Site Characterization Report and Remediation Workplan

June 4, 2020

Abo Centurion Station Crude Oil Release
NRM2003032458

Prepared For:

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1.0 Introduction

TRC Environmental Corporation (TRC), on behalf of Holly Energy Partners – Operating, L.P. (HEP), has prepared this *Site Characterization Report and Remediation Workplan* for the crude oil release at Abo Centurion Station (Site). On December 4, 2019, an estimated 15 barrels (bbls) of crude oil were released from a pipe at the Site located approximately 9.5 miles southeast of Artesia, in Eddy County, New Mexico. The global positioning system (GPS) coordinates for the Release Site are 32.763269, -104.268120. The property surface rights are owned by the State of New Mexico and administered by the New Mexico State Land Office (NMSLO). The location of the Release Site is depicted on Figure 1.

2.0 Background

On December 4, 2019, internal corrosion on a pipe resulted in a release of approximately 15 barrels (bbls) of crude oil. Immediately following the release, the area was secured and the pipe was repaired.

The released crude oil flowed on the ground approximately 270 feet south/southeast from the release point, crossing numerous piping systems. Land use in the Site vicinity is primarily oil and gas production activity and cattle grazing. Immediately following the release, vacuum trucks recovered approximately 3 bbls of free-standing crude oil from the ground.

Verbal notification of the release was provided to the NMOCD on December 4, 2019, and the NMOCD Form C-141 (Release Notification Report) was submitted on December 18, 2019. A copy of the NMOCD Form C-141 is provided in Appendix A. The C-141 was approved by the NMOCD on January 29, 2020 and the Site was given a NMOCD Tracking Number of NRM2003032458. Crude oil surface impacts at the Site cover approximately 1,100 square feet. The release point and the surface extent of the crude oil release are depicted on Figure 2.

This *Site Characterization Report and Remediation Workplan* was due within 90 days of discovering the release (i.e., by March 4, 2020) in accordance with 19.15.29.11 New Mexico Administrative Code (NMAC). On February 13, 2020, HEP requested and was granted a deadline extension of three (3) months by the NMOCD for a deadline of June 4, 2020.

3.0 NMOCD Closure Criteria

Cleanup standards for crude oil spills are provided in 19.15.29 NMAC. The cleanup standards (described in the rule as “Closure Criteria”) are based primarily on depth to groundwater but are also based on other criteria. Three different Closure Criteria are provided in the rule. The most stringent apply to sites where groundwater is found within 50 feet of the ground surface or if the release occurred within one of the following areas:

- Within 300 feet of any continuously flowing watercourse or any other significant watercourse.
- Within 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary highwater mark).
- Within 300 feet from an occupied permanent residence, school, hospital, institution or church.
- Within 500 feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes.
- Within 1,000 feet of any fresh water well or spring.
- Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to Section 3-27-3 NMSA 1978 as amended.
- Within 300 feet of a wetland.

- Within the area overlying a subsurface mine.
- Within an unstable area such as a karst formation.
- Within a 100-year floodplain.

TRC reviewed available information to determine the Closure Criteria for the Site. The findings of this evaluation are summarized below.

3.1 Groundwater Evaluation

Review of the New Mexico Office of the State Engineer (NMOSE) records indicated one water well is located within 0.5 mile of the Site. As shown on the table below, the recorded depth to groundwater is 50 feet below ground surface (bgs). The location of the water well relative to the Site is depicted on Figure 3.

Nearby Water Wells

Well ID	Location from Release Site	Owner	Use	Well Depth and Depth to Water (feet bgs)
RA-03917	0.40 miles to northeast	N/A	N/A	130 feet/50 feet

3.2 Surface Features and Other Development

TRC reviewed recent aerial photographs, topographic maps, the NMOSE Point of Discharge (POD) GIS website, and information available from the Eddy County, New Mexico Central Appraisal District website. As shown on Figure 3, the Site is **not** located:

- Within 300 feet of any continuously flowing watercourse or any other significant watercourse.
    - No continuously flowing watercourses (rivers, streams, arroyos, etc.) are apparent within 300 feet of the Site in the aerial photography (Figure 3) or appear on the topographic map (Figure 1). The Site is located within approximately 200 feet of Scoggin Draw, a tributary feature of the Pecos River; however, this feature is ephemeral and not a continuously flowing watercourse.
- Within 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary highwater mark).
    - The topographic map, aerial photography, and wetland/floodplain maps (Figures 1, 3, and 4, respectively) indicate there is not a lakebed, sinkhole or playa lake located within 200 feet of the Site.
- Within 300 feet from an occupied permanent residence, school, hospital, institution or church.
    - The aerial photography (Figure 3) and information available from the Eddy County, New Mexico Central Appraisal District do not show or list any permanent residence, school, hospital, institution or church located within 300 feet of the Site.
- Within 500 feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes.
    - No wells or springs located within 500 feet of the Site appear in any of the NMOSE records reviewed by TRC.
- Within 1,000 feet of any fresh water well or spring.
    - No fresh water wells or springs located within 1,000 feet of the Site appear in any of the records reviewed by TRC.

- Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to Section 3-27-3 NMSA 1978 as amended.
    - Based on the property and other records review by TRC, the Site is not located in incorporated municipal boundaries or within a defined municipal fresh water well field.
- Within the area overlying a subsurface mine
    - Based on the property and other records reviewed by TRC, the Site is not located within an area overlying a subsurface mine.

3.3 Wetlands, Floodplain, and Karst Geology

A review of the United States Fish and Wildlife Service (USFWS) wetlands map indicated the Site is not located within 300 feet of a wetland. The New Mexico Bureau of Land Management (BLM) karst potential map indicates the Site is located within the "high karst potential" area. Finally, review of the Federal Emergency Management Act (FEMA) floodplain map indicates the release at the Site is located outside of a 100-year floodplain. Figures 4 and 5 depict the FEMA floodplain information and the karst potential data, respectively.

3.4 Closure Criteria Currently Assumed Applicable to the Site

The Closure Criteria applicable to the Site will be based on the elevated karst potential of the Release Site, which dictates the most stringent regulatory guidelines typically associated with groundwater depths of less than fifty (50) feet bgs. A summary of the Closure Criteria is provided in the table below and in Table 1.

NMOCD Closure Criteria

Constituent of Concern		Closure Criteria Based on Depth to Groundwater (mg/kg)		
		≤ 50 feet bgs	51 feet to 100 feet bgs	> 100 feet bgs
Chloride (EPA 300)		600	10,000	20,000
TPH (EPA 8015M)	GRO + DRO + MRO	100	2,500	2,500
	GRO + DRO	NA	1,000	1,000
Total BTEX (EPA 8021 or 8260)		50	50	50
Benzene (EPA 8021 or 8260)		10	10	10

Notes: NA = not applicable
bgs = below ground surface
mg/kg = milligrams per kilogram
GRO = gasoline range organics
DRO = diesel range organics
MRO = motor oil range organics
TPH = total petroleum hydrocarbons
BTEX = benzene, toluene, ethylbenzene, and total xylenes
Green highlighted cells denote applicable Closure Criteria.

4.0 Site Assessment/Characterization Results

As per 19.15.29.11 NMAC, a Site Characterization Report will have the components described in Sections 4.1 through 4.5 of this document.

4.1 Site Map

As required by 19.15.29.11 NMAC, a scaled diagram showing significant Site infrastructure, test trench locations, and known subsurface features such as utilities is provided as Figure 2.

4.2 Depth to Groundwater

As discussed in Section 3.1, the exact depth to groundwater beneath the Site is unknown. During investigation activities, a maximum depth of 10 feet bgs was reached, at which groundwater was not encountered. A review of the NMOSE water well records indicates the depth to groundwater at the nearest well with known depth to water information (RA-03917, located 0.40 miles northeast of the Site) is 50 feet bgs.

According to the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey, surface soils beneath the Site should consist of loam ranging from shallow to moderately deep, overlying gypsum beds belonging to the Gypsum land-Cottonwood complex. Bedrock will often be encountered between one (1) and five (5) feet bgs. According to the United States Geological Society (USGS) National Geologic Map Database, surface soils should be underlain by gypsiferous, sedimentary rock of the Guadalupian-aged Artesia group, consisting of the Tansill, Yates, Seven Rivers, Queen, and Grayburg formations. The Tansill and Yates formations consist of sandstone, siltstone, limestone, dolomite, and anhydrite. The Seven Rivers formation underlies the Tansill and Yates formations and consists of gypsum, anhydrite, salt, dolomite, and siltstone. The Queen and Grayburg formations underlie the Seven Rivers formation and consist of sandstone, gypsum, anhydrite, dolomite, and red mudstone. Geologic formations in the area generally dip to the southeast.

The observations in the test trench locations deviated from the surface soil compositions in the documented literature. Trench TT-1, located furthest from the release point and topographically downgradient from the spill, appeared to consist of medium to fine sand with clay at the surface, underlain by apparent fluvial gravel. Bedrock was not encountered at the maximum investigation depth of 10 feet bgs. Trench TT-2 appeared to be sandy, apparent fluvial gravel intermixed with a large amount of gypsum at the surface; bedrock was encountered at approximately 7 feet bgs. Trench TT-2 was located topographically upgradient to trench TT-1, and downgradient of trenches TT-3 and TT-4. The elevation rise from trench TT-2 to trenches TT-3 and TT-4 represents a rocky ‘shelf’ of bedrock at trenches TT-3 and TT-4 that does not underlie trenches TT-1 and TT-2. The soil on the surface of the bedrock shelf at the trench TT-3 and TT-4 locations appears to be non-native fill material.

4.3 Wellhead Protection Area

The 0.5-mile wellhead protection area is shown on Figure 3. There is one known water source, water well RA-03917, which is discussed above. No other wells, springs, or other sources of fresh water extraction were identified within 0.5-mile of the Site.

4.4 Distance to Nearest Significant Watercourse

The horizontal distance to the nearest significant watercourse as defined in Subsection P of 19.15.17.7 NMAC is greater than 0.5-mile from the Site.

4.5 Soil Characteristics

4.5.1 Summary of December 2019 and March 2020 Investigation and Soil Sampling

On December 12, 2019, an investigation was conducted to determine the nature and extent of soil impacts associated with the December 2019 crude oil release. Lateral delineation of impacts associated with the December 2019 release was based on visual observation of the surface extent of the crude oil and will be confirmed during proposed excavation activities. To determine the vertical extent of impacts, a total of three test trenches (TT-1 through TT-3) were advanced using a backhoe at select locations within the surface extent of the release area. During excavation of trench TT-3, the first two attempts to vertically advance the excavation were terminated at approximately 2 feet bgs due to a caliche layer. The third attempt was completed to a depth of 5 feet bgs, where an unmarked pipeline was encountered and prevented deeper completion of the trench.

Discrete soil samples were collected from the trenches by hand using a shovel. Non-dedicated sampling equipment was decontaminated between each sampling location. Soil samples were collected from the surface and at 1-foot intervals from each trench until photo-ionization detector (PID) results indicated hydrocarbon concentrations were reduced (trenches TT-1 and TT-2) or refusal was encountered (trench TT-3). The depth of trench TT-3 was limited at 5 feet bgs by the presence of an unmarked pipe at the base of the trench. After consultation with line locating staff, it was determined that this pipe was owned and operated by Centurion Pipeline, L.P. and is inactive. The locator was familiar with the installation of the pipeline and indicated that dynamite was utilized to cut the pipe trench into the caliche layer.

The total depth of trenches TT-1 through TT-3 ranged from 5 feet bgs to 10 feet bgs. Lithology and field observations of hydrocarbon impacts, including hydrocarbon odor, staining, and PID readings, were recorded every 1 vertical foot in each trench. Soil samples were selected for laboratory analysis from the surface (0 to 1 foot bgs), from the shallowest sample with reduced PID readings to assess vertical delineation, and from the bottom of each trench. Soil samples were submitted to DHL Analytical in Austin, Texas, for laboratory analysis of TPH by Environmental Protection Agency (EPA) Method 8015, BTEX by EPA Method SW8260 and chloride by EPA Method SW9056. The locations of the trenches are depicted on Figure 2. The sample depths and analytical results for the soil samples are provided in Table 1 and Figure 2. Photographic documentation is provided as Appendix B. The test trench logs with PID readings are provided as Appendix C. Laboratory analytical results are provided in Appendix D.

The results of the December 2019 sampling event indicated that further investigation was required to complete vertical delineation of TPH and BTEX at trench TT-3. Additional investigation at this location was performed on March 30, 2020.

On March 30, 2020, due to the presence of the pipeline and for safety purposes, a hydro-excavator rather than a backhoe was used to further assess the feasibility of excavating soil impacts at trench TT-3 where the Centurion pipe was encountered. Multiple attempts were made to hydro-excavate soil at the Centurion pipe; however, hydro-excavation could not remove soil to the depth of the Centurion pipe. Therefore, it was not feasible to remove soil in this area with the size of hydro-excavation rig that was used.

On March 30, 2020, to assess vertical delineation of BTEX and TPH encountered at trench TT-3, numerous attempts were made using a backhoe to advance another trench (TT-4) within the release footprint offset from the Centurion pipe in the area immediately adjacent to trench TT-3. Mechanical backhoe refusal was met at approximately 1 foot bgs at each attempted location. After approximately five attempts, a softer surface was found approximately 10 feet south/southwest of the trench TT-3 location within the release footprint that allowed for sample collection to a depth of approximately 2.5 feet bgs, where backhoe refusal was encountered due to the hard caliche layer. Vertical delineation at trenches TT-3 and TT-4 was limited by a combination of the Centurion pipe and refusal at the hard caliche layer such that further delineation is not feasible.

Following investigation and soil sampling activities, the trenches were backfilled with the originally excavated material and the site was returned to original grade.

4.5.2 Summary of December 2019 and March 2020 Analytical Results

Based on the analytical results, concentrations of benzene, BTEX, and TPH in soil exceeded Closure Criteria at each of the test trench locations. A brief summary of the soil analytical results for each parameter is discussed below. Soils with benzene, BTEX, and TPH exceedances will be addressed in accordance with the Remediation Workplan discussed in Section 5.0.

Benzene

- Benzene concentrations exceeded the Closure Criteria at two locations, trenches TT-2 and TT-3.
- The exceedance at trench TT-2 was detected in the surface sample collected from 0 to 1 foot bgs, but benzene was not detected in deeper samples at this location to demonstrate vertical delineation.
- The benzene exceedances at trench TT-3 were detected at depths of 0 to 1, 3, and 5 feet bgs, and vertical delineation was not possible due to the presence of the Centurion Pipeline, L.P. pipe at the base of the trench at 5 feet and refusal at 2.5 feet bgs due to the hard caliche layer at offset trench TT-4.
- Trench TT-4 was advanced approximately 10 feet south/southwest of trench TT-3 within the release footprint, and samples collected at this location did not exhibit benzene exceedances to a depth of 2.5 feet bgs where refusal was encountered. Based on the analytical results at trenches TT-3 and TT-4, concentrations of benzene are variable; regardless, remediation of soils with benzene exceedances throughout the affected area will be addressed during remediation.

BTEX

- BTEX concentrations exceeded the Closure Criteria at three locations: trenches TT-1, TT-2, and TT-3.
- The exceedances at trenches TT-1 and TT-2 were detected in the surface samples collected from 0 to 1 foot bgs, but BTEX concentrations were either not detected or were below the Closure Criteria in deeper samples at these locations to demonstrate vertical delineation.
- The BTEX exceedances at trench TT-3 were detected at depths of 0 to 1, 3, and 5 feet bgs, and vertical delineation was not possible due to the presence of the Centurion Pipeline, L.P. pipe at the base of the trench at 5 feet and refusal at 2.5 feet bgs due to the hard caliche layer at offset trench TT-4.
- Trench TT-4 was advanced approximately 10 feet south/southwest of trench TT-3 within the release footprint, and samples collected at this location did not exhibit BTEX exceedances to a depth of 2.5 feet bgs where refusal was encountered. Based on the analytical results at trenches TT-3 and TT-4, concentrations of BTEX are variable; regardless, remediation of soils with BTEX exceedances throughout the affected area will be addressed during remediation.

TPH

- TPH concentrations exceeded the Closure Criteria in one or more samples collected from each trench.
- The highest TPH concentrations were observed in the surface or near surface samples, as expected.
- TPH concentrations decreased with depth at all sampling locations.
- TPH concentrations were vertically delineated at trenches TT-1 and TT-2 but were not vertically delineated at trenches TT-3 and TT-4. TPH concentrations decreased two orders of magnitude at trench TT-4 from a depth of 1 to 2 feet bgs. Vertical delineation of TPH exceedances at trenches TT-3 and TT-4 will be addressed during remediation to the degree feasible.

Chloride concentrations were detected in various samples but were below NMOCD Closure Criteria in each soil sample. As the presence of chloride in soil at the Site is below NMOCD Closure Criteria in each sample, chlorides will not be addressed in the proposed Remediation Workplan.

4.5.3 Laboratory Analytical Data Quality Assurance/Quality Control Results

Data reported in Work Orders 1912160 and 2004022 generated by DHL Laboratory in Round Rock, Texas, was reviewed to ensure that reported analytical results met data quality objectives. It was determined by quality control data associated with analytical results that reported concentrations of target analytes are defensible and that measurement data reliability is within the expected limits of sampling and analytical error. All analytical results are usable for characterization of soil at the Site. The laboratory analytical results are provided as Appendix D.

5.0 Proposed Remediation Workplan

5.1 Proposed Remedial Activities

Benzene, BTEX, and TPH concentrations are present in soils above NMOCD Closure Criteria at trenches TT-1 through TT-4. Following approval of this workplan by the NMOCD, remediation activities will commence. Soils with benzene, BTEX, and TPH concentrations above the Closure Criteria will be excavated to the maximum extent practicable considering excavation limitations around the existing pipelines and depth limitations due to the hard caliche layer. An attempt will be made to hydro-excavate affected soils above the Centurion pipe at the trench TT-3 location and in the vicinity of the other lines that cross the release area. The lateral extent of the excavation is anticipated to correspond with the lateral extent of the surface release area as shown on Figure 2. The area will be excavated until confirmation samples collected from the base and sidewalls of the excavation indicate soil exhibiting benzene, BTEX, and TPH concentrations above NMOCD Closure Criteria have been removed, as feasible around pipes that cross the release area, or until additional mechanical excavation into the hard caliche layer is no longer feasible. An estimated volume of approximately 180 cubic yards of soil will be excavated. The excavated material will be characterized and transported under manifest to a NMOCD approved disposal facility.

Confirmation soil samples will be collected from the base and sidewalls of the excavation to confirm that the extent of the benzene, BTEX, and TPH concentrations in exceedance of the Closure Criteria were removed with consideration of excavation limitations such as pipes and hard caliche layer. Confirmation soil samples will be collected from the base of the excavated areas on the basis of one soil sample per 200 square feet of excavation floor. Additionally, sidewall confirmation soil samples will be collected from the excavated areas on a basis of one soil sample per 100 linear feet of sidewall. Pursuant to 19.15.29.12(D) NMAC, confirmation samples will consist of five-point composite samples, and discrete grab samples will be collected from any wet or discolored areas. Each confirmation sample will be analyzed for TPH by EPA SW-846 Method 8015M and BTEX by EPA SW-846 Method 8260.

If confirmation sample results report concentrations of benzene, BTEX and/or TPH above the Closure Criteria and backhoe refusal has been encountered on the hard caliche layer, areas of elevated concentrations on the hard caliche layer will be sprayed with MicroBlaze® to promote natural attenuation, because further excavation of the hard caliche is not feasible. The excavation will remain open for approximately 30 days at which time an additional confirmation sample will be collected. If that sample is not below the Closure Criteria, an additional application of MicroBlaze® will be performed and the excavation will be backfilled to grade with non-impacted similar material because further excavation of the hard caliche layer is not feasible. Additionally, the hard caliche layer represents a low permeability unit that will impede further vertical migration of residual impacts. If that sample is below the Closure Criteria, the excavation will be backfilled to grade with non-impacted similar material. Pursuant to 19.15.29.13 NMAC, the impacted surface areas will be restored to pre-release conditions. Surface grading will be

performed to near original conditions and contoured to prevent erosion and ponding, promote stability, and preserve storm water flow patterns.

HEP requests a remediation schedule of 150 days from the date of NMOCD approval of this Remediation Workplan to complete the proposed remediation activities and submit a *Remediation Summary and Closure Report* for NMOCD and NMSLO approval, pending the results of the confirmation samples. The closure report will summarize remedial activities and confirmation sampling results, and will include the final Form C-141.

6.0 Distribution

Copy 1: Mike Bratcher
New Mexico Energy, Minerals, and Natural Resources Department
Oil Conservation Division, District 2
811 S. First Street
Artesia, NM 88210

Copy 2: Ryan Mann
Hobbs Field Office
New Mexico State Land Office
2827 North Del Paso St., Suite 117
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Copy 3: Mark Shemaria
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TABLES

TABLE 1
SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS
HOLLY ENERGY PARTNERS - OPERATING, L.P.
ABO CENTURION STATION CRUDE OIL RELEASE
NMOCD TRACKING NO.: NRM2003032458

Sample ID	Sample Date	Sample Depth (feet bgs)	Soil Status	TPH (GRO)	TPH (DRO)	TPH (MRO)	Total TPH	Benzene	Toluene	Ethylbenzene	Total Xylenes	Total BTEX	Chloride
				milligrams per kilogram (mg/kg)									
NMOCD Closure Criteria				-	-	-	100	10	-	-	-	50	600
TT-1 @ 0-1'	12/12/19	0-1	In-Situ	3,070	4,410	457 J	**7,937**	0.329	22.9	17.9	66.7	**107.829**	22.9
TT-1 @ 7'	12/12/19	7	In-Situ	<2.19	<3.38	<3.38	<3.38	<0.0548	<0.0548	<0.0548	<0.0548	<0.0548	452
TT-1 @ 10'	12/12/19	10	In-Situ	<2.25	<3.54	<3.54	<3.54	0.0563 J	0.146 J	<0.0563	<0.0563	0.2023	358
TT-2 @ 0-1'	12/12/19	0-1	In-Situ	7,880	13,400	1,080 J	**22,360**	**31.7**	161	61.4	214	**468.1**	31.0
TT-2 @ 4'	12/12/19	4	In-Situ	<2.14	<3.14	<3.14	<3.14	<0.0535	<0.0535	<0.0535	<0.0535	<0.0535	10.3
Dup-1	12/12/19	4	In-Situ	4.05 J	<3.30	<3.30	4.05 J	<0.0511	<0.0511	<0.0511	<0.0511	<0.0511	5.37
TT-2 @ 7'	12/12/19	7	In-Situ	<2.22	11.6	<3.31	11.6	<0.0556	<0.0556	<0.0556	<0.0556	<0.0556	27.8
TT-3 @ 0-1'	12/12/19	0-1	In-Situ	9,670	23,100	4,230	**37,000**	**40.0**	205	81.8	267	**593.8**	41.1
TT-3 @ 3'	12/12/19	3	In-Situ	21,200	20,700	1,490	**43,390**	**163**	535	163	481	**1,342**	21.2
TT-3 @ 5'	12/12/19	5	In-Situ	6,630	8,190	617 J	**15,437**	**24.5**	672	187	794	**1,677.5**	30.6
TT-4 Surface	03/30/20	0-0.5	In-Situ	168	23,000	4,150	**27,318**	0.0278	0.290	0.137	0.522	0.9768	NA
Duplicate	03/30/20	0-0.5	In-Situ	104	24,000	6,880	**30,984**	0.0329	0.319	0.151	0.556	1.0589	NA
TT-4 @ 1'	03/30/20	1	In-Situ	2,230	7,810	369 J	**10,409**	0.0966	3.86	4.99	18.6	27.5466	NA
TT-4 @ 2'	03/30/20	2	In-Situ	33.1	84.5	13.7	**131.3**	<0.00120	0.00873	0.00623	0.0233	0.03826	NA
TT-4 @ 30"R	03/30/20	2.5	In-Situ	7.08	103	11.7	**121.78**	<0.00109	0.00235	0.00555	0.0373	0.0452	NA

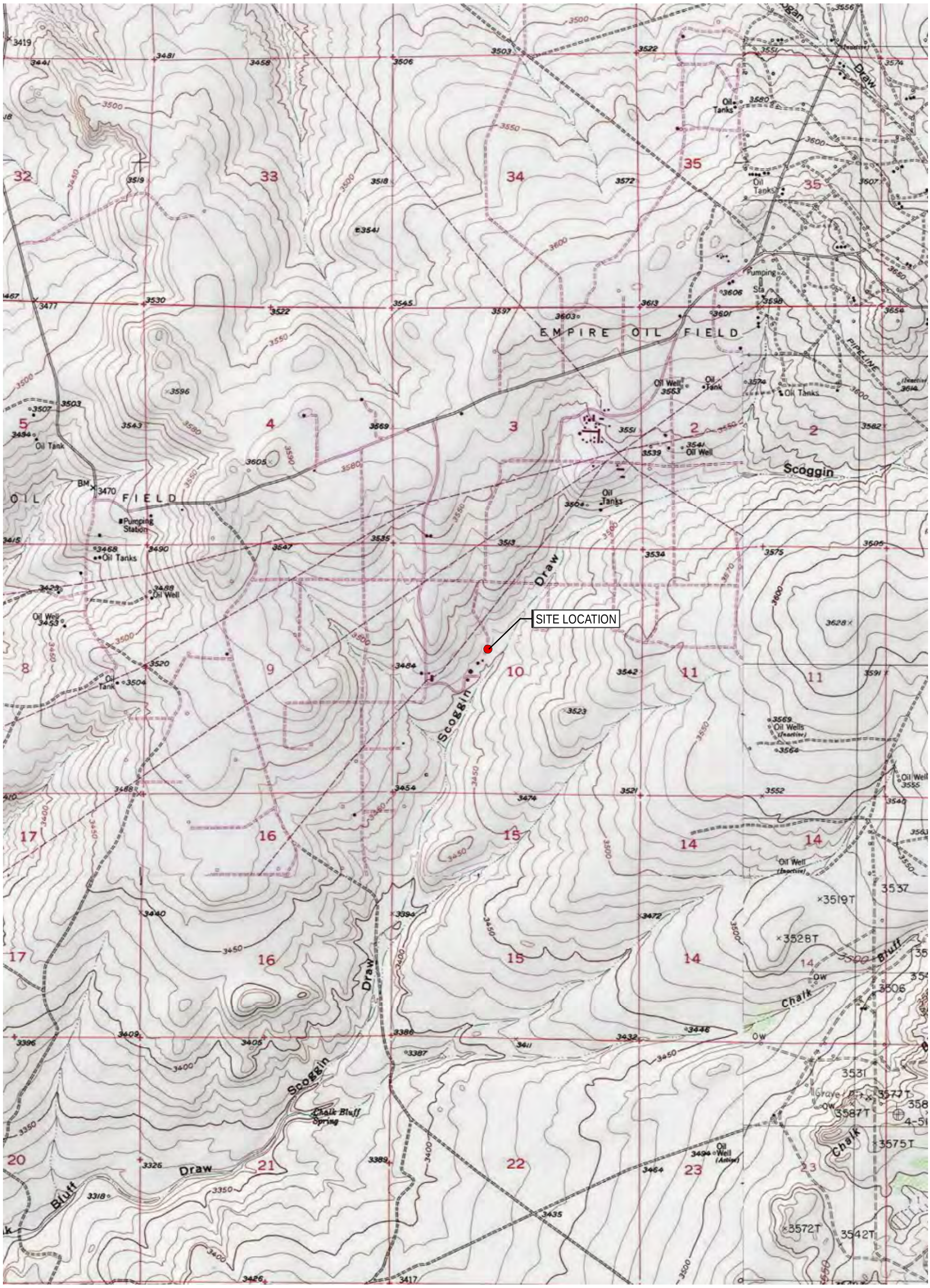
Notes:

1. GRO: Gasoline Range Organics
2. DRO: Diesel Range Organics
3. MRO: Motor Oil Range Organics
4. -: No NMOCD Closure Criteria established.
5. Bold and highlighting indicates the COC was detected above the NMOCD Closure Criteria.
6. < indicates the COC was below the appropriate laboratory method/sample detection limit.
7. J flag indicates analyte was detected between the reporting limit and sample detection limit.
8. Dup-1 was collected from the same location as TT-2 @ 4'
9. Duplicate was collected from the same location as TT-4 Surface
10. NA: not analyzed

FIGURES

Plot Date: 5/29/2020, 13:56:20 PM by MJAGOE -- LAYOUT: ANSI B (11"x17")
Path: S:\1-PROJECTS\HOLLY_ENERGY_PARTNERS\390412_Abo_Centurion_Release_2020\mxd\390412_1.mxd
Coordinate System: NAD 1983 2011 StatePlane New Mexico East FIPS 3001 Ft US (Foot US)
Map Rotation: 0

TRC - GIS



BASE MAP FROM USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE SERIES - SPRING LAKE, NEW MEXICO (1978).

