Dominion Energy Southeast Services, Inc. 400 Otarre Parkway Cayce, SC 29033



July 29, 2020

Mr. Greg Cassidy State Voluntary Cleanup Section Bureau of Land and Waste Management South Carolina Department of Health and Environmental Control 2600 Bull Street Columbia SC 29201

Re: Congaree River Project Surface Water Assessment Report – June 2020 Sampling Event Columbia, South Carolina

Dear Mr. Cassidy:

Dominion Energy South Carolina, Inc. (DESC) is submitting one hard copy and one CD of the Surface Water Assessment Report – June 2020 Sampling Event for the Congaree River Project located in Columbia, South Carolina. The sampling activities were performed consistent with the Surface Water Sampling and Analysis Plan (SW-SAP) and subsequent modifications approved by SCDHEC.

Four semi-annual events and one annual event have been conducted by DESC and the analytical results indicate no detections of constituents of interest. DESC recommends continuing the current annual sampling frequency. The next surface water sampling event will be scheduled for June 2021.

Should you have any questions or need additional information, please contact Paul Biery at (803) 217-5016.

Sincerely,

Thomas N. Effinger, P.E. Director, Environmental Services

cc: P. Biery, R. Contrael (DESC) W. Zeli (Apex)



SURFACE WATER ASSESSMENT REPORT (SWAR) JUNE 2020 SAMPLING EVENT

CONGAREE RIVER PROJECT COLUMBIA, SOUTH CAROLINA

July 2020

Prepared for:

Dominion Energy South Carolina, Inc. 400 Otarre Parkway Cayce, South Carolina 29033

Prepared by:

Apex Companies, LLC 1600 Commerce Circle Trafford, Pennsylvania

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1.0 INTRODUCTION

This Surface Water Assessment Report (SWAR) has been prepared on behalf of Dominion Energy South Carolina, Inc (DESC). The SWAR documents activities completed in June 2020 during implementation of the Surface Water – Sampling and Analysis Plan (SW-SAP) submitted to the South Carolina Department of Health and Environmental Control (SCDHEC) in June 2017 and approved on July 21, 2017, including subsequent modifications approved by SCDHEC. The sampling is being completed as a component of the ongoing sediment remediation project to address a tar-like material (TLM) located in a portion of the Congaree River in Columbia, South Carolina. The areas within the river planned for remediation are shown on Figure 1.

1.1 Brief Project History/Summary

DESC and SCDHEC have been working on the Congaree River Project since the discovery of the TLM in June of 2010. Based on the delineation work previously completed and available in the project administrative record, the extent of TLM has been well defined. The TLM is commingled with sediment primarily within an area of the river just south of the Gervais Street Bridge, adjacent to the eastern shoreline, as shown on Figure 2. The TLM in the river is thought to have been the result of past operations of the former Huger Street Manufactured Gas Plant (MGP) site located at 1409 Huger Street, Columbia, South Carolina (Figure 2). The former MGP site was operated by predecessor companies to DESC from approximately 1905 thru the mid 1950's. SCDHEC's Administrative Record contains additional details on the environmental history of the site.

1.2 Regulatory Framework

The SCDHEC and DESC have executed a Responsible Party Voluntary Cleanup Contract (VCC) #02-5295-RP for the former MGP site located at 1409 Huger St. in Columbia, South Carolina. After discovery of the TLM in the river in June of 2010, the existing VCC for the Huger Street site was extended to cover the Congaree River Project area. The Huger Street VCC was executed by the Department on August 19, 2002 and all the activities documented within this SWAR are consistent with the VCC.

1.3 Overview of the SW-SAP

The SW-SAP was submitted to SCDHEC on June 30, 2017 and approved on July 21, 2017. It is, by design, intended to replicate the initial SCDHEC surface water sampling event implemented in April 2017. The initial sampling event completed by SCDHEC is now considered the "baseline" for monitoring surface water conditions in the Project area. Additional information on the SCDHEC baseline work plan is provided in the SW-SAP (Apex, June 2017). Baseline results (all virtually non-detect) are discussed in more detail in the following section.

2.0 BACKGROUND INFORMATION AND BASELINE SAMPLING EVENT

2.1 Surface Water Hydrology

The Congaree River is formed by the confluence of the Broad and Lower Saluda Rivers approximately 6,000 feet above the project area near the Timmerman/State Route 126 Bridge (Figure 1). The flow of the Lower Saluda River is largely influenced by the Saluda River Hydroelectric Dam, which is constructed on Lake Murray and located approximately 12 miles northwest of the site. The Broad River is located to the north east of the project area, with multiple dams constructed upriver from the Gervais Street Bridge. The flow of the Broad River is less regulated (or controlled) than the Lower Saluda and is more runoff dependent. The Lower Saluda is considered a South Carolina Scenic River from approximately 1 mile below the Lake Murray Dam to the confluence with the Broad River, or the beginning of the Congaree River.

Within the project area, the unnamed tributary that extends from the 72-inch culvert pipe located near the intersection of Gist and Gervais Streets (Figure 2) provides a discharge point for stormwater runoff from the City of Columbia. This stormwater conveyance services a large area northeast of the site and exhibits varying flows that are strongly dependent on recent precipitation amounts. Minimal flow is observed during extended dry periods, which suggests some groundwater infiltration into the stormwater system.

A United States Geologic Survey (USGS) river gage is located directly across the river from the project area. According to the USGS, the drainage area for the Congaree River at this gage location is 7,850 square miles and the gage height is 113.02 feet, based on NGVD '29 (or 112.25 based on NGVD '88). From the available data, the mean daily discharge rate varies from approximately 5,000 cubic feet to 16,000 cubic feet. The USGS gage height is a key component in the overall approach for this sampling program.

