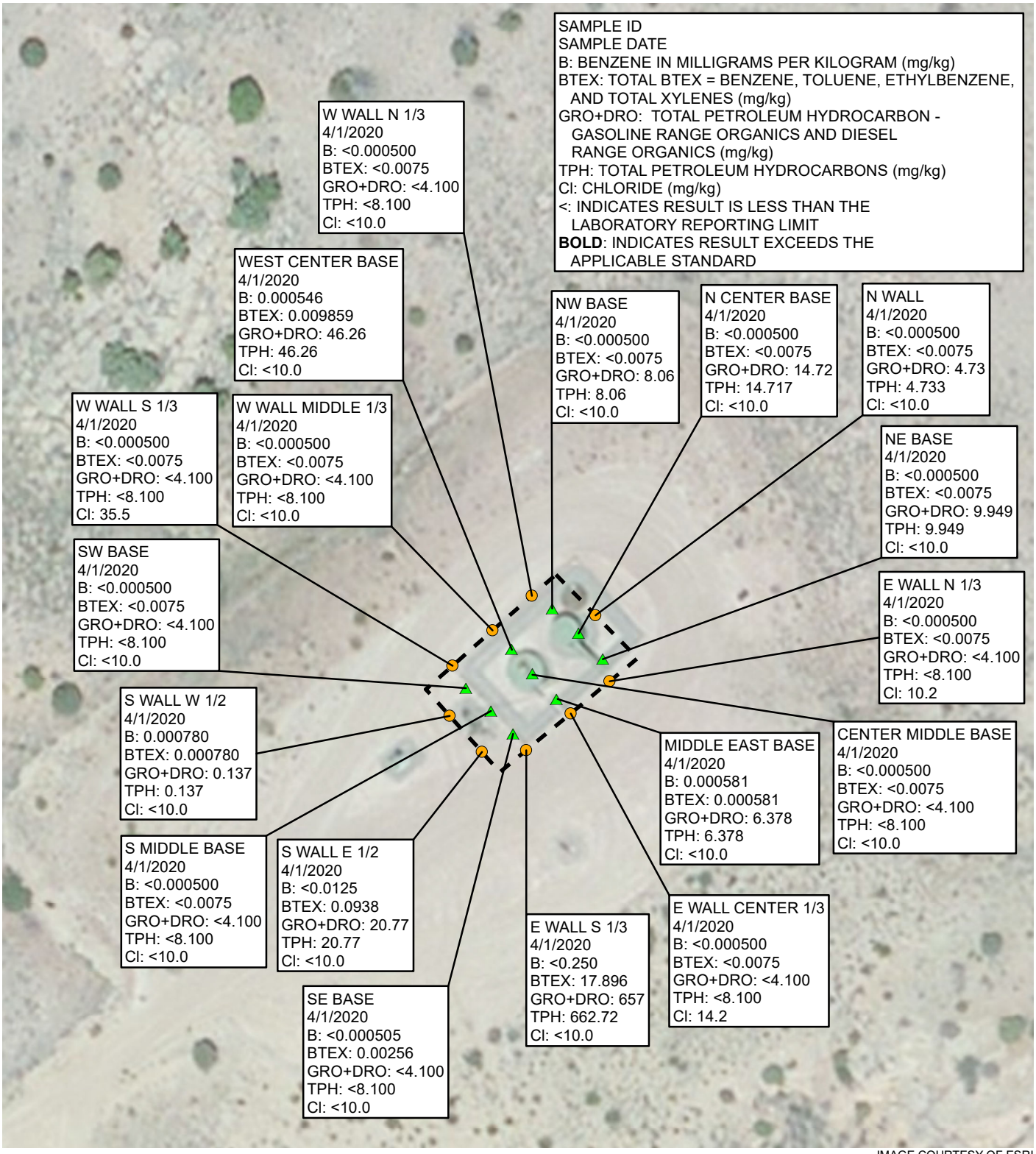


IMAGE COURTESY OF ESRI

LEGEND

- SIDEWALL SAMPLE
- FLOOR SAMPLE
- EXCAVATION EXTENT

0 60 120
Feet

N

FIGURE 3
EXCAVATION SOIL SAMPLES
SAN JUAN 28-5 UNIT 68M
NWNW SEC 33-T28N-R5W
RIO ARRIBA COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

P:\Hilcorp\GIS\MXD\017820014_SJ 28-5 #68M\017820014_FIG03_EXCAVATION_SOIL_SAMPLES.mxd

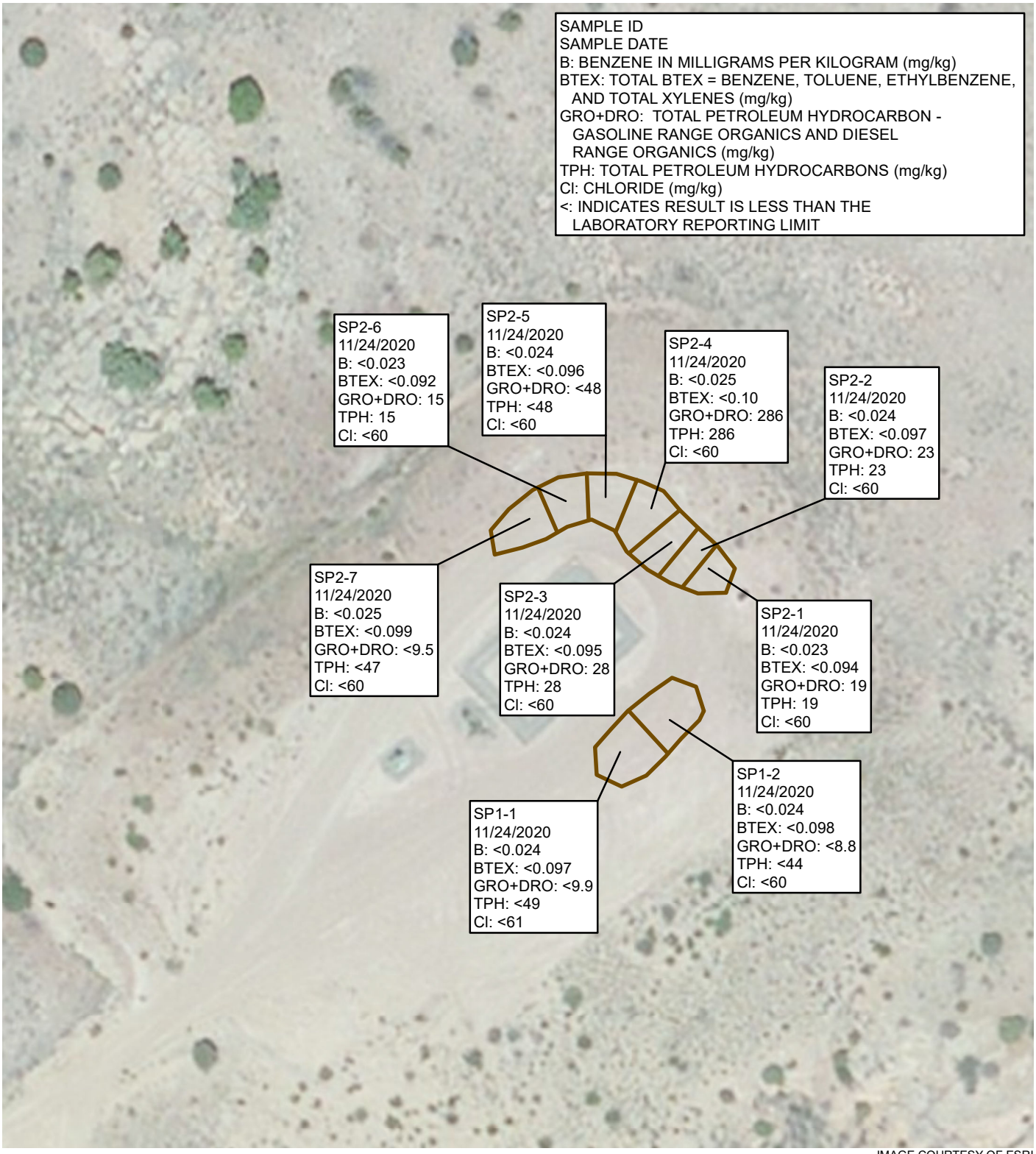


IMAGE COURTESY OF ESRI

LEGEND

SOIL STOCKPILE

0 60 120

Feet

N

FIGURE 4
STOCKPILE SOIL SAMPLES
SAN JUAN 28-5 UNIT 68M
NWNW SEC 33-T28N-R5W
RIO ARRIBA COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

P:\Hilcorp\GIS\MXD\017820014_SJ 28-5 #68M\017820014_FIG04_STOCKPILE_SOIL_SAMPLES.mxd

TABLES

TABLE 1

EXCAVATION CONFIRMATION SOIL ANALYTICAL RESULTS
SAN JUAN 28-5 UNIT 68M
RIO ARRIBA, NEW MEXICO
HILCORP ENERGY COMPANY

Sample Name	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-MRO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NW Base	4/1/2020	<0.000500	<0.00500	<0.000500	<0.00150	<0.0075	<0.100	8.06	<4.00	8.06	8.06	<10.0
N Center Base	4/1/2020	<0.000500	<0.00500	<0.000500	<0.00150	<0.0075	0.217	14.5	<4.00	14.7	14.7	<10.0
Middle East Base	4/1/2020	0.000581	<0.00500	<0.000500	<0.00150	0.000581	0.138	6.24	<4.00	6.38	6.38	<10.0
NE Base	4/1/2020	<0.000500	<0.00500	<0.000500	<0.00150	<0.0075	0.339	9.61	<4.00	9.95	9.95	<10.0
Center Middle Base	4/1/2020	<0.000500	<0.00500	<0.000500	<0.00150	<0.0075	<0.100	<4.00	<4.00	<4.100	<8.100	<10.0
West Center Base	4/1/2020	0.000546	<0.00500	0.000973	0.00834	0.00986	2.26	44.0	<4.00	46.3	46.3	<10.0
SW Base	4/1/2020	<0.000500	<0.00500	<0.000500	<0.00150	<0.0075	<0.100	<4.00	<4.00	<4.100	<8.100	<10.0
S Middle Base	4/1/2020	<0.000500	<0.00500	<0.000500	<0.00150	<0.0075	<0.100	<4.00	<4.00	<4.100	<8.100	<10.0
S Wall West 1/2	4/1/2020	0.000780	<0.00500	<0.000500	<0.00150	0.000780	0.137	<4.00	<4.00	0.137	0.137	<10.0
S Wall East 1/2	4/1/2020	<0.0125	<0.125	0.0463	0.0475	0.0938	8.27	12.5	<4.00	20.8	20.8	<10.0
W Wall S 1/3	4/1/2020	<0.000500	<0.00500	<0.000500	<0.00150	<0.0075	<0.100	<4.00	<4.00	<4.100	<8.100	35.5
W Wall Middle 1/3	4/1/2020	<0.000500	<0.00500	<0.000500	<0.00150	<0.0075	<0.100	<4.00	<4.00	<4.100	<8.100	<10.0
W Wall N 1/3	4/1/2020	<0.000500	<0.00500	<0.000500	<0.00150	<0.0075	<0.100	<4.00	<4.00	<4.100	<8.100	<10.0
N Wall	4/1/2020	<0.000500	<0.00500	<0.000500	<0.00150	<0.0075	0.113	4.62	<4.00	4.73	4.73	<10.0
E Wall N 1/3	4/1/2020	<0.000500	<0.00500	<0.000500	<0.00150	<0.0075	<0.100	<4.00	<4.00	<4.100	<8.100	10.2
E Wall Center 1/3	4/1/2020	<0.000500	<0.00500	<0.000500	<0.00150	<0.0075	<0.100	<4.00	<4.00	<4.100	<8.100	14.2
S E Base	4/1/2020	<0.000505	<0.00505	<0.000505	0.00256	0.00256	<0.101	<4.00	<4.00	<4.101	<8.101	<10.0
E Wall S 1/3	4/1/2020	<0.250	<2.5	1.00	16.9	17.9	446	211	5.72	657	663	<10.0
NMOCD Table 1 Closure Criteria		**10**	NE	NE	NE	**50**	NE	NE	NE	**1,000**	**2,500**	**20,000**