N

0 1,000 2,000
FEET

1 " = 2,000 '
1:24,000

TRC
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PROJECT:
HOLLY ENERGY PARTNERS - OPERATING, L.P.
ABO CENTURION STATION CRUDE OIL RELEASE
EDDY COUNTY, NEW MEXICO

TITLE:
SITE LOCATION MAP

DRAWN BY:	S. RAY
CHECKED BY:	JES
APPROVED BY:	JES
DATE:	MAY 2020
PROJ. NO.:	390412
FILE:	390412_1.mxd

FIGURE 1

Sample ID	Benzene	Total BTEX	Total TPH	Chloride
TT-3 @ 0-1'	**40.0**	**593.8**	**37,000**	41.1
TT-3 @ 3'	**163**	**1,342**	**43,390**	21.2
TT-3 @ 5'	**24.5**	**1,677.5**	**15,437**	30.6

Sample ID	Benzene	Total BTEX	Total TPH	Chloride
TT-4 Surface	0.0278	0.9768	**27,318**	-
Duplicate	0.0329	1.0589	**30,984**	-
TT-4 @ 1'	0.0966	27.5466	**10,409**	-
TT-4 @ 2'	<0.00120	0.03826	**131.3**	-
TT-4 @ 30"R	<0.00109	0.0452	**121.78**	-

Sample ID	Benzene	Total BTEX	Total TPH	Chloride
TT-2 @ 0-1'	**31.7**	**468.1**	**22,360**	31.0
TT-2 @ 4'	<0.0535	<0.0535	<3.14	10.3
Dup-1	<0.0511	<0.0511	4.05	5.37
TT-2 @ 7'	<0.0556	<0.0556	11.6	27.8

Sample ID	Benzene	Total BTEX	Total TPH	Chloride
TT-1 @ 0-1'	0.329	**107.829**	**7,937**	22.9
TT-1 @ 7'	<0.0548	<0.0548	<3.38	452
TT-1 @ 10'	0.0563J	0.2023	<3.54	358

TT-3

TT-4

TT-2

TT-1

LEGEND

- Test Trench Locations
- Release Point
- Lateral Extent of Surface Release
- HEP Abo Centurion Station Fenceline
- Pipeline Continues In Both Directions
- Centurion Facility Fenceline
- Pipeline Terminates On The Western End and Continues On The Eastern End

Sample ID	Benzene	Total BTEX	Total TPH	Chloride
NMOCD Closure Criteria	**10 mg/kg**	**50 mg/kg**	**100 mg/kg**	**600 mg/kg**

NOTES:
1. Bold and highlighting indicates the COC was detected above the NMOCD Closure Criteria.
2. < indicates the COC was below the appropriate laboratory method/sample detection limit.
3. Dup-1 was collected from the same location as TT-2 @ 4'.
4. Duplicate was collected from the same location as TT-4 Surface.

N

0 35 70 Feet

1 " = 35 '

1:420

BASE MAP FROM GOOGLE AND THEIR DATA PARTNERS (3/12/2016).

PROJECT:
HOLLY ENERGY PARTNERS - OPERATING, L.P.
ABO CENTURION STATION CRUDE OIL RELEASE
EDDY COUNTY, NEW MEXICO

TITLE:
SOIL SAMPLE ANALYTICAL RESULTS MAP

DRAWN BY:	S. RAY	PROJ. NO.:	390412
CHECKED BY:	JES		
APPROVED BY:	JES		
DATE:	JUNE 2020		

FIGURE 2

TRC
505 East Huntland Drive, Suite 250
Austin, TX 78752
Phone: 512.329.6080
www.trcsolutions.com

FILE NO.: 390412_2_V3.mxd

Plot Date: 6/2/2020, 18:26:25 PM by MJAGOE -- LAYOUT: ANSI B(11"x17")
Path: S:\1-PROJECTS\HOLLY_ENERGY_PARTNERS\390412_Abo_Centurion_Release_2020\mxd\390412_2_V3.mxd
Coordinate System: NAD 1983 2011 StatePlane New Mexico East FIPS 3001 Ft US (Foot US)
Map Rotation: 0

Plot Date: 5/29/2020, 13:57:42 PM by MJAGOE -- LAYOUT: ANSI B (11"x17")
Path: S:\1-PROJECTS\HOLLY_ENERGY_PARTNERS\390412_Abo_Centurion_Release_2020\mxd\390412_3.mxd
Coordinate System: NAD 1983 2011 StatePlane New Mexico East FIPS 3001 Ft US (Foot US)
Map Rotation: 0

TRC - GIS

BASE MAP FROM USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE SERIES - SPRING LAKE, NEW MEXICO (1978).

LEGEND

1/2 Mile Radius

W Water Well

0 1,000 2,000
FEET
1 " = 2,000 '
1:24,000

N

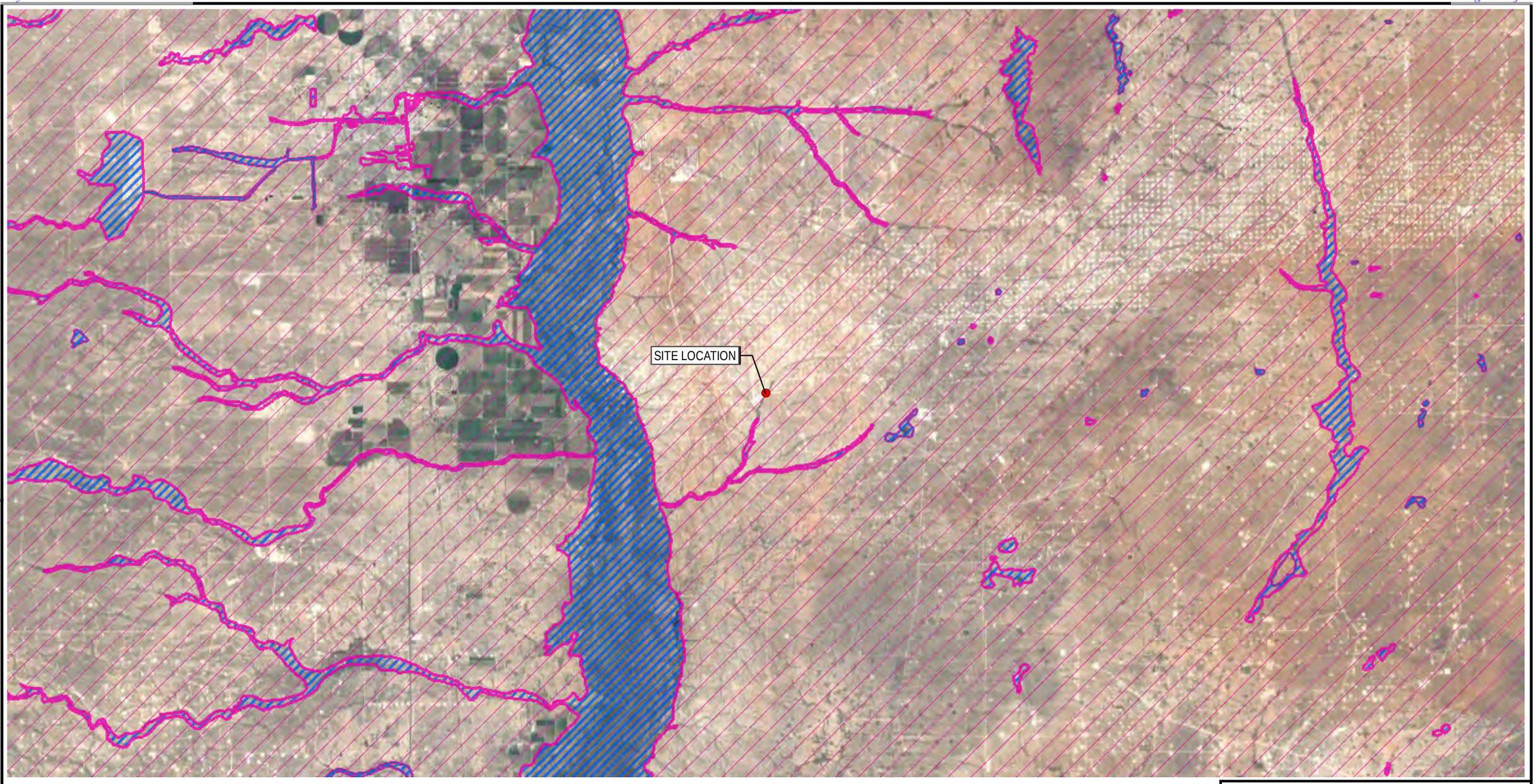
TRC
505 East Huntland Drive, Suite 250
Austin, TX 78752
Phone: 512.329.6080
www.trcsolutions.com

PROJECT:
HOLLY ENERGY PARTNERS - OPERATING, L.P.
ABO CENTURION STATION CRUDE OIL RELEASE
EDDY COUNTY, NEW MEXICO

TITLE:
WELLHEAD PROTECTION AREA MAP

DRAWN BY:	S. RAY
CHECKED BY:	JES
APPROVED BY:	JES
DATE:	MAY 2020
PROJ. NO.:	390412
FILE:	390412_3.mxd

FIGURE 3



LEGEND

A; AE - AREA INSIDE 100 YEAR FLOODPLAIN

X - AREA OUTSIDE OF 500 YEAR FLOODPLAIN

N

0 2 4 Miles

1 " = 2 MILES
1:126,720

BASEMAP FROM GOOGLE AND THEIR DATA PARTNERS (3/12/2016).
FLOODPLAIN DATA FROM FEMA NATIONAL FLOOD HAZARD LAYER (FEBRUARY 2019).

PROJECT:
HOLLY ENERGY PARTNERS - OPERATING, L.P.
ABO CENTURION STATION CRUDE OIL RELEASE
EDDY COUNTY, NEW MEXICO

TITLE:
FEMA FLOODPLAIN MAP

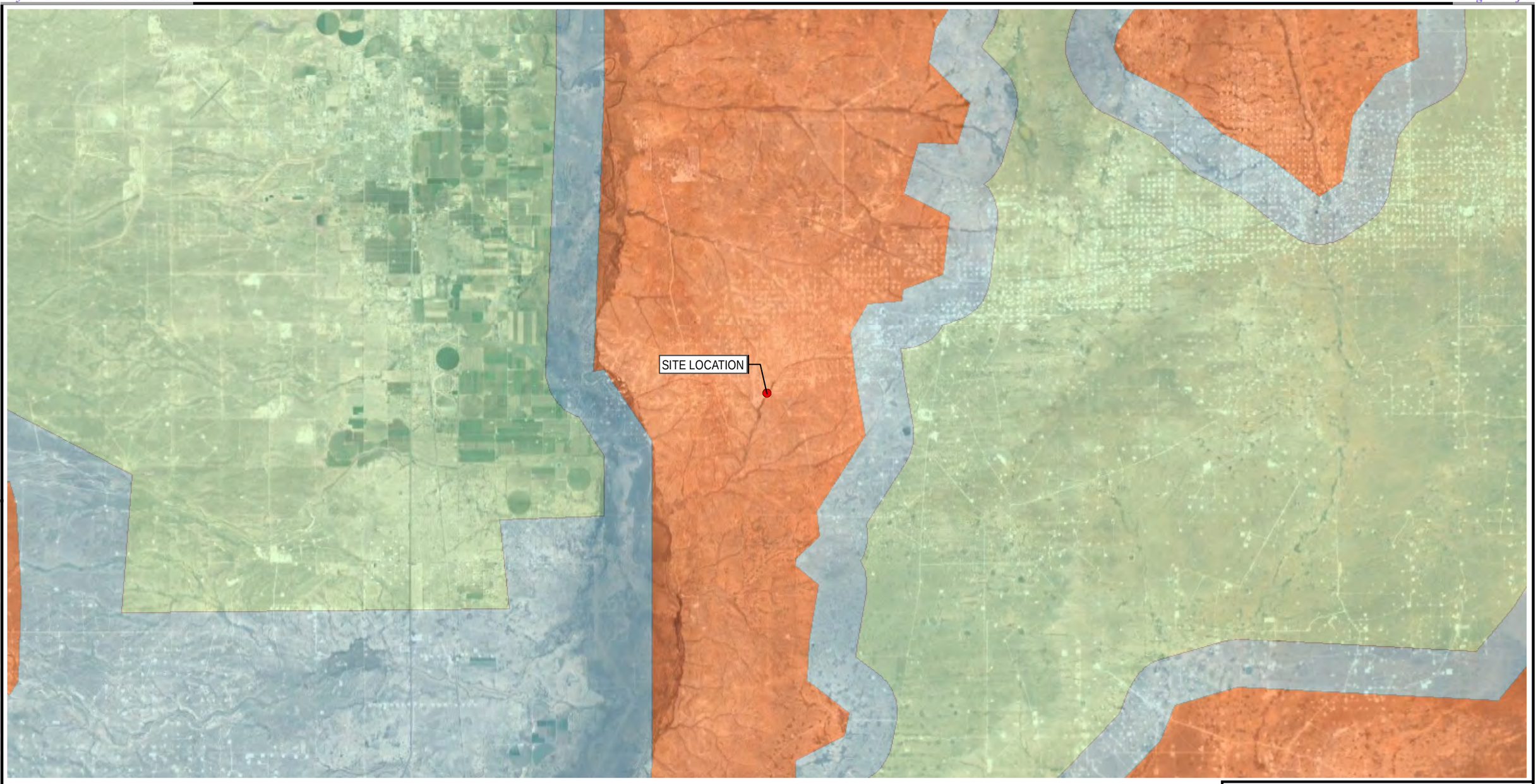
DRAWN BY:	S. RAY	PROJ NO.:	390412
CHECKED BY:	JES		
APPROVED BY:	JES		**FIGURE 4**
DATE:	MAY 2020		

505 East Huntland Drive, Suite 250
Austin, TX 78752
Phone: 512.329.6080
www.trcsolutions.com

FILE NO.: 390412_4.mxd

Plot Date: 5/29/2020, 13:59:18 PM by MJAGOE -- LAYOUT: ANSI B(11"x17")
Path: S:\1-PROJECTS\HOLLY_ENERGY_PARTNERS\390412_Abo_Centurion_Release_2020\mxd\390412_4.mxd
Coordinate System: NAD 1983 2011 StatePlane New Mexico East FIPS 3001 Ft US (Foot US)
Map Rotation: 0

TRC - GIS



LEGEND

- LOW KARST POTENTIAL
- MEDIUM KARST POTENTIAL
- HIGH KARST POTENTIAL

N

0 2 4 Miles

1 " = 2 MILES
1:126,720

BASEMAP FROM GOOGLE AND THEIR DATA PARTNERS (3/12/2016).
KARST DATA FROM NEW MEXICO BUREAU OF LAND MANAGMENT (APRIL 2018).

PROJECT:
HOLLY ENERGY PARTNERS - OPERATING, L.P.
ABO CENTURION STATION CRUDE OIL RELEASE
EDDY COUNTY, NEW MEXICO

TITLE:
KARST POTENTIAL MAP

DRAWN BY:	S. RAY	PROJ NO.:	390412
CHECKED BY:	JES		
APPROVED BY:	JES		**FIGURE 5**
DATE:	MAY 2020		

505 East Huntland Drive, Suite 250
Austin, TX 78752
Phone: 512.329.6080
www.trcsolutions.com

FILE NO.: 390412_5.mxd

Plot Date: 5/29/2020, 14:00:41 PM by MJAGOE - - LAYOUT: ANSI B(11"x17")
Path: S:\1-PROJECTS\HOLLY_ENERGY_PARTNERS\390412_Abo_Centurion_Release_2020\mxd\390412_5.mxd

Coordinate System: NAD 1983 2011 StatePlane New Mexico East FIPS 3001 Ft US (Foot US)
Map Rotation: 0

TRC - GIS

Appendix A: Release Notification and Corrective Action Form (NMOCD Form C-141)

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

State of New Mexico
Energy Minerals and Natural Resources Department

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

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

Incident ID	
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party Holly Energy Partners	OGRID 282505
Contact Name Melanie Nolan	Contact Telephone 214-605-8303
Contact email Melanie.Nolan@hollyenergy.com	Incident # *(assigned by OCD)*
Contact mailing address 1602 W Main St. Artesia, NM 88210	

Location of Release Source

Latitude 32.76337442
(NAD 83 in decimal degrees to 5 decimal places)

Longitude -104.26801562

Site Name Abo Centurion Station	Site Type Shipping Receiving Station
Date Release Discovered 12/4/2019	API# *(if applicable)*

Unit Letter	Section	Township	Range	County
	10	18S	27E	Eddy

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) Approximately 15	Volume Recovered (bbls) 3
☐ Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release
Due to internal corrosion on the pipeline 15 bbls of crude oil was released to surrounding area.

Form C-141
Page 2

State of New Mexico
Oil Conservation Division

Incident ID	
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?
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? N/A	

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: Melanie Nolan Title: Environmental Specialist

Signature: Melanie Nolan Date: 12/18/2019

email: Melanie.Nolan@hollyenergy.com Telephone: 214-605-8303

OCD Only

Received by: Date:

State of New Mexico
Oil Conservation Division

Incident ID	NRM2003032458
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	>100 (ft bgs)
Did this release impact groundwater or surface water? According to OCD records, depth to water at this site is 49' bgs. - CE	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology? CE	☒ Yes ☐ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☒ No

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

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

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

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

State of New Mexico
Oil Conservation Division

Incident ID	NRM2003032458
District RP	
Facility ID	
Application ID	

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: Melanie Nolan Title: Environmental Specialist

Signature: Date: 5/21/2020

email: Melanie.Nolan@hollyenergy.com Telephone: 214-605-8303

OCD Only

Received by: Cristina Eads Date: 06/04/2020

State of New Mexico
Oil Conservation Division

Incident ID	NRM2003032458
District RP	
Facility ID	
Application ID	

Remediation Plan

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

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

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

☒ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.

☒ Extents of contamination must be fully delineated.

☒ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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

Printed Name: Melanie Nolan Title: Environmental Specialist

Signature: _____ Date: 5/21/2020

email: Melanie.Nolan@hollyenergy.com Telephone: 214-605-8303

OCD Only

Received by: Cristina Eads Date: 06/04/2020

☐ Approved ☒ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature: _____ Date: 08/07/2020

Appendix B: Photographic Documentation

Appendix B
Photographic Documentation

Photo 1: Origin of the release; inside HEP facility

Photo 2: Area represented by sample trench TT-3 (near origin)

Photo 3: Area represented by sample trench TT-2 (middle)

Photo 4: Area represented by sample trench TT-1 (terminus)

TRC Job No.	Photographs Taken By:	Page No.	Client:	Site Name/Address:	TRC
390412	Jared Stoffel (12/19/19)	1 of 1	Holly Energy Partners – Operating L.P.	Abo Centurion Station	

Appendix C: Trench Logs

TRC

LOG OF SOIL BORING

PROJECT NAME: Abo to Centurion	SOIL BORING ID: TT-1		
PROJECT NUMBER: 375540	LOCATION: Terminus of release	SHEET 1 OF 1	
LOGGED BY: Jared Stoffel		SURFACE ELEV.: —	
PROJECT LOCATION: Eddy County, NM	N: E:	DATE STARTED: 12/12/19	
DRILLED BY: —	DRILLER NAME: —	DATE COMPLETED: 12/12/19	

NO.	TYPE	%	BLOWS	PID	DEPTH	VISUAL CLASSIFICATION AND OBSERVATIONS	COMMENT
	SP-SM			>5000		brown to black sand with clay, heavy hydrocarbon odor & staining	0-1' sampled
				>5000		brown sand with trace clay, fine to medium sand, subrounded, light hydrocarbon odor	
	SP-SM			>5000	2.5		
				>5000			
				7500	5.0		
				>5000		brown medium sand with gravel, well rounded, poor sorting, moist @ 6'	7' sampled
	SW			162.2	7.5		
				109.8			
				368.0			
				93.0	10.0		10' sampled
						terminated @ 10' bgs due to low PID readings	
					12.5		
					15.0		
					17.5		
					20.0		

DRILLING METHOD	
DRILL RIG	
BORING DIAMETER	

WATER LEVEL OBSERVATIONS			
FIRST OCCURRENCE:			
DATE	TIME	DEPTH TO WATER	DEPTH TO BOTTOM

J Stoffel 2/12/20

SIGNED DATE

Cynthia K. Crain 5/21/20

CHECKED DATE

REVISED 06/2011

TRC

LOG OF SOIL BORING

PROJECT NAME: Abo to Centurion	SOIL BORING ID: TT-2		
PROJECT NUMBER: 375540	LOCATION: Middle of Release Flowpath	SHEET 1 OF 1	
LOGGED BY: Jared Stoffel		SURFACE ELEV.: —	
PROJECT LOCATION: Eddy County, NM	N: — E: —	DATE STARTED: 12/12/19	
DRILLED BY: —	DRILLER NAME: —	DATE COMPLETED: 12/12/19	

NO.	TYPE	%	BLOWS	PID	DEPTH	VISUAL CLASSIFICATION AND OBSERVATIONS	COMMENT
	SW			>5000		brown to black m. fine sand with gravel, poor sorting, heavy hydrocarbon staining & odor	0-1' sample
				>5000		brown medium sand with gravel, well rounded, poor sorting, light odor (hydrocarbon), gypsum crystals (lots)	
	SW			804.3	2.5		
				114.8			4' sample
				309.7	5.0		
				251.8			
				374.4			7' sample
					7.5	trench terminated due to backhoe refusal, appears to be caliche	
					10.0		
					12.5		
					15.0		
					17.5		
					20.0		

DRILLING METHOD	
DRILL RIG	
BORING DIAMETER	

WATER LEVEL OBSERVATIONS			
FIRST OCCURRENCE:			
DATE	TIME	DEPTH TO WATER	DEPTH TO BOTTOM

J Stoffel 2/12/20

SIGNED DATE

Cynthia K. Crain 5/21/20

CHECKED DATE

REVISED 06/2011

TRC

LOG OF SOIL BORING

PROJECT NAME: Hwy to Centurion	SOIL BORING ID: TT-3		
PROJECT NUMBER: 375540	LOCATION: Near source,	SHEET 1 OF 1	
LOGGED BY: Jared Stoffel		SURFACE ELEV.:	
PROJECT LOCATION: Eddy County, NM	N: E:	DATE STARTED: 12/12/19	
DRILLED BY: —	DRILLER NAME: —	DATE COMPLETED: 12/12/19	

NO.	TYPE	%	BLOWS	PID	DEPTH	VISUAL CLASSIFICATION AND OBSERVATIONS	COMMENT
	SP-SC			>5000		brown to black sand with clay, backhoe refusal @ 1' bgs on either side of trench (caliche),	0-1' Sample
				>5000			
				>5000	2.5		3' sample
				>5000			
				>5000	5.0		5' sample
						terminated, large diameter pipeline at base of trench; determined to be Centurion	
					7.5		
					10.0		
					12.5		
					15.0		
					17.5		
					20.0		

DRILLING METHOD	
DRILL RIG	
BORING DIAMETER	

WATER LEVEL OBSERVATIONS			
FIRST OCCURRENCE:			
DATE	TIME	DEPTH TO WATER	DEPTH TO BOTTOM

Jared Stoffel 4/12/20

SIGNED DATE

Cynthia K. Crain 5/21/20

CHECKED DATE

REVISED 06/2011

PAGE 1 OF 1

TRC

LOG OF SOIL BORING

PROJECT NAME: Holly: Abo to Centurion	SOIL BORING ID: TT-4	
PROJECT NUMBER:	LOCATION: ≈ 10' SW of TT-3	SHEET 1 OF 1
LOGGED BY: Misti Teinert		SURFACE ELEV.:
PROJECT LOCATION: Artesia, NM	N: 32.763093 W: -104.268150	DATE STARTED: 3/30/20
DRILLED BY: Backhoe / TRC — DRILLER NAME: Operator: Juan Rodriguez		DATE COMPLETED: 3/30/20

NO.	TYPE	%	BLOWS	PID	DEPTH	VISUAL CLASSIFICATION AND OBSERVATIONS	COMMENT
				305 ppm		Surface, coarse grained m. sand, dark brown	
				>5,000 ppm	1'	moderate hydrocarbon staining and odor	
						Gypsum rock layer, off-white, heavy odor	
				909 ppm	2'	Gypsum rock layer, white, light odor	
					2.5		
				538 ppm		Refusal, bright white rock layer/gypsum	
						light odor	
						Terminated due to backhoe refusal 30"	
					5.0		
					7.5		
					10.0		
					12.5		
					15.0		
					17.5		
					20.0		

DRILLING METHOD	Trench
DRILL RIG	Backhoe
BORING DIAMETER	

WATER LEVEL OBSERVATIONS			
FIRST OCCURRENCE:			
DATE	TIME	DEPTH TO WATER	DEPTH TO BOTTOM

Misti Teinert 3/30/2020
SIGNED DATE

Cynthia K. Crain 5/11/20
CHECKED DATE

REVISED 06/2011

Appendix D: Laboratory Analytical Reports

December 23, 2019

Cindy Crain
TRC Environmental Corp.
10 Desta Dr. #150E
Midland, Texas 79705
TEL: (432) 215-6730
FAX

Order No.: 1912160

RE: ABO to Centurion

Dear Cindy Crain:

DHL Analytical, Inc. received 11 sample(s) on 12/14/2019 for the analyses presented in the following report.

There were no problems with the analyses and all data met requirements of NELAP except where noted in the Case Narrative. All non-NELAP methods will be identified accordingly in the case narrative and all estimated uncertainties of test results are within method or EPA specifications.

If you have any questions regarding these tests results, please feel free to call. Thank you for using DHL Analytical.