2.2 Findings of the Baseline Event April 2017

A total of 14 surface water samples and one duplicate sample were collected during the April 2017 SCDHEC baseline surface water sampling. The samples were analyzed for volatile organic compounds (VOC) and semi-volatile organic compounds (SVOC) via Methods 8260B and 8270D, respectively. Shealy Environmental Services, Inc. (Shealy) located in West Columbia, South Carolina performed the analyses.

The SCDHEC provided the analytical findings to SCANA in a letter dated April 7, 2017. In this letter, the SCDHEC indicated "with the exception of one detection of bis(2-ethylhexyl)phthalate, all other samples yielded no detections. This constituent is a common laboratory contaminant and is suspected to be a false detection". SCDHEC also indicated that the analytical results for the duplicate sample collected from the same location were non-detect. The surface water sample analytical results were submitted with the SW-SAP (Apex, June 2017).

3.0 JUNE 2020 ANNUAL SURFACE WATER SAMPLING

3.1 Sampling Locations

A total of nine surface water samples were collected on June 16, 2020 along the Congaree, Saluda, and Broad Rivers, and tributaries discharging to the Congaree River. The gage height recorded at the USGS station located across from the project area averaged 4.09 feet during the sampling event. The sampling locations are described in Table 1 and shown on Figure 3. The locations include:

- **SW-01 through SW-03 and SW-08**: Monitoring surface water quality at upstream locations to establish surface water quality prior to entering the project area;
- SW-04 and SW-05: Monitoring surface water quality in the project area;
- SW-06 and SW-07: Monitoring surface water quality downstream of the project area; and
- **SW-09**: Monitoring surface water quality at a tributary to the west of the Congaree River to assess other potential contributions.

Sampling locations SW-01 and SW-04 through SW-07 are intended to be located near the SCDHEC surface water sampling locations (Table 1 and Figure 3).

Table 2 provides the list of parameters analyzed for each surface water sample, as well as the corresponding analytical methods and project reporting limits. This parameter list represents the same parameters analyzed in sediment samples collected during delineation activities. Pace Analytical Services, LLC (Pace), formerly Shealy Environmental Services, Inc. located in West Columbia, South Carolina performed the analyses.

3.2 Sampling Procedures

In general, and where possible, the interval at about 1.0 foot above the river or tributary bottom was targeted for sampling. To facilitate sampling this interval, the two different sampling procedures described below were utilized based on surface water depth encountered at the time of sampling. Where possible, samples were collected by sampling personnel wading into the river or tributary (SW-01, SW-02, SW-03, SW-08 and SW-09). Samples that were located within the Congaree River (SW-04, SW-05, SW-06 and SW-07) were collected utilizing a boat. At each sampling location, depth and color/clarity of the water as well as the sampling method (shallow or deeper) were noted. Table 3 lists the sampling locations along with the sampling method utilized and corresponding observations. Appendix A provides a photographic summary of the typical surface water sampling locations.

3.2.1 Shallow Surface Water Sampling Procedures

Shallow surface water (defined in this report as 2.5 feet or less in depth) sampling procedures were utilized at locations where collecting the sample by submerging the sample bottle, or transfer container, directly into the water column at the correct depth was feasible. The shallow surface water sample was collected by orienting the sample bottle or clean transfer container with the bottle opening facing upstream and opening the container to allow water from the correct interval to enter. As shown on Table 3, this sampling procedure was utilized at sample locations SW-01, SW-02, SW-03, SW-08 and SW-09 located within the tributaries and Broad River (Figure 3).

3.2.2 Deeper Surface Water Sampling Procedures

Deeper surface water sampling procedures were utilized at locations within the Congaree River where the surface water depth was 2 feet or more and combined with the current prohibited submerging the sample bottle, or transfer container, directly into the water column to collect the sample. This sampling procedure was utilized at sample locations SW-04, SW-05, SW-06 and SW-07 located in the Congaree River, as shown on Table 3 and Figure 3. For these deeper surface water samples, a Van Dorn sampling device was used, as described below. Similar to SCDHEC's Surface Water Sampling Plan, surface water samples in the project area were collected about 15 to 20 feet from the shoreline.

At these locations, the water column height was measured, and then the Van Dorn sampler was lowered to a distance of approximately one foot above the river or tributary bottom. A weighted "messenger" was sent down the rope supporting the sampler, triggering a mechanism that closed the gaskets sealing the water from the appropriate point in the water column inside the device. The sampler was then raised, and the contents transferred into the appropriate sample containers. A picture showing typical use of a Van Dorn sampling device is provided for reference in Appendix A.

Care was taken when collecting the sample to minimize sediment disturbance and if disturbed, sufficient time was permitted to allow the sediment to clear.

3.3 Decontamination and Materials Management

3.3.1 Decontamination

Non-dedicated equipment was decontaminated after each use. Equipment was decontaminated with a deionized water and Alconox wash followed by a deionized water rinse.

3.3.2 Materials Management

Waste materials generated through the completion of the surface water sampling activities were minimal, but included:

- Decontamination fluids;
- Spent personal protective equipment (PPE); and
- Miscellaneous field supplies (paper towels, etc.) generated from the sampling.

A minimal amount of decontamination fluid was generated and absorbed with a paper towel, bagged and staged for disposal with the remaining waste materials at the Calhoun Park Area Site in Charleston, SC.

3.4 Analytical Results

The June 2020 surface water results are discussed in this section, along with a comparison of the results to the baseline results of April 2017 and four rounds of semi-annual results for samples collected in September 2017, March 2018, October 2018, and May 2019. The June 2020 surface water analytical data report from the laboratory (Pace) is provided as Appendix B. A summary of surface water results from the past four events is included in Appendix D.

3.4.1 Data Evaluation

Following receipt of the data package from Pace, the data were evaluated in accordance with the U.S. EPA National Functional Guidelines for Organic Superfund Methods Data Review (EPA, January 2017). The analytical data were reviewed with respect to sample preservation, holding times, field duplicate, trip blanks (volatiles only) and other laboratory control samples. The data were determined to be acceptable without qualification and a memorandum discussing the data evaluation is provided in Appendix C.