Notes:
< - indicates result is less than the stated laboratory reporting limit
BTEX - benzene, toluene, ehtylbenzene, and total xylenes
mg/kg -milligrams per kilogram
NMOCD - New Mexico Oil Conservation Division
NS - not sampled
TPH-DRO - total petroleum hydrocarbons diesel range organics
TPH-GRO - total petroleum hydrocarbons gasoline range organics
TPH-MRO - total petroleum hydrocarbons motor oil range organics

TABLE 2

STOCKPILE CONFIRMATION SOIL ANALYTICAL RESULTS
SAN JUAN 28-5 UNIT 68M
RIO ARRIBA, NEW MEXICO

Sample Name	Sample Date	PID (ppm)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-MRO (mg/kg)	Total GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
SP1-1	11/24/2020	4.6	<0.024	<0.048	<0.048	<0.097	<0.097	<4.8	<9.9	<49	<9.9	<49	<61
SP1-2	11/24/2020	2.0	<0.024	<0.049	<0.049	<0.098	<0.098	<4.9	<8.8	<44	<8.8	<44	<60
SP2-1	11/24/2020	17.8	<0.023	<0.047	<0.047	<0.094	<0.094	<4.7	19	<47	19	19	<60
SP2-2	11/24/2020	28.0	<0.024	<0.049	<0.049	<0.097	<0.097	<4.9	23	<43	23	23	<60
SP2-3	11/24/2020	8.9	<0.024	<0.047	<0.047	<0.095	<0.095	<4.7	28	<48	28	28	<60
SP2-4	11/24/2020	21.4	<0.025	<0.050	<0.050	<0.10	<0.10	220	66	<49	286	286	<60
SP2-5	11/24/2020	5.1	<0.024	<0.048	<0.048	<0.096	<0.096	<4.8	<9.6	<48	<48	<48	<60
SP2-6	11/24/2020	3.7	<0.023	<0.046	<0.046	<0.092	<0.092	<4.6	15	<46	15	15	<60
SP2-7	11/24/2020	1.5	<0.025	<0.050	<0.050	<0.099	<0.099	<5.0	<9.5	<47	<9.5	<47	<60
NMOCD Table 1 Closure Criteria			**10**	NE	NE	NE	**50**	NE	NE	NE	**1,000**	**2,500**	**20,000**

Notes:
< - indicates result is less than the stated laboratory reporting limit
BTEX - benzene, toluene, ehtylbenzene, and total xylenes
mg/kg -milligrams per kilogram
NMOCD - New Mexico Oil Conservation Division
PID - photoionization detector
ppm - parts per million
TPH-DRO - total petroleum hydrocarbons diesel range organics
TPH-GRO - total petroleum hydrocarbons gasoline range organics
TPH-MRO - total petroleum hydrocarbons motor oil range organics

PHOTOGRAPHIC LOG

PHOTOGRAPHIC LOG		
Hilcorp Energy Company	San Juan 28-5 Unit 68M Rio Arriba County, New Mexico	TE017820014

Photo No.	Date
1	November 24, 2020

View of Stockpile 1 (SP1) looking west. Stockpile 1 is approximately 200 cubic yards in volume

Photo No.	Date
2	November 24, 2020

View of Stockpile 2 (SP2) looking north. Stockpile 2 is approximately 630 cubic yards in volume

PHOTOGRAPHIC LOG		
Hilcorp Energy Company	San Juan 28-5 Unit 68M Rio Arriba County, New Mexico	TE017820014

Photo No.	Date
3	November 24, 2020

View of Stockpile 1 (SP1) looking west and sample trenches SP1-1 (far trench) and SP1-2 (near trench). An excavator was used to trench into the middle of the stockpiles and expose soil at depth to collect soil aliquots at multiple depths.

Photo No.	Date
4	November 24, 2020

View of Stockpile 2 (SP2) looking west and sample trench SP2-1.

ENCLOSURE A – EXCAVATION ANALYTICAL LABORATORY REPORTS

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

April 09, 2020

HilCorp-Farmington, NM

Sample Delivery Group:	L1205630
Samples Received:	04/03/2020
Project Number:	
Description:	San Juan 28-5 # 68M
Site:	SJ 28-5 # 68M
Report To:	Lindsay Dumas 382 Road 3100 Aztec, NM 87410

Entire Report Reviewed By:

Olivia Studebaker
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

TABLE OF CONTENTS

NW BASE L1205630-01 Solid

Collected by: K Hoekstra | Collected date/time: 04/01/20 09:50 | Received date/time: 04/03/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 300.0	WG1455695	1	04/05/20 21:05	04/05/20 23:59	MCG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1455881	1	04/04/20 09:54	04/05/20 17:44	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1457350	1	04/07/20 06:02	04/08/20 11:16	KME	Mt. Juliet, TN

N CENTER BASE L1205630-02 Solid

Collected by: K Hoekstra | Collected date/time: 04/01/20 09:52 | Received date/time: 04/03/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 300.0	WG1455695	1	04/05/20 21:05	04/06/20 00:34	MCG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1455881	1	04/04/20 09:54	04/05/20 18:06	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1457350	1	04/07/20 06:02	04/08/20 11:29	KME	Mt. Juliet, TN

MIDDLE EASE BASE L1205630-03 Solid

Collected by: K Hoekstra | Collected date/time: 04/01/20 09:53 | Received date/time: 04/03/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 300.0	WG1455695	1	04/05/20 21:05	04/06/20 00:52	MCG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1455881	1	04/04/20 09:54	04/05/20 18:53	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1457350	1	04/07/20 06:02	04/08/20 11:42	KME	Mt. Juliet, TN

NE BASE L1205630-04 Solid

Collected by: K Hoekstra | Collected date/time: 04/01/20 09:55 | Received date/time: 04/03/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 300.0	WG1455695	1	04/05/20 21:05	04/06/20 01:10	MCG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1455881	1	04/04/20 09:54	04/05/20 19:15	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1457350	1	04/07/20 06:02	04/08/20 11:55	KME	Mt. Juliet, TN

CENTER MIDDLE BASE L1205630-05 Solid

Collected by: K Hoekstra | Collected date/time: 04/01/20 09:58 | Received date/time: 04/03/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 300.0	WG1455695	1	04/05/20 21:05	04/06/20 01:28	MCG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1455881	1	04/04/20 09:54	04/05/20 19:37	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1457350	1	04/07/20 06:02	04/08/20 12:09	KME	Mt. Juliet, TN

WEST CENTER BASE L1205630-06 Solid

Collected by: K Hoekstra | Collected date/time: 04/01/20 10:02 | Received date/time: 04/03/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 300.0	WG1455695	1	04/05/20 21:05	04/06/20 01:46	MCG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1455881	1	04/04/20 09:54	04/05/20 20:00	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1457350	1	04/07/20 06:02	04/08/20 12:22	KME	Mt. Juliet, TN

SW BASE L1205630-07 Solid

Collected by: K Hoekstra | Collected date/time: 04/01/20 10:03 | Received date/time: 04/03/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 300.0	WG1455695	1	04/05/20 21:05	04/06/20 03:16	MCG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1455881	1	04/04/20 09:54	04/05/20 20:22	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1457350	1	04/07/20 06:02	04/08/20 12:35	KME	Mt. Juliet, TN

S MIDDLE BASE L1205630-08 Solid

Collected by: K Hoekstra | Collected date/time: 04/01/20 10:05 | Received date/time: 04/03/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 300.0	WG1455695	1	04/05/20 21:05	04/06/20 03:33	MCG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1455881	1	04/04/20 09:54	04/05/20 20:44	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1457350	1	04/07/20 06:02	04/08/20 12:48	KME	Mt. Juliet, TN

S WALL WEST 1/2 L1205630-09 Solid

Collected by: K Hoekstra | Collected date/time: 04/01/20 10:08 | Received date/time: 04/03/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 300.0	WG1455695	1	04/05/20 21:05	04/06/20 03:51	MCG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1455881	1	04/04/20 09:54	04/05/20 21:07	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1457350	1	04/07/20 06:02	04/08/20 13:02	KME	Mt. Juliet, TN

S WALL EAST 1/2 L1205630-10 Solid

Collected by: K Hoekstra | Collected date/time: 04/01/20 10:11 | Received date/time: 04/03/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 300.0	WG1455695	1	04/05/20 21:05	04/06/20 04:09	MCG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1456633	25	04/04/20 09:54	04/08/20 05:38	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1456867	1	04/07/20 23:41	04/08/20 18:08	FM	Mt. Juliet, TN

W WALL S 1/3 L1205630-11 Solid

Collected by: K Hoekstra | Collected date/time: 04/01/20 10:14 | Received date/time: 04/03/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 300.0	WG1455695	1	04/05/20 21:05	04/06/20 04:27	MCG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1456387	1	04/04/20 09:54	04/07/20 00:54	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1456867	1	04/07/20 23:41	04/08/20 18:21	FM	Mt. Juliet, TN

W WALL MIDDLE 1/3 L1205630-12 Solid

Collected by: K Hoekstra | Collected date/time: 04/01/20 10:16 | Received date/time: 04/03/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 300.0	WG1455695	1	04/05/20 21:05	04/06/20 04:45	MCG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1456387	1	04/04/20 09:54	04/07/20 01:15	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1456867	1	04/07/20 23:41	04/08/20 18:35	FM	Mt. Juliet, TN

W WALL N 1/3 L1205630-13 Solid

Collected by: K Hoekstra | Collected date/time: 04/01/20 10:17 | Received date/time: 04/03/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 300.0	WG1455695	1	04/05/20 21:05	04/06/20 05:03	MCG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1456387	1	04/04/20 09:54	04/07/20 01:36	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1456867	1	04/07/20 23:41	04/08/20 18:48	FM	Mt. Juliet, TN

N WALL L1205630-14 Solid

Collected by: K Hoekstra | Collected date/time: 04/01/20 10:19 | Received date/time: 04/03/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 300.0	WG1455695	1	04/05/20 21:05	04/06/20 05:21	MCG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1456387	1	04/04/20 09:54	04/07/20 01:56	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1456867	1	04/07/20 23:41	04/08/20 19:01	FM	Mt. Juliet, TN

E WALL N 1/3 L1205630-15 Solid

Collected by: K Hoekstra | Collected date/time: 04/01/20 10:21 | Received date/time: 04/03/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 300.0	WG1455695	1	04/05/20 21:05	04/06/20 05:39	MCG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1456387	1	04/04/20 09:54	04/07/20 02:17	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1456867	1	04/07/20 23:41	04/08/20 19:14	FM	Mt. Juliet, TN