Sincerely,

John DuPont
General Manager

This report was performed under the accreditation of the State of Texas Laboratory Certification Number: T104704211-19-24

Table of Contents

DHL ANALYTICAL
2300 Double Creek Dr. ■ Round Rock, TX 78664
Phone (512) 388-8222 ■ FAX (512) 388-8229
Web: www.dhlanalytical.com
E-Mail: login@dhlanalytical.com

№ 80460 CHAIN-OF-CUSTODY

CLIENT: TRC
ADDRESS: 10 Desta Dr STE 150E
PHONE: 432-215-6730 FAX/E-MAIL:
DATA REPORTED TO: CKrain@trccompanies.com
ADDITIONAL REPORT COPIES TO:

DATE: 12/13/19 PAGE 1 OF 1
PO #: DHL WORK ORDER #: 192160
PROJECT LOCATION OR NAME: Abo to Centurion
CLENT PROJECT #: 375540 COLLECTOR: J. Stoffel

Authorize 5% surcharge for TRRP Report? ☐ Yes ☐ No

S=SOIL W=WATER A=AIR L=LIQUID SE=SEDIMENT P=PAINT SL=SLUDGE O=OTHER SO=SOLID

PRESERVATION: HCl, HNO_3, H_2SO_4 ☐ NaOH ☐, ICE, UNPRESERVED

ANALYSES: BTEX ☒ MTBE ☐ [METHOD 8021] | TPH 1005 ☐ TPH 1006 ☐ HOLD 1006 ☐ | GRO [METHOD 8015] ☒ DRO [METHOD 8105] ☒ | VOC 8260 ☐ VOC 624 ☐ VOC 8260/5035 ☐ | SVOC 8270 ☐ PAH 8270 ☐ HOLD PAH ☐ SVOC 625 ☐ | 8270 PEST ☐ 625 PEST/PCB ☐ 608 PCB ☐ | 8270 O-P PEST ☐ 8082 PCB ☐ 8270 PCB ☐ | 8321 HERB ☐ T PHOS, AMMONIA ☐ | METALS 6020 ☐ METALS 200.8 ☐ DISS. METALS ☐ | RCRA ☐ TX11 ☐ ___ ☐ | PH ☐ HEX CHROM ☐ ALKALINITY ☐ COD ☐ | CHLORIDE ☒ ANIONS ___ ☐ | TCLP-SVOC ☐ VOC ☐ PEST ☐ HERB ☐ | TCLP-METALS ☐ RCRA 8 ☐ TX-11 ☐ Pb ☐ | RCI ☐ FLASHPOINT ☐ DGAS ☐ | TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐

Field Sample I.D.	DHL Lab #	Date	Time	Matrix	Container Type	# of Containers	Preservation	Analyses	FIELD NOTES
TB-20191213	01	12/13/19	1700	Soil	VOA, 4oz	2	UNPRESERVED	BTEX, GRO, DRO	Direct Bill
Dup-1	02	12/12/19	—		VOA, 4oz	4		BTEX, GRO, DRO, Chloride	
TT-1@0-1'	03		0238						
TT-1@7'	04		0242						
TT-1@10'	05		0248						
TT-2@0-1'	06		0256						
TT-2@4'	07		0302						
TT-2@7'	08		0306						
TT-3@0-1'	09		0320						
TT-3@3'	10		0324						
TT-3@5'	11		0328						

RELINQUISHED BY: (Signature) DATE/TIME 12/13/19 1700 RECEIVED BY: (Signature) FedEx
RELINQUISHED BY: (Signature) FedEx DATE/TIME 12/14/19 15:19 RECEIVED BY: (Signature)
RELINQUISHED BY: (Signature) DATE/TIME RECEIVED BY: (Signature)

☐ DHL DISPOSAL @ $5.00 each ☐ Return

3

TURN AROUND TIME
RUSH ☐ CALL FIRST
1 DAY ☐ CALL FIRST
2 DAY ☐
NORMAL ☒
OTHER ☐ _____

LABORATORY USE ONLY:
RECEIVING TEMP: 1.8°C THERM #: 70
CUSTODY SEALS: ☐ BROKEN ☒ INTACT ☐ NOT USED
CARRIER: ☐ LONE STAR ☒ FEDEX ☐ UPS ☐ OTHER
☐ COURIER DELIVERY
☐ HAND DELIVERED

DHL COC Rev 1 | FEB 2010

CUSTODY SEAL

DATE 12/13/19

SIGNATURE [signature]

DHL ANALYTICAL

1.8°C

ORIGIN ID:MAFA (432) 238-3003
TRC

SUITE E-150
10 DESTA DR STE 150E
MIDLAND, TX 79705
UNITED STATES US

SHIP DATE: 13DEC19
ACTWGT: 46.30 LB
CAD: 6997909/SSFO2021
DIMS: 24x13x14 IN

BILL THIRD PARTY

TO DHL ANALYTICAL

2300 DOUBLE CREEK DR

ROUND ROCK TX 78664

(512) 388-8222 REF:

FedEx
Express

E

TRK# 0201 7789 0759 9634

X0 BSMA

SATURDAY 9:30A
FIRST OVERNIGHT
AHS
78664
TX US AUS

DHL Analytical, Inc.

Sample Receipt Checklist

Client Name TRC Environmental Corp. Date Received: 12/14/2019

Work Order Number 1912160 Received by: DEW

Checklist completed by: _____ 12/16/2019 Reviewed by CC 12/16/2019
Signature | Date | Initials | Date

Carrier name: FedEx 1day

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shippping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	1.8 °C
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH<2 acceptable upon receipt?	Yes ☐	No ☐	NA ☑ LOT #
	Adjusted? _____		Checked by _____
Water - ph>9 (S) or ph>10 (CN) acceptable upon receipt?	Yes ☐	No ☐	NA ☑ LOT #
	Adjusted? _____		Checked by _____

Any No response must be detailed in the comments section below.

Client contacted: _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

Page 1 of 1

Laboratory Name: DHL Analytical, Inc.

Laboratory Review Checklist: Reportable Data

Project Name: ABO to Centurion	**LRC Date:** 12/23/19
Reviewer Name: Carlos Castro	**Laboratory Work Order:** 1912160
Prep Batch Number(s): See Prep Dates Report	**Run Batch:** See Analytical Dates Report

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
		Chain-of-Custody (C-O-C)					
R1	OI	**1)** Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				**R1-01**
		2) Were all departures from standard conditions described in an exception report?			X		
R2	OI	**Sample and Quality Control (QC) Identification**					
		1) Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		2) Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	**Test Reports**					
		1) Were all samples prepared and analyzed within holding times?	X				
		2) Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		3) Were calculations checked by a peer or supervisor?	X				
		4) Were all analyte identifications checked by a peer or supervisor?	X				
		5) Were sample detection limits reported for all analytes not detected?	X				
		6) Were all results for soil and sediment samples reported on a dry weight basis?	X				
		7) Were % moisture (or solids) reported for all soil and sediment samples?	X				
		8) Were bulk soils/solids samples for volatile analysis extracted with methanol per EPA Method 5035?	X				
		9) If required for the project, TICs reported?			X		
R4	O	**Surrogate Recovery Data**					
		1) Were surrogates added prior to extraction?	X				
		2) Were surrogate percent recoveries in all samples within the laboratory QC limits?		X			**R4-02**
R5	OI	**Test Reports/Summary Forms for Blank Samples**					
		1) Were appropriate type(s) of blanks analyzed?	X				
		2) Were blanks analyzed at the appropriate frequency?	X				
		3) Where method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		4) Were blank concentrations < MDL?	X				
		5) For analyte(s) detected in a blank sample, was the concentration, unadjusted for sample specific factors, in all associated field samples, **greater** than 10 times the concentration in the blank sample?			X		
R6	OI	**Laboratory Control Samples (LCS):**					
		1) Were all COCs included in the LCS?	X				
		2) Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		3) Were LCSs analyzed at the required frequency?	X				
		4) Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		5) Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		6) Was the LCSD RPD within QC limits (if applicable)?	X				
R7	OI	**Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Data**					
		1) Were the project/method specified analytes included in the MS and MSD?	X				
		2) Were MS/MSD analyzed at the appropriate frequency?	X				
		3) Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
		4) Were MS/MSD RPDs within laboratory QC limits?	X				
R8	OI	**Analytical Duplicate Data**					
		1) Were appropriate analytical duplicates analyzed for each matrix?	X				
		2) Were analytical duplicates analyzed at the appropriate frequency?	X				
		3) Were RPDs or relative standard deviations within the laboratory QC limits?		X			**R8-03**
R9	OI	**Method Quantitation Limits (MQLs):**					
		1) Are the MQLs for each method analyte included in the laboratory data package?	X				
		2) Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		3) Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	**Other Problems/Anomalies**					
		1) Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				**R10-01**
		2) Was applicable and available technology used to lower the SDL to minimize the matrix interference affects on the sample results?	X				
		3) Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				

Laboratory Name: DHL Analytical, Inc.

Laboratory Review Checklist (continued): Supporting Data

Project Name: ABO to Centurion	**LRC Date:** 12/23/19
Reviewer Name: Carlos Castro	**Laboratory Work Order:** 1912160
Prep Batch Number(s): See Prep Dates Report	**Run Batch:** See Analytical Dates Report

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	**Initial Calibration (ICAL)**					
		1) Were response factors and/or relative response factors for each analyte within QC limits?	X				
		2) Were percent RSDs or correlation coefficient criteria met?	X				
		3) Was the number of standards recommended in the method used for all analytes?	X				
		4) Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		5) Are ICAL data available for all instruments used?	X				
		6) Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	**Initial and Continuing calibration Verification (ICCV and CCV) and Continuing Calibration blank (CCB):**					
		1) Was the CCV analyzed at the method-required frequency?	X				
		2) Were percent differences for each analyte within the method-required QC limits?	X				
		3) Was the ICAL curve verified for each analyte?	X				
		4) Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	**Mass Spectral Tuning:**					
		1) Was the appropriate compound for the method used for tuning?	X				
		2) Were ion abundance data within the method-required QC limits?	X				
S4	O	**Internal Standards (IS):**					
		1) Were IS area counts and retention times within the method-required QC limits?	X				
S5	OI	**Raw Data (NELAC Section 5.5.10)**					
		1) Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		2) Were data associated with manual integrations flagged on the raw data?	X				
S6	O	**Dual Column Confirmation**					
		1) Did dual column confirmation results meet the method-required QC?			X		
S7	O	**Tentatively Identified Compounds (TICs):**					
		1) If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	**Interference Check Sample (ICS) Results:**					
		1) Were percent recoveries within method QC limits?			X		
S9	I	**Serial Dilutions, Post Digestion Spikes, and Method of Standard Additions**					
		1) Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
S10	OI	**Method Detection Limit (MDL) Studies**					
		1) Was a MDL study performed for each reported analyte?	X				
		2) Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	**Proficiency Test Reports:**					
		1) Was the lab's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	**Standards Documentation**					
		1) Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	**Compound/Analyte Identification Procedures**					
		1) Are the procedures for compound/analyte identification documented?	X				
S14	OI	**Demonstration of Analyst Competency (DOC)**					
		1) Was DOC conducted consistent with NELAC Chapter 5 – Appendix C?	X				
		2) Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	**Verification/Validation Documentation for Methods** (NELAC Chapter 5)					
		1) Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	**Laboratory Standard Operating Procedures (SOPs):**					
		1) Are laboratory SOPs current and on file for each method performed?	X				

1 Items identified by the letter "R" should be included in the laboratory data package submitted to the TCEQ in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2 O = organic analyses; I = inorganic analyses (and general chemistry, when applicable).
3 NA = Not applicable.
4 NR = Not Reviewed.
5 ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Data Package Signature Page – RG-366/TRRP-13

This data package consists of:

This signature page, the laboratory review checklist, and the following reportable data:

R1 Field chain-of-custody documentation;
R2 Sample identification cross-reference;
R3 Test reports (analytical data sheets) for each environmental sample that includes:
  a) Items consistent with NELAC Chapter 5,
  b) dilution factors,
  c) preparation methods,
  d) cleanup methods, and
  e) if required for the project, tentatively identified compounds (TICs).
R4 Surrogate recovery data including:
  a) Calculated recovery (%R), and
  b) The laboratory's surrogate QC limits.
R5 Test reports/summary forms for blank samples;
R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  a) LCS spiking amounts,
  b) Calculated %R for each analyte, and
  c) The laboratory's LCS QC limits.
R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  a) Samples associated with the MS/MSD clearly identified,
  b) MS/MSD spiking amounts,
  c) Concentration of each MS/MSD analyte measured in the parent and spiked samples,
  d) Calculated %Rs and relative percent differences (RPDs), and
  e) The laboratory's MS/MSD QC limits
R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  a) The amount of analyte measured in the duplicate,
  b) The calculated RPD, and
  c) The laboratory's QC limits for analytical duplicates.
R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix;
R10 Other problems or anomalies.

The Exception Report for each "No" or "Not Reviewed (NR)" item in the Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory is not accredited under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge that all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information or data affecting the quality of the data has been knowingly withheld.

This laboratory was last inspected by TCEQ on February 25-28 2019. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Name: John DuPont
Official Title: General Manager

Signature

12/23/19
Date

Name: Dr. Derhsing Luu
Official Title: Technical Director

DHL Analytical, Inc. **Date:** *23-Dec-19*

CLIENT: TRC Environmental Corp.
Project: ABO to Centurion
Lab Order: 1912160

CASE NARRATIVE

Samples were analyzed using the methods outlined in the following references:

- Method M8015D - DRO/ORO Analysis
Method M8015V - GRO Analysis
Method SW8260D - Volatile Organics Analysis
Method SW9056A - Anions Analysis
Method D2216 - Percent Moisture Analysis

Exception Report R1-01

The samples were received and log-in performed on 12/14/19. A total of 11 samples were received. The samples arrived in good condition and were properly packaged.

Exception Report R4-02

For DRO/ORO analysis performed on 12/19/19 the surrogate recoveries for five samples were above control limits for Isopropylbenzene and Octacosane. These are flagged accordingly. This was due to high concentrations of target compounds. No further corrective actions were taken.

For Volatiles analysis performed on 12/16/19 the surrogate recoveries for samples TT-1@0-1' and TT-3@5' were above control limits for 4-Bromofluorobenzene and Toluene-d8 at various dilutions. These are flagged accordingly. This was due to matrix interference. The remaining surrogates were within control limits. No further corrective actions were taken.

Exception Report R8-03

For Anions analysis performed on 12/18/19 the samples and sample duplicates (1912127-22, 1912127-23, 1912127-22-DUP & 1912127-23-DUP) had the RPDs above control limits for Chloride. This was due to matrix effect. No further corrective actions were taken.

Exception Report R10-01

For GRO analysis (batch 94142) an MS/MSD was not performed due to insufficient sample volume. An LCS/LCSD was performed instead.

DHL Analytical, Inc.

Date: *23-Dec-19*

CLIENT: TRC Environmental Corp.
Project: ABO to Centurion
Lab Order: 1912160

Work Order Sample Summary

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recved
1912160-01	TB-20191213		12/13/19 05:00 PM	12/14/2019
1912160-02	Dup-1		12/12/19	12/14/2019
1912160-03	TT-1@0-1'		12/12/19 02:30 PM	12/14/2019
1912160-04	TT-1@7'		12/12/19 02:42 PM	12/14/2019
1912160-05	TT-1@10'		12/12/19 02:48 PM	12/14/2019
1912160-06	TT-2@0-1'		12/12/19 02:56 PM	12/14/2019
1912160-07	TT-2@4'		12/12/19 03:02 PM	12/14/2019
1912160-08	TT-2@7'		12/12/19 03:08 PM	12/14/2019
1912160-09	TT-3@0-1'		12/12/19 03:20 PM	12/14/2019
1912160-10	TT-3@3'		12/12/19 03:24 PM	12/14/2019
1912160-11	TT-3@5'		12/12/19 03:28 PM	12/14/2019

DHL Analytical, Inc.

23-Dec-19

Lab Order: 1912160
Client: TRC Environmental Corp.
Project: ABO to Centurion

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1912160-01A	TB-20191213	12/13/19 05:00 PM	Trip Blank	SW5030C	Purge and Trap Water GC/MS	12/19/19 04:28 PM	94211
1912160-02A	Dup-1	12/12/19	Soil	SW5035A	Purge and Trap 5035	12/16/19 10:23 AM	94128
1912160-02B	Dup-1	12/12/19	Soil	SW5035A	Purge and Trap Soils GC- Gas	12/17/19 08:36 AM	94142
1912160-02C	Dup-1	12/12/19	Soil	SW9056A	Anion Prep	12/17/19 03:59 PM	94158
	Dup-1	12/12/19	Soil	D2216	Moisture Preparation	12/18/19 04:22 PM	94181
	Dup-1	12/12/19	Soil	SW3550C	Soil Prep Sonication: DRO	12/18/19 08:34 AM	94166
1912160-03A	TT-1@0-1'	12/12/19 02:30 PM	Soil	SW5035A	Purge and Trap 5035	12/16/19 10:23 AM	94128
1912160-03B	TT-1@0-1'	12/12/19 02:30 PM	Soil	SW5035A	Purge and Trap Soils GC- Gas	12/18/19 06:41 AM	94159
	TT-1@0-1'	12/12/19 02:30 PM	Soil	SW5035A	Purge and Trap Soils GC- Gas	12/18/19 06:41 AM	94159
1912160-03C	TT-1@0-1'	12/12/19 02:30 PM	Soil	SW9056A	Anion Prep	12/17/19 03:59 PM	94158
	TT-1@0-1'	12/12/19 02:30 PM	Soil	D2216	Moisture Preparation	12/18/19 04:22 PM	94181
	TT-1@0-1'	12/12/19 02:30 PM	Soil	SW3550C	Soil Prep Sonication: DRO	12/18/19 08:34 AM	94166
1912160-04A	TT-1@7'	12/12/19 02:42 PM	Soil	SW5035A	Purge and Trap 5035	12/16/19 10:23 AM	94128
1912160-04B	TT-1@7'	12/12/19 02:42 PM	Soil	SW5035A	Purge and Trap Soils GC- Gas	12/17/19 08:36 AM	94142
1912160-04C	TT-1@7'	12/12/19 02:42 PM	Soil	SW9056A	Anion Prep	12/17/19 03:59 PM	94158
	TT-1@7'	12/12/19 02:42 PM	Soil	SW9056A	Anion Prep	12/17/19 03:59 PM	94158
	TT-1@7'	12/12/19 02:42 PM	Soil	D2216	Moisture Preparation	12/19/19 04:06 PM	94206
	TT-1@7'	12/12/19 02:42 PM	Soil	SW3550C	Soil Prep Sonication: DRO	12/18/19 08:34 AM	94166
1912160-05A	TT-1@10'	12/12/19 02:48 PM	Soil	SW5035A	Purge and Trap 5035	12/16/19 10:23 AM	94128
1912160-05B	TT-1@10'	12/12/19 02:48 PM	Soil	SW5035A	Purge and Trap Soils GC- Gas	12/17/19 08:36 AM	94142
1912160-05C	TT-1@10'	12/12/19 02:48 PM	Soil	SW9056A	Anion Prep	12/17/19 03:59 PM	94158
	TT-1@10'	12/12/19 02:48 PM	Soil	SW9056A	Anion Prep	12/17/19 03:59 PM	94158
	TT-1@10'	12/12/19 02:48 PM	Soil	D2216	Moisture Preparation	12/19/19 04:06 PM	94206
	TT-1@10'	12/12/19 02:48 PM	Soil	SW3550C	Soil Prep Sonication: DRO	12/18/19 08:34 AM	94166
1912160-06A	TT-2@0-1'	12/12/19 02:56 PM	Soil	SW5035A	Purge and Trap 5035	12/16/19 10:23 AM	94128
1912160-06B	TT-2@0-1'	12/12/19 02:56 PM	Soil	SW5035A	Purge and Trap Soils GC- Gas	12/18/19 06:41 AM	94159
1912160-06C	TT-2@0-1'	12/12/19 02:56 PM	Soil	SW9056A	Anion Prep	12/17/19 03:59 PM	94158
	TT-2@0-1'	12/12/19 02:56 PM	Soil	D2216	Moisture Preparation	12/19/19 04:06 PM	94206

Lab Order: 1912160
Client: TRC Environmental Corp.
Project: ABO to Centurion

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1912160-06C	TT-2@0-1'	12/12/19 02:56 PM	Soil	SW3550C	Soil Prep Sonication: DRO	12/18/19 08:34 AM	94166
1912160-07A	TT-2@4'	12/12/19 03:02 PM	Soil	SW5035A	Purge and Trap 5035	12/16/19 10:23 AM	94128
1912160-07B	TT-2@4'	12/12/19 03:02 PM	Soil	SW5035A	Purge and Trap Soils GC- Gas	12/17/19 08:36 AM	94142
1912160-07C	TT-2@4'	12/12/19 03:02 PM	Soil	SW9056A	Anion Prep	12/17/19 03:59 PM	94158
	TT-2@4'	12/12/19 03:02 PM	Soil	D2216	Moisture Preparation	12/19/19 04:06 PM	94206
	TT-2@4'	12/12/19 03:02 PM	Soil	SW3550C	Soil Prep Sonication: DRO	12/18/19 08:34 AM	94166
1912160-08A	TT-2@7'	12/12/19 03:08 PM	Soil	SW5035A	Purge and Trap 5035	12/16/19 10:23 AM	94128
1912160-08B	TT-2@7'	12/12/19 03:08 PM	Soil	SW5035A	Purge and Trap Soils GC- Gas	12/17/19 08:36 AM	94142
1912160-08C	TT-2@7'	12/12/19 03:08 PM	Soil	SW9056A	Anion Prep	12/17/19 03:59 PM	94158
	TT-2@7'	12/12/19 03:08 PM	Soil	D2216	Moisture Preparation	12/19/19 04:06 PM	94206
	TT-2@7'	12/12/19 03:08 PM	Soil	SW3550C	Soil Prep Sonication: DRO	12/18/19 08:34 AM	94166
1912160-09A	TT-3@0-1'	12/12/19 03:20 PM	Soil	SW5035A	Purge and Trap 5035	12/16/19 10:23 AM	94128
1912160-09B	TT-3@0-1'	12/12/19 03:20 PM	Soil	SW5035A	Purge and Trap Soils GC- Gas	12/18/19 06:41 AM	94159
1912160-09C	TT-3@0-1'	12/12/19 03:20 PM	Soil	SW9056A	Anion Prep	12/17/19 03:59 PM	94158
	TT-3@0-1'	12/12/19 03:20 PM	Soil	D2216	Moisture Preparation	12/19/19 04:06 PM	94206
	TT-3@0-1'	12/12/19 03:20 PM	Soil	SW3550C	Soil Prep Sonication: DRO	12/18/19 08:34 AM	94166
1912160-10A	TT-3@3'	12/12/19 03:24 PM	Soil	SW5035A	Purge and Trap 5035	12/16/19 10:23 AM	94128
1912160-10B	TT-3@3'	12/12/19 03:24 PM	Soil	SW5035A	Purge and Trap Soils GC- Gas	12/18/19 06:41 AM	94159
1912160-10C	TT-3@3'	12/12/19 03:24 PM	Soil	SW9056A	Anion Prep	12/17/19 03:59 PM	94158
	TT-3@3'	12/12/19 03:24 PM	Soil	D2216	Moisture Preparation	12/19/19 04:06 PM	94206
	TT-3@3'	12/12/19 03:24 PM	Soil	SW3550C	Soil Prep Sonication: DRO	12/18/19 08:34 AM	94166
1912160-11A	TT-3@5'	12/12/19 03:28 PM	Soil	SW5035A	Purge and Trap 5035	12/16/19 10:23 AM	94128
	TT-3@5'	12/12/19 03:28 PM	Soil	SW5035A	Purge and Trap 5035	12/16/19 10:23 AM	94128
1912160-11B	TT-3@5'	12/12/19 03:28 PM	Soil	SW5035A	Purge and Trap Soils GC- Gas	12/18/19 06:41 AM	94159
1912160-11C	TT-3@5'	12/12/19 03:28 PM	Soil	SW9056A	Anion Prep	12/17/19 03:59 PM	94158
	TT-3@5'	12/12/19 03:28 PM	Soil	D2216	Moisture Preparation	12/19/19 04:06 PM	94206
	TT-3@5'	12/12/19 03:28 PM	Soil	SW3550C	Soil Prep Sonication: DRO	12/18/19 08:34 AM	94166

Lab Order: 1912160
Client: TRC Environmental Corp.
Project: ABO to Centurion

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1912160-01A	TB-20191213	Trip Blank	SW8260D	Volatile Aromatics by GC/MS	94211	1	12/19/19 10:28 PM	GCMS3_191219A
1912160-02A	Dup-1	Soil	SW8260D	Volatiles by 8260/5035 GC/MS	94128	50	12/16/19 05:10 PM	GCMS2_191216A
1912160-02B	Dup-1	Soil	M8015V	TPH Purgeable by GC - Soil	94142	20	12/17/19 08:10 PM	GC4_191217A
1912160-02C	Dup-1	Soil	SW9056A	Anions by IC method - Soil	94158	1	12/18/19 10:20 PM	IC4_191218A
	Dup-1	Soil	D2216	Percent Moisture	94181	1	12/19/19 08:37 AM	PMOIST_191218A
	Dup-1	Soil	M8015D	TPH Extractable by GC - Soil	94166	1	12/19/19 02:44 PM	GC15_191219A
1912160-03A	TT-1@0-1'	Soil	SW8260D	Volatiles by 8260/5035 GC/MS	94128	50	12/16/19 08:00 PM	GCMS2_191216A
1912160-03B	TT-1@0-1'	Soil	M8015V	TPH Purgeable by GC - Soil	94159	200	12/18/19 11:52 PM	GC4_191218A
	TT-1@0-1'	Soil	M8015V	TPH Purgeable by GC - Soil	94159	500	12/19/19 01:07 PM	GC4_191219A
1912160-03C	TT-1@0-1'	Soil	SW9056A	Anions by IC method - Soil	94158	1	12/18/19 10:36 PM	IC4_191218A
	TT-1@0-1'	Soil	D2216	Percent Moisture	94181	1	12/19/19 08:37 AM	PMOIST_191218A
	TT-1@0-1'	Soil	M8015D	TPH Extractable by GC - Soil	94166	100	12/19/19 04:47 PM	GC15_191219A
1912160-04A	TT-1@7'	Soil	SW8260D	Volatiles by 8260/5035 GC/MS	94128	50	12/16/19 05:38 PM	GCMS2_191216A
1912160-04B	TT-1@7'	Soil	M8015V	TPH Purgeable by GC - Soil	94142	20	12/17/19 08:34 PM	GC4_191217A
1912160-04C	TT-1@7'	Soil	SW9056A	Anions by IC method - Soil	94158	10	12/19/19 10:17 AM	IC4_191219A
	TT-1@7'	Soil	SW9056A	Anions by IC method - Soil	94158	1	12/18/19 10:52 PM	IC4_191218A
	TT-1@7'	Soil	D2216	Percent Moisture	94206	1	12/20/19 07:55 AM	PMOIST_191219A
	TT-1@7'	Soil	M8015D	TPH Extractable by GC - Soil	94166	1	12/19/19 02:53 PM	GC15_191219A
1912160-05A	TT-1@10'	Soil	SW8260D	Volatiles by 8260/5035 GC/MS	94128	50	12/16/19 06:06 PM	GCMS2_191216A
1912160-05B	TT-1@10'	Soil	M8015V	TPH Purgeable by GC - Soil	94142	20	12/17/19 08:58 PM	GC4_191217A
1912160-05C	TT-1@10'	Soil	SW9056A	Anions by IC method - Soil	94158	1	12/18/19 11:08 PM	IC4_191218A
	TT-1@10'	Soil	SW9056A	Anions by IC method - Soil	94158	10	12/19/19 10:33 AM	IC4_191219A
	TT-1@10'	Soil	D2216	Percent Moisture	94206	1	12/20/19 07:55 AM	PMOIST_191219A
	TT-1@10'	Soil	M8015D	TPH Extractable by GC - Soil	94166	1	12/19/19 03:02 PM	GC15_191219A
1912160-06A	TT-2@0-1'	Soil	SW8260D	Volatiles by 8260/5035 GC/MS	94128	2000	12/16/19 08:56 PM	GCMS2_191216A
1912160-06B	TT-2@0-1'	Soil	M8015V	TPH Purgeable by GC - Soil	94159	2000	12/18/19 04:41 PM	GC4_191218A
1912160-06C	TT-2@0-1'	Soil	SW9056A	Anions by IC method - Soil	94158	1	12/18/19 11:24 PM	IC4_191218A
	TT-2@0-1'	Soil	D2216	Percent Moisture	94206	1	12/20/19 07:55 AM	PMOIST_191219A