3.4.2 Trip Blank Analytical Results

A trip blank was included with the samples and analyzed for volatiles only. The results indicate that constituents were not detected. A summary of the results is included in Table 4.

3.4.3 Surface Water Analytical Results

A summary of the analytical results for the surface water samples analyzed during the June 2020 event is provided in Table 4. Similar to the SCDHEC baseline (April 2017) and subsequent events (September 2017, March 2018, October 2018, and May 2019), all samples collected during the June 2020 event yielded no detections for the analyzed constituents.

4.0 CONCLUSIONS

June 2020 surface water analytical results for samples collected within the Congaree River and tributaries continue to yield no detections. This marks the sixth sampling event where all surface water samples were essentially non-detect.

5.0 RECOMMENDATIONS

Since the baseline event conducted by SCDHEC, four semi-annual events and one annual event have been conducted and the analytical results indicate no detections of constituents of interest. DESC recommends continuing the current annual sampling frequency. The next surface water sampling event will be scheduled for June 2021.

SURFACE WATER SAMPLING LOCATIONS

Congaree River Project Columbia, South Carolina

DESC Sampling Location	SCDHEC Sampling Location (Baseline)	Description
SW-01	CR-SW-14	Location upstream of Tributary "1", located in Memorial Park and coinciding with the SCDHEC sample location
SW-02		Unnamed Tributary "1" outfall
SW-03		Just upstream of the confluence of the Broad River and Congaree River
SW-04	CR-SW-13	Just south of the Alluvial Fan and coinciding with SCDHEC sample location
SW-05	CR-SW-06	Approximately 200 feet downstream of SW-04 and coinciding with the SCDHEC sample location
SW-06	CR-SW-08	Approximately 200 feet downstream of SW-05 and coinciding with the SCDHEC sample location
SW-07	CR-SW-10	Approximately 200 feet downstream of SW-06 and coinciding with the SCDHEC sample location
SW-08		Just upstream of the confluence of the Saluda River and Congaree River
SW-09		Tributary located west of the Congaree River

SURFACE WATER SAMPLING PARAMETERS AND METHODS

		Reporting
	Analytical	Limit
Constituent	Method	(µg/L)
Volatile Organic Compounds		
Benzene	8260D	5
Ethylbenzene	8260D	5
Toluene	8260D	5
Xylenes, Total	8260D	5
PAH Constituents		
Acenaphthene	8270E	10
Acenaphthylene	8270E	10
Anthracene	8270E	10
Benzo(a)anthracene	8270E	10
Benzo(a)pyrene	8270E	10
Benzo(b)fluoranthene	8270E	10
Benzo(g,h,i)perylene	8270E	10
Benzo(k)fluoranthene	8270E	10
Chrysene	8270E	10
Dibenzo(a,h)anthracene	8270E	10
Fluoranthene	8270E	10
Fluorene	8270E	10
Indeno(1,2,3-cd)pyrene	8270E	10
Naphthalene	8270E	10
Phenanthrene	8270E	10
Pyrene	8270E	10

Congaree River Project Columbia, South Carolina

Note:

1. Quality assurance/quality control (QA/QC) samples included one trip blank per sample delivery group (VOCs only) and one blind field duplicate.

SUMMARY OF SAMPLING METHODS AND FIELD OBSERVATIONS

DESC Sampling Location	Date Sampled	Water Depth (feet)	Color/Clarity	Sampling Method (Shallow/Deep)
SW-01	June 16, 2020	0.1	Clear	Shallow
SW-02	June 16, 2020	0.1	Clear	Shallow
SW-03	June 16, 2020	1.5	Clear	Shallow
SW-04	June 16, 2020	5.5	Clear	Deep
SW-05	June 16, 2020	7	Clear	Deep
SW-06	June 16, 2020	11	Clear	Deep
SW-07	June 16, 2020	2	Clear	Deep
SW-08	June 16, 2020	2.5	Clear	Shallow
SW-09	June 16, 2020	0.33	Clear	Shallow

Congaree River Project Columbia, South Carolina

SUMMARY OF SURFACE WATER ANALYTICAL RESULTS

		SW-01	SW-02	SW-03	SW-04	SW-05	SW-05 (Dup)	SW-06	SW-07	SW-08	SW-09	Trip Blank
Constituent	Unit	6/16/2020	6/16/2020	6/16/2020	6/16/2020	6/16/2020	6/16/2020	6/16/2020	6/16/2020	6/16/2020	6/16/2020	6/16/2020
Volatile Organic Compounds												
Benzene	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Ethylbenzene	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Toluene	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Xylenes, Total	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
PAH Constituents												
Acenaphthene	µg/L	10 U	10 U	10 U	10 U	10 U	NA					
Acenaphthylene	µg/L	10 U	10 U	10 U	10 U	10 U	NA					
Anthracene	µg/L	10 U	10 U	10 U	10 U	10 U	NA					
Benzo(a)anthracene	µg/L	10 U	10 U	10 U	10 U	10 U	NA					
Benzo(a)pyrene	µg/L	10 U	10 U	10 U	10 U	10 U	NA					
Benzo(b)fluoranthene	µg/L	10 U	10 U	10 U	10 U	10 U	NA					
Benzo(g,h,i)perylene	µg/L	10 U	10 U	10 U	10 U	10 U	NA					
Benzo(k)fluoranthene	µg/L	10 U	10 U	10 U	10 U	10 U	NA					
Chrysene	µg/L	10 U	10 U	10 U	10 U	10 U	NA					
Dibenzo(a,h)anthracene	µg/L	10 U	10 U	10 U	10 U	10 U	NA					
Fluoranthene	µg/L	10 U	10 U	10 U	10 U	10 U	NA					
Fluorene	µg/L	10 U	10 U	10 U	10 U	10 U	NA					
Indeno(1,2,3-cd)pyrene	µg/L	10 U	10 U	10 U	10 U	10 U	NA					
Naphthalene	µg/L	10 U	10 U	10 U	10 U	10 U	NA					
Phenanthrene	µg/L	10 U	10 U	10 U	10 U	10 U	NA					
Pyrene	µg/L	10 U	10 U	10 U	10 U	10 U	NA					

Congaree River Project Columbia, South Carolina

Notes:

(1) NA - not analyzed

(2) U - represents the consituent was not detected above the limit of quantitation.