E WALL CENTER 1/3 L1205630-16 Solid

Collected by: K Hoekstra | Collected date/time: 04/01/20 10:24 | Received date/time: 04/03/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 300.0	WG1456136	1	04/06/20 15:17	04/06/20 19:38	ST	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1456387	1	04/04/20 09:54	04/07/20 02:37	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1456867	1	04/07/20 23:41	04/08/20 17:28	FM	Mt. Juliet, TN

S E BASE L1205630-17 Solid

Collected by: K Hoekstra | Collected date/time: 04/01/20 10:30 | Received date/time: 04/03/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 300.0	WG1456136	1	04/06/20 15:17	04/06/20 20:15	ST	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1456387	1.01	04/04/20 09:54	04/07/20 02:57	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1456867	1	04/07/20 23:41	04/08/20 21:53	FM	Mt. Juliet, TN

E WALL S 1/3 L1205630-18 Solid

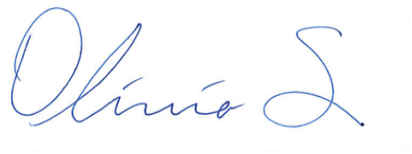
Collected by: K Hoekstra | Collected date/time: 04/01/20 10:40 | Received date/time: 04/03/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 300.0	WG1456136	1	04/06/20 15:17	04/06/20 20:34	ST	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1456387	500	04/04/20 09:54	04/07/20 03:18	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1456867	1	04/07/20 23:41	04/08/20 21:13	FM	Mt. Juliet, TN

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Olivia Studebaker
Project Manager

Wet Chemistry by Method 300.0

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chloride	ND		10.0	1	04/05/2020 23:59	WG1455695

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.000500	1	04/05/2020 17:44	WG1455881
Toluene	ND		0.00500	1	04/05/2020 17:44	WG1455881
Ethylbenzene	ND		0.000500	1	04/05/2020 17:44	WG1455881
Total Xylene	ND		0.00150	1	04/05/2020 17:44	WG1455881
TPH (GC/FID) Low Fraction	ND		0.100	1	04/05/2020 17:44	WG1455881
(S) a,a,a-Trifluorotoluene(FID)	*109*		*77.0-120*		*04/05/2020 17:44*	WG1455881
(S) a,a,a-Trifluorotoluene(PID)	*106*		*72.0-128*		*04/05/2020 17:44*	WG1455881

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	8.06		4.00	1	04/08/2020 11:16	WG1457350
C28-C40 Oil Range	ND		4.00	1	04/08/2020 11:16	WG1457350
(S) o-Terphenyl	*58.3*		*18.0-148*		*04/08/2020 11:16*	WG1457350

Wet Chemistry by Method 300.0

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chloride	ND		10.0	1	04/06/2020 00:34	WG1455695

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.000500	1	04/05/2020 18:06	WG1455881
Toluene	ND		0.00500	1	04/05/2020 18:06	WG1455881
Ethylbenzene	ND		0.000500	1	04/05/2020 18:06	WG1455881
Total Xylene	ND		0.00150	1	04/05/2020 18:06	WG1455881
TPH (GC/FID) Low Fraction	0.217	B	0.100	1	04/05/2020 18:06	WG1455881
(S) a,a,a-Trifluorotoluene(FID)	*110*		*77.0-120*		*04/05/2020 18:06*	WG1455881
(S) a,a,a-Trifluorotoluene(PID)	*106*		*72.0-128*		*04/05/2020 18:06*	WG1455881

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	14.5		4.00	1	04/08/2020 11:29	WG1457350
C28-C40 Oil Range	ND		4.00	1	04/08/2020 11:29	WG1457350
(S) o-Terphenyl	*56.8*		*18.0-148*		*04/08/2020 11:29*	WG1457350

Wet Chemistry by Method 300.0

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chloride	ND		10.0	1	04/06/2020 00:52	WG1455695

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.000581		0.000500	1	04/05/2020 18:53	WG1455881
Toluene	ND		0.00500	1	04/05/2020 18:53	WG1455881
Ethylbenzene	ND		0.000500	1	04/05/2020 18:53	WG1455881
Total Xylene	ND		0.00150	1	04/05/2020 18:53	WG1455881
TPH (GC/FID) Low Fraction	0.138	B	0.100	1	04/05/2020 18:53	WG1455881
(S) a,a,a-Trifluorotoluene(FID)	*109*		*77.0-120*		*04/05/2020 18:53*	WG1455881
(S) a,a,a-Trifluorotoluene(PID)	*105*		*72.0-128*		*04/05/2020 18:53*	WG1455881

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	6.24		4.00	1	04/08/2020 11:42	WG1457350
C28-C40 Oil Range	ND		4.00	1	04/08/2020 11:42	WG1457350
(S) o-Terphenyl	*60.1*		*18.0-148*		*04/08/2020 11:42*	WG1457350

Wet Chemistry by Method 300.0

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chloride	ND		10.0	1	04/06/2020 01:10	WG1455695

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.000500	1	04/05/2020 19:15	WG1455881
Toluene	ND		0.00500	1	04/05/2020 19:15	WG1455881
Ethylbenzene	ND		0.000500	1	04/05/2020 19:15	WG1455881
Total Xylene	ND		0.00150	1	04/05/2020 19:15	WG1455881
TPH (GC/FID) Low Fraction	0.339	B	0.100	1	04/05/2020 19:15	WG1455881
(S) a,a,a-Trifluorotoluene(FID)	*110*		*77.0-120*		*04/05/2020 19:15*	WG1455881
(S) a,a,a-Trifluorotoluene(PID)	*105*		*72.0-128*		*04/05/2020 19:15*	WG1455881

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	9.61		4.00	1	04/08/2020 11:55	WG1457350
C28-C40 Oil Range	ND		4.00	1	04/08/2020 11:55	WG1457350
(S) o-Terphenyl	*55.1*		*18.0-148*		*04/08/2020 11:55*	WG1457350

Wet Chemistry by Method 300.0

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chloride	ND		10.0	1	04/06/2020 01:28	WG1455695

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.000500	1	04/05/2020 19:37	WG1455881
Toluene	ND		0.00500	1	04/05/2020 19:37	WG1455881
Ethylbenzene	ND		0.000500	1	04/05/2020 19:37	WG1455881
Total Xylene	ND		0.00150	1	04/05/2020 19:37	WG1455881
TPH (GC/FID) Low Fraction	ND		0.100	1	04/05/2020 19:37	WG1455881
(S) a,a,a-Trifluorotoluene(FID)	*111*		*77.0-120*		*04/05/2020 19:37*	WG1455881
(S) a,a,a-Trifluorotoluene(PID)	*105*		*72.0-128*		*04/05/2020 19:37*	WG1455881

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	ND		4.00	1	04/08/2020 12:09	WG1457350
C28-C40 Oil Range	ND		4.00	1	04/08/2020 12:09	WG1457350
(S) o-Terphenyl	*40.9*		*18.0-148*		*04/08/2020 12:09*	WG1457350

Wet Chemistry by Method 300.0

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chloride	ND		10.0	1	04/06/2020 01:46	WG1455695

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.000546		0.000500	1	04/05/2020 20:00	WG1455881
Toluene	ND		0.00500	1	04/05/2020 20:00	WG1455881
Ethylbenzene	0.000973		0.000500	1	04/05/2020 20:00	WG1455881
Total Xylene	0.00834		0.00150	1	04/05/2020 20:00	WG1455881
TPH (GC/FID) Low Fraction	2.26		0.100	1	04/05/2020 20:00	WG1455881
(S) a,a,a-Trifluorotoluene(FID)	*109*		*77.0-120*		*04/05/2020 20:00*	WG1455881
(S) a,a,a-Trifluorotoluene(PID)	*106*		*72.0-128*		*04/05/2020 20:00*	WG1455881

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	44.0		4.00	1	04/08/2020 12:22	WG1457350
C28-C40 Oil Range	ND		4.00	1	04/08/2020 12:22	WG1457350
(S) o-Terphenyl	*55.8*		*18.0-148*		*04/08/2020 12:22*	WG1457350

Wet Chemistry by Method 300.0

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chloride	ND		10.0	1	04/06/2020 03:16	WG1455695

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.000500	1	04/05/2020 20:22	WG1455881
Toluene	ND		0.00500	1	04/05/2020 20:22	WG1455881
Ethylbenzene	ND		0.000500	1	04/05/2020 20:22	WG1455881
Total Xylene	ND		0.00150	1	04/05/2020 20:22	WG1455881
TPH (GC/FID) Low Fraction	ND		0.100	1	04/05/2020 20:22	WG1455881
(S) a,a,a-Trifluorotoluene(FID)	*110*		*77.0-120*		*04/05/2020 20:22*	WG1455881
(S) a,a,a-Trifluorotoluene(PID)	*103*		*72.0-128*		*04/05/2020 20:22*	WG1455881

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	ND		4.00	1	04/08/2020 12:35	WG1457350
C28-C40 Oil Range	ND		4.00	1	04/08/2020 12:35	WG1457350
(S) o-Terphenyl	*61.5*		*18.0-148*		*04/08/2020 12:35*	WG1457350

Wet Chemistry by Method 300.0

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chloride	ND		10.0	1	04/06/2020 03:33	WG1455695

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.000500	1	04/05/2020 20:44	WG1455881
Toluene	ND		0.00500	1	04/05/2020 20:44	WG1455881
Ethylbenzene	ND		0.000500	1	04/05/2020 20:44	WG1455881
Total Xylene	ND		0.00150	1	04/05/2020 20:44	WG1455881
TPH (GC/FID) Low Fraction	ND		0.100	1	04/05/2020 20:44	WG1455881
(S) a,a,a-Trifluorotoluene(FID)	*111*		*77.0-120*		*04/05/2020 20:44*	WG1455881
(S) a,a,a-Trifluorotoluene(PID)	*105*		*72.0-128*		*04/05/2020 20:44*	WG1455881

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	ND		4.00	1	04/08/2020 12:48	WG1457350
C28-C40 Oil Range	ND		4.00	1	04/08/2020 12:48	WG1457350
(S) o-Terphenyl	*66.4*		*18.0-148*		*04/08/2020 12:48*	WG1457350

Wet Chemistry by Method 300.0

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chloride	ND		10.0	1	04/06/2020 03:51	WG1455695

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.000780		0.000500	1	04/05/2020 21:07	WG1455881
Toluene	ND		0.00500	1	04/05/2020 21:07	WG1455881
Ethylbenzene	ND		0.000500	1	04/05/2020 21:07	WG1455881
Total Xylene	ND		0.00150	1	04/05/2020 21:07	WG1455881
TPH (GC/FID) Low Fraction	0.137	B	0.100	1	04/05/2020 21:07	WG1455881
(S) a,a,a-Trifluorotoluene(FID)	*110*		*77.0-120*		*04/05/2020 21:07*	WG1455881
(S) a,a,a-Trifluorotoluene(PID)	*105*		*72.0-128*		*04/05/2020 21:07*	WG1455881

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	ND		4.00	1	04/08/2020 13:02	WG1457350
C28-C40 Oil Range	ND		4.00	1	04/08/2020 13:02	WG1457350
(S) o-Terphenyl	*64.2*		*18.0-148*		*04/08/2020 13:02*	WG1457350

Wet Chemistry by Method 300.0

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chloride	ND		10.0	1	04/06/2020 04:09	WG1455695

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.0125	25	04/08/2020 05:38	WG1456633
Toluene	ND		0.125	25	04/08/2020 05:38	WG1456633
Ethylbenzene	0.0463		0.0125	25	04/08/2020 05:38	WG1456633
Total Xylene	0.0475		0.0375	25	04/08/2020 05:38	WG1456633
TPH (GC/FID) Low Fraction	8.27		2.50	25	04/08/2020 05:38	WG1456633
(S) a,a,a-Trifluorotoluene(FID)	*102*		*77.0-120*		*04/08/2020 05:38*	WG1456633
(S) a,a,a-Trifluorotoluene(PID)	*106*		*72.0-128*		*04/08/2020 05:38*	WG1456633

Sample Narrative:

L1205630-10 WG1456633: Elevated RL due to sample matrix.