Lab Order: 1912160
Client: TRC Environmental Corp.
Project: ABO to Centurion

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1912160-06C	TT-2@0-1'	Soil	M8015D	TPH Extractable by GC - Soil	94166	100	12/19/19 04:56 PM	GC15_191219A
1912160-07A	TT-2@4'	Soil	SW8260D	Volatiles by 8260/5035 GC/MS	94128	50	12/16/19 06:35 PM	GCMS2_191216A
1912160-07B	TT-2@4'	Soil	M8015V	TPH Purgeable by GC - Soil	94142	20	12/17/19 09:21 PM	GC4_191217A
1912160-07C	TT-2@4'	Soil	SW9056A	Anions by IC method - Soil	94158	1	12/18/19 11:40 PM	IC4_191218A
	TT-2@4'	Soil	D2216	Percent Moisture	94206	1	12/20/19 07:55 AM	PMOIST_191219A
	TT-2@4'	Soil	M8015D	TPH Extractable by GC - Soil	94166	1	12/19/19 03:12 PM	GC15_191219A
1912160-08A	TT-2@7'	Soil	SW8260D	Volatiles by 8260/5035 GC/MS	94128	50	12/16/19 07:03 PM	GCMS2_191216A
1912160-08B	TT-2@7'	Soil	M8015V	TPH Purgeable by GC - Soil	94142	20	12/17/19 09:45 PM	GC4_191217A
1912160-08C	TT-2@7'	Soil	SW9056A	Anions by IC method - Soil	94158	1	12/18/19 11:56 PM	IC4_191218A
	TT-2@7'	Soil	D2216	Percent Moisture	94206	1	12/20/19 07:55 AM	PMOIST_191219A
	TT-2@7'	Soil	M8015D	TPH Extractable by GC - Soil	94166	1	12/19/19 03:21 PM	GC15_191219A
1912160-09A	TT-3@0-1'	Soil	SW8260D	Volatiles by 8260/5035 GC/MS	94128	2000	12/16/19 09:24 PM	GCMS2_191216A
1912160-09B	TT-3@0-1'	Soil	M8015V	TPH Purgeable by GC - Soil	94159	2000	12/18/19 05:29 PM	GC4_191218A
1912160-09C	TT-3@0-1'	Soil	SW9056A	Anions by IC method - Soil	94158	1	12/19/19 12:12 AM	IC4_191218A
	TT-3@0-1'	Soil	D2216	Percent Moisture	94206	1	12/20/19 07:55 AM	PMOIST_191219A
	TT-3@0-1'	Soil	M8015D	TPH Extractable by GC - Soil	94166	100	12/19/19 05:05 PM	GC15_191219A
1912160-10A	TT-3@3'	Soil	SW8260D	Volatiles by 8260/5035 GC/MS	94128	2000	12/16/19 09:53 PM	GCMS2_191216A
1912160-10B	TT-3@3'	Soil	M8015V	TPH Purgeable by GC - Soil	94159	2000	12/18/19 06:16 PM	GC4_191218A
1912160-10C	TT-3@3'	Soil	SW9056A	Anions by IC method - Soil	94158	1	12/19/19 12:28 AM	IC4_191218A
	TT-3@3'	Soil	D2216	Percent Moisture	94206	1	12/20/19 07:55 AM	PMOIST_191219A
	TT-3@3'	Soil	M8015D	TPH Extractable by GC - Soil	94166	100	12/19/19 05:14 PM	GC15_191219A
1912160-11A	TT-3@5'	Soil	SW8260D	Volatiles by 8260/5035 GC/MS	94128	50	12/16/19 10:21 PM	GCMS2_191216A
	TT-3@5'	Soil	SW8260D	Volatiles by 8260/5035 GC/MS	94128	2000	12/17/19 03:39 PM	GCMS2_191217B
1912160-11B	TT-3@5'	Soil	M8015V	TPH Purgeable by GC - Soil	94159	2000	12/18/19 07:04 PM	GC4_191218A
1912160-11C	TT-3@5'	Soil	SW9056A	Anions by IC method - Soil	94158	1	12/19/19 12:44 AM	IC4_191218A
	TT-3@5'	Soil	D2216	Percent Moisture	94206	1	12/20/19 07:55 AM	PMOIST_191219A
	TT-3@5'	Soil	M8015D	TPH Extractable by GC - Soil	94166	100	12/19/19 05:23 PM	GC15_191219A

DHL Analytical, Inc.

Date: *23-Dec-19*

CLIENT:	TRC Environmental Corp.	**Client Sample ID:**	TB-20191213
Project:	ABO to Centurion	**Lab ID:**	1912160-01
Project No:	375540	**Collection Date:**	12/13/19 05:00 PM
Lab Order:	1912160	**Matrix:**	TRIP BLANK

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
VOLATILE AROMATICS BY GC/MS		**SW8260D**					Analyst: **BTJ**
Benzene	<0.000800	0.000800	0.00200		mg/L	1	12/19/19 10:28 PM
Ethylbenzene	<0.00200	0.00200	0.00600		mg/L	1	12/19/19 10:28 PM
Toluene	<0.00200	0.00200	0.00600		mg/L	1	12/19/19 10:28 PM
Total Xylenes	<0.00200	0.00200	0.00600		mg/L	1	12/19/19 10:28 PM
Surr: 1,2-Dichloroethane-d4	98.1	0	72-119		%REC	1	12/19/19 10:28 PM
Surr: 4-Bromofluorobenzene	97.2	0	76-119		%REC	1	12/19/19 10:28 PM
Surr: Dibromofluoromethane	101	0	85-115		%REC	1	12/19/19 10:28 PM
Surr: Toluene-d8	99.1	0	81-120		%REC	1	12/19/19 10:28 PM

Qualifiers:

ND - Not Detected at the SDL
J - Analyte detected between SDL and RL
B - Analyte detected in the associated Method Blank
DF- Dilution Factor
N - Parameter not NELAP certified
See Final Page of Report for MQLs and MDLs
S - Spike Recovery outside control limits
C - Sample Result or QC discussed in Case Narrative
RL - Reporting Limit (MQL adjusted for moisture and sample size)
SDL - Sample Detection Limit
E - TPH pattern not Gas or Diesel Range Pattern

DHL Analytical, Inc.

Date: *23-Dec-19*

CLIENT: TRC Environmental Corp.
Project: ABO to Centurion
Project No: 375540
Lab Order: 1912160

Client Sample ID: Dup-1
Lab ID: 1912160-02
Collection Date: 12/12/19
Matrix: SOIL

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
TPH EXTRACTABLE BY GC - SOIL		**M8015D**					Analyst: **BTJ**
TPH-DRO C10-C28	<3.30	3.30	11.0		mg/Kg-dry	1	12/19/19 02:44 PM
TPH-ORO >C28-C35	<3.30	3.30	11.0		mg/Kg-dry	1	12/19/19 02:44 PM
Surr: Isopropylbenzene	93.8	0	47-142		%REC	1	12/19/19 02:44 PM
Surr: Octacosane	70.3	0	25-162		%REC	1	12/19/19 02:44 PM
TPH PURGEABLE BY GC - SOIL		**M8015V**					Analyst: **BTJ**
Gasoline Range Organics	4.05	2.04	4.09	J	mg/Kg-dry	20	12/17/19 08:10 PM
Surr: Tetrachlorethene	106	0	70-134		%REC	20	12/17/19 08:10 PM
VOLATILES BY 8260/5035 GC/MS		**SW8260D**					Analyst: **DEW**
Benzene	<0.0511	0.0511	0.255		mg/Kg-dry	50	12/16/19 05:10 PM
Ethylbenzene	<0.0511	0.0511	0.255		mg/Kg-dry	50	12/16/19 05:10 PM
Toluene	<0.0511	0.0511	0.255		mg/Kg-dry	50	12/16/19 05:10 PM
Xylenes, Total	<0.0511	0.0511	0.255		mg/Kg-dry	50	12/16/19 05:10 PM
Surr: 1,2-Dichloroethane-d4	87.2	0	52-149		%REC	50	12/16/19 05:10 PM
Surr: 4-Bromofluorobenzene	91.5	0	84-118		%REC	50	12/16/19 05:10 PM
Surr: Dibromofluoromethane	96.6	0	65-135		%REC	50	12/16/19 05:10 PM
Surr: Toluene-d8	94.3	0	84-116		%REC	50	12/16/19 05:10 PM
ANIONS BY IC METHOD - SOIL		**SW9056A**					Analyst: **SNM**
Chloride	5.37	2.12	5.30		mg/Kg-dry	1	12/18/19 10:20 PM
PERCENT MOISTURE		**D2216**					Analyst: **RBW**
Percent Moisture	11.3	0	0		WT%	1	12/19/19 08:37 AM

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C - Sample Result or QC discussed in Case Narrative
RL - Reporting Limit (MQL adjusted for moisture and sample size)
SDL - Sample Detection Limit
E - TPH pattern not Gas or Diesel Range Pattern

DHL Analytical, Inc.

Date: *23-Dec-19*

CLIENT: TRC Environmental Corp.
Project: ABO to Centurion
Project No: 375540
Lab Order: 1912160

Client Sample ID: TT-1@0-1'
Lab ID: 1912160-03
Collection Date: 12/12/19 02:30 PM
Matrix: SOIL

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
TPH EXTRACTABLE BY GC - SOIL		**M8015D**					Analyst: **BTJ**
TPH-DRO C10-C28	4410	350	1170		mg/Kg-dry	100	12/19/19 04:47 PM
TPH-ORO >C28-C35	457	350	1170	J	mg/Kg-dry	100	12/19/19 04:47 PM
Surr: Isopropylbenzene	171	0	47-142	S	%REC	100	12/19/19 04:47 PM
Surr: Octacosane	467	0	25-162	S	%REC	100	12/19/19 04:47 PM
TPH PURGEABLE BY GC - SOIL		**M8015V**					Analyst: **BTJ**
Gasoline Range Organics	3070	52.7	105		mg/Kg-dry	500	12/19/19 01:07 PM
Surr: Tetrachlorethene	104	0	70-134		%REC	500	12/19/19 01:07 PM
VOLATILES BY 8260/5035 GC/MS		**SW8260D**					Analyst: **DEW**
Benzene	0.329	0.0527	0.264		mg/Kg-dry	50	12/16/19 08:00 PM
Ethylbenzene	17.9	0.0527	0.264		mg/Kg-dry	50	12/16/19 08:00 PM
Toluene	22.9	0.0527	0.264		mg/Kg-dry	50	12/16/19 08:00 PM
Xylenes, Total	66.7	0.0527	0.264		mg/Kg-dry	50	12/16/19 08:00 PM
Surr: 1,2-Dichloroethane-d4	84.5	0	52-149		%REC	50	12/16/19 08:00 PM
Surr: 4-Bromofluorobenzene	126	0	84-118	S	%REC	50	12/16/19 08:00 PM
Surr: Dibromofluoromethane	95.4	0	65-135		%REC	50	12/16/19 08:00 PM
Surr: Toluene-d8	117	0	84-116	S	%REC	50	12/16/19 08:00 PM
ANIONS BY IC METHOD - SOIL		**SW9056A**					Analyst: **SNM**
Chloride	22.9	2.28	5.69		mg/Kg-dry	1	12/18/19 10:36 PM
PERCENT MOISTURE		**D2216**					Analyst: **RBW**
Percent Moisture	16.6	0	0		WT%	1	12/19/19 08:37 AM

Qualifiers:

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See Final Page of Report for MQLs and MDLs
S - Spike Recovery outside control limits
C - Sample Result or QC discussed in Case Narrative
RL - Reporting Limit (MQL adjusted for moisture and sample size)
SDL - Sample Detection Limit
E - TPH pattern not Gas or Diesel Range Pattern

DHL Analytical, Inc.

Date: *23-Dec-19*

CLIENT: TRC Environmental Corp.
Project: ABO to Centurion
Project No: 375540
Lab Order: 1912160

Client Sample ID: TT-1@7'
Lab ID: 1912160-04
Collection Date: 12/12/19 02:42 PM
Matrix: SOIL

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
TPH EXTRACTABLE BY GC - SOIL		**M8015D**					Analyst: **BTJ**
TPH-DRO C10-C28	<3.38	3.38	11.3		mg/Kg-dry	1	12/19/19 02:53 PM
TPH-ORO >C28-C35	<3.38	3.38	11.3		mg/Kg-dry	1	12/19/19 02:53 PM
Surr: Isopropylbenzene	98.5	0	47-142		%REC	1	12/19/19 02:53 PM
Surr: Octacosane	73.6	0	25-162		%REC	1	12/19/19 02:53 PM
TPH PURGEABLE BY GC - SOIL		**M8015V**					Analyst: **BTJ**
Gasoline Range Organics	<2.19	2.19	4.39		mg/Kg-dry	20	12/17/19 08:34 PM
Surr: Tetrachlorethene	126	0	70-134		%REC	20	12/17/19 08:34 PM
VOLATILES BY 8260/5035 GC/MS		**SW8260D**					Analyst: **DEW**
Benzene	<0.0548	0.0548	0.274		mg/Kg-dry	50	12/16/19 05:38 PM
Ethylbenzene	<0.0548	0.0548	0.274		mg/Kg-dry	50	12/16/19 05:38 PM
Toluene	<0.0548	0.0548	0.274		mg/Kg-dry	50	12/16/19 05:38 PM
Xylenes, Total	<0.0548	0.0548	0.274		mg/Kg-dry	50	12/16/19 05:38 PM
Surr: 1,2-Dichloroethane-d4	84.3	0	52-149		%REC	50	12/16/19 05:38 PM
Surr: 4-Bromofluorobenzene	91.1	0	84-118		%REC	50	12/16/19 05:38 PM
Surr: Dibromofluoromethane	94.9	0	65-135		%REC	50	12/16/19 05:38 PM
Surr: Toluene-d8	95.5	0	84-116		%REC	50	12/16/19 05:38 PM
ANIONS BY IC METHOD - SOIL		**SW9056A**					Analyst: **SNM**
Chloride	452	21.8	54.4		mg/Kg-dry	10	12/19/19 10:17 AM
PERCENT MOISTURE		**D2216**					Analyst: **RBW**
Percent Moisture	12.8	0	0		WT%	1	12/20/19 07:55 AM

Qualifiers:

ND - Not Detected at the SDL
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N - Parameter not NELAP certified
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S - Spike Recovery outside control limits
C - Sample Result or QC discussed in Case Narrative
RL - Reporting Limit (MQL adjusted for moisture and sample size)
SDL - Sample Detection Limit
E - TPH pattern not Gas or Diesel Range Pattern

DHL Analytical, Inc.

Date: *23-Dec-19*

CLIENT: TRC Environmental Corp.
Project: ABO to Centurion
Project No: 375540
Lab Order: 1912160

Client Sample ID: TT-1@10'
Lab ID: 1912160-05
Collection Date: 12/12/19 02:48 PM
Matrix: SOIL

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
TPH EXTRACTABLE BY GC - SOIL		**M8015D**					Analyst: **BTJ**
TPH-DRO C10-C28	<3.54	3.54	11.8		mg/Kg-dry	1	12/19/19 03:02 PM
TPH-ORO >C28-C35	<3.54	3.54	11.8		mg/Kg-dry	1	12/19/19 03:02 PM
Surr: Isopropylbenzene	100	0	47-142		%REC	1	12/19/19 03:02 PM
Surr: Octacosane	71.7	0	25-162		%REC	1	12/19/19 03:02 PM
TPH PURGEABLE BY GC - SOIL		**M8015V**					Analyst: **BTJ**
Gasoline Range Organics	<2.25	2.25	4.50		mg/Kg-dry	20	12/17/19 08:58 PM
Surr: Tetrachlorethene	119	0	70-134		%REC	20	12/17/19 08:58 PM
VOLATILES BY 8260/5035 GC/MS		**SW8260D**					Analyst: **DEW**
Benzene	0.0563	0.0563	0.281	J	mg/Kg-dry	50	12/16/19 06:06 PM
Ethylbenzene	<0.0563	0.0563	0.281		mg/Kg-dry	50	12/16/19 06:06 PM
Toluene	0.146	0.0563	0.281	J	mg/Kg-dry	50	12/16/19 06:06 PM
Xylenes, Total	<0.0563	0.0563	0.281		mg/Kg-dry	50	12/16/19 06:06 PM
Surr: 1,2-Dichloroethane-d4	84.7	0	52-149		%REC	50	12/16/19 06:06 PM
Surr: 4-Bromofluorobenzene	87.8	0	84-118		%REC	50	12/16/19 06:06 PM
Surr: Dibromofluoromethane	96.2	0	65-135		%REC	50	12/16/19 06:06 PM
Surr: Toluene-d8	95.0	0	84-116		%REC	50	12/16/19 06:06 PM
ANIONS BY IC METHOD - SOIL		**SW9056A**					Analyst: **SNM**
Chloride	358	22.8	57.1		mg/Kg-dry	10	12/19/19 10:33 AM
PERCENT MOISTURE		**D2216**					Analyst: **RBW**
Percent Moisture	18.2	0	0		WT%	1	12/20/19 07:55 AM

Qualifiers:

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S - Spike Recovery outside control limits
C - Sample Result or QC discussed in Case Narrative
RL - Reporting Limit (MQL adjusted for moisture and sample size)
SDL - Sample Detection Limit
E - TPH pattern not Gas or Diesel Range Pattern

DHL Analytical, Inc.

Date: *23-Dec-19*

CLIENT: TRC Environmental Corp.
Project: ABO to Centurion
Project No: 375540
Lab Order: 1912160

Client Sample ID: TT-2@0-1'
Lab ID: 1912160-06
Collection Date: 12/12/19 02:56 PM
Matrix: SOIL

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
TPH EXTRACTABLE BY GC - SOIL		**M8015D**					Analyst: **BTJ**
TPH-DRO C10-C28	13400	327	1090		mg/Kg-dry	100	12/19/19 04:56 PM
TPH-ORO >C28-C35	1080	327	1090	J	mg/Kg-dry	100	12/19/19 04:56 PM
Surr: Isopropylbenzene	809	0	47-142	S	%REC	100	12/19/19 04:56 PM
Surr: Octacosane	1590	0	25-162	S	%REC	100	12/19/19 04:56 PM
TPH PURGEABLE BY GC - SOIL		**M8015V**					Analyst: **BTJ**
Gasoline Range Organics	7880	210	419		mg/Kg-dry	2000	12/18/19 04:41 PM
Surr: Tetrachlorethene	102	0	70-134		%REC	2000	12/18/19 04:41 PM
VOLATILES BY 8260/5035 GC/MS		**SW8260D**					Analyst: **DEW**
Benzene	31.7	2.10	10.5		mg/Kg-dry	2000	12/16/19 08:56 PM
Ethylbenzene	61.4	2.10	10.5		mg/Kg-dry	2000	12/16/19 08:56 PM
Toluene	161	2.10	10.5		mg/Kg-dry	2000	12/16/19 08:56 PM
Xylenes, Total	214	2.10	10.5		mg/Kg-dry	2000	12/16/19 08:56 PM
Surr: 1,2-Dichloroethane-d4	87.0	0	52-149		%REC	2000	12/16/19 08:56 PM
Surr: 4-Bromofluorobenzene	93.3	0	84-118		%REC	2000	12/16/19 08:56 PM
Surr: Dibromofluoromethane	99.9	0	65-135		%REC	2000	12/16/19 08:56 PM
Surr: Toluene-d8	99.2	0	84-116		%REC	2000	12/16/19 08:56 PM
ANIONS BY IC METHOD - SOIL		**SW9056A**					Analyst: **SNM**
Chloride	31.0	2.24	5.60		mg/Kg-dry	1	12/18/19 11:24 PM
PERCENT MOISTURE		**D2216**					Analyst: **RBW**
Percent Moisture	12.1	0	0		WT%	1	12/20/19 07:55 AM

Qualifiers:

ND - Not Detected at the SDL
J - Analyte detected between SDL and RL
B - Analyte detected in the associated Method Blank
DF- Dilution Factor
N - Parameter not NELAP certified
See Final Page of Report for MQLs and MDLs
S - Spike Recovery outside control limits
C - Sample Result or QC discussed in Case Narrative
RL - Reporting Limit (MQL adjusted for moisture and sample size)
SDL - Sample Detection Limit
E - TPH pattern not Gas or Diesel Range Pattern

DHL Analytical, Inc.

Date: *23-Dec-19*

CLIENT: TRC Environmental Corp.
Project: ABO to Centurion
Project No: 375540
Lab Order: 1912160

Client Sample ID: TT-2@4'
Lab ID: 1912160-07
Collection Date: 12/12/19 03:02 PM
Matrix: SOIL

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
TPH EXTRACTABLE BY GC - SOIL		**M8015D**					Analyst: **BTJ**
TPH-DRO C10-C28	<3.14	3.14	10.5		mg/Kg-dry	1	12/19/19 03:12 PM
TPH-ORO >C28-C35	<3.14	3.14	10.5		mg/Kg-dry	1	12/19/19 03:12 PM
Surr: Isopropylbenzene	96.0	0	47-142		%REC	1	12/19/19 03:12 PM
Surr: Octacosane	73.0	0	25-162		%REC	1	12/19/19 03:12 PM
TPH PURGEABLE BY GC - SOIL		**M8015V**					Analyst: **BTJ**
Gasoline Range Organics	<2.14	2.14	4.28		mg/Kg-dry	20	12/17/19 09:21 PM
Surr: Tetrachlorethene	114	0	70-134		%REC	20	12/17/19 09:21 PM
VOLATILES BY 8260/5035 GC/MS		**SW8260D**					Analyst: **DEW**
Benzene	<0.0535	0.0535	0.268		mg/Kg-dry	50	12/16/19 06:35 PM
Ethylbenzene	<0.0535	0.0535	0.268		mg/Kg-dry	50	12/16/19 06:35 PM
Toluene	<0.0535	0.0535	0.268		mg/Kg-dry	50	12/16/19 06:35 PM
Xylenes, Total	<0.0535	0.0535	0.268		mg/Kg-dry	50	12/16/19 06:35 PM
Surr: 1,2-Dichloroethane-d4	90.8	0	52-149		%REC	50	12/16/19 06:35 PM
Surr: 4-Bromofluorobenzene	89.3	0	84-118		%REC	50	12/16/19 06:35 PM
Surr: Dibromofluoromethane	99.1	0	65-135		%REC	50	12/16/19 06:35 PM
Surr: Toluene-d8	92.9	0	84-116		%REC	50	12/16/19 06:35 PM
ANIONS BY IC METHOD - SOIL		**SW9056A**					Analyst: **SNM**
Chloride	10.3	2.09	5.23		mg/Kg-dry	1	12/18/19 11:40 PM
PERCENT MOISTURE		**D2216**					Analyst: **RBW**
Percent Moisture	5.62	0	0		WT%	1	12/20/19 07:55 AM

Qualifiers:

ND - Not Detected at the SDL
J - Analyte detected between SDL and RL
B - Analyte detected in the associated Method Blank
DF- Dilution Factor
N - Parameter not NELAP certified
See Final Page of Report for MQLs and MDLs
S - Spike Recovery outside control limits
C - Sample Result or QC discussed in Case Narrative
RL - Reporting Limit (MQL adjusted for moisture and sample size)
SDL - Sample Detection Limit
E - TPH pattern not Gas or Diesel Range Pattern

DHL Analytical, Inc.

Date: *23-Dec-19*

CLIENT: TRC Environmental Corp.
Project: ABO to Centurion
Project No: 375540
Lab Order: 1912160

Client Sample ID: TT-2@7'
Lab ID: 1912160-08
Collection Date: 12/12/19 03:08 PM
Matrix: SOIL

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
TPH EXTRACTABLE BY GC - SOIL		**M8015D**					Analyst: **BTJ**
TPH-DRO C10-C28	11.6	3.31	11.0		mg/Kg-dry	1	12/19/19 03:21 PM
TPH-ORO >C28-C35	<3.31	3.31	11.0		mg/Kg-dry	1	12/19/19 03:21 PM
Surr: Isopropylbenzene	95.5	0	47-142		%REC	1	12/19/19 03:21 PM
Surr: Octacosane	76.4	0	25-162		%REC	1	12/19/19 03:21 PM
TPH PURGEABLE BY GC - SOIL		**M8015V**					Analyst: **BTJ**
Gasoline Range Organics	<2.22	2.22	4.45		mg/Kg-dry	20	12/17/19 09:45 PM
Surr: Tetrachlorethene	115	0	70-134		%REC	20	12/17/19 09:45 PM
VOLATILES BY 8260/5035 GC/MS		**SW8260D**					Analyst: **DEW**
Benzene	<0.0556	0.0556	0.278		mg/Kg-dry	50	12/16/19 07:03 PM
Ethylbenzene	<0.0556	0.0556	0.278		mg/Kg-dry	50	12/16/19 07:03 PM
Toluene	<0.0556	0.0556	0.278		mg/Kg-dry	50	12/16/19 07:03 PM
Xylenes, Total	<0.0556	0.0556	0.278		mg/Kg-dry	50	12/16/19 07:03 PM
Surr: 1,2-Dichloroethane-d4	86.8	0	52-149		%REC	50	12/16/19 07:03 PM
Surr: 4-Bromofluorobenzene	90.2	0	84-118		%REC	50	12/16/19 07:03 PM
Surr: Dibromofluoromethane	96.1	0	65-135		%REC	50	12/16/19 07:03 PM
Surr: Toluene-d8	95.8	0	84-116		%REC	50	12/16/19 07:03 PM
ANIONS BY IC METHOD - SOIL		**SW9056A**					Analyst: **SNM**
Chloride	27.8	2.29	5.71		mg/Kg-dry	1	12/18/19 11:56 PM
PERCENT MOISTURE		**D2216**					Analyst: **RBW**
Percent Moisture	13.9	0	0		WT%	1	12/20/19 07:55 AM

Qualifiers:

ND - Not Detected at the SDL
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See Final Page of Report for MQLs and MDLs
S - Spike Recovery outside control limits
C - Sample Result or QC discussed in Case Narrative
RL - Reporting Limit (MQL adjusted for moisture and sample size)
SDL - Sample Detection Limit
E - TPH pattern not Gas or Diesel Range Pattern

DHL Analytical, Inc.