FIGURES







APPENDIX A

PHOTOGRAPHIC SUMMARY OF SURFACE WATER SAMPLING



Memorial Park Outfall - SW-01 (Typical)



SW-02 - Unnamed Tributary Outfall (Typical)



SW-03 - Broad River (Typical)



SW-08 - Saluda River (Typical)



SW-09 - West Side of Congaree River (Typical)



Use of Van Dorn Sampling Device (Typical)



Collecting Samples in Congaree River - Typical of SW-04, SW-05, SW-06 and SW-07

FIGURE A-1

DOMINION ENERGY SOUTH CAROLINA, INC.

PHOTOGRAPHIC SUMMARY OF SURFACE WATER SAMPLING LOCATIONS

CONGAREE RIVER PROJECT

COLUMBIA, SOUTH CAROLINA

DATE: 06/13/2019

FILENAME: 052019 SW APEX COMPANIES, LLC

APPENDIX B

LABORATORY ANALYTICAL RESULTS



Report of Analysis

Apex Companies, LLC 1600 Commerce Circle Trafford, PA 15085 Attention: Kayla Jones

Project Name: Congaree River SWS 2020 Project Number: 87500614-05 Lot Number:**VF16086** Date Completed:06/25/2020

N. Saitaly

06/30/2020 4:50 PM Approved and released by: Project Manager: **Nisreen Saikaly**





The electronic signature above is the equivalent of a handwritten signature. This report shall not be reproduced, except in its entirety, without the written approval of Pace Analytical Services, LLC.

Case Narrative Apex Companies, LLC Lot Number: VF16086

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved NELAC standards, the Pace Analytical Services, LLC ("Pace") Quality Assurance Management Plan (QAMP), standard operating procedures (SOPs), and Pace policies. Any exceptions to the NELAC standards, the QAMP, SOPs or policies are qualified on the results page or discussed below.

If you have any questions regarding this report please contact the Pace Project Manager listed on the cover page.

Sample Summary Apex Companies, LLC Lot Number: VF16086

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	Trip Blank	Aqueous	06/16/2020	06/16/2020
002	SW-1	Aqueous	06/16/2020 1235	06/16/2020
003	SW-2	Aqueous	06/16/2020 1120	06/16/2020
004	SW-3	Aqueous	06/16/2020 1100	06/16/2020
005	SW-4	Aqueous	06/16/2020 0940	06/16/2020
006	SW-5	Aqueous	06/16/2020 1000	06/16/2020
007	SW-6	Aqueous	06/16/2020 1020	06/16/2020
008	SW-7	Aqueous	06/16/2020 1040	06/16/2020
009	SW-8	Aqueous	06/16/2020 1135	06/16/2020
010	SW-9	Aqueous	06/16/2020 1150	06/16/2020
011	FD061620	Aqueous	06/16/2020 1000	06/16/2020

(11 samples)

Detection Summary

Apex Companies, LLC

Lot Number: VF16086

Sample Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page

(0 detections)

Volatile Organic Compounds by GC/MS

Client: Apex Compani Description: Trip Blank Date Sampled: 06/16/2020	es, LLC						Laboratory ID: VF16086-001 Matrix: Aqueous		
Date Received: 06/16/2020									
RunPrep Method15030B	Analytical Method 8260D	Dilution 1	Analys 06/24/2	is Date Analyst 020 1332 JAN	Prep	Date	Batch 57934		
Parameter		Nur	CAS nber	Analytical Method	Result	Q	LOQ	Units	Run
Benzene		71-	43-2	8260D	ND		5.0	ug/L	1
Ethylbenzene		100-	41-4	8260D	ND		5.0	ug/L	1
Toluene		108-	88-3	8260D	ND		5.0	ug/L	1
Xylenes (total)		1330-	20-7	8260D	ND		5.0	ug/L	1
Surrogate	Q % F	Run 1 Recovery	Accepta Limit	nce s					
1,2-Dichloroethane-d4		110	70-13	0					
Toluene-d8		107	70-13	0					
Bromofluorobenzene		104	70-13	0					

LOQ = Limit of QuantitationB = Detected in the method blankE = Quantitation of compound exceeded the calibration rangeND = Not detected at or above the LOQN = Recovery is out of criteriaP = The RPD between two GC columns exceeds 40%H = Out of holding timeW = Reported on wet weight basis

Volatile Organic Compounds by GC/MS

Client: Apex Companies,	LLC					Laboratory ID: VF16086-	002	
Description: SW-1						Matrix: Aqueous		
Date Sampled:06/16/2020 1235								
Date Received: 06/16/2020								
RunPrep Method15030B	Analytical Method 8260D	Dilution	Analys i 06/24/20	i s Date Analyst 020 1355 JAN	Prep Dat	e Batch 57934		
Parameter		Nu	CAS mber	Analytical Method	Result Q	LOQ	Units	Run
Benzene		71	-43-2	8260D	ND	5.0	ug/L	1
Ethylbenzene		100	-41-4	8260D	ND	5.0	ug/L	1
Toluene		108	-88-3	8260D	ND	5.0	ug/L	1
Xylenes (total)		1330	-20-7	8260D	ND	5.0	ug/L	1
Surrogate	Q %	Run 1 Recovery	Acceptar Limits	ice				
1,2-Dichloroethane-d4		108	70-130)				
Toluene-d8		104	70-130)				
Bromofluorobenzene		107	70-130)				