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	12.5		4.00	1	04/08/2020 18:08	WG1456867
C28-C40 Oil Range	ND		4.00	1	04/08/2020 18:08	WG1456867
(S) o-Terphenyl	*58.3*		*18.0-148*		*04/08/2020 18:08*	WG1456867

Wet Chemistry by Method 300.0

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chloride	35.5		10.0	1	04/06/2020 04:27	WG1455695

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.000500	1	04/07/2020 00:54	WG1456387
Toluene	ND		0.00500	1	04/07/2020 00:54	WG1456387
Ethylbenzene	ND		0.000500	1	04/07/2020 00:54	WG1456387
Total Xylene	ND		0.00150	1	04/07/2020 00:54	WG1456387
TPH (GC/FID) Low Fraction	ND		0.100	1	04/07/2020 00:54	WG1456387
(S) a,a,a-Trifluorotoluene(FID)	*99.1*		*77.0-120*		*04/07/2020 00:54*	WG1456387
(S) a,a,a-Trifluorotoluene(PID)	*104*		*72.0-128*		*04/07/2020 00:54*	WG1456387

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	ND		4.00	1	04/08/2020 18:21	WG1456867
C28-C40 Oil Range	ND		4.00	1	04/08/2020 18:21	WG1456867
(S) o-Terphenyl	*66.2*		*18.0-148*		*04/08/2020 18:21*	WG1456867

Wet Chemistry by Method 300.0

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chloride	ND		10.0	1	04/06/2020 04:45	WG1455695

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.000500	1	04/07/2020 01:15	WG1456387
Toluene	ND		0.00500	1	04/07/2020 01:15	WG1456387
Ethylbenzene	ND		0.000500	1	04/07/2020 01:15	WG1456387
Total Xylene	ND		0.00150	1	04/07/2020 01:15	WG1456387
TPH (GC/FID) Low Fraction	ND		0.100	1	04/07/2020 01:15	WG1456387
(S) a,a,a-Trifluorotoluene(FID)	*96.2*		*77.0-120*		*04/07/2020 01:15*	WG1456387
(S) a,a,a-Trifluorotoluene(PID)	*104*		*72.0-128*		*04/07/2020 01:15*	WG1456387

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	ND		4.00	1	04/08/2020 18:35	WG1456867
C28-C40 Oil Range	ND		4.00	1	04/08/2020 18:35	WG1456867
(S) o-Terphenyl	*51.5*		*18.0-148*		*04/08/2020 18:35*	WG1456867

Wet Chemistry by Method 300.0

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chloride	ND		10.0	1	04/06/2020 05:03	WG1455695

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.000500	1	04/07/2020 01:36	WG1456387
Toluene	ND		0.00500	1	04/07/2020 01:36	WG1456387
Ethylbenzene	ND		0.000500	1	04/07/2020 01:36	WG1456387
Total Xylene	ND		0.00150	1	04/07/2020 01:36	WG1456387
TPH (GC/FID) Low Fraction	ND		0.100	1	04/07/2020 01:36	WG1456387
(S) a,a,a-Trifluorotoluene(FID)	*96.1*		*77.0-120*		*04/07/2020 01:36*	WG1456387
(S) a,a,a-Trifluorotoluene(PID)	*108*		*72.0-128*		*04/07/2020 01:36*	WG1456387

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	ND		4.00	1	04/08/2020 18:48	WG1456867
C28-C40 Oil Range	ND		4.00	1	04/08/2020 18:48	WG1456867
(S) o-Terphenyl	*46.7*		*18.0-148*		*04/08/2020 18:48*	WG1456867

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Wet Chemistry by Method 300.0

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chloride	ND		10.0	1	04/06/2020 05:21	WG1455695

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.000500	1	04/07/2020 01:56	WG1456387
Toluene	ND		0.00500	1	04/07/2020 01:56	WG1456387
Ethylbenzene	ND		0.000500	1	04/07/2020 01:56	WG1456387
Total Xylene	ND		0.00150	1	04/07/2020 01:56	WG1456387
TPH (GC/FID) Low Fraction	0.113	B	0.100	1	04/07/2020 01:56	WG1456387
(S) a,a,a-Trifluorotoluene(FID)	*95.7*		*77.0-120*		*04/07/2020 01:56*	WG1456387
(S) a,a,a-Trifluorotoluene(PID)	*104*		*72.0-128*		*04/07/2020 01:56*	WG1456387

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	4.62		4.00	1	04/08/2020 19:01	WG1456867
C28-C40 Oil Range	ND		4.00	1	04/08/2020 19:01	WG1456867
(S) o-Terphenyl	*62.9*		*18.0-148*		*04/08/2020 19:01*	WG1456867

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Wet Chemistry by Method 300.0

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chloride	10.2	B	10.0	1	04/06/2020 05:39	WG1455695

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.000500	1	04/07/2020 02:17	WG1456387
Toluene	ND		0.00500	1	04/07/2020 02:17	WG1456387
Ethylbenzene	ND		0.000500	1	04/07/2020 02:17	WG1456387
Total Xylene	ND		0.00150	1	04/07/2020 02:17	WG1456387
TPH (GC/FID) Low Fraction	ND		0.100	1	04/07/2020 02:17	WG1456387
(S) a,a,a-Trifluorotoluene(FID)	*95.9*		*77.0-120*		*04/07/2020 02:17*	WG1456387
(S) a,a,a-Trifluorotoluene(PID)	*107*		*72.0-128*		*04/07/2020 02:17*	WG1456387

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	ND		4.00	1	04/08/2020 19:14	WG1456867
C28-C40 Oil Range	ND		4.00	1	04/08/2020 19:14	WG1456867
(S) o-Terphenyl	*62.5*		*18.0-148*		*04/08/2020 19:14*	WG1456867

Wet Chemistry by Method 300.0

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chloride	14.2	B	10.0	1	04/06/2020 19:38	WG1456136

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.000500	1	04/07/2020 02:37	WG1456387
Toluene	ND		0.00500	1	04/07/2020 02:37	WG1456387
Ethylbenzene	ND		0.000500	1	04/07/2020 02:37	WG1456387
Total Xylene	ND		0.00150	1	04/07/2020 02:37	WG1456387
TPH (GC/FID) Low Fraction	ND		0.100	1	04/07/2020 02:37	WG1456387
(S) a,a,a-Trifluorotoluene(FID)	*96.1*		*77.0-120*		*04/07/2020 02:37*	WG1456387
(S) a,a,a-Trifluorotoluene(PID)	*104*		*72.0-128*		*04/07/2020 02:37*	WG1456387

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	ND		4.00	1	04/08/2020 17:28	WG1456867
C28-C40 Oil Range	ND		4.00	1	04/08/2020 17:28	WG1456867
(S) o-Terphenyl	*60.4*		*18.0-148*		*04/08/2020 17:28*	WG1456867

Wet Chemistry by Method 300.0

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chloride	ND		10.0	1	04/06/2020 20:15	WG1456136

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.000505	1.01	04/07/2020 02:57	WG1456387
Toluene	ND		0.00505	1.01	04/07/2020 02:57	WG1456387
Ethylbenzene	ND		0.000505	1.01	04/07/2020 02:57	WG1456387
Total Xylene	0.00256		0.00152	1.01	04/07/2020 02:57	WG1456387
TPH (GC/FID) Low Fraction	ND		0.101	1.01	04/07/2020 02:57	WG1456387
(S) a,a,a-Trifluorotoluene(FID)	*95.5*		*77.0-120*		*04/07/2020 02:57*	WG1456387
(S) a,a,a-Trifluorotoluene(PID)	*104*		*72.0-128*		*04/07/2020 02:57*	WG1456387

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	37.9		4.00	1	04/08/2020 21:53	WG1456867
C28-C40 Oil Range	105		4.00	1	04/08/2020 21:53	WG1456867
(S) o-Terphenyl	*59.3*		*18.0-148*		*04/08/2020 21:53*	WG1456867

Wet Chemistry by Method 300.0

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chloride	ND		10.0	1	04/06/2020 20:34	WG1456136

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.250	500	04/07/2020 03:18	WG1456387
Toluene	ND		2.50	500	04/07/2020 03:18	WG1456387
Ethylbenzene	0.996		0.250	500	04/07/2020 03:18	WG1456387
Total Xylene	16.9		0.750	500	04/07/2020 03:18	WG1456387
TPH (GC/FID) Low Fraction	446		50.0	500	04/07/2020 03:18	WG1456387
(S) a,a,a-Trifluorotoluene(FID)	*96.5*		*77.0-120*		*04/07/2020 03:18*	WG1456387
(S) a,a,a-Trifluorotoluene(PID)	*104*		*72.0-128*		*04/07/2020 03:18*	WG1456387

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	211		4.00	1	04/08/2020 21:13	WG1456867
C28-C40 Oil Range	5.72		4.00	1	04/08/2020 21:13	WG1456867
(S) o-Terphenyl	*63.0*		*18.0-148*		*04/08/2020 21:13*	WG1456867

Method Blank (MB)

(MB) R3515763-1 04/05/20 22:54

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Chloride	1.13	J	0.795	10.0

L1205630-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1205630-01 04/05/20 23:59 • (DUP) R3515763-3 04/06/20 00:16

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	ND	0.824	1	0.000		20

L1205804-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1205804-03 04/06/20 07:08 • (DUP) R3515763-6 04/06/20 07:26

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	218	228	1	4.50		20

Laboratory Control Sample (LCS)

(LCS) R3515763-2 04/05/20 23:12

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	200	207	103	90.0-110	

L1205630-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1205630-06 04/06/20 01:46 • (MS) R3515763-4 04/06/20 02:04 • (MSD) R3515763-5 04/06/20 02:58

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	500	ND	510	503	102	100	1	80.0-120			1.38	20

Method Blank (MB)

(MB) R3516088-1 04/06/20 17:46

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Chloride	1.49	J	0.795	10.0

L1205630-16 Original Sample (OS) • Duplicate (DUP)

(OS) L1205630-16 04/06/20 19:38 • (DUP) R3516088-3 04/06/20 19:57

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	14.2	17.2	1	18.8		20

L1205826-61 Original Sample (OS) • Duplicate (DUP)

(OS) L1205826-61 04/06/20 23:56 • (DUP) R3516088-6 04/07/20 00:15

Analyte	Original Result (dry) mg/kg	DUP Result (dry) mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	107	94.3	1	13.0		20