Date: *23-Dec-19*

CLIENT:	TRC Environmental Corp.	**Client Sample ID:**	TT-3@0-1'
Project:	ABO to Centurion	**Lab ID:**	1912160-09
Project No:	375540	**Collection Date:**	12/12/19 03:20 PM
Lab Order:	1912160	**Matrix:**	SOIL

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
TPH EXTRACTABLE BY GC - SOIL		**M8015D**					Analyst: **BTJ**
TPH-DRO C10-C28	23100	337	1120		mg/Kg-dry	100	12/19/19 05:05 PM
TPH-ORO >C28-C35	4230	337	1120		mg/Kg-dry	100	12/19/19 05:05 PM
Surr: Isopropylbenzene	835	0	47-142	S	%REC	100	12/19/19 05:05 PM
Surr: Octacosane	6090	0	25-162	S	%REC	100	12/19/19 05:05 PM
TPH PURGEABLE BY GC - SOIL		**M8015V**					Analyst: **BTJ**
Gasoline Range Organics	9670	232	464		mg/Kg-dry	2000	12/18/19 05:29 PM
Surr: Tetrachlorethene	102	0	70-134		%REC	2000	12/18/19 05:29 PM
VOLATILES BY 8260/5035 GC/MS		**SW8260D**					Analyst: **DEW**
Benzene	40.0	2.32	11.6		mg/Kg-dry	2000	12/16/19 09:24 PM
Ethylbenzene	81.8	2.32	11.6		mg/Kg-dry	2000	12/16/19 09:24 PM
Toluene	205	2.32	11.6		mg/Kg-dry	2000	12/16/19 09:24 PM
Xylenes, Total	267	2.32	11.6		mg/Kg-dry	2000	12/16/19 09:24 PM
Surr: 1,2-Dichloroethane-d4	88.5	0	52-149		%REC	2000	12/16/19 09:24 PM
Surr: 4-Bromofluorobenzene	94.1	0	84-118		%REC	2000	12/16/19 09:24 PM
Surr: Dibromofluoromethane	97.6	0	65-135		%REC	2000	12/16/19 09:24 PM
Surr: Toluene-d8	99.6	0	84-116		%REC	2000	12/16/19 09:24 PM
ANIONS BY IC METHOD - SOIL		**SW9056A**					Analyst: **SNM**
Chloride	41.1	2.14	5.34		mg/Kg-dry	1	12/19/19 12:12 AM
PERCENT MOISTURE		**D2216**					Analyst: **RBW**
Percent Moisture	14.5	0	0		WT%	1	12/20/19 07:55 AM

Qualifiers:

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DF- Dilution Factor
N - Parameter not NELAP certified
See Final Page of Report for MQLs and MDLs
S - Spike Recovery outside control limits
C - Sample Result or QC discussed in Case Narrative
RL - Reporting Limit (MQL adjusted for moisture and sample size)
SDL - Sample Detection Limit
E - TPH pattern not Gas or Diesel Range Pattern

DHL Analytical, Inc.

Date: *23-Dec-19*

CLIENT:	TRC Environmental Corp.	**Client Sample ID:**	TT-3@3'
Project:	ABO to Centurion	**Lab ID:**	1912160-10
Project No:	375540	**Collection Date:**	12/12/19 03:24 PM
Lab Order:	1912160	**Matrix:**	SOIL

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
TPH EXTRACTABLE BY GC - SOIL		**M8015D**					Analyst: **BTJ**
TPH-DRO C10-C28	20700	370	1230		mg/Kg-dry	100	12/19/19 05:14 PM
TPH-ORO >C28-C35	1490	370	1230		mg/Kg-dry	100	12/19/19 05:14 PM
Surr: Isopropylbenzene	1600	0	47-142	S	%REC	100	12/19/19 05:14 PM
Surr: Octacosane	3240	0	25-162	S	%REC	100	12/19/19 05:14 PM
TPH PURGEABLE BY GC - SOIL		**M8015V**					Analyst: **BTJ**
Gasoline Range Organics	21200	303	606		mg/Kg-dry	2000	12/18/19 06:16 PM
Surr: Tetrachlorethene	95.3	0	70-134		%REC	2000	12/18/19 06:16 PM
VOLATILES BY 8260/5035 GC/MS		**SW8260D**					Analyst: **DEW**
Benzene	163	3.03	15.1		mg/Kg-dry	2000	12/16/19 09:53 PM
Ethylbenzene	163	3.03	15.1		mg/Kg-dry	2000	12/16/19 09:53 PM
Toluene	535	3.03	15.1		mg/Kg-dry	2000	12/16/19 09:53 PM
Xylenes, Total	481	3.03	15.1		mg/Kg-dry	2000	12/16/19 09:53 PM
Surr: 1,2-Dichloroethane-d4	91.4	0	52-149		%REC	2000	12/16/19 09:53 PM
Surr: 4-Bromofluorobenzene	92.1	0	84-118		%REC	2000	12/16/19 09:53 PM
Surr: Dibromofluoromethane	101	0	65-135		%REC	2000	12/16/19 09:53 PM
Surr: Toluene-d8	97.2	0	84-116		%REC	2000	12/16/19 09:53 PM
ANIONS BY IC METHOD - SOIL		**SW9056A**					Analyst: **SNM**
Chloride	21.2	2.39	5.98		mg/Kg-dry	1	12/19/19 12:28 AM
PERCENT MOISTURE		**D2216**					Analyst: **RBW**
Percent Moisture	21.0	0	0		WT%	1	12/20/19 07:55 AM

Qualifiers:

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- DF- Dilution Factor
- N - Parameter not NELAP certified
- See Final Page of Report for MQLs and MDLs
- S - Spike Recovery outside control limits
- C - Sample Result or QC discussed in Case Narrative
- RL - Reporting Limit (MQL adjusted for moisture and sample size)
- SDL - Sample Detection Limit
- E - TPH pattern not Gas or Diesel Range Pattern

DHL Analytical, Inc.

Date: *23-Dec-19*

CLIENT: TRC Environmental Corp.
Project: ABO to Centurion
Project No: 375540
Lab Order: 1912160

Client Sample ID: TT-3@5'
Lab ID: 1912160-11
Collection Date: 12/12/19 03:28 PM
Matrix: SOIL

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
TPH EXTRACTABLE BY GC - SOIL		**M8015D**					Analyst: **BTJ**
TPH-DRO C10-C28	8190	364	1210		mg/Kg-dry	100	12/19/19 05:23 PM
TPH-ORO >C28-C35	617	364	1210	J	mg/Kg-dry	100	12/19/19 05:23 PM
Surr: Isopropylbenzene	536	0	47-142	S	%REC	100	12/19/19 05:23 PM
Surr: Octacosane	1370	0	25-162	S	%REC	100	12/19/19 05:23 PM
TPH PURGEABLE BY GC - SOIL		**M8015V**					Analyst: **BTJ**
Gasoline Range Organics	6630	249	498		mg/Kg-dry	2000	12/18/19 07:04 PM
Surr: Tetrachlorethene	106	0	70-134		%REC	2000	12/18/19 07:04 PM
VOLATILES BY 8260/5035 GC/MS		**SW8260D**					Analyst: **DEW**
Benzene	24.5	0.0623	0.311		mg/Kg-dry	50	12/16/19 10:21 PM
Ethylbenzene	187	2.49	12.5		mg/Kg-dry	2000	12/17/19 03:39 PM
Toluene	672	2.49	12.5		mg/Kg-dry	2000	12/17/19 03:39 PM
Xylenes, Total	794	2.49	12.5		mg/Kg-dry	2000	12/17/19 03:39 PM
Surr: 1,2-Dichloroethane-d4	85.6	0	52-149		%REC	50	12/16/19 10:21 PM
Surr: 1,2-Dichloroethane-d4	84.6	0	52-149		%REC	2000	12/17/19 03:39 PM
Surr: 4-Bromofluorobenzene	96.4	0	84-118		%REC	2000	12/17/19 03:39 PM
Surr: 4-Bromofluorobenzene	121	0	84-118	S	%REC	50	12/16/19 10:21 PM
Surr: Dibromofluoromethane	96.3	0	65-135		%REC	2000	12/17/19 03:39 PM
Surr: Dibromofluoromethane	92.0	0	65-135		%REC	50	12/16/19 10:21 PM
Surr: Toluene-d8	149	0	84-116	S	%REC	50	12/16/19 10:21 PM
Surr: Toluene-d8	104	0	84-116		%REC	2000	12/17/19 03:39 PM
ANIONS BY IC METHOD - SOIL		**SW9056A**					Analyst: **SNM**
Chloride	30.6	2.34	5.85		mg/Kg-dry	1	12/19/19 12:44 AM
PERCENT MOISTURE		**D2216**					Analyst: **RBW**
Percent Moisture	19.7	0	0		WT%	1	12/20/19 07:55 AM

Qualifiers:

ND - Not Detected at the SDL
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C - Sample Result or QC discussed in Case Narrative
RL - Reporting Limit (MQL adjusted for moisture and sample size)
SDL - Sample Detection Limit
E - TPH pattern not Gas or Diesel Range Pattern

DHL Analytical, Inc.

Date: *23-Dec-19*

CLIENT: TRC Environmental Corp.
Work Order: 1912160
Project: ABO to Centurion

ANALYTICAL QC SUMMARY REPORT

RunID: GC15_191127A

Sample ID: **DCS-93833** Batch ID: **93833** TestNo: **M8015D** Units: **mg/Kg**
SampType: **DCS** Run ID: **GC15_191127A** Analysis Date: **11/27/2019 10:46:10 A** Prep Date: **11/22/2019**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
TPH-DRO C10-C28	9.76	10.0	15.00	0	65.1	20	400	0	0	
Surr: Isopropylbenzene	6.02		7.500		80.2	47	142	0	0	
Surr: Octacosane	6.58		7.500		87.7	25	162	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAP certified

CLIENT: TRC Environmental Corp.
Work Order: 1912160
Project: ABO to Centurion

ANALYTICAL QC SUMMARY REPORT

RunID: GC15_191219A

The QC data in batch 94166 applies to the following samples: 1912160-02C, 1912160-03C, 1912160-04C, 1912160-05C, 1912160-06C, 1912160-07C, 1912160-08C, 1912160-09C, 1912160-10C, 1912160-11C

Sample ID: **MB-94166** Batch ID: **94166** TestNo: **M8015D** Units: **mg/Kg**
SampType: **MBLK** Run ID: **GC15_191219A** Analysis Date: **12/19/2019 1:32:29 PM** Prep Date: **12/18/2019**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
TPH-DRO C10-C28	<3.00	10.0								
TPH-ORO >C28-C35	<3.00	10.0								
Surr: Isopropylbenzene	7.42		7.500		98.9	47	142			
Surr: Octacosane	5.02		7.500		66.9	25	162			

Sample ID: **LCS-94166** Batch ID: **94166** TestNo: **M8015D** Units: **mg/Kg**
SampType: **LCS** Run ID: **GC15_191219A** Analysis Date: **12/19/2019 1:41:33 PM** Prep Date: **12/18/2019**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
TPH-DRO C10-C28	116	10.0	125.0	0	92.5	50	114			
Surr: Isopropylbenzene	8.00		7.500		107	47	142			
Surr: Octacosane	5.36		7.500		71.5	25	162			

Sample ID: **1912127-22CMS** Batch ID: **94166** TestNo: **M8015D** Units: **mg/Kg-dry**
SampType: **MS** Run ID: **GC15_191219A** Analysis Date: **12/19/2019 1:59:40 PM** Prep Date: **12/18/2019**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
TPH-DRO C10-C28	133	9.95	124.4	15.10	95.0	50	114			
Surr: Isopropylbenzene	8.47		7.463		113	47	142			
Surr: Octacosane	5.75		7.463		77.1	25	162			

Sample ID: **1912127-22CMSD** Batch ID: **94166** TestNo: **M8015D** Units: **mg/Kg-dry**
SampType: **MSD** Run ID: **GC15_191219A** Analysis Date: **12/19/2019 2:08:43 PM** Prep Date: **12/18/2019**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
TPH-DRO C10-C28	128	9.96	124.5	15.10	90.3	50	114	4.44	30	
Surr: Isopropylbenzene	7.74		7.470		104	47	142	0	0	
Surr: Octacosane	5.98		7.470		80.1	25	162	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAP certified

CLIENT: TRC Environmental Corp.
Work Order: 1912160
Project: ABO to Centurion

ANALYTICAL QC SUMMARY REPORT

RunID: GC15_191219A

Sample ID: **ICV-191219**	Batch ID: **R108017**	TestNo: **M8015D**	Units: **mg/Kg**
SampType: **ICV**	Run ID: **GC15_191219A**	Analysis Date: **12/19/2019 1:21:59 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
TPH-DRO C10-C28	542	10.0	500.0	0	108	80	120			
Surr: Isopropylbenzene	28.6		25.00		114	80	120			
Surr: Octacosane	20.0		25.00		80.1	80	120			

Sample ID: **CCV1-191219**	Batch ID: **R108017**	TestNo: **M8015D**	Units: **mg/Kg**
SampType: **CCV**	Run ID: **GC15_191219A**	Analysis Date: **12/19/2019 3:44:05 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
TPH-DRO C10-C28	251	10.0	250.0	0	100	80	120			
Surr: Isopropylbenzene	14.9		12.50		119	80	120			
Surr: Octacosane	10.2		12.50		81.7	80	120			

Sample ID: **CCV2-191219**	Batch ID: **R108017**	TestNo: **M8015D**	Units: **mg/Kg**
SampType: **CCV**	Run ID: **GC15_191219A**	Analysis Date: **12/19/2019 6:07:25 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
TPH-DRO C10-C28	233	10.0	250.0	0	93.3	80	120			
Surr: Isopropylbenzene	14.9		12.50		119	80	120			
Surr: Octacosane	10.9		12.50		86.9	80	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAP certified

CLIENT: TRC Environmental Corp.
Work Order: 1912160
Project: ABO to Centurion

ANALYTICAL QC SUMMARY REPORT

RunID: GC4_191017A

Sample ID: **DCS-93268** Batch ID: **93268** TestNo: **M8015V** Units: **mg/Kg**
SampType: **DCS** Run ID: **GC4_191017A** Analysis Date: **10/17/2019 7:45:54 PM** Prep Date: **10/17/2019**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics	0.173	0.200	0.2000	0	86.7	31	161	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAP certified

CLIENT: TRC Environmental Corp.
Work Order: 1912160
Project: ABO to Centurion

ANALYTICAL QC SUMMARY REPORT

RunID: GC4_191217A

The QC data in batch 94142 applies to the following samples: 1912160-02B, 1912160-04B, 1912160-05B, 1912160-07B, 1912160-08B

Sample ID: **LCS-94142 MEOH** Batch ID: **94142** TestNo: **M8015V** Units: **mg/Kg**
SampType: **LCS** Run ID: **GC4_191217A** Analysis Date: **12/17/2019 10:37:09 A** Prep Date: **12/17/2019**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics	3.01	0.200	2.500	0	120	68	126			
Surr: Tetrachlorethene	0.447		0.4000		112	70	134			

Sample ID: **MB-94142 MEOH** Batch ID: **94142** TestNo: **M8015V** Units: **mg/Kg**
SampType: **MBLK** Run ID: **GC4_191217A** Analysis Date: **12/17/2019 11:48:44 A** Prep Date: **12/17/2019**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics	<0.100	0.200								
Surr: Tetrachlorethene	0.445		0.4000		111	70	134			

Qualifiers:				
B	Analyte detected in the associated Method Blank	DF	Dilution Factor	
J	Analyte detected between MDL and RL	MDL	Method Detection Limit	
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits	
RL	Reporting Limit	S	Spike Recovery outside control limits	
J	Analyte detected between SDL and RL	N	Parameter not NELAP certified	

CLIENT: TRC Environmental Corp.
Work Order: 1912160
Project: ABO to Centurion

ANALYTICAL QC SUMMARY REPORT

RunID: GC4_191217A

Sample ID: **ICV-191217**	Batch ID: **R107965**	TestNo: **M8015V**	Units: **mg/Kg**
SampType: **ICV**	Run ID: **GC4_191217A**	Analysis Date: **12/17/2019 10:13:18 A**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics	5.43	0.200	5.000	0	109	80	120			
Surr: Tetrachlorethene	0.407		0.4000		102	70	134			

Sample ID: **CCV1-191217**	Batch ID: **R107965**	TestNo: **M8015V**	Units: **mg/Kg**
SampType: **CCV**	Run ID: **GC4_191217A**	Analysis Date: **12/17/2019 5:23:14 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics	2.75	0.200	2.500	0	110	80	120			
Surr: Tetrachlorethene	0.426		0.4000		107	70	134			

Sample ID: **CCV2-191217**	Batch ID: **R107965**	TestNo: **M8015V**	Units: **mg/Kg**
SampType: **CCV**	Run ID: **GC4_191217A**	Analysis Date: **12/17/2019 10:33:22 P**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics	2.55	0.200	2.500	0	102	80	120			
Surr: Tetrachlorethene	0.443		0.4000		111	70	134			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAP certified

CLIENT: TRC Environmental Corp.
Work Order: 1912160
Project: ABO to Centurion

ANALYTICAL QC SUMMARY REPORT

RunID: GC4_191218A

The QC data in batch 94159 applies to the following samples: 1912160-03B, 1912160-06B, 1912160-09B, 1912160-10B, 1912160-11B

Sample ID: **LCS-94159 MEOH**	Batch ID: **94159**	TestNo: **M8015V**	Units: **mg/Kg**
SampType: **LCS**	Run ID: **GC4_191218A**	Analysis Date: **12/18/2019 8:43:12 AM**	Prep Date: **12/18/2019**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics	2.90	0.200	2.500	0	116	68	126			
Surr: Tetrachlorethene	0.474		0.4000		118	70	134			

Sample ID: **MB-94159 MEOH**	Batch ID: **94159**	TestNo: **M8015V**	Units: **mg/Kg**
SampType: **MBLK**	Run ID: **GC4_191218A**	Analysis Date: **12/18/2019 9:55:11 AM**	Prep Date: **12/18/2019**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics	<0.100	0.200								
Surr: Tetrachlorethene	0.526		0.4000		132	70	134			

Sample ID: **1912127-09BMS**	Batch ID: **94159**	TestNo: **M8015V**	Units: **mg/Kg-dry**
SampType: **MS**	Run ID: **GC4_191218A**	Analysis Date: **12/18/2019 10:16:30 P**	Prep Date: **12/18/2019**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics	3860	198	2481	1422	98.2	68	126			
Surr: Tetrachlorethene	376		397.0		94.6	70	134			

Sample ID: **1912127-09BMSD**	Batch ID: **94159**	TestNo: **M8015V**	Units: **mg/Kg-dry**
SampType: **MSD**	Run ID: **GC4_191218A**	Analysis Date: **12/18/2019 10:40:15 P**	Prep Date: **12/18/2019**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics	4550	198	2481	1422	126	68	126	16.5	30	
Surr: Tetrachlorethene	427		397.0		108	70	134	0	0	

Qualifiers:				
	B	Analyte detected in the associated Method Blank	DF	Dilution Factor
	J	Analyte detected between MDL and RL	MDL	Method Detection Limit
	ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
	RL	Reporting Limit	S	Spike Recovery outside control limits
	J	Analyte detected between SDL and RL	N	Parameter not NELAP certified

CLIENT: TRC Environmental Corp.
Work Order: 1912160
Project: ABO to Centurion

ANALYTICAL QC SUMMARY REPORT

RunID: GC4_191218A

Sample ID: **ICV-191218**	Batch ID: **R107996**	TestNo: **M8015V**	Units: **mg/Kg**
SampType: **ICV**	Run ID: **GC4_191218A**	Analysis Date: **12/18/2019 8:19:18 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics	5.36	0.200	5.000	0	107	80	120			
Surr: Tetrachlorethene	0.461		0.4000		115	70	134			

Sample ID: **CCV1-191218**	Batch ID: **R107996**	TestNo: **M8015V**	Units: **mg/Kg**
SampType: **CCV**	Run ID: **GC4_191218A**	Analysis Date: **12/18/2019 3:53:48 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics	2.59	0.200	2.500	0	104	80	120			
Surr: Tetrachlorethene	0.486		0.4000		121	70	134			

Sample ID: **CCV2-191218**	Batch ID: **R107996**	TestNo: **M8015V**	Units: **mg/Kg**
SampType: **CCV**	Run ID: **GC4_191218A**	Analysis Date: **12/18/2019 11:04:15 P**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics	2.75	0.200	2.500	0	110	80	120			
Surr: Tetrachlorethene	0.496		0.4000		124	70	134			

Sample ID: **CCV3-191218**	Batch ID: **R107996**	TestNo: **M8015V**	Units: **mg/Kg**
SampType: **CCV**	Run ID: **GC4_191218A**	Analysis Date: **12/19/2019 1:04:03 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics	2.69	0.200	2.500	0	108	80	120			
Surr: Tetrachlorethene	0.431		0.4000		108	70	134			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAP certified

CLIENT: TRC Environmental Corp.
Work Order: 1912160
Project: ABO to Centurion

ANALYTICAL QC SUMMARY REPORT

RunID: GC4_191219A

The QC data in batch 94159 applies to the following samples: 1912160-03B, 1912160-06B, 1912160-09B, 1912160-10B, 1912160-11B

Sample ID: **SB-191219** Batch ID: **94159** TestNo: **M8015V** Units: **mg/Kg**
SampType: **SBLK** Run ID: **GC4_191219A** Analysis Date: **12/19/2019 12:44:05 P** Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics	<0.100	0.200	0							
Surr: Tetrachlorethene	0.505		0.4000		126	70	134			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAP certified

CLIENT: TRC Environmental Corp.
Work Order: 1912160
Project: ABO to Centurion

ANALYTICAL QC SUMMARY REPORT

RunID: GC4_191219A

Sample ID: **ICV-191219**	Batch ID: **R108030**	TestNo: **M8015V**	Units: **mg/Kg**
SampType: **ICV**	Run ID: **GC4_191219A**	Analysis Date: **12/19/2019 11:32:46 A**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics	5.50	0.200	5.000	0	110	80	120			
Surr: Tetrachlorethene	0.478		0.4000		120	70	134			

Sample ID: **CCV1-191219**	Batch ID: **R108030**	TestNo: **M8015V**	Units: **mg/Kg**
SampType: **CCV**	Run ID: **GC4_191219A**	Analysis Date: **12/19/2019 2:19:32 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics	2.75	0.200	2.500	0	110	80	120			
Surr: Tetrachlorethene	0.476		0.4000		119	70	134			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAP certified

CLIENT: TRC Environmental Corp.
Work Order: 1912160
Project: ABO to Centurion

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS2_191118A

Sample ID: **DCS-93748** Batch ID: **93748** TestNo: **SW8260D** Units: **mg/Kg**
SampType: **DCS** Run ID: **GCMS2_191118A** Analysis Date: **11/18/2019 1:08:00 PM** Prep Date: **11/18/2019**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.00284	0.00500	0.00232	0	122	10	400	0	0	
Ethylbenzene	0.00243	0.00500	0.00232	0	105	10	400	0	0	
Toluene	0.00273	0.00500	0.00232	0	118	10	400	0	0	
Total Xylenes	0.00686	0.00500	0.00696	0	98.6	10	400	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAP certified

CLIENT: TRC Environmental Corp.
Work Order: 1912160
Project: ABO to Centurion

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS2_191216A

The QC data in batch 94128 applies to the following samples: 1912160-02A, 1912160-03A, 1912160-04A, 1912160-05A, 1912160-06A, 1912160-07A, 1912160-08A, 1912160-09A, 1912160-10A, 1912160-11A

Sample ID: **LCS-94128 MEOH** Batch ID: **94128** TestNo: **SW8260D** Units: **mg/Kg**
SampType: **LCS** Run ID: **GCMS2_191216A** Analysis Date: **12/16/2019 11:02:00 A** Prep Date: **12/16/2019**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.29	0.250	1.16	0	111	73	126			
Ethylbenzene	1.32	0.250	1.16	0	114	74	127			
Toluene	1.33	0.250	1.16	0	114	71	127			
Xylenes, Total	3.97	0.250	3.48	0	114	75	125			
Surr: 1,2-Dichloroethane-d4	2210		2500		88.5	52	149			
Surr: 4-Bromofluorobenzene	2280		2500		91.2	84	118			
Surr: Dibromofluoromethane	2510		2500		100	65	135			
Surr: Toluene-d8	2460		2500		98.6	84	116			

Sample ID: **MB-94128 MEOH** Batch ID: **94128** TestNo: **SW8260D** Units: **mg/Kg**
SampType: **MBLK** Run ID: **GCMS2_191216A** Analysis Date: **12/16/2019 11:30:00 A** Prep Date: **12/16/2019**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	<0.0500	0.250								
Ethylbenzene	<0.0500	0.250								
Toluene	<0.0500	0.250								
Xylenes, Total	<0.0500	0.250								
Surr: 1,2-Dichloroethane-d4	2190		2500		87.7	52	149			
Surr: 4-Bromofluorobenzene	2340		2500		93.6	84	118			
Surr: Dibromofluoromethane	2520		2500		101	65	135			
Surr: Toluene-d8	2350		2500		94.0	84	116			

Sample ID: **1912127-22AMS** Batch ID: **94128** TestNo: **SW8260D** Units: **mg/Kg-dry**
SampType: **MS** Run ID: **GCMS2_191216A** Analysis Date: **12/16/2019 12:27:00 P** Prep Date: **12/16/2019**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.31	0.262	1.22	0	108	73	126			
Ethylbenzene	1.27	0.262	1.22	0	104	74	127			
Toluene	1.36	0.262	1.22	0	111	71	127			
Xylenes, Total	3.80	0.262	3.65	0	104	75	125			
Surr: 1,2-Dichloroethane-d4	2270		2623		86.4	52	149			
Surr: 4-Bromofluorobenzene	2260		2623		86.1	84	118			
Surr: Dibromofluoromethane	2550		2623		97.1	65	135			
Surr: Toluene-d8	2530		2623		96.3	84	116			

Sample ID: **1912127-22AMSD** Batch ID: **94128** TestNo: **SW8260D** Units: **mg/Kg-dry**
SampType: **MSD** Run ID: **GCMS2_191216A** Analysis Date: **12/16/2019 12:55:00 P** Prep Date: **12/16/2019**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAP certified

CLIENT: TRC Environmental Corp.
Work Order: 1912160
Project: ABO to Centurion

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS2_191216A

Sample ID: **1912127-22AMSD**	Batch ID: **94128**	TestNo: **SW8260D**	Units: **mg/Kg-dry**
SampType: **MSD**	Run ID: **GCMS2_191216A**	Analysis Date: **12/16/2019 12:55:00 P**	Prep Date: **12/16/2019**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.30	0.262	1.22	0	107	73	126	0.643	30	
Ethylbenzene	1.29	0.262	1.22	0	106	74	127	1.77	30	
Toluene	1.35	0.262	1.22	0	111	71	127	0.466	30	
Xylenes, Total	3.79	0.262	3.65	0	104	75	125	0.096	30	
Surr: 1,2-Dichloroethane-d4	2380		2623		90.8	52	149	0	0	
Surr: 4-Bromofluorobenzene	2300		2623		87.6	84	118	0	0	
Surr: Dibromofluoromethane	2630		2623		100	65	135	0	0	
Surr: Toluene-d8	2470		2623		94.1	84	116	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAP certified