 LOQ = Limit of Quantitation
 B = Detected in the method blank
 E = Quantitation of compound exceeded the calibration range

 ND = Not detected at or above the LOQ
 N = Recovery is out of criteria
 P = The RPD between two GC columns exceeds 40%

 H = Out of holding time
 W = Reported on wet weight basis

Client: Apex Companies, LLC

Description: SW-1

Date Sampled:06/16/2020 1235

Laboratory ID: VF16086-002

Matrix: Aqueous

Date Received: 06/16/2020

Run	Prep Method	Analytical Method	Dilution	Analysis Date Analyst	Prep Date	Batch
1	3520C	8270E	1	06/19/2020 1903 SCD	06/17/2020 1030	57268

	CAS	Analytical				
Parameter	Number	Method	Result Q	LOQ	Units	Run
Acenaphthene	83-32-9	8270E	ND	10	ug/L	1
Acenaphthylene	208-96-8	8270E	ND	10	ug/L	1
Anthracene	120-12-7	8270E	ND	10	ug/L	1
Benzo(a)anthracene	56-55-3	8270E	ND	10	ug/L	1
Benzo(a)pyrene	50-32-8	8270E	ND	10	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270E	ND	10	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270E	ND	10	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270E	ND	10	ug/L	1
Chrysene	218-01-9	8270E	ND	10	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270E	ND	10	ug/L	1
Fluoranthene	206-44-0	8270E	ND	10	ug/L	1
Fluorene	86-73-7	8270E	ND	10	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	ND	10	ug/L	1
Naphthalene	91-20-3	8270E	ND	10	ug/L	1
Phenanthrene	85-01-8	8270E	ND	10	ug/L	1
Pyrene	129-00-0	8270E	ND	10	ug/L	1
Surrogate	Run 1 Acce Q % Recovery L	eptance imits				
2-Fluorobiphenyl	80 3	7-129				
Nitrobenzene-d5	77 3	8-127				
Terphenyl-d14	94 1	0-148				

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range
ND = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%
H = Out of holding time	W = Reported on wet weight basis	

Volatile Organic Compounds by GC/MS

Client: Apex Companies,	LLC					Laboratory ID: VF16086	-003	
Description: SW-2						Matrix: Aqueous	i	
Date Sampled:06/16/2020 1120								
Date Received: 06/16/2020								
RunPrep Method15030B	Analytical Method 8260D	Dilution 1	Analys i 06/24/20	s Date Analyst 20 1417 JAN	Prep Da	ate Batch 57934		
Parameter		Nur	CAS mber	Analytical Method	Result C		Units	Run
Benzene		71-	43-2	8260D	ND	5.0	ug/L	1
Ethylbenzene		100-	41-4	8260D	ND	5.0	ug/L	1
Toluene		108-	88-3	8260D	ND	5.0	ug/L	1
Xylenes (total)		1330-	-20-7	8260D	ND	5.0	ug/L	1
Surrogate	Q %	Run 1 Recovery	Acceptar Limits	ice				
1,2-Dichloroethane-d4		106	70-130)				
Toluene-d8		106	70-130)				
Bromofluorobenzene		102	70-130)				

 LOQ = Limit of Quantitation
 B = Detected in the method blank
 E = Quantitation of compound exceeded the calibration range

 ND = Not detected at or above the LOQ
 N = Recovery is out of criteria
 P = The RPD between two GC columns exceeds 40%

 H = Out of holding time
 W = Reported on wet weight basis

Client: Apex Companies, LLC

Description: SW-2

Date Sampled:06/16/2020 1120

Laboratory ID: VF16086-003

Matrix: Aqueous

Date Received: 06/16/2020

Run	Prep Method	Analytical Method	Dilution	Analysis Date Analyst	Prep Date	Batch
1	3520C	8270E	1	06/22/2020 1924 JCG	06/19/2020 1700 \$	57530

	С	AS Analyti	al			
Parameter	Numl	ber Metho	d Result	Q LOQ	Units	Run
Acenaphthene	83-32	2-9 827	DE ND	10	ug/L	1
Acenaphthylene	208-96	6-8 827	DE ND	10	ug/L	1
Anthracene	120-12	2-7 827	DE ND	10	ug/L	1
Benzo(a)anthracene	56-5	5-3 827	DE ND	10	ug/L	1
Benzo(a)pyrene	50-32	2-8 827	DE ND	10	ug/L	1
Benzo(b)fluoranthene	205-99	9-2 827	DE ND	10	ug/L	1
Benzo(g,h,i)perylene	191-24	4-2 827	DE ND	10	ug/L	1
Benzo(k)fluoranthene	207-08	8-9 827	DE ND	10	ug/L	1
Chrysene	218-01	1-9 827	DE ND	10	ug/L	1
Dibenzo(a,h)anthracene	53-70	0-3 827	DE ND	10	ug/L	1
Fluoranthene	206-44	4-0 827	DE ND	10	ug/L	1
Fluorene	86-73	3-7 827	DE ND	10	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39	9-5 827	DE ND	10	ug/L	1
Naphthalene	91-20	0-3 827	DE ND	10	ug/L	1
Phenanthrene	85-0	1-8 827	DE ND	10	ug/L	1
Pyrene	129-00	0-0 827	DE ND	10	ug/L	1
Surrogate Q	Run 1 A % Recovery	cceptance Limits				
2-Fluorobiphenyl	79	37-129				
Nitrobenzene-d5	71	38-127				
Terphenyl-d14	98	10-148				