Laboratory Control Sample (LCS)

(LCS) R3516088-2 04/06/20 18:04

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	200	197	98.4	90.0-110	

L1205788-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1205788-04 04/06/20 21:10 • (MS) R3516088-4 04/06/20 21:29 • (MSD) R3516088-5 04/06/20 21:47

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	500	21.1	495	521	94.9	100	1	80.0-120			5.06	20

Method Blank (MB)

(MB) R3515766-3 04/05/20 11:56

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000120	0.000500
Toluene	U		0.000150	0.00500
Ethylbenzene	U		0.000110	0.000500
Total Xylene	U		0.000460	0.00150
TPH (GC/FID) Low Fraction	0.0535	J	0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*110*			*77.0-120*
(S) a,a,a-Trifluorotoluene(PID)	*107*			*72.0-128*

Laboratory Control Sample (LCS)

(LCS) R3515766-1 04/05/20 09:49

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.0500	0.0542	108	76.0-121	
Toluene	0.0500	0.0559	112	80.0-120	
Ethylbenzene	0.0500	0.0568	114	80.0-124	
Total Xylene	0.150	0.157	105	37.0-160	
(S) a,a,a-Trifluorotoluene(FID)			*110*	*77.0-120*	
(S) a,a,a-Trifluorotoluene(PID)			*106*	*72.0-128*	

Laboratory Control Sample (LCS)

(LCS) R3515766-2 04/05/20 10:55

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	6.32	115	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*114*	*77.0-120*	
(S) a,a,a-Trifluorotoluene(PID)			*113*	*72.0-128*	

Method Blank (MB)

(MB) R3516169-3 04/06/20 20:14

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000120	0.000500
Toluene	0.000230	J	0.000150	0.00500
Ethylbenzene	U		0.000110	0.000500
Total Xylene	U		0.000460	0.00150
TPH (GC/FID) Low Fraction	0.0268	J	0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*101*			*77.0-120*
(S) a,a,a-Trifluorotoluene(PID)	*106*			*72.0-128*

Laboratory Control Sample (LCS)

(LCS) R3516169-1 04/06/20 19:13

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.0500	0.0506	101	76.0-121	
Toluene	0.0500	0.0443	88.6	80.0-120	
Ethylbenzene	0.0500	0.0481	96.2	80.0-124	
Total Xylene	0.150	0.135	90.0	37.0-160	
(S) a,a,a-Trifluorotoluene(FID)			*96.2*	*77.0-120*	
(S) a,a,a-Trifluorotoluene(PID)			*90.9*	*72.0-128*	

Laboratory Control Sample (LCS)

(LCS) R3516169-2 04/06/20 19:33

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.36	97.5	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*109*	*77.0-120*	
(S) a,a,a-Trifluorotoluene(PID)			*119*	*72.0-128*	

L1205630-18 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1205630-18 04/07/20 03:18 • (MS) R3516169-4 04/07/20 03:59 • (MSD) R3516169-5 04/07/20 04:19

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	25.0	ND	26.2	27.4	105	110	500	10.0-155			4.48	32
Toluene	25.0	ND	22.5	23.5	88.4	92.4	500	10.0-160			4.35	34
Ethylbenzene	25.0	0.996	24.3	25.6	93.2	98.4	500	10.0-160			5.21	32
Total Xylene	75.0	16.9	82.9	86.4	88.0	92.7	500	10.0-160			4.13	32
(S) a,a,a-Trifluorotoluene(FID)					*95.8*	*95.7*		*77.0-120*				
(S) a,a,a-Trifluorotoluene(PID)					*89.6*	*89.9*		*72.0-128*				

L1205630-18 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1205630-18 04/07/20 03:18 • (MS) R3516169-6 04/07/20 04:40 • (MSD) R3516169-7 04/07/20 05:00

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	2750	446	2860	3080	87.8	95.8	500	10.0-151			7.41	28
(S) a,a,a-Trifluorotoluene(FID)					*106*	*109*		*77.0-120*				
(S) a,a,a-Trifluorotoluene(PID)					*119*	*120*		*72.0-128*				

Method Blank (MB)

(MB) R3516549-3 04/07/20 23:02

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000120	0.000500
Toluene	0.000282	J	0.000150	0.00500
Ethylbenzene	U		0.000110	0.000500
Total Xylene	U		0.000460	0.00150
TPH (GC/FID) Low Fraction	0.0308	J	0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*97.0*			*77.0-120*
(S) a,a,a-Trifluorotoluene(PID)	*106*			*72.0-128*

Laboratory Control Sample (LCS)

(LCS) R3516549-1 04/07/20 22:00

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.0500	0.0510	102	76.0-121	
Toluene	0.0500	0.0458	91.6	80.0-120	
Ethylbenzene	0.0500	0.0498	99.6	80.0-124	
Total Xylene	0.150	0.135	90.0	37.0-160	
(S) a,a,a-Trifluorotoluene(FID)			*96.6*	*77.0-120*	
(S) a,a,a-Trifluorotoluene(PID)			*88.7*	*72.0-128*	

Laboratory Control Sample (LCS)

(LCS) R3516549-2 04/07/20 22:21

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.10	92.7	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*108*	*77.0-120*	
(S) a,a,a-Trifluorotoluene(PID)			*119*	*72.0-128*	

Method Blank (MB)

(MB) R3516909-1 04/08/20 17:02

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C40 Oil Range	U		0.274	4.00
(S) o-Terphenyl	*67.7*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3516909-2 04/08/20 17:15

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	32.5	65.0	50.0-150	
(S) o-Terphenyl			*63.8*	*18.0-148*	

L1205630-16 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1205630-16 04/08/20 17:28 • (MS) R3516909-3 04/08/20 17:42 • (MSD) R3516909-4 04/08/20 17:55

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	50.0	ND	37.0	33.7	74.0	67.4	1	50.0-150			9.34	20
(S) o-Terphenyl					*63.8*	*56.2*		*18.0-148*				

Method Blank (MB)

(MB) R3516735-1 04/08/20 10:49

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C40 Oil Range	0.592	J	0.274	4.00
(S) o-Terphenyl	*69.4*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3516735-2 04/08/20 11:02

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	41.5	83.0	50.0-150	
(S) o-Terphenyl			*77.2*	*18.0-148*	

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.

ACCREDITATIONS & LOCATIONS

ONE LAB. NATIONWIDE.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

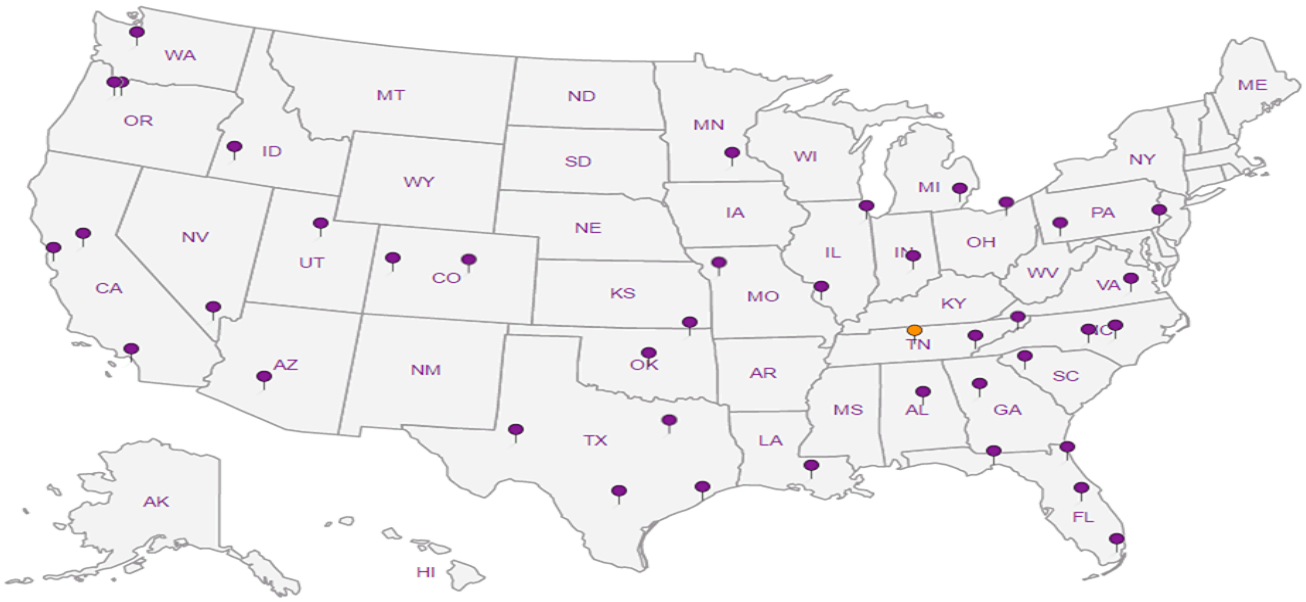
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



ACCOUNT:	PROJECT:	SDG:	DATE/TIME:	PAGE:
HilCorp-Farmington, NM		L1205630	04/09/20 16:07	34 of 36

Billing Information: ATTN: Lindsay Dumas

Pres Chk

Report to: Lindsay Dumas

Email To: ldumas@hilcorp.com; kboekstra@hilcorp.com

Project Description: San Juan 28-5 # 68M

City/State Collected: Aztec, NM

Phone: 281-794-9159

Fax:

Client Project #

Lab Project #

Collected by (print): K Hoekstra

Site/Facility ID # SJ 28-5 # 68M

P.O. #

Collected by (signature): Kurt Hoekstra

Immediately Packed on Ice N ____ Y X

Rush? (Lab MUST Be Notified)
____ Same Day X Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day

Quote #

Date Results Needed

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	TPH - 8015 - DRO, GRO, MRO	BTEX 8021	Chloride 300.0	Remarks	Sample # (lab only)
NW Base	Comp	SS		4-1-20	9:50	1	X	X	X		-01
N Center Base	Comp	SS		4-1-20	9:52	1	X	X	X		-02
Middle East Base	Comp	SS		4-1-20	9:53	1	X	X	X		-03
NE Base	Comp	SS		4-1-20	9:55	1	X	X	X		-04
Center Middle Base	Comp	SS		4-1-20	9:58	1	X	X	X		-05
West Center Base	Comp	SS		4-1-20	10:02	1	X	X	X		-06
SW Base	Comp	SS		4-1-20	10:03	1	X	X	X		-07
S Middle Base	Comp	SS		4-1-20	10:05	1	X	X	X		-08
S Wall West 1/2	Comp	SS		4-1-20	10:08	1	X	X	X		-09
S Wall East 1/2	Comp	SS		4-1-20	10:11	1	X	X	X		-10

Analysis / Container / Preservative

Chain of Custody Page ___ of ___

Pace Analytical® National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L # 1205630

J011

Acctnum: HILCORANM

Template:

Prelogin:

TSR:

PB:

Shipped Via:

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N

Samples returned via:
__ UPS __ FedEx __ Courier __ _____

Tracking #

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Kurt Hoekstra	4-2-20	9:30	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Trip Blank Received: Yes / (No) HCL / MeoH TBR

Temp: 1.2 °C Bottles Received: 18

1.2-.1=1.1

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Date: 4-3 Time: 0831

Billing Information: **ATTN: Lindsay Dumas**

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page ___ of ___

Pace Analytical® National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L # 1205630