CLIENT: TRC Environmental Corp.
Work Order: 1912160
Project: ABO to Centurion

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS2_191216A

Sample ID: **ICV-191216**	Batch ID: **R107948**	TestNo: **SW8260D**	Units: **mg/Kg**
SampType: **ICV**	Run ID: **GCMS2_191216A**	Analysis Date: **12/16/2019 10:34:00 A**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0489	0.00500	0.0464	0	105	80	120			
Ethylbenzene	0.0489	0.00500	0.0464	0	105	80	120			
Toluene	0.0509	0.00500	0.0464	0	110	80	120			
Xylenes, Total	0.148	0.00500	0.139	0	106	80	120			
Surr: 1,2-Dichloroethane-d4	44.9		50.00		89.8	52	149			
Surr: 4-Bromofluorobenzene	47.6		50.00		95.2	84	118			
Surr: Dibromofluoromethane	50.6		50.00		101	65	135			
Surr: Toluene-d8	46.1		50.00		92.2	84	116			

Qualifiers:				
	B	Analyte detected in the associated Method Blank	DF	Dilution Factor
	J	Analyte detected between MDL and RL	MDL	Method Detection Limit
	ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
	RL	Reporting Limit	S	Spike Recovery outside control limits
	J	Analyte detected between SDL and RL	N	Parameter not NELAP certified

CLIENT: TRC Environmental Corp.
Work Order: 1912160
Project: ABO to Centurion

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS2_191217B

The QC data in batch 94128 applies to the following samples: 1912160-02A, 1912160-03A, 1912160-04A, 1912160-05A, 1912160-06A, 1912160-07A, 1912160-08A, 1912160-09A, 1912160-10A, 1912160-11A

Sample ID: **SB-191217** Batch ID: **94128** TestNo: **SW8260D** Units: **mg/Kg**
SampType: **SBLK** Run ID: **GCMS2_191217B** Analysis Date: **12/17/2019 10:48:00 A** Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Ethylbenzene	<0.00100	0.00500	0							
Toluene	<0.00100	0.00500	0							
Xylenes, Total	<0.00100	0.00500	0							
Surr: 1,2-Dichloroethane-d4	44.1		0							
Surr: 4-Bromofluorobenzene	44.0		0							
Surr: Dibromofluoromethane	52.2		0							
Surr: Toluene-d8	46.6		0							

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAP certified

CLIENT: TRC Environmental Corp.
Work Order: 1912160
Project: ABO to Centurion

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS2_191217B

Sample ID: **ICV-191217** Batch ID: **R107963** TestNo: **SW8260D** Units: **mg/Kg**
SampType: **ICV** Run ID: **GCMS2_191217B** Analysis Date: **12/17/2019 9:51:00 AM** Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Ethylbenzene	0.0510	0.00500	0.0464	0	110	80	120			
Toluene	0.0507	0.00500	0.0464	0	109	80	120			
Xylenes, Total	0.146	0.00500	0.139	0	105	80	120			
Surr: 1,2-Dichloroethane-d4	43.5		50.00		87.1	52	149			
Surr: 4-Bromofluorobenzene	46.4		50.00		92.8	84	118			
Surr: Dibromofluoromethane	50.4		50.00		101	65	135			
Surr: Toluene-d8	48.1		50.00		96.2	84	116			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAP certified

CLIENT: TRC Environmental Corp.
Work Order: 1912160
Project: ABO to Centurion

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS3_191121A

Sample ID: **DCS-93791** Batch ID: **93791** TestNo: **SW8260D** Units: **mg/L**
SampType: **DCS** Run ID: **GCMS3_191121A** Analysis Date: **11/21/2019 9:51:00 AM** Prep Date: **11/21/2019**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.000529	0.00200	0.000464	0	114	10	400	0	0	
Ethylbenzene	0.000528	0.00600	0.000464	0	114	10	400	0	0	
Toluene	0.000546	0.00600	0.000464	0	118	10	400	0	0	
Total Xylenes	0.00161	0.00600	0.00139	0	116	10	400	0	0	
Surr: 1,2-Dichloroethane-d4	44.7		50.00		89.5	72	119	0	0	
Surr: 4-Bromofluorobenzene	48.3		50.00		96.5	76	119	0	0	
Surr: Dibromofluoromethane	50.9		50.00		102	85	115	0	0	
Surr: Toluene-d8	48.9		50.00		97.8	81	120	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAP certified

CLIENT: TRC Environmental Corp.
Work Order: 1912160
Project: ABO to Centurion

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS3_191219A

The QC data in batch 94211 applies to the following samples: 1912160-01A

Sample ID: **LCS-94211** Batch ID: **94211** TestNo: **SW8260D** Units: **mg/L**
SampType: **LCS** Run ID: **GCMS3_191219A** Analysis Date: **12/19/2019 9:34:00 PM** Prep Date: **12/19/2019**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0421	0.00200	0.0464	0	90.7	81	122			
Ethylbenzene	0.0418	0.00600	0.0464	0	90.1	73	127			
Toluene	0.0426	0.00600	0.0464	0	91.8	77	122			
Total Xylenes	0.122	0.00600	0.139	0	87.9	80	121			
Surr: 1,2-Dichloroethane-d4	48.8		50.00		97.5	72	119			
Surr: 4-Bromofluorobenzene	47.8		50.00		95.6	76	119			
Surr: Dibromofluoromethane	50.0		50.00		100	85	115			
Surr: Toluene-d8	49.4		50.00		98.8	81	120			

Sample ID: **MB-94211** Batch ID: **94211** TestNo: **SW8260D** Units: **mg/L**
SampType: **MBLK** Run ID: **GCMS3_191219A** Analysis Date: **12/19/2019 10:01:00 P** Prep Date: **12/19/2019**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	<0.000800	0.00200								
Ethylbenzene	<0.00200	0.00600								
Toluene	<0.00200	0.00600								
Total Xylenes	<0.00200	0.00600								
Surr: 1,2-Dichloroethane-d4	48.9		50.00		97.9	72	119			
Surr: 4-Bromofluorobenzene	48.7		50.00		97.5	76	119			
Surr: Dibromofluoromethane	50.1		50.00		100	85	115			
Surr: Toluene-d8	49.5		50.00		99.1	81	120			

Sample ID: **1912196-05AMS** Batch ID: **94211** TestNo: **SW8260D** Units: **mg/L**
SampType: **MS** Run ID: **GCMS3_191219A** Analysis Date: **12/20/2019 1:05:00 AM** Prep Date: **12/19/2019**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0443	0.00200	0.0464	0	95.5	81	122			
Ethylbenzene	0.0439	0.00600	0.0464	0	94.6	73	127			
Toluene	0.0451	0.00600	0.0464	0	97.1	77	122			
Total Xylenes	0.131	0.00600	0.139	0	94.2	80	121			
Surr: 1,2-Dichloroethane-d4	48.9		50.00		97.9	72	119			
Surr: 4-Bromofluorobenzene	48.5		50.00		97.0	76	119			
Surr: Dibromofluoromethane	50.5		50.00		101	85	115			
Surr: Toluene-d8	49.9		50.00		99.8	81	120			

Sample ID: **1912196-05AMSD** Batch ID: **94211** TestNo: **SW8260D** Units: **mg/L**
SampType: **MSD** Run ID: **GCMS3_191219A** Analysis Date: **12/20/2019 1:31:00 AM** Prep Date: **12/19/2019**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0409	0.00200	0.0464	0	88.2	81	122	7.92	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAP certified

CLIENT: TRC Environmental Corp.
Work Order: 1912160
Project: ABO to Centurion

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS3_191219A

Sample ID: **1912196-05AMSD** Batch ID: **94211** TestNo: **SW8260D** Units: **mg/L**
SampType: **MSD** Run ID: **GCMS3_191219A** Analysis Date: **12/20/2019 1:31:00 AM** Prep Date: **12/19/2019**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Ethylbenzene	0.0410	0.00600	0.0464	0	88.4	73	127	6.84	20	
Toluene	0.0415	0.00600	0.0464	0	89.5	77	122	8.14	20	
Total Xylenes	0.121	0.00600	0.139	0	87.1	80	121	7.79	20	
Surr: 1,2-Dichloroethane-d4	49.1		50.00		98.1	72	119	0	0	
Surr: 4-Bromofluorobenzene	48.4		50.00		96.8	76	119	0	0	
Surr: Dibromofluoromethane	50.0		50.00		100	85	115	0	0	
Surr: Toluene-d8	49.9		50.00		99.7	81	120	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAP certified

CLIENT: TRC Environmental Corp.
Work Order: 1912160
Project: ABO to Centurion

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS3_191219A

Sample ID: **ICV2-191219** Batch ID: **R108032** TestNo: **SW8260D** Units: **mg/L**
SampType: **ICV** Run ID: **GCMS3_191219A** Analysis Date: **12/19/2019 9:08:00 PM** Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0841	0.00200	0.0928	0	90.7	80	120			
Ethylbenzene	0.0828	0.00600	0.0928	0	89.2	80	120			
Toluene	0.0844	0.00600	0.0928	0	91.0	80	120			
Total Xylenes	0.237	0.00600	0.278	0	85.3	80	120			
Surr: 1,2-Dichloroethane-d4	48.7		50.00		97.3	72	119			
Surr: 4-Bromofluorobenzene	47.4		50.00		94.9	76	119			
Surr: Dibromofluoromethane	50.1		50.00		100	85	115			
Surr: Toluene-d8	49.4		50.00		98.8	81	120			

Qualifiers:

B	Analyte detected in the associated Method Blank
J	Analyte detected between MDL and RL
ND	Not Detected at the Method Detection Limit
RL	Reporting Limit
J	Analyte detected between SDL and RL
DF	Dilution Factor
MDL	Method Detection Limit
R	RPD outside accepted control limits
S	Spike Recovery outside control limits
N	Parameter not NELAP certified

CLIENT: TRC Environmental Corp.
Work Order: 1912160
Project: ABO to Centurion

ANALYTICAL QC SUMMARY REPORT

RunID: IC4_191002A

Sample ID: **DCS-93058** Batch ID: **93058** TestNo: **SW9056A** Units: **mg/Kg**
SampType: **DCS** Run ID: **IC4_191002A** Analysis Date: **10/2/2019 12:37:56 PM** Prep Date: **10/2/2019**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	2.66	5.00	2.500	0	106	65	135	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAP certified

CLIENT: TRC Environmental Corp.
Work Order: 1912160
Project: ABO to Centurion

ANALYTICAL QC SUMMARY REPORT

RunID: IC4_191218A

The QC data in batch 94158 applies to the following samples: 1912160-02C, 1912160-03C, 1912160-04C, 1912160-05C, 1912160-06C, 1912160-07C, 1912160-08C, 1912160-09C, 1912160-10C, 1912160-11C

Sample ID: **MB-94158**	Batch ID: **94158**	TestNo: **SW9056A**	Units: **mg/Kg**
SampType: **MBLK**	Run ID: **IC4_191218A**	Analysis Date: **12/18/2019 10:39:00 A**	Prep Date: **12/17/2019**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	<2.00	5.00								

Sample ID: **LCS-94158**	Batch ID: **94158**	TestNo: **SW9056A**	Units: **mg/Kg**
SampType: **LCS**	Run ID: **IC4_191218A**	Analysis Date: **12/18/2019 10:55:00 A**	Prep Date: **12/17/2019**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	48.8	5.00	50.00	0	97.7	80	120			

Sample ID: **LCSD-94158**	Batch ID: **94158**	TestNo: **SW9056A**	Units: **mg/Kg**
SampType: **LCSD**	Run ID: **IC4_191218A**	Analysis Date: **12/18/2019 11:11:00 A**	Prep Date: **12/17/2019**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	49.2	5.00	50.00	0	98.4	80	120	0.747	15	

Sample ID: **1912127-22C-DUP**	Batch ID: **94158**	TestNo: **SW9056A**	Units: **mg/Kg-dry**
SampType: **DUP**	Run ID: **IC4_191218A**	Analysis Date: **12/18/2019 7:40:42 PM**	Prep Date: **12/17/2019**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	2.70	5.20	0	3.314				20.6	10	R

Sample ID: **1912127-22CMS**	Batch ID: **94158**	TestNo: **SW9056A**	Units: **mg/Kg-dry**
SampType: **MS**	Run ID: **IC4_191218A**	Analysis Date: **12/18/2019 7:56:42 PM**	Prep Date: **12/17/2019**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	99.9	5.02	100.4	3.314	96.2	80	120			

Sample ID: **1912127-22CMSD**	Batch ID: **94158**	TestNo: **SW9056A**	Units: **mg/Kg-dry**
SampType: **MSD**	Run ID: **IC4_191218A**	Analysis Date: **12/18/2019 8:12:42 PM**	Prep Date: **12/17/2019**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	96.9	4.87	97.41	3.314	96.0	80	120	3.07	15	

Sample ID: **1912127-23C-DUP**	Batch ID: **94158**	TestNo: **SW9056A**	Units: **mg/Kg-dry**
SampType: **DUP**	Run ID: **IC4_191218A**	Analysis Date: **12/18/2019 8:28:42 PM**	Prep Date: **12/17/2019**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	42.6	5.05	0	34.67				20.5	10	R

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAP certified

CLIENT: TRC Environmental Corp.
Work Order: 1912160
Project: ABO to Centurion

ANALYTICAL QC SUMMARY REPORT

RunID: IC4_191218A

Sample ID: **ICV-191218**	Batch ID: **R107977**	TestNo: **SW9056A**	Units: **mg/Kg**
SampType: **ICV**	Run ID: **IC4_191218A**	Analysis Date: **12/18/2019 10:07:00 A**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	25.4	5.00	25.00	0	102	90	110			

Sample ID: **CCV1-191218**	Batch ID: **R107977**	TestNo: **SW9056A**	Units: **mg/Kg**
SampType: **CCV**	Run ID: **IC4_191218A**	Analysis Date: **12/18/2019 4:12:31 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.89	5.00	10.00	0	98.9	90	110			

Sample ID: **CCV2-191218**	Batch ID: **R107977**	TestNo: **SW9056A**	Units: **mg/Kg**
SampType: **CCV**	Run ID: **IC4_191218A**	Analysis Date: **12/18/2019 9:48:42 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.2	5.00	10.00	0	102	90	110			

Sample ID: **CCV3-191218**	Batch ID: **R107977**	TestNo: **SW9056A**	Units: **mg/Kg**
SampType: **CCV**	Run ID: **IC4_191218A**	Analysis Date: **12/19/2019 2:04:42 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.0	5.00	10.00	0	100	90	110			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAP certified

CLIENT: TRC Environmental Corp.
Work Order: 1912160
Project: ABO to Centurion

ANALYTICAL QC SUMMARY REPORT

RunID: IC4_191219A

Sample ID: **ICV-191219**	Batch ID: **R108002**	TestNo: **SW9056A**	Units: **mg/Kg**
SampType: **ICV**	Run ID: **IC4_191219A**	Analysis Date: **12/19/2019 9:45:14 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	25.8	5.00	25.00	0	103	90	110			

Sample ID: **CCV1-191219**	Batch ID: **R108002**	TestNo: **SW9056A**	Units: **mg/Kg**
SampType: **CCV**	Run ID: **IC4_191219A**	Analysis Date: **12/19/2019 11:05:14 A**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.91	5.00	10.00	0	99.1	90	110			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAP certified

CLIENT: TRC Environmental Corp.
Work Order: 1912160
Project: ABO to Centurion

ANALYTICAL QC SUMMARY REPORT

RunID: **PMOIST_191218A**

The QC data in batch 94181 applies to the following samples: 1912160-02C, 1912160-03C

Sample ID: **1912160-02C-DUP** Batch ID: **94181** TestNo: **D2216** Units: **WT%**
SampType: **DUP** Run ID: **PMOIST_191218A** Analysis Date: **12/19/2019 8:37:00 AM** Prep Date: **12/18/2019**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Percent Moisture	12.1	0	0	11.33				6.26	30	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAP certified

CLIENT: TRC Environmental Corp.
Work Order: 1912160
Project: ABO to Centurion

ANALYTICAL QC SUMMARY REPORT

RunID: PMOIST_191219A

The QC data in batch 94206 applies to the following samples: 1912160-04C, 1912160-05C, 1912160-06C, 1912160-07C, 1912160-08C, 1912160-09C, 1912160-10C, 1912160-11C

Sample ID: **1912201-05A-DUP** Batch ID: **94206** TestNo: **D2216** Units: **WT%**
SampType: **DUP** Run ID: **PMOIST_191219A** Analysis Date: **12/20/2019 7:55:00 AM** Prep Date: **12/19/2019**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Percent Moisture	20.8	0	0	20.76				0.262	30	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAP certified

DHL Analytical, Inc.

Date: *23-Dec-19*

CLIENT: TRC Environmental Corp.
Work Order: 1912160
Project: ABO to Centurion

MQL SUMMARY REPORT

TestNo: SW8260D	**MDL**	**MQL**
Analyte	**mg/L**	**mg/L**
Benzene	0.000800	0.00200
Ethylbenzene	0.00200	0.00600
Toluene	0.00200	0.00600
Total Xylenes	0.00200	0.00600

TestNo: SW8260D	**MDL**	**MQL**
Analyte	**mg/Kg**	**mg/Kg**
Benzene	0.0500	0.250
Ethylbenzene	0.0500	0.250
Toluene	0.0500	0.250
Xylenes, Total	0.0500	0.250

TestNo: SW9056A	**MDL**	**MQL**
Analyte	**mg/Kg**	**mg/Kg**
Chloride	2.00	5.00

TestNo: M8015D	**MDL**	**MQL**
Analyte	**mg/Kg**	**mg/Kg**
TPH-DRO C10-C28	3.00	10.0
TPH-ORO >C28-C35	3.00	10.0

TestNo: M8015V	**MDL**	**MQL**
Analyte	**mg/Kg**	**mg/Kg**
Gasoline Range Organics	0.100	0.200

Qualifiers: MQL -Method Quantitation Limit as defined by TRRP
MDL -Method Detection Limit as defined by TRRP

April 13, 2020

Cindy Crain
TRC Environmental Corp.
10 Desta Dr. #150E
Midland, Texas 79705
TEL: (432) 215-6730
FAX:

Order No.: 2004022

RE: HEP Abo Centurion

Dear Cindy Crain:

DHL Analytical, Inc. received 5 sample(s) on 4/2/2020 for the analyses presented in the following report.

There were no problems with the analyses and all data met requirements of NELAP except where noted in the Case Narrative. All non-NELAP methods will be identified accordingly in the case narrative and all estimated uncertainties of test results are within method or EPA specifications.

If you have any questions regarding these tests results, please feel free to call. Thank you for using DHL Analytical.

Sincerely,

John DuPont
General Manager

This report was performed under the accreditation of the State of Texas Laboratory Certification Number: T104704211-19-24

Table of Contents

DHL ANALYTICAL
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E-Mail: login@dhlanalytical.com

CHAIN-OF-CUSTODY

CLIENT: TRC
ADDRESS: 10 Desta Drive, Ste. 150E, Midland, TX, 79705
PHONE: 432-215-6730 FAX/E-MAIL: ckcrain@trccompanies.com
DATA REPORTED TO: Cindy Crain
ADDITIONAL REPORT COPIES TO:

DATE: 3/30/20 PAGE 1 OF 1
PO #: HEP 288250 DHL WORK ORDER #: 2004022
PROJECT LOCATION OR NAME: HEP Abo Centurion
CLENT PROJECT #: 390412 COLLECTOR: Misti Bryant

Authorize 5% surcharge for TRRP Report? ❑ Yes ❑ No

S=SOIL P=PAINT
W=WATER SL=SLUDGE
A=AIR O=OTHER
L=LIQUID SO=SOLID
SE=SEDIMENT

Field Sample I.D.	DHL Lab #	Date	Time	Matrix	Container Type	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ❑ NaOH ❑	ICE	UNPRESERVED	ANALYSES: BTEX ✗ MTBE ❑ [METHOD 8021]	TPH 1005 ❑ TPH 1006 ❑ HOLD 1006 ❑	GRO [METHOD 8015] ❑ DRO [METHOD 8105] ❑	VOC 8260 ❑ VOC 624 ❑ VOC 8260/5035 ❑	SVOC 8270 ❑ PAH 8270 ❑ HOLD PAH ❑ SVOC 625 ❑	8270 PEST ❑ 625 PEST/PCB ❑ 608 PCB ❑	8270 O-P PEST ❑ 8082 PCB ❑ 8270 PCB ❑	8321 HERB ❑ T PHOS, AMMONIA ❑	METALS 6020 ❑ METALS 200.8 ❑ DISS. METALS ❑	RCRA ❑ TX1 1 ❑ ❑	PH ❑ HEX CHROM ❑ ALKALINITY ❑ COD ❑	CHLORIDE ❑ ANIONS ❑	TCLP-SVOC ❑ VOC ❑ PEST ❑ HERB ❑	TCLP-METALS ❑ RCRA 8 ❑ TX-1 ❑ Pb ❑	RCI ❑ FLASHPOINT ❑ DGAS ❑	TDS ❑ TSS ❑ % MOISTURE ❑ CYANIDE ❑	FIELD NOTES
Duplicate	01	3/30/2020	—	S	VOA 4oz	1				X	X	X	X															Direct bill to HEP
TT-4 Surface	02	↓	1430	↓	↓	↓				↓	↓	↓	↓															
TT-4 @ 1'	03		1435																									
TT-4 @ 2'	04		1445																									
TT-4 @ 30" R	05	↓	1530	↓	↓	↓				↓	↓	↓	↓															

RELINQUISHED BY: (Signature) Misti Tempert DATE/TIME MT 3/30/2020 1430 RECEIVED BY: (Signature) FedEx
RELINQUISHED BY: (Signature) FedEx 4-2-2020 DATE/TIME 4/1/2020 0832 RECEIVED BY: (Signature)
RELINQUISHED BY: (Signature) DATE/TIME RECEIVED BY: (Signature)

❑ DHL DISPOSAL @ $5.00 each ❑ Return

TURN AROUND TIME
RUSH ❑ CALL FIRST
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2 DAY ❑
NORMAL ❑
OTHER ❑ _____

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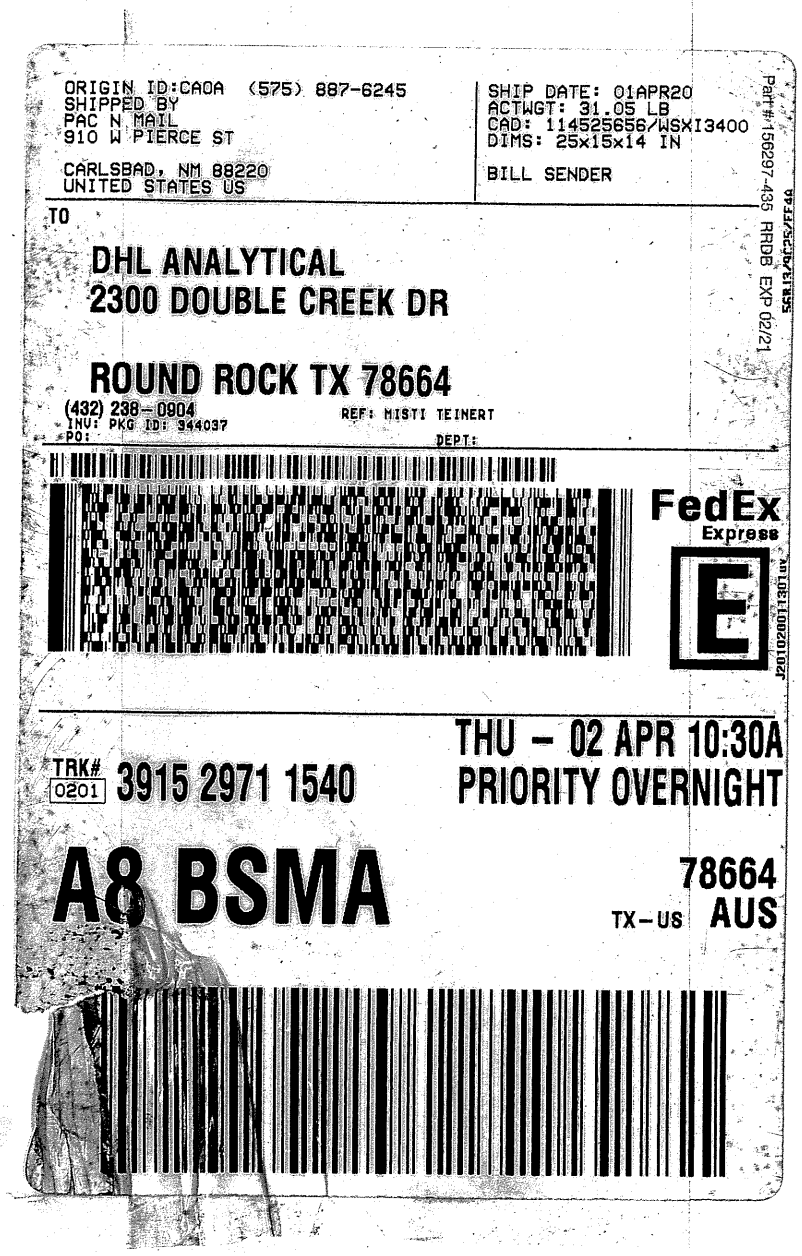
CUSTODY SEALS: ❑ BROKEN ❑ INTACT ☒ NOT USED
CARRIER: ❑ LONE STAR ☒ FEDEX ❑ UPS ❑ OTHER
❑ COURIER DELIVERY
❑ HAND DELIVERED



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910 W PIERCE ST

CARLSBAD, NM 88220
UNITED STATES US

SHIP DATE: 01APR20
ACTWGT: 31.05 LB
CAD: 114525656/WSXI3400
DIMS: 25x15x14 IN

BILL SENDER

Part #156297-436 RRDB EXP 02/21

TO

DHL ANALYTICAL
2300 DOUBLE CREEK DR

ROUND ROCK TX 78664

(432) 238-0904
INV: PKG ID: 344037
PO:

REF: MISTI TEINERT
DEPT:

FedEx
Express

TRK# 0201 3915 2971 1540

THU - 02 APR 10:30A
PRIORITY OVERNIGHT

A8 BSMA

78664
TX-US AUS

DHL Analytical, Inc.

Sample Receipt Checklist

Client Name TRC Environmental Corp. Date Received: 4/2/2020

Work Order Number 2004022 Received by: JH

Checklist completed by: _____ 4/2/2020 Reviewed by DL 4/2/2020
Signature | Date | Initials | Date

Carrier name: FedEx 1day

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	**0.5** °C
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH<2 acceptable upon receipt?	Yes ☐	No ☐	NA ☑ LOT #
	Adjusted? _____		Checked by _____
Water - ph>9 (S) or ph>10 (CN) acceptable upon receipt?	Yes ☐	No ☐	NA ☑ LOT #
	Adjusted? _____		Checked by _____

Any No response must be detailed in the comments section below.

Client contacted: _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

Laboratory Name: DHL Analytical, Inc.