LOQ = Limit of QuantitationB = Detected in the method blankE = Quantitation of compound exceeded the calibration rangeND = Not detected at or above the LOQN = Recovery is out of criteriaP = The RPD between two GC columns exceeds 40%H = Out of holding timeW = Reported on wet weight basis

Volatile Organic Compounds by GC/MS

Client: Apex Companies,	LLC					Laboratory ID: VF16086-0	004	
Description: SW-3						Matrix: Aqueous		
Date Sampled:06/16/2020 1100								
Date Received: 06/16/2020								
RunPrep Method15030B	Analytical Method 8260D	Dilution 1	Analys 06/24/2	i s Date Analyst 020 1440 JAN	Prep Da	ate Batch 57934		
Parameter		Nu	CAS mber	Analytical Method	Result Q	LOQ	Units	Run
Benzene		71·	-43-2	8260D	ND	5.0	ug/L	1
Ethylbenzene		100-	41-4	8260D	ND	5.0	ug/L	1
Toluene		108-	-88-3	8260D	ND	5.0	ug/L	1
Xylenes (total)		1330	-20-7	8260D	ND	5.0	ug/L	1
Surrogate	Q %	Run 1 Recovery	Accepta Limit	nce s				
1,2-Dichloroethane-d4		107	70-13	0				
Toluene-d8		107	70-13	0				
Bromofluorobenzene		104	70-13	0				

 LOQ = Limit of Quantitation
 B = Detected in the method blank
 E = Quantitation of compound exceeded the calibration range

 ND = Not detected at or above the LOQ
 N = Recovery is out of criteria
 P = The RPD between two GC columns exceeds 40%

 H = Out of holding time
 W = Reported on wet weight basis

Client: Apex Companies, LLC

Description: SW-3

Date Sampled:06/16/2020 1100

Laboratory ID: VF16086-004

Matrix: Aqueous

Date Received: 06/16/2020

Run	Prep Method	Analytical Method	Dilution	Analysis Date Analyst	Prep Date Batch
1	3520C	8270E	1	06/22/2020 1949 JCG	06/19/2020 1700 57530

Parameter	CAS Number	Analytical Method	Result Q	LOQ	Units	Run
Acenaphthene	83-32-9	8270E	ND	10	ug/L	1
Acenaphthylene	208-96-8	8270E	ND	10	ug/L	1
Anthracene	120-12-7	8270E	ND	10	ug/L	1
Benzo(a)anthracene	56-55-3	8270E	ND	10	ug/L	1
Benzo(a)pyrene	50-32-8	8270E	ND	10	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270E	ND	10	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270E	ND	10	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270E	ND	10	ug/L	1
Chrysene	218-01-9	8270E	ND	10	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270E	ND	10	ug/L	1
Fluoranthene	206-44-0	8270E	ND	10	ug/L	1
Fluorene	86-73-7	8270E	ND	10	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	ND	10	ug/L	1
Naphthalene	91-20-3	8270E	ND	10	ug/L	1
Phenanthrene	85-01-8	8270E	ND	10	ug/L	1
Pyrene	129-00-0	8270E	ND	10	ug/L	1
Surrogate	Run 1 Acce Q % Recovery Li	ptance mits				
2-Fluorobiphenyl	75 37	7-129				
Nitrobenzene-d5	70 38	3-127				
Terphenyl-d14	88 10)-148				

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range
ND = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%
H = Out of holding time	W = Reported on wet weight basis	

Volatile Organic Compounds by GC/MS

Client: Apex Companies,	LLC					Laboratory ID: VF16086	6-005	
Description: SW-4						Matrix: Aqueou	s	
Date Sampled:06/16/2020 0940								
Date Received: 06/16/2020								
RunPrep Method15030B	Analytical Method 8260D	Dilution 1	Analys 06/24/20	is Date Analyst 020 1502 JAN	Prep Da	ate Batch 57934		
Parameter		Nu	CAS mber	Analytical Method	Result C	LOQ	Units	Run
Benzene		71·	-43-2	8260D	ND	5.0	ug/L	1
Ethylbenzene		100-	41-4	8260D	ND	5.0	ug/L	1
Toluene		108-	-88-3	8260D	ND	5.0	ug/L	1
Xylenes (total)		1330	-20-7	8260D	ND	5.0	ug/L	1
Surrogate	Q %	Run 1 Recovery	Acceptar Limits	nce S				
1,2-Dichloroethane-d4		109	70-13	0				
Toluene-d8		108	70-13	0				
Bromofluorobenzene		106	70-13	0				

LOQ = Limit of QuantitationB = Detected in the method blankE = Quantitation of compound exceeded the calibration rangeND = Not detected at or above the LOQN = Recovery is out of criteriaP = The RPD between two GC columns exceeds 40%H = Out of holding timeW = Reported on wet weight basis

Client: Apex Companies, LLC

Description: SW-4

Date Sampled:06/16/2020 0940

Laboratory ID: VF16086-005

Matrix: Aqueous

Date Received: 06/16/2020

Run	Prep Method	Analytical Method	Dilution	Analysis Date Analyst	Prep Date Batch	
1	3520C	8270E	1	06/22/2020 2014 JCG	06/19/2020 1700 57530	