Table #

Acctnum: HILCORANM

Template:

Prelogin:

TSR:

PB:

Shipped Via:

Report to: **Lindsay Dumas**

Email To: **ldumas@hilcorp.com; kboekstra@hilcorp.com**

Project Description: **San Juan 28-5 # 68M**

City/State Collected: **Aztec, NM**

Phone: **281-794-9159**
Fax:

Client Project #

Lab Project #

Collected by (print): **K Hoekstra**

Site/Facility ID # **SJ 28-5 # 68M**

P.O. #

Collected by (signature): Kurt Hoekstra

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day X Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	TPH - 8015 - DRO, GRO, MRO	BTEX 8021	Chloride 300.0	Remarks	Sample # (lab only)
W Wall S 1/3	Comp	SS		4-1-20	10:14	1	X	X	X		-11
W Wall Middle 1/3	Comp	SS		4-1-20	10:16	1	X	X	X		-12
W Wall N 1/3	Comp	SS		4-1-20	10:17	1	X	X	X		-13
N Wall	Comp	SS		4-1-20	10:19	1	X	X	X		-14
E Wall N 1/3	Comp	SS		4-1-20	10:21	1	X	X	X		-15
E Wall Center 1/3	Comp	SS		4-1-20	10:24	1	X	X	X		-16
S E Base	Comp	SS		4-1-20	10:30	1	X	X	X		-17
E Wall S 1/3	Comp	SS		4-1-20	10:40	1	X	X	X		-18

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Sample Receipt Checklist
COC Seal Present/Intact: NP ___Y ___N
COC Signed/Accurate: ___Y ___N
Bottles arrive intact: ___Y ___N
Correct bottles used: ___Y ___N
Sufficient volume sent: ___Y ___N
If Applicable
VOA Zero Headspace: ___Y ___N
Preservation Correct/Checked: ___Y ___N

Samples returned via: ___ UPS ___ FedEx ___ Courier ___ _____

Tracking #

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	If preservation required by Login: Date/Time
Kurt Hoekstra	4-2-20	9:30			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: Huy AG °C 1.2-.1=1.1 Bottles Received:	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) IS	Date: 4-3 Time: 0830	Hold: Condition: NCF / OK

ENCLOSURE B – NMOCD CORRESPONDENCE, CONFIRMATION SAMPLING APPROVAL

From: Smith, Cory, EMNRD
To: Hyde, Stuart; aadeloye@blm.gov
Cc: Lindsay Dumas
Subject: RE: Notice to Sample Soil Stockpile - San Juan 28-5 #68M, NRM2006560641
Date: Tuesday, November 24, 2020 10:08:15 AM
Attachments: image001.png

Stuart,

Typically we need some type of sampling plan on how your going to collect the samples. OCD is ok with 1 5pt sample per 100 cubic yards. At least 3 of the aliquots need to come from within the stock piles from varying depths.

In addition if the piles are not clearly separated then they need to be physically marked via flags or survey sticks etc.. If the piles are not completely separated and a pile fails the operator will have to remove 2' into each adjacent pile regardless of that piles results.

Please take photos of the sampling event and send them to me after completion thank you.

Cory Smith • Environmental Specialist
Environmental Bureau
EMNRD - Oil Conservation Division
1000 Rio Brazos | Aztec, NM 87410
505.334.6178 x115 | Cory.Smith@state.nm.us
http://www.emnrd.state.nm.us/OCD/

From: Hyde, Stuart <Stuart.Hyde@wsp.com>
Sent: Wednesday, November 18, 2020 3:39 PM
To: aadeloye@blm.gov
Cc: Lindsay Dumas <ldumas@hilcorp.com>; Smith, Cory, EMNRD <Cory.Smith@state.nm.us>
Subject: [EXT] FW: Notice to Sample Soil Stockpile - San Juan 28-5 #68M, NRM2006560641

Emmanuel,

On behalf of Hilcorp Energy Company, WSP is providing notice to perform confirmation/closure soil sampling of the stockpile at the San Juan 28-5 #68M site (NMOCD Incident No. N NRM2006560641) on Tuesday November 24, 2020 at 12:30 p.m. MDT. Per Hilcorp's phone conversation with the NMOCD, representative 5-point composite samples will be collected from the stockpile at a rate of 1 per 100 cubic yards. In total, the stockpiles contain approximately 830 cubic yards of soil; therefore, 9 composite samples will be collected during this work.

Please feel free to call or email with any questions or comments. Thanks and have a great day.

Stuart Hyde, L.G.
Environmental Geologist
Please note the new email address.

T+ 1 970-385-1096
M+ 1 970-903-1607

WSP USA
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ENCLOSURE C – STOCKPILE ANALYTICAL LABORATORY REPORTS

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

December 03, 2020

Lindsay Dumas

Hilcorp Energy
PO Box 61529
Houston, TX 77208-1529
TEL: (337) 276-7676
FAX:

RE: SJ 28 5 68M OrderNo.: 2011C42

Dear Lindsay Dumas:

Hall Environmental Analysis Laboratory received 9 sample(s) on 11/25/2020 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 **2011C42**
Date Reported: **12/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Hilcorp Energy
Client Sample ID: SP1-1
Project: SJ 28 5 68M
Collection Date: 11/24/2020 1:25:00 PM
Lab ID: 2011C42-001 **Matrix:** SOIL **Received Date:** 11/25/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	ND	61		mg/Kg	20	11/29/2020 2:03:29 AM	56679
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/29/2020 12:02:13 AM	56661
Surr: BFB	97.6	70-130		%Rec	1	11/29/2020 12:02:13 AM	56661
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	11/28/2020 12:44:39 PM	56662
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/28/2020 12:44:39 PM	56662
Surr: DNOP	103	30.4-154		%Rec	1	11/28/2020 12:44:39 PM	56662
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**	
Benzene	ND	0.024		mg/Kg	1	11/29/2020 12:02:13 AM	56661
Toluene	ND	0.048		mg/Kg	1	11/29/2020 12:02:13 AM	56661
Ethylbenzene	ND	0.048		mg/Kg	1	11/29/2020 12:02:13 AM	56661
Xylenes, Total	ND	0.097		mg/Kg	1	11/29/2020 12:02:13 AM	56661
Surr: 1,2-Dichloroethane-d4	92.7	70-130		%Rec	1	11/29/2020 12:02:13 AM	56661
Surr: 4-Bromofluorobenzene	100	70-130		%Rec	1	11/29/2020 12:02:13 AM	56661
Surr: Dibromofluoromethane	110	70-130		%Rec	1	11/29/2020 12:02:13 AM	56661
Surr: Toluene-d8	94.8	70-130		%Rec	1	11/29/2020 12:02:13 AM	56661

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		

Analytical Report
Lab Order **2011C42**
Date Reported: **12/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Hilcorp Energy
Client Sample ID: SP1-2
Project: SJ 28 5 68M
Collection Date: 11/24/2020 1:27:00 PM
Lab ID: 2011C42-002 **Matrix:** SOIL **Received Date:** 11/25/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	ND	60		mg/Kg	20	11/29/2020 2:15:54 AM	56679
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/29/2020 12:29:17 AM	56661
Surr: BFB	97.2	70-130		%Rec	1	11/29/2020 12:29:17 AM	56661
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	8.8		mg/Kg	1	11/28/2020 12:54:25 PM	56662
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	11/28/2020 12:54:25 PM	56662
Surr: DNOP	103	30.4-154		%Rec	1	11/28/2020 12:54:25 PM	56662
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**	
Benzene	ND	0.024		mg/Kg	1	11/29/2020 12:29:17 AM	56661
Toluene	ND	0.049		mg/Kg	1	11/29/2020 12:29:17 AM	56661
Ethylbenzene	ND	0.049		mg/Kg	1	11/29/2020 12:29:17 AM	56661
Xylenes, Total	ND	0.098		mg/Kg	1	11/29/2020 12:29:17 AM	56661
Surr: 1,2-Dichloroethane-d4	94.5	70-130		%Rec	1	11/29/2020 12:29:17 AM	56661
Surr: 4-Bromofluorobenzene	100	70-130		%Rec	1	11/29/2020 12:29:17 AM	56661
Surr: Dibromofluoromethane	109	70-130		%Rec	1	11/29/2020 12:29:17 AM	56661
Surr: Toluene-d8	93.2	70-130		%Rec	1	11/29/2020 12:29:17 AM	56661

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		

Analytical Report
Lab Order **2011C42**
Date Reported: **12/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Hilcorp Energy
Client Sample ID: SP2-1
Project: SJ 28 5 68M
Collection Date: 11/24/2020 1:30:00 PM
Lab ID: 2011C42-003 **Matrix:** SOIL **Received Date:** 11/25/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	ND	60		mg/Kg	20	11/29/2020 2:28:18 AM	56679
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/29/2020 12:56:20 AM	56661
Surr: BFB	96.1	70-130		%Rec	1	11/29/2020 12:56:20 AM	56661
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	19	9.4		mg/Kg	1	11/28/2020 1:04:08 PM	56662
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	11/28/2020 1:04:08 PM	56662
Surr: DNOP	102	30.4-154		%Rec	1	11/28/2020 1:04:08 PM	56662
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**	
Benzene	ND	0.023		mg/Kg	1	11/29/2020 12:56:20 AM	56661
Toluene	ND	0.047		mg/Kg	1	11/29/2020 12:56:20 AM	56661
Ethylbenzene	ND	0.047		mg/Kg	1	11/29/2020 12:56:20 AM	56661
Xylenes, Total	ND	0.094		mg/Kg	1	11/29/2020 12:56:20 AM	56661
Surr: 1,2-Dichloroethane-d4	93.6	70-130		%Rec	1	11/29/2020 12:56:20 AM	56661
Surr: 4-Bromofluorobenzene	99.0	70-130		%Rec	1	11/29/2020 12:56:20 AM	56661
Surr: Dibromofluoromethane	107	70-130		%Rec	1	11/29/2020 12:56:20 AM	56661
Surr: Toluene-d8	92.8	70-130		%Rec	1	11/29/2020 12:56:20 AM	56661

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		

Analytical Report
Lab Order **2011C42**
Date Reported: **12/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Hilcorp Energy
Client Sample ID: SP2-2
Project: SJ 28 5 68M
Collection Date: 11/24/2020 1:33:00 PM
Lab ID: 2011C42-004 **Matrix:** SOIL **Received Date:** 11/25/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	ND	60		mg/Kg	20	11/29/2020 2:40:42 AM	56679
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/29/2020 1:23:22 AM	56661
Surr: BFB	97.6	70-130		%Rec	1	11/29/2020 1:23:22 AM	56661
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	23	8.6		mg/Kg	1	11/28/2020 1:13:51 PM	56662
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	11/28/2020 1:13:51 PM	56662
Surr: DNOP	102	30.4-154		%Rec	1	11/28/2020 1:13:51 PM	56662
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**	
Benzene	ND	0.024		mg/Kg	1	11/29/2020 1:23:22 AM	56661
Toluene	ND	0.049		mg/Kg	1	11/29/2020 1:23:22 AM	56661
Ethylbenzene	ND	0.049		mg/Kg	1	11/29/2020 1:23:22 AM	56661
Xylenes, Total	ND	0.097		mg/Kg	1	11/29/2020 1:23:22 AM	56661
Surr: 1,2-Dichloroethane-d4	95.2	70-130		%Rec	1	11/29/2020 1:23:22 AM	56661
Surr: 4-Bromofluorobenzene	97.2	70-130		%Rec	1	11/29/2020 1:23:22 AM	56661
Surr: Dibromofluoromethane	109	70-130		%Rec	1	11/29/2020 1:23:22 AM	56661
Surr: Toluene-d8	94.4	70-130		%Rec	1	11/29/2020 1:23:22 AM	56661