Laboratory Review Checklist: Reportable Data

Project Name: HEP Abo Centurion	**LRC Date:** 4/13/2020
Reviewer Name: Angie O'Donnell	**Laboratory Work Order: 2004022**
Prep Batch Number(s): See Prep Dates Report	**Run Batch:** See Analytical Dates Report

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
		Chain-of-Custody (C-O-C)					
R1	OI	**1)** Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				**R1-01**
		2) Were all departures from standard conditions described in an exception report?			X		
R2	OI	**Sample and Quality Control (QC) Identification**					
		1) Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		2) Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	**Test Reports**					
		1) Were all samples prepared and analyzed within holding times?	X				
		2) Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		3) Were calculations checked by a peer or supervisor?	X				
		4) Were all analyte identifications checked by a peer or supervisor?	X				
		5) Were sample detection limits reported for all analytes not detected?	X				
		6) Were all results for soil and sediment samples reported on a dry weight basis?	X				
		7) Were % moisture (or solids) reported for all soil and sediment samples?	X				
		8) Were bulk soils/solids samples for volatile analysis extracted with methanol per EPA Method 5035?		X			**R3-08**
		9) If required for the project, TICs reported?			X		
R4	O	**Surrogate Recovery Data**					
		1) Were surrogates added prior to extraction?	X				
		2) Were surrogate percent recoveries in all samples within the laboratory QC limits?		X			**R4-02**
R5	OI	**Test Reports/Summary Forms for Blank Samples**					
		1) Were appropriate type(s) of blanks analyzed?	X				
		2) Were blanks analyzed at the appropriate frequency?	X				
		3) Where method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		4) Were blank concentrations < MDL?	X				
		5) For analyte(s) detected in a blank sample, was the concentration, unadjusted for sample specific factors, in all associated field samples, **greater** than 10 times the concentration in the blank sample?			X		
R6	OI	**Laboratory Control Samples (LCS):**					
		1) Were all COCs included in the LCS?	X				
		2) Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		3) Were LCSs analyzed at the required frequency?	X				
		4) Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		5) Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		6) Was the LCSD RPD within QC limits (if applicable)?			X		
R7	OI	**Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Data**					
		1) Were the project/method specified analytes included in the MS and MSD?	X				
		2) Were MS/MSD analyzed at the appropriate frequency?	X				
		3) Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			**R7-03**
		4) Were MS/MSD RPDs within laboratory QC limits?	X				
R8	OI	**Analytical Duplicate Data**					
		1) Were appropriate analytical duplicates analyzed for each matrix?	X				
		2) Were analytical duplicates analyzed at the appropriate frequency?	X				
		3) Were RPDs or relative standard deviations within the laboratory QC limits?	X				
R9	OI	**Method Quantitation Limits (MQLs):**					
		1) Are the MQLs for each method analyte included in the laboratory data package?	X				
		2) Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		3) Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	**Other Problems/Anomalies**					
		1) Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		2) Was applicable and available technology used to lower the SDL to minimize the matrix interference affects on the sample results?	X				
		3) Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				

Laboratory Name: DHL Analytical, Inc.

Laboratory Review Checklist (continued): Supporting Data

Project Name: HEP Abo Centurion	**LRC Date:** 4/13/2020
Reviewer Name: Angie O'Donnell	**Laboratory Work Order:** 2004022
Prep Batch Number(s): See Prep Dates Report	**Run Batch:** See Analytical Dates Report

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	**Initial Calibration (ICAL)**					
		1) Were response factors and/or relative response factors for each analyte within QC limits?	X				
		2) Were percent RSDs or correlation coefficient criteria met?	X				
		3) Was the number of standards recommended in the method used for all analytes?	X				
		4) Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		5) Are ICAL data available for all instruments used?	X				
		6) Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	**Initial and Continuing calibration Verification (ICCV and CCV) and Continuing Calibration blank (CCB):**					
		1) Was the CCV analyzed at the method-required frequency?	X				
		2) Were percent differences for each analyte within the method-required QC limits?	X				
		3) Was the ICAL curve verified for each analyte?	X				
		4) Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
S3	O	**Mass Spectral Tuning:**					
		1) Was the appropriate compound for the method used for tuning?	X				
		2) Were ion abundance data within the method-required QC limits?	X				
S4	O	**Internal Standards (IS):**					
		1) Were IS area counts and retention times within the method-required QC limits?	X				
S5	OI	**Raw Data (NELAC Section 5.5.10)**					
		1) Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		2) Were data associated with manual integrations flagged on the raw data?	X				
S6	O	**Dual Column Confirmation**					
		1) Did dual column confirmation results meet the method-required QC?			X		
S7	O	**Tentatively Identified Compounds (TICs):**					
		1) If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	**Interference Check Sample (ICS) Results:**					
		1) Were percent recoveries within method QC limits?			X		
S9	I	**Serial Dilutions, Post Digestion Spikes, and Method of Standard Additions**					
		1) Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
S10	OI	**Method Detection Limit (MDL) Studies**					
		1) Was a MDL study performed for each reported analyte?	X				
		2) Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	**Proficiency Test Reports:**					
		1) Was the lab's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	**Standards Documentation**					
		1) Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	**Compound/Analyte Identification Procedures**					
		1) Are the procedures for compound/analyte identification documented?	X				
S14	OI	**Demonstration of Analyst Competency (DOC)**					
		1) Was DOC conducted consistent with NELAC Chapter 5 – Appendix C?	X				
		2) Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	**Verification/Validation Documentation for Methods** (NELAC Chapter 5)					
		1) Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	**Laboratory Standard Operating Procedures (SOPs):**					
		1) Are laboratory SOPs current and on file for each method performed?	X				

1 Items identified by the letter "R" should be included in the laboratory data package submitted to the TCEQ in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2 O = organic analyses; I = inorganic analyses (and general chemistry, when applicable).
3 NA = Not applicable.
4 NR = Not Reviewed.
5 ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Data Package Signature Page – RG-366/TRRP-13

This data package consists of:

This signature page, the laboratory review checklist, and the following reportable data:

R1 Field chain-of-custody documentation;
R2 Sample identification cross-reference;
R3 Test reports (analytical data sheets) for each environmental sample that includes:
  a) Items consistent with NELAC Chapter 5,
  b) dilution factors,
  c) preparation methods,
  d) cleanup methods, and
  e) if required for the project, tentatively identified compounds (TICs).
R4 Surrogate recovery data including:
  a) Calculated recovery (%R), and
  b) The laboratory's surrogate QC limits.
R5 Test reports/summary forms for blank samples;
R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  a) LCS spiking amounts,
  b) Calculated %R for each analyte, and
  c) The laboratory's LCS QC limits.
R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  a) Samples associated with the MS/MSD clearly identified,
  b) MS/MSD spiking amounts,
  c) Concentration of each MS/MSD analyte measured in the parent and spiked samples,
  d) Calculated %Rs and relative percent differences (RPDs), and
  e) The laboratory's MS/MSD QC limits
R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  a) The amount of analyte measured in the duplicate,
  b) The calculated RPD, and
  c) The laboratory's QC limits for analytical duplicates.
R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix;
R10 Other problems or anomalies.

The Exception Report for each "No" or "Not Reviewed (NR)" item in the Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory is not accredited under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge that all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information or data affecting the quality of the data has been knowingly withheld.

This laboratory was last inspected by TCEQ on February 25-28, 2019. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Name: John DuPont
Official Title: General Manager

Signature

04/13/20
Date

Name: Dr. Derhsing Luu
Official Title: Technical Director

DHL Analytical, Inc. **Date:** *13-Apr-20*

CLIENT: TRC Environmental Corp.
Project: HEP Abo Centurion
Lab Order: 2004022

CASE NARRATIVE

Samples were analyzed using the methods outlined in the following references:

Method M8015D - DRO/ORO Analysis
Method M8015V - GRO Analysis
Method SW8260D - Volatile Organics Analysis
Method D2216 - Percent Moisture Analysis

Exception Report R1-01

The samples were received and log-in performed on 4/2/2020. A total of 5 samples were received and analyzed. The samples arrived in good condition and were properly packaged.

Exception Report R3-08

As per the TCEQ-NELAP accreditation requirement the following must be noted: As of January 1, 2016, the TCEQ remediation division guidance on the collection of soil for VOC analysis requires the use of Method 5035 and will reject VOC data reported for soil samples collected and prepared using another method; this applies to remediation testing only. For analyses reported to TCEQ for waste characterization, TCLP testing or matrices other than soil, bulk sampling is allowed. NELAP requires a note that if 5035 sampling method for VOCs is not utilized, the results of samples collected in bulk containers for low level volatile components may be compromised. The client has been notified and has requested the Laboratory to proceed with analysis.

Exception Report R4-02

For DRO/ORO Analysis, the recoveries of up to two surrogates for three samples were above the method control limits. These were flagged accordingly in the Analytical Data Report and the QC Summary Report. No further corrective action was taken.

For Volatile Organics Analysis, the recovery of surrogate 4-Bromofluorobenzene for two samples, the Initial Calibration Verification (ICV-200407), the Laboratory Control Spike (LCS-95811) and Method Blank-95811 was outside of the method control limits. Additionally, the recoveries of two surrogates for Sample TT-4 @ 1' were above the method control limits. These were flagged accordingly in the Analytical Data Report and the QC Summary Report. The remaining surrogates for these samples were within method control limits. No further corrective action was taken.

Exception Report R7-03

For Volatile Organics Analysis, for Batches 95887 and 95811, for the Matrix Spike and Matrix Spike

CLIENT:	TRC Environmental Corp.
Project:	HEP Abo Centurion
Lab Order:	2004022

CASE NARRATIVE

Duplicate(s) (2004022-03, -04 MS/MSD) were outside of the method control limits. These are flagged accordingly in the QC Summary Report. These compounds were within method control limits in the associated LCS(s). No further corrective action was taken.

DHL Analytical, Inc.

Date: *13-Apr-20*

CLIENT: TRC Environmental Corp.
Project: HEP Abo Centurion
Lab Order: 2004022

Work Order Sample Summary

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recved
2004022-01	Duplicate		03/30/20	4/2/2020
2004022-02	TT-4 Surface		03/30/20 02:30 PM	4/2/2020
2004022-03	TT-4 @ 1'		03/30/20 02:35 PM	4/2/2020
2004022-04	TT-4 @ 2'		03/30/20 02:45 PM	4/2/2020
2004022-05	TT-4 @ 30"R		03/30/20 03:30 PM	4/2/2020

DHL Analytical, Inc.

13-Apr-20

Lab Order: 2004022
Client: TRC Environmental Corp.
Project: HEP Abo Centurion

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
2004022-01A	Duplicate	03/30/20	Soil	D2216	Moisture Preparation	04/08/20 04:46 PM	95854
	Duplicate	03/30/20	Soil	SW5030C	Purge and Trap Soils GC- Gas	04/06/20 09:58 AM	95808
	Duplicate	03/30/20	Soil	SW5030C	Purge and Trap Soils GC/MS	04/06/20 10:10 AM	95811
	Duplicate	03/30/20	Soil	SW3550C	Soil Prep Sonication: DRO	04/09/20 09:06 AM	95860
	Duplicate	03/30/20	Soil	SW3550C	Soil Prep Sonication: DRO	04/09/20 09:06 AM	95860
2004022-02A	TT-4 Surface	03/30/20 02:30 PM	Soil	D2216	Moisture Preparation	04/08/20 04:46 PM	95854
	TT-4 Surface	03/30/20 02:30 PM	Soil	SW5030C	Purge and Trap Soils GC- Gas	04/06/20 09:58 AM	95808
	TT-4 Surface	03/30/20 02:30 PM	Soil	SW5030C	Purge and Trap Soils GC/MS	04/06/20 10:10 AM	95811
	TT-4 Surface	03/30/20 02:30 PM	Soil	SW3550C	Soil Prep Sonication: DRO	04/09/20 09:06 AM	95860
	TT-4 Surface	03/30/20 02:30 PM	Soil	SW3550C	Soil Prep Sonication: DRO	04/09/20 09:06 AM	95860
2004022-03A	TT-4 @ 1'	03/30/20 02:35 PM	Soil	D2216	Moisture Preparation	04/08/20 04:46 PM	95854
	TT-4 @ 1'	03/30/20 02:35 PM	Soil	SW5030C	Purge and Trap Soils GC- Gas	04/06/20 09:58 AM	95808
	TT-4 @ 1'	03/30/20 02:35 PM	Soil	SW5030C	Purge and Trap Soils GC- Gas	04/06/20 09:58 AM	95808
	TT-4 @ 1'	03/30/20 02:35 PM	Soil	SW5030C	Purge and Trap Soils GC/MS	04/06/20 10:10 AM	95811
	TT-4 @ 1'	03/30/20 02:35 PM	Soil	SW5030C	Purge and Trap Soils GC/MS	04/10/20 12:07 PM	95887
	TT-4 @ 1'	03/30/20 02:35 PM	Soil	SW3550C	Soil Prep Sonication: DRO	04/09/20 09:06 AM	95860
	TT-4 @ 1'	03/30/20 02:35 PM	Soil	SW3550C	Soil Prep Sonication: DRO	04/09/20 09:06 AM	95860
2004022-04A	TT-4 @ 2'	03/30/20 02:45 PM	Soil	D2216	Moisture Preparation	04/08/20 04:46 PM	95854
	TT-4 @ 2'	03/30/20 02:45 PM	Soil	SW5030C	Purge and Trap Soils GC- Gas	04/06/20 09:58 AM	95808
	TT-4 @ 2'	03/30/20 02:45 PM	Soil	SW5030C	Purge and Trap Soils GC- Gas	04/06/20 09:58 AM	95808
	TT-4 @ 2'	03/30/20 02:45 PM	Soil	SW5030C	Purge and Trap Soils GC/MS	04/06/20 10:10 AM	95811
	TT-4 @ 2'	03/30/20 02:45 PM	Soil	SW3550C	Soil Prep Sonication: DRO	04/09/20 09:06 AM	95860
2004022-05A	TT-4 @ 30"R	03/30/20 03:30 PM	Soil	D2216	Moisture Preparation	04/08/20 04:46 PM	95854
	TT-4 @ 30"R	03/30/20 03:30 PM	Soil	SW5030C	Purge and Trap Soils GC- Gas	04/06/20 09:58 AM	95808
	TT-4 @ 30"R	03/30/20 03:30 PM	Soil	SW5030C	Purge and Trap Soils GC- Gas	04/06/20 09:58 AM	95808
	TT-4 @ 30"R	03/30/20 03:30 PM	Soil	SW5030C	Purge and Trap Soils GC/MS	04/06/20 10:10 AM	95811
	TT-4 @ 30"R	03/30/20 03:30 PM	Soil	SW3550C	Soil Prep Sonication: DRO	04/09/20 09:06 AM	95860

Lab Order: 2004022
Client: TRC Environmental Corp.
Project: HEP Abo Centurion

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
2004022-01A	Duplicate	Soil	SW8260D	8260 Soil Volatiles by GC/MS	95811	1	04/07/20 10:34 PM	GCMS2_200407B
	Duplicate	Soil	D2216	Percent Moisture	95854	1	04/09/20 09:17 AM	PMOIST_200408B
	Duplicate	Soil	M8015D	TPH Extractable by GC - Soil	95860	50	04/10/20 11:42 AM	GC15_200410A
	Duplicate	Soil	M8015D	TPH Extractable by GC - Soil	95860	200	04/10/20 01:20 PM	GC15_200410A
	Duplicate	Soil	M8015V	TPH Purgeable by GC - Soil	95808	50	04/06/20 01:49 PM	GC4_200406A
2004022-02A	TT-4 Surface	Soil	SW8260D	8260 Soil Volatiles by GC/MS	95811	1	04/07/20 11:02 PM	GCMS2_200407B
	TT-4 Surface	Soil	D2216	Percent Moisture	95854	1	04/09/20 09:17 AM	PMOIST_200408B
	TT-4 Surface	Soil	M8015D	TPH Extractable by GC - Soil	95860	50	04/10/20 11:51 AM	GC15_200410A
	TT-4 Surface	Soil	M8015D	TPH Extractable by GC - Soil	95860	200	04/10/20 01:29 PM	GC15_200410A
	TT-4 Surface	Soil	M8015V	TPH Purgeable by GC - Soil	95808	50	04/06/20 02:12 PM	GC4_200406A
2004022-03A	TT-4 @ 1'	Soil	SW8260D	8260 Soil Volatiles by GC/MS	95811	1	04/07/20 11:30 PM	GCMS2_200407B
	TT-4 @ 1'	Soil	SW8260D	8260 Soil Volatiles by GC/MS	95887	50	04/10/20 01:29 PM	GCMS2_200410A
	TT-4 @ 1'	Soil	D2216	Percent Moisture	95854	1	04/09/20 09:17 AM	PMOIST_200408B
	TT-4 @ 1'	Soil	M8015D	TPH Extractable by GC - Soil	95860	100	04/10/20 01:38 PM	GC15_200410A
	TT-4 @ 1'	Soil	M8015D	TPH Extractable by GC - Soil	95860	10	04/10/20 12:00 PM	GC15_200410A
	TT-4 @ 1'	Soil	M8015V	TPH Purgeable by GC - Soil	95808	20	04/06/20 02:35 PM	GC4_200406A
	TT-4 @ 1'	Soil	M8015V	TPH Purgeable by GC - Soil	95808	200	04/06/20 09:40 PM	GC4_200406A
2004022-04A	TT-4 @ 2'	Soil	SW8260D	8260 Soil Volatiles by GC/MS	95811	1	04/07/20 11:58 PM	GCMS2_200407B
	TT-4 @ 2'	Soil	D2216	Percent Moisture	95854	1	04/09/20 09:17 AM	PMOIST_200408B
	TT-4 @ 2'	Soil	M8015D	TPH Extractable by GC - Soil	95860	1	04/10/20 10:27 AM	GC15_200410A
	TT-4 @ 2'	Soil	M8015V	TPH Purgeable by GC - Soil	95808	20	04/06/20 02:58 PM	GC4_200406A
	TT-4 @ 2'	Soil	M8015V	TPH Purgeable by GC - Soil	95808	20	04/06/20 08:54 PM	GC4_200406A
2004022-05A	TT-4 @ 30"R	Soil	SW8260D	8260 Soil Volatiles by GC/MS	95811	1	04/08/20 12:26 AM	GCMS2_200407B
	TT-4 @ 30"R	Soil	D2216	Percent Moisture	95854	1	04/09/20 09:17 AM	PMOIST_200408B
	TT-4 @ 30"R	Soil	M8015D	TPH Extractable by GC - Soil	95860	1	04/10/20 10:36 AM	GC15_200410A
	TT-4 @ 30"R	Soil	M8015V	TPH Purgeable by GC - Soil	95808	20	04/06/20 09:17 PM	GC4_200406A
	TT-4 @ 30"R	Soil	M8015V	TPH Purgeable by GC - Soil	95808	20	04/06/20 03:21 PM	GC4_200406A

DHL Analytical, Inc.

Date: *13-Apr-20*

CLIENT: TRC Environmental Corp.
Project: HEP Abo Centurion
Project No: 390412
Lab Order: 2004022

Client Sample ID: Duplicate
Lab ID: 2004022-01
Collection Date: 03/30/20
Matrix: SOIL

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
TPH EXTRACTABLE BY GC - SOIL		**M8015D**					Analyst: **BTJ**
TPH-DRO C10-C28	24000	618	2060		mg/Kg-dry	200	04/10/20 01:20 PM
TPH-ORO >C28-C35	6880	618	2060		mg/Kg-dry	200	04/10/20 01:20 PM
Surr: Isopropylbenzene	108	0	47-142		%REC	200	04/10/20 01:20 PM
Surr: Octacosane	6210	0	25-162	S	%REC	200	04/10/20 01:20 PM
TPH PURGEABLE BY GC - SOIL		**M8015V**					Analyst: **BTJ**
Gasoline Range Organics	104	4.70	9.39		mg/Kg-dry	50	04/06/20 01:49 PM
Surr: Tetrachlorethene	70.8	0	70-134		%REC	50	04/06/20 01:49 PM
8260 SOIL VOLATILES BY GC/MS		**SW8260D**					Analyst: **CC**
Benzene	0.0329	0.00101	0.00507		mg/Kg-dry	1	04/07/20 10:34 PM
Ethylbenzene	0.151	0.00101	0.00507		mg/Kg-dry	1	04/07/20 10:34 PM
Toluene	0.319	0.00101	0.00507		mg/Kg-dry	1	04/07/20 10:34 PM
Total Xylenes	0.556	0.00101	0.00507		mg/Kg-dry	1	04/07/20 10:34 PM
Surr: 1,2-Dichloroethane-d4	103	0	52-149		%REC	1	04/07/20 10:34 PM
Surr: 4-Bromofluorobenzene	156	0	84-118	S	%REC	1	04/07/20 10:34 PM
Surr: Dibromofluoromethane	114	0	65-135		%REC	1	04/07/20 10:34 PM
Surr: Toluene-d8	105	0	84-116		%REC	1	04/07/20 10:34 PM
PERCENT MOISTURE		**D2216**					Analyst: **RBW**
Percent Moisture	7.74	0	0		WT%	1	04/09/20 09:17 AM

Qualifiers:

ND - Not Detected at the SDL
J - Analyte detected between SDL and RL
B - Analyte detected in the associated Method Blank
DF- Dilution Factor
N - Parameter not NELAP certified
See Final Page of Report for MQLs and MDLs
S - Spike Recovery outside control limits
C - Sample Result or QC discussed in Case Narrative
RL - Reporting Limit (MQL adjusted for moisture and sample size)
SDL - Sample Detection Limit
E - TPH pattern not Gas or Diesel Range Pattern

DHL Analytical, Inc.

Date: *13-Apr-20*

CLIENT:	TRC Environmental Corp.	**Client Sample ID:**	TT-4 Surface
Project:	HEP Abo Centurion	**Lab ID:**	2004022-02
Project No:	390412	**Collection Date:**	03/30/20 02:30 PM
Lab Order:	2004022	**Matrix:**	SOIL

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
TPH EXTRACTABLE BY GC - SOIL		**M8015D**					Analyst: **BTJ**
TPH-DRO C10-C28	23000	625	2080		mg/Kg-dry	200	04/10/20 01:29 PM
TPH-ORO >C28-C35	4150	625	2080		mg/Kg-dry	200	04/10/20 01:29 PM
Surr: Isopropylbenzene	98.6	0	47-142		%REC	200	04/10/20 01:29 PM
Surr: Octacosane	5740	0	25-162	S	%REC	200	04/10/20 01:29 PM
TPH PURGEABLE BY GC - SOIL		**M8015V**					Analyst: **BTJ**
Gasoline Range Organics	168	5.30	10.6		mg/Kg-dry	50	04/06/20 02:12 PM
Surr: Tetrachlorethene	97.4	0	70-134		%REC	50	04/06/20 02:12 PM
8260 SOIL VOLATILES BY GC/MS		**SW8260D**					Analyst: **CC**
Benzene	0.0278	0.00105	0.00526		mg/Kg-dry	1	04/07/20 11:02 PM
Ethylbenzene	0.137	0.00105	0.00526		mg/Kg-dry	1	04/07/20 11:02 PM
Toluene	0.290	0.00105	0.00526		mg/Kg-dry	1	04/07/20 11:02 PM
Total Xylenes	0.522	0.00105	0.00526		mg/Kg-dry	1	04/07/20 11:02 PM
Surr: 1,2-Dichloroethane-d4	103	0	52-149		%REC	1	04/07/20 11:02 PM
Surr: 4-Bromofluorobenzene	144	0	84-118	S	%REC	1	04/07/20 11:02 PM
Surr: Dibromofluoromethane	110	0	65-135		%REC	1	04/07/20 11:02 PM
Surr: Toluene-d8	102	0	84-116		%REC	1	04/07/20 11:02 PM
PERCENT MOISTURE		**D2216**					Analyst: **RBW**
Percent Moisture	7.71	0	0		WT%	1	04/09/20 09:17 AM

Qualifiers:

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- See Final Page of Report for MQLs and MDLs
- S - Spike Recovery outside control limits
- C - Sample Result or QC discussed in Case Narrative
- RL - Reporting Limit (MQL adjusted for moisture and sample size)
- SDL - Sample Detection Limit
- E - TPH pattern not Gas or Diesel Range Pattern

DHL Analytical, Inc.

Date: *13-Apr-20*

CLIENT: TRC Environmental Corp.
Project: HEP Abo Centurion
Project No: 390412
Lab Order: 2004022

Client Sample ID: TT-4 @ 1'
Lab ID: 2004022-03
Collection Date: 03/30/20 02:35 PM
Matrix: SOIL

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
TPH EXTRACTABLE BY GC - SOIL		**M8015D**					Analyst: **BTJ**
TPH-DRO C10-C28	7810	367	1220		mg/Kg-dry	100	04/10/20 01:38 PM
TPH-ORO >C28-C35	369	367	1220	J	mg/Kg-dry	100	04/10/20 01:38 PM
Surr: Isopropylbenzene	226	0	47-142	S	%REC	100	04/10/20 01:38 PM
Surr: Octacosane	678	0	25-162	S	%REC	100	04/10/20 01:38 PM
TPH PURGEABLE BY GC - SOIL		**M8015V**					Analyst: **BTJ**
Gasoline Range Organics	2230	23.7	47.4		mg/Kg-dry	200	04/06/20 09:40 PM
Surr: Tetrachlorethene	76.7	0	70-134		%REC	200	04/06/20 09:40 PM
8260 SOIL VOLATILES BY GC/MS		**SW8260D**					Analyst: **CC**
Benzene	0.0966	0.00121	0.00603		mg/Kg-dry	1	04/07/20 11:30 PM
Ethylbenzene	4.99	0.0626	0.313		mg/Kg-dry	50	04/10/20 01:29 PM
Toluene	3.86	0.0626	0.313		mg/Kg-dry	50	04/10/20 01:29 PM
Total Xylenes	18.6	0.0626	0.313		mg/Kg-dry	50	04/10/20 01:29 PM
Surr: 1,2-Dichloroethane-d4	99.4	0	52-149		%REC	50	04/10/20 01:29 PM
Surr: 1,2-Dichloroethane-d4	98.7	0	52-149		%REC	1	04/07/20 11:30 PM
Surr: 4-Bromofluorobenzene	97.4	0	84-118		%REC	50	04/10/20 01:29 PM
Surr: 4-Bromofluorobenzene	771	0	84-118	S	%REC	1	04/07/20 11:30 PM
Surr: Dibromofluoromethane	109	0	65-135		%REC	50	04/10/20 01:29 PM
Surr: Dibromofluoromethane	109	0	65-135		%REC	1	04/07/20 11:30 PM
Surr: Toluene-d8	97.9	0	84-116		%REC	50	04/10/20 01:29 PM
Surr: Toluene-d8	165	0	84-116	S	%REC	1	04/07/20 11:30 PM
PERCENT MOISTURE		**D2216**					Analyst: **RBW**
Percent Moisture	21.3	0	0		WT%	1	04/09/20 09:17 AM

Qualifiers:

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See Final Page of Report for MQLs and MDLs
S - Spike Recovery outside control limits
C - Sample Result or QC discussed in Case Narrative
RL - Reporting Limit (MQL adjusted for moisture and sample size)
SDL - Sample Detection Limit
E - TPH pattern not Gas or Diesel Range Pattern

DHL Analytical, Inc.