		CAS	Analytical				_
Parameter		Number	Method	Result Q	LOQ	Units	Run
Acenaphthene		83-32-9	8270E	ND	10	ug/L	1
Acenaphthylene	20	08-96-8	8270E	ND	10	ug/L	1
Anthracene	1:	20-12-7	8270E	ND	10	ug/L	1
Benzo(a)anthracene		56-55-3	8270E	ND	10	ug/L	1
Benzo(a)pyrene	:	50-32-8	8270E	ND	10	ug/L	1
Benzo(b)fluoranthene	20	05-99-2	8270E	ND	10	ug/L	1
Benzo(g,h,i)perylene	19	91-24-2	8270E	ND	10	ug/L	1
Benzo(k)fluoranthene	20	07-08-9	8270E	ND	10	ug/L	1
Chrysene	2	18-01-9	8270E	ND	10	ug/L	1
Dibenzo(a,h)anthracene	:	53-70-3	8270E	ND	10	ug/L	1
Fluoranthene	20	06-44-0	8270E	ND	10	ug/L	1
Fluorene		86-73-7	8270E	ND	10	ug/L	1
Indeno(1,2,3-c,d)pyrene	19	93-39-5	8270E	ND	10	ug/L	1
Naphthalene		91-20-3	8270E	ND	10	ug/L	1
Phenanthrene		85-01-8	8270E	ND	10	ug/L	1
Pyrene	1:	29-00-0	8270E	ND	10	ug/L	1
Surrogate	Run 1 Q % Recove	Accepta ry Limi	ance ts				
2-Fluorobiphenyl	74	37-1	29				
Nitrobenzene-d5	68	38-1	27				
Terphenyl-d14	88	10-1-	48				

ND = Not detected at or above the LOQ N = Recovery is out of criteria P = The RPD between two GC columns exceeds 40% H = Out of holding time W = Reported on wet weight basis	LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range
H = Out of holding time W = Reported on wet weight basis	ND = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%
	H = Out of holding time	W = Reported on wet weight basis	

Volatile Organic Compounds by GC/MS

Client: Apex Companies,	LLC					L	aboratory ID: VF16086-006	;	
Description: SW-5							Matrix: Aqueous		
Date Sampled:06/16/2020 1000									
Date Received: 06/16/2020									
RunPrep Method15030B	Analytical Method 8260D	Dilution 1	Analys 06/24/2	i s Date Analyst 020 1524 JAN	Prep D	Date	Batch 57934		
Parameter		Nu	CAS mber	Analytical Method	Result	Q	LOQ	Units	Run
Benzene		71	-43-2	8260D	ND		5.0	ug/L	1
Ethylbenzene		100	-41-4	8260D	ND		5.0	ug/L	1
Toluene		108	-88-3	8260D	ND		5.0	ug/L	1
Xylenes (total)		1330	-20-7	8260D	ND		5.0	ug/L	1
Surrogate	Q %	Run 1 Recovery	Accepta Limits	nce s					
1,2-Dichloroethane-d4		111	70-13	0					
Toluene-d8		107	70-13	0					
Bromofluorobenzene		108	70-13	0					

LOQ = Limit of QuantitationB = Detected in the method blankE = Quantitation of compound exceeded the calibration rangeND = Not detected at or above the LOQN = Recovery is out of criteriaP = The RPD between two GC columns exceeds 40%H = Out of holding timeW = Reported on wet weight basis

Client: Apex Companies, LLC

Description: SW-5

Date Sampled:06/16/2020 1000

Laboratory ID: VF16086-006

Matrix: Aqueous

Date Received: 06/16/2020

Run	Prep Method	Analytical Method	Dilution	Analysis Date Analyst	Prep Date Batch	
1	3520C	8270E	1	06/22/2020 2039 JCG	06/19/2020 1700 57530	

		CAS	Analytical				
Parameter	Nu	mber	Method	Result Q	LOQ	Units	Run
Acenaphthene	83	-32-9	8270E	ND	10	ug/L	1
Acenaphthylene	208	-96-8	8270E	ND	10	ug/L	1
Anthracene	120	-12-7	8270E	ND	10	ug/L	1
Benzo(a)anthracene	56	6-55-3	8270E	ND	10	ug/L	1
Benzo(a)pyrene	50	-32-8	8270E	ND	10	ug/L	1
Benzo(b)fluoranthene	205	-99-2	8270E	ND	10	ug/L	1
Benzo(g,h,i)perylene	191	-24-2	8270E	ND	10	ug/L	1
Benzo(k)fluoranthene	207	-08-9	8270E	ND	10	ug/L	1
Chrysene	218	-01-9	8270E	ND	10	ug/L	1
Dibenzo(a,h)anthracene	53	-70-3	8270E	ND	10	ug/L	1
Fluoranthene	206	-44-0	8270E	ND	10	ug/L	1
Fluorene	86	6-73-7	8270E	ND	10	ug/L	1
Indeno(1,2,3-c,d)pyrene	193	-39-5	8270E	ND	10	ug/L	1
Naphthalene	91	-20-3	8270E	ND	10	ug/L	1
Phenanthrene	85	-01-8	8270E	ND	10	ug/L	1
Pyrene	129	-00-0	8270E	ND	10	ug/L	1
	Run 1	Acceptar	ice				
Surrogate	Q % Recovery	Limits	5				
2-Fluorobiphenyl	72	37-129	Э				
Nitrobenzene-d5	66	38-127	7				
Terphenyl-d14	92	10-148	3				

ND = Not detected at or above the LOQ N = Recovery is out of criteria P = The RPD between two GC columns exceeds 40%	LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range
	ND = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%
H = Out of holding time W = Reported on wet weight basis	H = Out of holding time	W = Reported on wet weight basis	

Volatile Organic Compounds by GC/MS

Client: Apex Companies, LLC Laboratory ID: VF16086-007								
Description: SW-6						Matrix: A	queous	
Date Sampled:06/16/2020 1020								
Date Received: 06/16/2020								
RunPrep Method15030B	Analytical Method 8260D	Dilution 1	Analys 06/24/2	i s Date Analyst 020 1547 JAN	Prep D	ate Batch 57934		
Parameter		Nu	CAS mber	Analytical Method	Result (Q LOQ	Units	Run
Benzene		71	-43-2	8260D	ND	5.0	ug/L	1
Ethylbenzene		100·	-41-4	8260D	ND	5.0	ug/L	1
Toluene		108·	-88-3	8260D	ND	5.0	ug/L	1
Xylenes (total)		1330	-20-7	8260D	ND	5.0	ug/L	1
Surrogate	Q %	Run 1 Recovery	Accepta Limits	nce s				
1,2-Dichloroethane-d4		109	70-13	0				
Toluene-d8		106	70-13	0				
Bromofluorobenzene		104	70-13	0				