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		

Analytical Report
Lab Order **2011C42**
Date Reported: **12/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Hilcorp Energy
Client Sample ID: SP2-3
Project: SJ 28 5 68M
Collection Date: 11/24/2020 1:35:00 PM
Lab ID: 2011C42-005 **Matrix:** SOIL **Received Date:** 11/25/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	ND	60		mg/Kg	20	11/29/2020 2:53:06 AM	56679
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/28/2020 12:51:30 PM	56663
Surr: BFB	113	70-130		%Rec	1	11/28/2020 12:51:30 PM	56663
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	28	9.7		mg/Kg	1	11/30/2020 10:24:55 AM	56680
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/30/2020 10:24:55 AM	56680
Surr: DNOP	78.1	30.4-154		%Rec	1	11/30/2020 10:24:55 AM	56680
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**	
Benzene	ND	0.024		mg/Kg	1	11/28/2020 12:51:30 PM	56663
Toluene	ND	0.047		mg/Kg	1	11/28/2020 12:51:30 PM	56663
Ethylbenzene	ND	0.047		mg/Kg	1	11/28/2020 12:51:30 PM	56663
Xylenes, Total	ND	0.095		mg/Kg	1	11/28/2020 12:51:30 PM	56663
Surr: 1,2-Dichloroethane-d4	103	70-130		%Rec	1	11/28/2020 12:51:30 PM	56663
Surr: 4-Bromofluorobenzene	94.7	70-130		%Rec	1	11/28/2020 12:51:30 PM	56663
Surr: Dibromofluoromethane	110	70-130		%Rec	1	11/28/2020 12:51:30 PM	56663
Surr: Toluene-d8	91.7	70-130		%Rec	1	11/28/2020 12:51:30 PM	56663

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		

Analytical Report
Lab Order **2011C42**
Date Reported: **12/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Hilcorp Energy
Client Sample ID: SP2-4
Project: SJ 28 5 68M
Collection Date: 11/24/2020 1:40:00 PM
Lab ID: 2011C42-006 **Matrix:** SOIL **Received Date:** 11/25/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	ND	60		mg/Kg	20	11/29/2020 3:05:31 AM	56679
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**	
Gasoline Range Organics (GRO)	220	5.0		mg/Kg	1	11/28/2020 2:17:13 PM	56663
Surr: BFB	142	70-130	S	%Rec	1	11/28/2020 2:17:13 PM	56663
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	66	9.8		mg/Kg	1	11/30/2020 10:34:18 AM	56680
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/30/2020 10:34:18 AM	56680
Surr: DNOP	82.8	30.4-154		%Rec	1	11/30/2020 10:34:18 AM	56680
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**	
Benzene	ND	0.025		mg/Kg	1	11/28/2020 2:17:13 PM	56663
Toluene	ND	0.050		mg/Kg	1	11/28/2020 2:17:13 PM	56663
Ethylbenzene	ND	0.050		mg/Kg	1	11/28/2020 2:17:13 PM	56663
Xylenes, Total	ND	0.10		mg/Kg	1	11/28/2020 2:17:13 PM	56663
Surr: 1,2-Dichloroethane-d4	113	70-130		%Rec	1	11/28/2020 2:17:13 PM	56663
Surr: 4-Bromofluorobenzene	124	70-130		%Rec	1	11/28/2020 2:17:13 PM	56663
Surr: Dibromofluoromethane	115	70-130		%Rec	1	11/28/2020 2:17:13 PM	56663
Surr: Toluene-d8	89.1	70-130		%Rec	1	11/28/2020 2:17:13 PM	56663

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		

Analytical Report
Lab Order **2011C42**
Date Reported: **12/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Hilcorp Energy
Client Sample ID: SP2-5
Project: SJ 28 5 68M
Collection Date: 11/24/2020 1:43:00 PM
Lab ID: 2011C42-007 **Matrix:** SOIL **Received Date:** 11/25/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	ND	60		mg/Kg	20	11/29/2020 3:17:56 AM	56679
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/28/2020 3:42:54 PM	56663
Surr: BFB	104	70-130		%Rec	1	11/28/2020 3:42:54 PM	56663
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	11/30/2020 10:43:41 AM	56680
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/30/2020 10:43:41 AM	56680
Surr: DNOP	88.5	30.4-154		%Rec	1	11/30/2020 10:43:41 AM	56680
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**	
Benzene	ND	0.024		mg/Kg	1	11/28/2020 3:42:54 PM	56663
Toluene	ND	0.048		mg/Kg	1	11/28/2020 3:42:54 PM	56663
Ethylbenzene	ND	0.048		mg/Kg	1	11/28/2020 3:42:54 PM	56663
Xylenes, Total	ND	0.096		mg/Kg	1	11/28/2020 3:42:54 PM	56663
Surr: 1,2-Dichloroethane-d4	104	70-130		%Rec	1	11/28/2020 3:42:54 PM	56663
Surr: 4-Bromofluorobenzene	97.3	70-130		%Rec	1	11/28/2020 3:42:54 PM	56663
Surr: Dibromofluoromethane	112	70-130		%Rec	1	11/28/2020 3:42:54 PM	56663
Surr: Toluene-d8	91.7	70-130		%Rec	1	11/28/2020 3:42:54 PM	56663

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		

Analytical Report
Lab Order **2011C42**
Date Reported: **12/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Hilcorp Energy
Client Sample ID: SP2-6
Project: SJ 28 5 68M
Collection Date: 11/24/2020 1:45:00 PM
Lab ID: 2011C42-008 **Matrix:** SOIL **Received Date:** 11/25/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	ND	60		mg/Kg	20	11/29/2020 3:30:21 AM	56679
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	11/28/2020 4:11:18 PM	56663
Surr: BFB	109	70-130		%Rec	1	11/28/2020 4:11:18 PM	56663
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	15	9.3		mg/Kg	1	11/30/2020 10:53:07 AM	56680
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	11/30/2020 10:53:07 AM	56680
Surr: DNOP	86.9	30.4-154		%Rec	1	11/30/2020 10:53:07 AM	56680
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**	
Benzene	ND	0.023		mg/Kg	1	11/28/2020 4:11:18 PM	56663
Toluene	ND	0.046		mg/Kg	1	11/28/2020 4:11:18 PM	56663
Ethylbenzene	ND	0.046		mg/Kg	1	11/28/2020 4:11:18 PM	56663
Xylenes, Total	ND	0.092		mg/Kg	1	11/28/2020 4:11:18 PM	56663
Surr: 1,2-Dichloroethane-d4	109	70-130		%Rec	1	11/28/2020 4:11:18 PM	56663
Surr: 4-Bromofluorobenzene	98.3	70-130		%Rec	1	11/28/2020 4:11:18 PM	56663
Surr: Dibromofluoromethane	114	70-130		%Rec	1	11/28/2020 4:11:18 PM	56663
Surr: Toluene-d8	91.5	70-130		%Rec	1	11/28/2020 4:11:18 PM	56663

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		

Analytical Report
Lab Order **2011C42**
Date Reported: **12/3/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Hilcorp Energy
Client Sample ID: SP2-7
Project: SJ 28 5 68M
Collection Date: 11/24/2020 1:49:00 PM
Lab ID: 2011C42-009 **Matrix:** SOIL **Received Date:** 11/25/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	ND	60		mg/Kg	20	11/30/2020 10:16:52 PM	56714
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/28/2020 4:39:54 PM	56663
Surr: BFB	103	70-130		%Rec	1	11/28/2020 4:39:54 PM	56663
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	12/1/2020 11:34:45 AM	56713
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	12/1/2020 11:34:45 AM	56713
Surr: DNOP	106	30.4-154		%Rec	1	12/1/2020 11:34:45 AM	56713
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**	
Benzene	ND	0.025		mg/Kg	1	11/28/2020 4:39:54 PM	56663
Toluene	ND	0.050		mg/Kg	1	11/28/2020 4:39:54 PM	56663
Ethylbenzene	ND	0.050		mg/Kg	1	11/28/2020 4:39:54 PM	56663
Xylenes, Total	ND	0.099		mg/Kg	1	11/28/2020 4:39:54 PM	56663
Surr: 1,2-Dichloroethane-d4	102	70-130		%Rec	1	11/28/2020 4:39:54 PM	56663
Surr: 4-Bromofluorobenzene	95.3	70-130		%Rec	1	11/28/2020 4:39:54 PM	56663
Surr: Dibromofluoromethane	114	70-130		%Rec	1	11/28/2020 4:39:54 PM	56663
Surr: Toluene-d8	94.0	70-130		%Rec	1	11/28/2020 4:39:54 PM	56663

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#: **2011C42**
03-Dec-20

Client: Hilcorp Energy
Project: SJ 28 5 68M

Sample ID: **MB-56679** SampType: **MBLK** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS** Batch ID: **56679** RunNo: **73657**
Prep Date: **11/28/2020** Analysis Date: **11/28/2020** SeqNo: **2596167** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-56679** SampType: **LCS** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS** Batch ID: **56679** RunNo: **73657**
Prep Date: **11/28/2020** Analysis Date: **11/28/2020** SeqNo: **2596168** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	90.7	90	110			

Sample ID: **MB-56714** SampType: **MBLK** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS** Batch ID: **56714** RunNo: **73666**
Prep Date: **11/30/2020** Analysis Date: **11/30/2020** SeqNo: **2596732** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-56714** SampType: **LCS** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS** Batch ID: **56714** RunNo: **73666**
Prep Date: **11/30/2020** Analysis Date: **11/30/2020** SeqNo: **2596733** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.1	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical 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#: **2011C42**
03-Dec-20

Client: Hilcorp Energy
Project: SJ 28 5 68M

Sample ID: **LCS-56662**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **56662**	RunNo: **73643**
Prep Date: **11/25/2020**	Analysis Date: **11/28/2020**	SeqNo: **2595549** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	10	50.00	0	96.9	70	130			
Surr: DNOP	5.0		5.000		101	30.4	154			

Sample ID: **MB-56662**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **56662**	RunNo: **73643**
Prep Date: **11/25/2020**	Analysis Date: **11/28/2020**	SeqNo: **2595551** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.6		10.00		96.5	30.4	154			

Sample ID: **LCS-56680**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **56680**	RunNo: **73679**
Prep Date: **11/28/2020**	Analysis Date: **11/30/2020**	SeqNo: **2596910** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	50	10	50.00	0	99.5	70	130			
Surr: DNOP	5.3		5.000		107	30.4	154			

Sample ID: **MB-56680**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **56680**	RunNo: **73679**
Prep Date: **11/28/2020**	Analysis Date: **11/30/2020**	SeqNo: **2596914** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.9		10.00		98.9	30.4	154			