Date: *13-Apr-20*

CLIENT:	TRC Environmental Corp.	**Client Sample ID:**	TT-4 @ 2'
Project:	HEP Abo Centurion	**Lab ID:**	2004022-04
Project No:	390412	**Collection Date:**	03/30/20 02:45 PM
Lab Order:	2004022	**Matrix:**	SOIL

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
TPH EXTRACTABLE BY GC - SOIL		**M8015D**					Analyst: **BTJ**
TPH-DRO C10-C28	84.5	3.55	11.8		mg/Kg-dry	1	04/10/20 10:27 AM
TPH-ORO >C28-C35	13.7	3.55	11.8		mg/Kg-dry	1	04/10/20 10:27 AM
Surr: Isopropylbenzene	70.4	0	47-142		%REC	1	04/10/20 10:27 AM
Surr: Octacosane	99.0	0	25-162		%REC	1	04/10/20 10:27 AM
TPH PURGEABLE BY GC - SOIL		**M8015V**					Analyst: **BTJ**
Gasoline Range Organics	33.1	2.50	5.00		mg/Kg-dry	20	04/06/20 08:54 PM
Surr: Tetrachlorethene	99.0	0	70-134		%REC	20	04/06/20 08:54 PM
8260 SOIL VOLATILES BY GC/MS		**SW8260D**					Analyst: **CC**
Benzene	<0.00120	0.00120	0.00600		mg/Kg-dry	1	04/07/20 11:58 PM
Ethylbenzene	0.00623	0.00120	0.00600		mg/Kg-dry	1	04/07/20 11:58 PM
Toluene	0.00873	0.00120	0.00600		mg/Kg-dry	1	04/07/20 11:58 PM
Total Xylenes	0.0233	0.00120	0.00600		mg/Kg-dry	1	04/07/20 11:58 PM
Surr: 1,2-Dichloroethane-d4	99.4	0	52-149		%REC	1	04/07/20 11:58 PM
Surr: 4-Bromofluorobenzene	92.3	0	84-118		%REC	1	04/07/20 11:58 PM
Surr: Dibromofluoromethane	107	0	65-135		%REC	1	04/07/20 11:58 PM
Surr: Toluene-d8	88.3	0	84-116		%REC	1	04/07/20 11:58 PM
PERCENT MOISTURE		**D2216**					Analyst: **RBW**
Percent Moisture	20.5	0	0		WT%	1	04/09/20 09:17 AM

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- See Final Page of Report for MQLs and MDLs
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- C - Sample Result or QC discussed in Case Narrative
- RL - Reporting Limit (MQL adjusted for moisture and sample size)
- SDL - Sample Detection Limit
- E - TPH pattern not Gas or Diesel Range Pattern

DHL Analytical, Inc.

Date: *13-Apr-20*

CLIENT:	TRC Environmental Corp.	**Client Sample ID:**	TT-4 @ 30"R
Project:	HEP Abo Centurion	**Lab ID:**	2004022-05
Project No:	390412	**Collection Date:**	03/30/20 03:30 PM
Lab Order:	2004022	**Matrix:**	SOIL

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
TPH EXTRACTABLE BY GC - SOIL		**M8015D**					Analyst: **BTJ**
TPH-DRO C10-C28	103	3.64	12.1		mg/Kg-dry	1	04/10/20 10:36 AM
TPH-ORO >C28-C35	11.7	3.64	12.1	J	mg/Kg-dry	1	04/10/20 10:36 AM
Surr: Isopropylbenzene	83.8	0	47-142		%REC	1	04/10/20 10:36 AM
Surr: Octacosane	99.6	0	25-162		%REC	1	04/10/20 10:36 AM
TPH PURGEABLE BY GC - SOIL		**M8015V**					Analyst: **BTJ**
Gasoline Range Organics	7.08	2.16	4.32		mg/Kg-dry	20	04/06/20 09:17 PM
Surr: Tetrachlorethene	94.9	0	70-134		%REC	20	04/06/20 09:17 PM
8260 SOIL VOLATILES BY GC/MS		**SW8260D**					Analyst: **CC**
Benzene	<0.00109	0.00109	0.00546		mg/Kg-dry	1	04/08/20 12:26 AM
Ethylbenzene	0.00555	0.00109	0.00546		mg/Kg-dry	1	04/08/20 12:26 AM
Toluene	0.00235	0.00109	0.00546	J	mg/Kg-dry	1	04/08/20 12:26 AM
Total Xylenes	0.0373	0.00109	0.00546		mg/Kg-dry	1	04/08/20 12:26 AM
Surr: 1,2-Dichloroethane-d4	101	0	52-149		%REC	1	04/08/20 12:26 AM
Surr: 4-Bromofluorobenzene	88.4	0	84-118		%REC	1	04/08/20 12:26 AM
Surr: Dibromofluoromethane	109	0	65-135		%REC	1	04/08/20 12:26 AM
Surr: Toluene-d8	89.3	0	84-116		%REC	1	04/08/20 12:26 AM
PERCENT MOISTURE		**D2216**					Analyst: **RBW**
Percent Moisture	20.2	0	0		WT%	1	04/09/20 09:17 AM

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- DF- Dilution Factor
- N - Parameter not NELAP certified
- See Final Page of Report for MQLs and MDLs
- S - Spike Recovery outside control limits
- C - Sample Result or QC discussed in Case Narrative
- RL - Reporting Limit (MQL adjusted for moisture and sample size)
- SDL - Sample Detection Limit
- E - TPH pattern not Gas or Diesel Range Pattern

DHL Analytical, Inc.

Date: *13-Apr-20*

CLIENT: TRC Environmental Corp.
Work Order: 2004022
Project: HEP Abo Centurion

ANALYTICAL QC SUMMARY REPORT

RunID: GC15_200330A

Sample ID: **DCS-95691** Batch ID: **95691** TestNo: **M8015D** Units: **mg/Kg**
SampType: **DCS** Run ID: **GC15_200330A** Analysis Date: **3/30/2020 11:37:15 AM** Prep Date: **3/27/2020**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
TPH-DRO C10-C28	10.1	10.0	15.00	0	67.4	20	400	0	0	
Surr: Isopropylbenzene	6.16		7.500		82.1	47	142	0	0	
Surr: Octacosane	6.03		7.500		80.4	25	162	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAP certified

CLIENT: TRC Environmental Corp.
Work Order: 2004022
Project: HEP Abo Centurion

ANALYTICAL QC SUMMARY REPORT

RunID: GC15_200410A

The QC data in batch 95860 applies to the following samples: 2004022-01A, 2004022-02A, 2004022-03A, 2004022-04A, 2004022-05A

Sample ID: **MB-95860** Batch ID: **95860** TestNo: **M8015D** Units: **mg/Kg**
SampType: **MBLK** Run ID: **GC15_200410A** Analysis Date: **4/10/2020 10:09:11 AM** Prep Date: **4/9/2020**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
TPH-DRO C10-C28	<3.00	10.0								
TPH-ORO >C28-C35	<3.00	10.0								
Surr: Isopropylbenzene	6.53		7.500		87.1	47	142			
Surr: Octacosane	5.54		7.500		73.9	25	162			

Sample ID: **LCS-95860** Batch ID: **95860** TestNo: **M8015D** Units: **mg/Kg**
SampType: **LCS** Run ID: **GC15_200410A** Analysis Date: **4/10/2020 10:18:15 AM** Prep Date: **4/9/2020**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
TPH-DRO C10-C28	104	10.0	125.0	0	83.1	50	114			
Surr: Isopropylbenzene	6.55		7.500		87.3	47	142			
Surr: Octacosane	5.35		7.500		71.3	25	162			

Sample ID: **2004023-02AMS** Batch ID: **95860** TestNo: **M8015D** Units: **mg/Kg-dry**
SampType: **MS** Run ID: **GC15_200410A** Analysis Date: **4/10/2020 11:12:37 AM** Prep Date: **4/9/2020**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
TPH-DRO C10-C28	105	10.9	136.2	3.781	74.0	50	114			
Surr: Isopropylbenzene	6.91		8.175		84.5	47	142			
Surr: Octacosane	5.59		8.175		68.4	25	162			

Sample ID: **2004023-02AMSD** Batch ID: **95860** TestNo: **M8015D** Units: **mg/Kg-dry**
SampType: **MSD** Run ID: **GC15_200410A** Analysis Date: **4/10/2020 11:21:41 AM** Prep Date: **4/9/2020**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
TPH-DRO C10-C28	104	11.0	138.1	3.781	72.6	50	114	0.454	30	
Surr: Isopropylbenzene	6.98		8.287		84.2	47	142	0	0	
Surr: Octacosane	5.59		8.287		67.4	25	162	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAP certified

CLIENT: TRC Environmental Corp.
Work Order: 2004022
Project: HEP Abo Centurion

ANALYTICAL QC SUMMARY REPORT

RunID: GC15_200410A

Sample ID: **ICV-200410**	Batch ID: **R109965**	TestNo: **M8015D**	Units: **mg/Kg**
SampType: **ICV**	Run ID: **GC15_200410A**	Analysis Date: **4/10/2020 9:56:17 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
TPH-DRO C10-C28	516	10.0	500.0	0	103	80	120			
TPH-ORO >C28-C35	0.0200	10.0	0							
Surr: Isopropylbenzene	28.8		25.00		115	80	120			
Surr: Octacosane	20.6		25.00		82.6	80	120			

Sample ID: **CCV1-200410**	Batch ID: **R109965**	TestNo: **M8015D**	Units: **mg/Kg**
SampType: **CCV**	Run ID: **GC15_200410A**	Analysis Date: **4/10/2020 4:13:23 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
TPH-DRO C10-C28	214	10.0	250.0	0	85.5	80	120			
TPH-ORO >C28-C35	0.179	10.0	0							
Surr: Isopropylbenzene	13.2		12.50		105	80	120			
Surr: Octacosane	10.1		12.50		80.4	80	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAP certified

CLIENT: TRC Environmental Corp.
Work Order: 2004022
Project: HEP Abo Centurion

ANALYTICAL QC SUMMARY REPORT

RunID: GC4_200327A

Sample ID: **DCS-95690** Batch ID: **95690** TestNo: **M8015V** Units: **mg/Kg**
SampType: **DCS** Run ID: **GC4_200327A** Analysis Date: **3/27/2020 12:53:32 PM** Prep Date: **3/27/2020**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics	0.189	0.200	0.2000	0	94.6	31	161	0	0	
Surr: Tetrachlorethene	0.470		0.4000		118	70	134	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAP certified

CLIENT: TRC Environmental Corp.
Work Order: 2004022
Project: HEP Abo Centurion

ANALYTICAL QC SUMMARY REPORT

RunID: GC4_200406A

The QC data in batch 95808 applies to the following samples: 2004022-01A, 2004022-02A, 2004022-03A, 2004022-04A, 2004022-05A

Sample ID: **LCS-95808 MEOH** Batch ID: **95808** TestNo: **M8015V** Units: **mg/Kg**
SampType: **LCS** Run ID: **GC4_200406A** Analysis Date: **4/6/2020 11:33:00 AM** Prep Date: **4/6/2020**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics	2.65	0.200	2.500	0	106	68	126			
Surr: Tetrachlorethene	0.447		0.4000		112	70	134			

Sample ID: **MB-95808 MEOH** Batch ID: **95808** TestNo: **M8015V** Units: **mg/Kg**
SampType: **MBLK** Run ID: **GC4_200406A** Analysis Date: **4/6/2020 12:41:52 PM** Prep Date: **4/6/2020**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics	<0.100	0.200								
Surr: Tetrachlorethene	0.294		0.4000		73.6	70	134			

Sample ID: **2004023-01AMSD** Batch ID: **95808** TestNo: **M8015V** Units: **mg/Kg-dry**
SampType: **MSD** Run ID: **GC4_200406A** Analysis Date: **4/6/2020 4:57:58 PM** Prep Date: **4/6/2020**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics	57.5	4.50	56.27	0	102	68	126	4.66	30	
Surr: Tetrachlorethene	10.8		9.004		120	70	134	0	0	

Sample ID: **2004023-01AMS** Batch ID: **95808** TestNo: **M8015V** Units: **mg/Kg-dry**
SampType: **MS** Run ID: **GC4_200406A** Analysis Date: **4/6/2020 10:04:31 PM** Prep Date: **4/6/2020**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics	60.3	4.50	56.27	0	107	68	126			
Surr: Tetrachlorethene	8.94		9.004		99.3	70	134			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAP certified

CLIENT: TRC Environmental Corp.
Work Order: 2004022
Project: HEP Abo Centurion

ANALYTICAL QC SUMMARY REPORT

RunID: GC4_200406A

Sample ID: **ICV-200406**	Batch ID: **R109914**	TestNo: **M8015V**	Units: **mg/Kg**
SampType: **ICV**	Run ID: **GC4_200406A**	Analysis Date: **4/6/2020 11:09:28 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics	4.79	0.200	5.000	0	95.7	80	120			
Surr: Tetrachlorethene	0.404		0.4000		101	70	134			

Sample ID: **CCV1-200406**	Batch ID: **R109914**	TestNo: **M8015V**	Units: **mg/Kg**
SampType: **CCV**	Run ID: **GC4_200406A**	Analysis Date: **4/6/2020 5:21:11 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics	2.44	0.200	2.500	0	97.5	80	120			
Surr: Tetrachlorethene	0.429		0.4000		107	70	134			

Sample ID: **CCV2-200406**	Batch ID: **R109914**	TestNo: **M8015V**	Units: **mg/Kg**
SampType: **CCV**	Run ID: **GC4_200406A**	Analysis Date: **4/6/2020 10:51:07 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics	2.65	0.200	2.500	0	106	80	120			
Surr: Tetrachlorethene	0.470		0.4000		118	70	134			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAP certified

CLIENT: TRC Environmental Corp.
Work Order: 2004022
Project: HEP Abo Centurion

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS2_200219A

Sample ID: **DCS-95077** Batch ID: **95077** TestNo: **SW8260D** Units: **mg/Kg**
SampType: **DCS** Run ID: **GCMS2_200219A** Analysis Date: **2/19/2020 3:12:00 PM** Prep Date: **2/19/2020**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.00243	0.00500	0.00232	0	105	10	400	0	0	
Ethylbenzene	0.00251	0.00500	0.00232	0	108	10	400	0	0	
Toluene	0.00259	0.00500	0.00232	0	112	10	400	0	0	
Total Xylenes	0.00767	0.00500	0.00696	0	110	10	400	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAP certified

CLIENT: TRC Environmental Corp.
Work Order: 2004022
Project: HEP Abo Centurion

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS2_200407B

The QC data in batch 95811 applies to the following samples: 2004022-01A, 2004022-02A, 2004022-03A, 2004022-04A, 2004022-05A

Sample ID: **LCS-95811** Batch ID: **95811** TestNo: **SW8260D** Units: **mg/Kg**
SampType: **LCS** Run ID: **GCMS2_200407B** Analysis Date: **4/7/2020 10:47:00 AM** Prep Date: **4/6/2020**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0228	0.00500	0.0232	0	98.1	75	125			
Ethylbenzene	0.0224	0.00500	0.0232	0	96.4	75	125			
Toluene	0.0237	0.00500	0.0232	0	102	75	125			
Total Xylenes	0.0670	0.00500	0.0696	0	96.3	75	125			
Surr: 1,2-Dichloroethane-d4	49.0		50.00		97.9	52	149			
Surr: 4-Bromofluorobenzene	40.0		50.00		80.1	84	118			S
Surr: Dibromofluoromethane	54.2		50.00		108	65	135			
Surr: Toluene-d8	44.8		50.00		89.6	84	116			

Sample ID: **MB-95811** Batch ID: **95811** TestNo: **SW8260D** Units: **mg/Kg**
SampType: **MBLK** Run ID: **GCMS2_200407B** Analysis Date: **4/7/2020 12:45:00 PM** Prep Date: **4/6/2020**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	<0.00100	0.00500								
Ethylbenzene	<0.00100	0.00500								
Toluene	<0.00100	0.00500								
Total Xylenes	<0.00100	0.00500								
Surr: 1,2-Dichloroethane-d4	45.2		50.00		90.5	52	149			
Surr: 4-Bromofluorobenzene	41.6		50.00		83.2	84	118			S
Surr: Dibromofluoromethane	54.3		50.00		109	65	135			
Surr: Toluene-d8	43.4		50.00		86.9	84	116			

Sample ID: **SB-200407** Batch ID: **95811** TestNo: **SW8260D** Units: **mg/Kg**
SampType: **SBLK** Run ID: **GCMS2_200407B** Analysis Date: **4/7/2020 5:23:00 PM** Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	<0.00100	0.00500	0							
Ethylbenzene	<0.00100	0.00500	0							
Toluene	<0.00100	0.00500	0							
Total Xylenes	<0.00100	0.00500	0							
Surr: 1,2-Dichloroethane-d4	50.0		0							
Surr: 4-Bromofluorobenzene	43.5		0							
Surr: Dibromofluoromethane	56.0		0							
Surr: Toluene-d8	44.7		0							

Sample ID: **2004022-04AMS** Batch ID: **95811** TestNo: **SW8260D** Units: **mg/Kg-dry**
SampType: **MS** Run ID: **GCMS2_200407B** Analysis Date: **4/8/2020 2:19:00 AM** Prep Date: **4/6/2020**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0290	0.00625	0.0290	0	100	73	126			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAP certified

CLIENT: TRC Environmental Corp.
Work Order: 2004022
Project: HEP Abo Centurion

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS2_200407B

Sample ID: **2004022-04AMS**	Batch ID: **95811**	TestNo: **SW8260D**	Units: **mg/Kg-dry**
SampType: **MS**	Run ID: **GCMS2_200407B**	Analysis Date: **4/8/2020 2:19:00 AM**	Prep Date: **4/6/2020**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Ethylbenzene	0.0296	0.00625	0.0290	0.00623	80.4	74	127			
Toluene	0.0311	0.00625	0.0290	0.00873	77.0	71	127			
Total Xylenes	0.0891	0.00625	0.0870	0.0233	75.6	75	125			
Surr: 1,2-Dichloroethane-d4	62.0		62.53		99.2	52	149			
Surr: 4-Bromofluorobenzene	55.2		62.53		88.3	84	118			
Surr: Dibromofluoromethane	67.3		62.53		108	65	135			
Surr: Toluene-d8	56.6		62.53		90.5	84	116			

Sample ID: **2004022-04AMSD**	Batch ID: **95811**	TestNo: **SW8260D**	Units: **mg/Kg-dry**
SampType: **MSD**	Run ID: **GCMS2_200407B**	Analysis Date: **4/8/2020 2:48:00 AM**	Prep Date: **4/6/2020**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0269	0.00590	0.0274	0	98.2	73	126	7.57	30	
Ethylbenzene	0.0255	0.00590	0.0274	0.00623	70.4	74	127	14.7	30	S
Toluene	0.0284	0.00590	0.0274	0.00873	71.7	71	127	9.06	30	
Total Xylenes	0.0774	0.00590	0.0821	0.0233	65.8	75	125	14.1	30	S
Surr: 1,2-Dichloroethane-d4	59.1		59.01		100	52	149	0	0	
Surr: 4-Bromofluorobenzene	50.9		59.01		86.3	84	118	0	0	
Surr: Dibromofluoromethane	63.3		59.01		107	65	135	0	0	
Surr: Toluene-d8	53.6		59.01		90.8	84	116	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAP certified

CLIENT: TRC Environmental Corp.
Work Order: 2004022
Project: HEP Abo Centurion

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS2_200407B

Sample ID: **ICV-200407** Batch ID: **R109883** TestNo: **SW8260D** Units: **mg/Kg**
SampType: **ICV** Run ID: **GCMS2_200407B** Analysis Date: **4/7/2020 10:02:00 AM** Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0445	0.00500	0.0464	0	95.9	70	130			
Ethylbenzene	0.0442	0.00500	0.0464	0	95.3	70	130			
Toluene	0.0475	0.00500	0.0464	0	102	70	130			
Total Xylenes	0.136	0.00500	0.139	0	98.0	70	130			
Surr: 1,2-Dichloroethane-d4	45.5		50.00		90.9	52	149			
Surr: 4-Bromofluorobenzene	40.1		50.00		80.1	84	118			S
Surr: Dibromofluoromethane	53.4		50.00		107	65	135			
Surr: Toluene-d8	44.9		50.00		89.8	84	116			

Sample ID: **ICV-200407** Batch ID: **R109883** TestNo: **SW8260D** Units: **mg/Kg**
SampType: **ICV** Run ID: **GCMS2_200407B** Analysis Date: **4/7/2020 4:52:00 PM** Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0418	0.00500	0.0464	0	90.0	70	130			
Ethylbenzene	0.0399	0.00500	0.0464	0	85.9	70	130			
Toluene	0.0444	0.00500	0.0464	0	95.8	70	130			
Total Xylenes	0.119	0.00500	0.139	0	85.7	70	130			
Surr: 1,2-Dichloroethane-d4	50.1		50.00		100	52	149			
Surr: 4-Bromofluorobenzene	42.0		50.00		83.9	84	118			
Surr: Dibromofluoromethane	54.1		50.00		108	65	135			
Surr: Toluene-d8	42.6		50.00		85.1	84	116			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAP certified

CLIENT: TRC Environmental Corp.
Work Order: 2004022
Project: HEP Abo Centurion

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS2_200410A

The QC data in batch 95887 applies to the following samples: 2004022-03A

Sample ID: **LCS-95887 MEOH** Batch ID: **95887** TestNo: **SW8260D** Units: **mg/Kg**
SampType: **LCS** Run ID: **GCMS2_200410A** Analysis Date: **4/10/2020 12:21:00 PM** Prep Date: **4/10/2020**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Ethylbenzene	1.05	0.250	1.16	0	90.3	75	125			
Toluene	1.06	0.250	1.16	0	91.5	75	125			
Total Xylenes	3.09	0.250	3.48	0	88.7	75	125			
Surr: 1,2-Dichloroethane-d4	2540		2500		102	52	149			
Surr: 4-Bromofluorobenzene	2150		2500		86.0	84	118			
Surr: Dibromofluoromethane	2720		2500		109	65	135			
Surr: Toluene-d8	2230		2500		89.2	84	116			

Sample ID: **MB-95887 MEOH** Batch ID: **95887** TestNo: **SW8260D** Units: **mg/Kg**
SampType: **MBLK** Run ID: **GCMS2_200410A** Analysis Date: **4/10/2020 12:50:00 PM** Prep Date: **4/10/2020**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Ethylbenzene	<0.0500	0.250	0							
Toluene	<0.0500	0.250	0							
Total Xylenes	<0.0500	0.250	0							
Surr: 1,2-Dichloroethane-d4	2480		2500		99.2	52	149			
Surr: 4-Bromofluorobenzene	2120		2500		84.6	84	118			
Surr: Dibromofluoromethane	2760		2500		110	65	135			
Surr: Toluene-d8	2250		2500		89.9	84	116			

Sample ID: **2004022-03AMS** Batch ID: **95887** TestNo: **SW8260D** Units: **mg/Kg-dry**
SampType: **MS** Run ID: **GCMS2_200410A** Analysis Date: **4/10/2020 2:26:00 PM** Prep Date: **4/10/2020**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Ethylbenzene	6.00	0.313	1.45	5.54	31.6	74	127			S
Toluene	5.08	0.313	1.45	5.59	-35.3	71	127			S
Total Xylenes	21.9	0.313	4.35	16.1	134	75	125			S
Surr: 1,2-Dichloroethane-d4	2930		3128		93.6	52	149			
Surr: 4-Bromofluorobenzene	2900		3128		92.6	84	118			
Surr: Dibromofluoromethane	3340		3128		107	65	135			
Surr: Toluene-d8	3000		3128		96.1	84	116			

Sample ID: **2004022-03AMSD** Batch ID: **95887** TestNo: **SW8260D** Units: **mg/Kg-dry**
SampType: **MSD** Run ID: **GCMS2_200410A** Analysis Date: **4/10/2020 2:54:00 PM** Prep Date: **4/10/2020**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Ethylbenzene	6.04	0.313	1.45	5.54	34.2	74	127	0.644	30	S
Toluene	5.10	0.313	1.45	5.59	-33.8	71	127	0.418	30	S
Total Xylenes	22.0	0.313	4.35	16.1	135	75	125	0.254	30	S
Surr: 1,2-Dichloroethane-d4	2910		3128		93.1	52	149	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAP certified

CLIENT: TRC Environmental Corp.
Work Order: 2004022
Project: HEP Abo Centurion

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS2_200410A

Sample ID: **2004022-03AMSD** Batch ID: **95887** TestNo: **SW8260D** Units: **mg/Kg-dry**
SampType: **MSD** Run ID: **GCMS2_200410A** Analysis Date: **4/10/2020 2:54:00 PM** Prep Date: **4/10/2020**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	3170		3128		101	84	118	0	0	
Surr: Dibromofluoromethane	3320		3128		106	65	135	0	0	
Surr: Toluene-d8	3040		3128		97.3	84	116	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAP certified

CLIENT: TRC Environmental Corp.
Work Order: 2004022
Project: HEP Abo Centurion

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS2_200410A

Sample ID: **ICV-200410** Batch ID: **R109962** TestNo: **SW8260D** Units: **mg/Kg**
SampType: **ICV** Run ID: **GCMS2_200410A** Analysis Date: **4/10/2020 11:53:00 AM** Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Ethylbenzene	0.0463	0.00500	0.0464	0	99.9	70	130			
Toluene	0.0478	0.00500	0.0464	0	103	70	130			
Total Xylenes	0.133	0.00500	0.139	0	95.6	70	130			
Surr: 1,2-Dichloroethane-d4	48.9		50.00		97.8	52	149			
Surr: 4-Bromofluorobenzene	43.2		50.00		86.3	84	118			
Surr: Dibromofluoromethane	55.3		50.00		111	65	135			
Surr: Toluene-d8	46.4		50.00		92.9	84	116			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAP certified

CLIENT: TRC Environmental Corp.
Work Order: 2004022
Project: HEP Abo Centurion

ANALYTICAL QC SUMMARY REPORT

RunID: PMOIST_200408B

The QC data in batch 95854 applies to the following samples: 2004022-01A, 2004022-02A, 2004022-03A, 2004022-04A, 2004022-05A

Sample ID: **2003255-06A-DUP** Batch ID: **95854** TestNo: **D2216** Units: **WT%**
SampType: **DUP** Run ID: **PMOIST_200408B** Analysis Date: **4/9/2020 9:17:00 AM** Prep Date: **4/8/2020**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Percent Moisture	80.6	0	0	79.16				1.85	30	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAP certified

DHL Analytical, Inc.

Date: *13-Apr-20*

CLIENT: TRC Environmental Corp.
Work Order: 2004022
Project: HEP Abo Centurion

MQL SUMMARY REPORT

TestNo: SW8260D	MDL	MQL
Analyte	**mg/Kg**	**mg/Kg**
Benzene	0.00100	0.00500
Ethylbenzene	0.0500	0.250
Ethylbenzene	0.00100	0.00500
Toluene	0.0500	0.250
Toluene	0.00100	0.00500
Total Xylenes	0.0500	0.250
Total Xylenes	0.00100	0.00500

TestNo: M8015D	MDL	MQL
Analyte	**mg/Kg**	**mg/Kg**
TPH-DRO C10-C28	3.00	10.0
TPH-ORO >C28-C35	3.00	10.0

TestNo: M8015V	MDL	MQL
Analyte	**mg/Kg**	**mg/Kg**
Gasoline Range Organics	0.100	0.200

Qualifiers: MQL -Method Quantitation Limit as defined by TRRP
MDL -Method Detection Limit as defined by TRRP