Sample ID: **2011C42-009AMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **SP2-7**	Batch ID: **56713**	RunNo: **73695**
Prep Date: **11/30/2020**	Analysis Date: **12/1/2020**	SeqNo: **2597960** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	50	9.9	49.31	0	102	15	184			
Surr: DNOP	5.5		4.931		111	30.4	154			

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#: **2011C42**
03-Dec-20

Client: Hilcorp Energy
Project: SJ 28 5 68M

Sample ID: **2011C42-009AMSD** SampType: **MSD** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **SP2-7** Batch ID: **56713** RunNo: **73695**
Prep Date: **11/30/2020** Analysis Date: **12/1/2020** SeqNo: **2597962** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	49	9.8	49.12	0	99.8	15	184	2.22	23.9	
Surr: DNOP	5.3		4.912		109	30.4	154	0	0	

Sample ID: **LCS-56713** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **56713** RunNo: **73695**
Prep Date: **11/30/2020** Analysis Date: **12/1/2020** SeqNo: **2598000** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	61	10	50.00	0	121	70	130			
Surr: DNOP	6.5		5.000		130	30.4	154			

Sample ID: **MB-56713** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **56713** RunNo: **73695**
Prep Date: **11/30/2020** Analysis Date: **12/1/2020** SeqNo: **2598002** 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	12		10.00		120	30.4	154			

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#: **2011C42**
03-Dec-20

Client: Hilcorp Energy
Project: SJ 28 5 68M

Sample ID: **mb-56661** SampType: **MBLK** TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **PBS** Batch ID: **56661** RunNo: **73634**
Prep Date: **11/25/2020** Analysis Date: **11/28/2020** SeqNo: **2595086** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 1,2-Dichloroethane-d4	0.47		0.5000		94.8	70	130			
Surr: 4-Bromofluorobenzene	0.51		0.5000		102	70	130			
Surr: Dibromofluoromethane	0.54		0.5000		109	70	130			
Surr: Toluene-d8	0.48		0.5000		96.7	70	130			

Sample ID: **lcs-56661** SampType: **LCS4** TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **BatchQC** Batch ID: **56661** RunNo: **73634**
Prep Date: **11/25/2020** Analysis Date: **11/28/2020** SeqNo: **2595087** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	105	80	120			
Toluene	1.0	0.050	1.000	0	101	80	120			
Ethylbenzene	0.99	0.050	1.000	0	98.9	80	120			
Xylenes, Total	3.0	0.10	3.000	0	99.4	80	120			
Surr: 1,2-Dichloroethane-d4	0.47		0.5000		93.6	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		101	70	130			
Surr: Dibromofluoromethane	0.53		0.5000		106	70	130			
Surr: Toluene-d8	0.48		0.5000		96.2	70	130			

Sample ID: **mb-56668** SampType: **MBLK** TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **PBS** Batch ID: **56668** RunNo: **73634**
Prep Date: **11/25/2020** Analysis Date: **11/28/2020** SeqNo: **2595110** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	0.46		0.5000		92.7	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		97.6	70	130			
Surr: Dibromofluoromethane	0.54		0.5000		108	70	130			
Surr: Toluene-d8	0.46		0.5000		92.5	70	130			

Sample ID: **lcs-56668** SampType: **LCS4** TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **BatchQC** Batch ID: **56668** RunNo: **73634**
Prep Date: **11/25/2020** Analysis Date: **11/28/2020** SeqNo: **2595111** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	0.49		0.5000		98.5	70	130			
Surr: 4-Bromofluorobenzene	0.51		0.5000		102	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#: **2011C42**
03-Dec-20

Client: Hilcorp Energy
Project: SJ 28 5 68M

Sample ID: **lcs-56668** SampType: **LCS4** TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **BatchQC** Batch ID: **56668** RunNo: **73634**
Prep Date: **11/25/2020** Analysis Date: **11/28/2020** SeqNo: **2595111** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Dibromofluoromethane	0.55		0.5000		110	70	130			
Surr: Toluene-d8	0.48		0.5000		95.3	70	130			

Sample ID: **mb-56663** SampType: **MBLK** TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **PBS** Batch ID: **56663** RunNo: **73639**
Prep Date: **11/25/2020** Analysis Date: **11/28/2020** SeqNo: **2595302** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 1,2-Dichloroethane-d4	0.49		0.5000		98.8	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		98.6	70	130			
Surr: Dibromofluoromethane	0.53		0.5000		105	70	130			
Surr: Toluene-d8	0.46		0.5000		92.5	70	130			

Sample ID: **lcs-56663** SampType: **LCS4** TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **BatchQC** Batch ID: **56663** RunNo: **73639**
Prep Date: **11/25/2020** Analysis Date: **11/28/2020** SeqNo: **2595303** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	113	80	120			
Toluene	1.1	0.050	1.000	0	107	80	120			
Ethylbenzene	1.0	0.050	1.000	0	104	80	120			
Xylenes, Total	3.4	0.10	3.000	0	112	80	120			
Surr: 1,2-Dichloroethane-d4	0.51		0.5000		103	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		99.5	70	130			
Surr: Dibromofluoromethane	0.52		0.5000		103	70	130			
Surr: Toluene-d8	0.45		0.5000		89.2	70	130			

Sample ID: **2011c42-006ams** SampType: **MS4** TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **SP2-4** Batch ID: **56663** RunNo: **73639**
Prep Date: **11/25/2020** Analysis Date: **11/28/2020** SeqNo: **2595306** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.024	0.9709	0	104	71.1	115			
Toluene	0.92	0.049	0.9709	0	94.4	79.6	132			
Ethylbenzene	0.95	0.049	0.9709	0	98.3	83.8	134			
Xylenes, Total	3.0	0.097	2.913	0	103	82.4	132			

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#: **2011C42**
03-Dec-20

Client: Hilcorp Energy
Project: SJ 28 5 68M

Sample ID: **2011c42-006ams**	SampType: **MS4**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **SP2-4**	Batch ID: **56663**	RunNo: **73639**
Prep Date: **11/25/2020**	Analysis Date: **11/28/2020**	SeqNo: **2595306** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	0.52		0.4854		108	70	130			
Surr: 4-Bromofluorobenzene	0.44		0.4854		90.0	70	130			
Surr: Dibromofluoromethane	0.53		0.4854		109	70	130			
Surr: Toluene-d8	0.43		0.4854		88.6	70	130			

Sample ID: **2011c42-006amsd**	SampType: **MSD4**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **SP2-4**	Batch ID: **56663**	RunNo: **73639**
Prep Date: **11/25/2020**	Analysis Date: **11/28/2020**	SeqNo: **2595307** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	0.9921	0	108	71.1	115	6.32	20	
Toluene	0.97	0.050	0.9921	0	97.9	79.6	132	5.86	20	
Ethylbenzene	0.98	0.050	0.9921	0	99.1	83.8	134	3.05	20	
Xylenes, Total	3.1	0.099	2.976	0	105	82.4	132	3.93	20	
Surr: 1,2-Dichloroethane-d4	0.52		0.4960		105	70	130	0	0	
Surr: 4-Bromofluorobenzene	0.49		0.4960		99.6	70	130	0	0	
Surr: Dibromofluoromethane	0.57		0.4960		116	70	130	0	0	
Surr: Toluene-d8	0.45		0.4960		90.0	70	130	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 Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2011C42**
03-Dec-20

Client: Hilcorp Energy
Project: SJ 28 5 68M

Sample ID: **mb-56661** SampType: **MBLK** TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS** Batch ID: **56661** RunNo: **73634**
Prep Date: **11/25/2020** Analysis Date: **11/28/2020** SeqNo: **2595123** 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	500		500.0		100	70	130			

Sample ID: **lcs-56661** SampType: **LCS** TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS** Batch ID: **56661** RunNo: **73634**
Prep Date: **11/25/2020** Analysis Date: **11/28/2020** SeqNo: **2595124** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	5.0	25.00	0	85.6	70	130			
Surr: BFB	490		500.0		97.4	70	130			

Sample ID: **mb-56668** SampType: **MBLK** TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS** Batch ID: **56668** RunNo: **73634**
Prep Date: **11/25/2020** Analysis Date: **11/28/2020** SeqNo: **2595147** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	480		500.0		96.5	70	130			

Sample ID: **lcs-56668** SampType: **LCS** TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS** Batch ID: **56668** RunNo: **73634**
Prep Date: **11/25/2020** Analysis Date: **11/28/2020** SeqNo: **2595148** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	490		500.0		98.6	70	130			

Sample ID: **mb-56663** SampType: **MBLK** TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS** Batch ID: **56663** RunNo: **73639**
Prep Date: **11/25/2020** Analysis Date: **11/28/2020** SeqNo: **2595342** 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	530		500.0		106	70	130			

Sample ID: **lcs-56663** SampType: **LCS** TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS** Batch ID: **56663** RunNo: **73639**
Prep Date: **11/25/2020** Analysis Date: **11/28/2020** SeqNo: **2595343** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	25.00	0	88.5	70	130			
Surr: BFB	510		500.0		103	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#: **2011C42**
03-Dec-20

Client: Hilcorp Energy
Project: SJ 28 5 68M

Sample ID: **2011c42-005ams**	SampType: **MS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **SP2-3**	Batch ID: **56663**	RunNo: **73639**
Prep Date: **11/25/2020**	Analysis Date: **11/28/2020**	SeqNo: **2595345** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	24.78	3.102	82.1	49.2	122			
Surr: BFB	530		495.5		108	70	130			

Sample ID: **2011c42-005amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **SP2-3**	Batch ID: **56663**	RunNo: **73639**
Prep Date: **11/25/2020**	Analysis Date: **11/28/2020**	SeqNo: **2595346** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	4.8	24.02	3.102	95.1	49.2	122	10.1	20	
Surr: BFB	530		480.3		110	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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: **Hilcorp Energy** Work Order Number: **2011C42** RcptNo: 1

Received By: **Sean Livingston** **11/25/2020 8:00:00 AM** Sean Livingston

Completed By: **Desiree Dominguez** **11/25/2020 8:41:06 AM** DD

Reviewed By: SGL 11/25/20

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. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☐	No ☐	NA ☑
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: JR 11/25/20

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	2.5	Good				

Chain-of-Custody Record

Client: Hilcorp Energy Co
Lindsay Dumas
Mailing Address: 1111 Travis St
Houston, TX 77002
Phone #: 832-839-4585
email or Fax#: ldumas@hilcorp.com
QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)
Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other
☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: SJ 28-5 #68M
Project #: TBD
Project Manager: Stuart Hyde
stuart.hyde@wspusa.com
Sampler: Stuart Hyde
On Ice: ☒ Yes ☐ No
# of Coolers: 1
Cooler Temp(including CF): 2.2+0.3=2.5 (°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. 2011C42	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)
11/24	1305	Soil	SP1-1	1-4oz	—	-001	X	X					X			
	1307		SP1-2			-002	X	X					X			
	1330		SP2-1			-003	X	X					X			
	1333		SP2-2			-004	X	X					X			
	1335		SP2-3			-005	X	X					X			
	1340		SP2-4			-006	X	X					X			
	1343		SP2-5			-007	X	X					X			
	1345		SP2-6			-008	X	X					X			
	1349		SP2-7			-009	X	X					X			

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
11/24	1530	Stuart Hyde	SGL	courier	11/25/20	8:00
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

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.

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

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

CONDITIONS

Action 26641

CONDITIONS

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 26641
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
nvelez	None	1/21/2022