LOQ = Limit of QuantitationB = Detected in the method blankE = Quantitation of compound exceeded the calibration rangeND = Not detected at or above the LOQN = Recovery is out of criteriaP = The RPD between two GC columns exceeds 40%H = Out of holding timeW = Reported on wet weight basis

Client: Apex Companies, LLC

Description: SW-6

Date Sampled:06/16/2020 1020

Laboratory ID: VF16086-007

Matrix: Aqueous

Date Received: 06/16/2020

Run	Prep Method	Analytical Method	Dilution	Analysis Date Analyst	Prep Date Batch	
1	3520C	8270E	1	06/24/2020 1848 JCG	06/22/2020 1542 57709	

	CAS	6 Analytical				_
Parameter	Numbe	r Method	Result Q	LOQ	Units	Run
Acenaphthene	83-32-9	9 8270E	ND	10	ug/L	1
Acenaphthylene	208-96-8	8 8270E	ND	10	ug/L	1
Anthracene	120-12-7	7 8270E	ND	10	ug/L	1
Benzo(a)anthracene	56-55-3	8 8270E	ND	10	ug/L	1
Benzo(a)pyrene	50-32-8	8 8270E	ND	10	ug/L	1
Benzo(b)fluoranthene	205-99-2	2 8270E	ND	10	ug/L	1
Benzo(g,h,i)perylene	191-24-2	2 8270E	ND	10	ug/L	1
Benzo(k)fluoranthene	207-08-9	9 8270E	ND	10	ug/L	1
Chrysene	218-01-9	9 8270E	ND	10	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8 8270E	ND	10	ug/L	1
Fluoranthene	206-44-0) 8270E	ND	10	ug/L	1
Fluorene	86-73-7	7 8270E	ND	10	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	5 8270E	ND	10	ug/L	1
Naphthalene	91-20-3	8 8270E	ND	10	ug/L	1
Phenanthrene	85-01-8	8 8270E	ND	10	ug/L	1
Pyrene	129-00-0) 8270E	ND	10	ug/L	1
Surrogate	Run 1 Acc Q % Recovery L	eptance Limits				
2-Fluorobiphenyl	64 3	37-129				
Nitrobenzene-d5	70 3	38-127				
Terphenyl-d14	67 1	10-148				

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range
ND = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%
H = Out of holding time	W = Reported on wet weight basis	

Volatile Organic Compounds by GC/MS

Client: Apex Companies,	LLC					Laboratory ID:	/F16086-008	
Description: SW-7						Matrix:	Aqueous	
Date Sampled:06/16/2020 1040								
Date Received: 06/16/2020								
RunPrep Method15030B	Analytical Method 8260D	Dilution 1	Analys 06/24/20	is Date Analyst 020 1609 JAN	Prep D	ate Batch 57934		
Parameter		Nui	CAS mber	Analytical Method	Result (a loq	Units	Run
Benzene		71-	-43-2	8260D	ND	5.0	ug/L	1
Ethylbenzene		100-	41-4	8260D	ND	5.0	ug/L	1
Toluene		108-	-88-3	8260D	ND	5.0	ug/L	1
Xylenes (total)		1330-	-20-7	8260D	ND	5.0	ug/L	1
Surrogate	Q %	Run 1 Recovery	Acceptar Limits	ice				
1,2-Dichloroethane-d4		109	70-13)				
Toluene-d8		105	70-13	0				
Bromofluorobenzene		106	70-13)				

LOQ = Limit of QuantitationB = Detected in the method blankE = Quantitation of compound exceeded the calibration rangeND = Not detected at or above the LOQN = Recovery is out of criteriaP = The RPD between two GC columns exceeds 40%H = Out of holding timeW = Reported on wet weight basis

Client: Apex Companies, LLC

Description: SW-7

Date Sampled:06/16/2020 1040

Laboratory ID: VF16086-008

Matrix: Aqueous

Date Received: 06/16/2020

Run	Prep Method	Analytical Method	Dilution	Analysis Date Analyst	Prep Date Ba	tch
1	3520C	8270E	1	06/24/2020 1912 JCG	06/22/2020 1542 577	709

Parameter	CAS Number	Analytical Method	Result Q	LOQ	Units	Run
Acenaphthene	83-32-9	8270E	ND	10	ug/L	1
Acenaphthylene	208-96-8	8270E	ND	10	ug/L	1
Anthracene	120-12-7	8270E	ND	10	ug/L	1
Benzo(a)anthracene	56-55-3	8270E	ND	10	ug/L	1
Benzo(a)pyrene	50-32-8	8270E	ND	10	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270E	ND	10	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270E	ND	10	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270E	ND	10	ug/L	1
Chrysene	218-01-9	8270E	ND	10	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270E	ND	10	ug/L	1
Fluoranthene	206-44-0	8270E	ND	10	ug/L	1
Fluorene	86-73-7	8270E	ND	10	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	ND	10	ug/L	1
Naphthalene	91-20-3	8270E	ND	10	ug/L	1
Phenanthrene	85-01-8	8270E	ND	10	ug/L	1
Pyrene	129-00-0	8270E	ND	10	ug/L	1
Surrogate	Run 1 Accer Q % Recovery Lir	otance nits				
2-Fluorobiphenyl	83 37	-129				
Nitrobenzene-d5	70 38	-127				
Terphenyl-d14	82 10	-148				

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range
ND = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%
H = Out of holding time	W = Reported on wet weight basis	

Volatile Organic Compounds by GC/MS

Client: Apex Companies,	LLC					Laboratory ID: VF16086-00	9	
Description: SW-8						Matrix: Aqueous		
Date Sampled:06/16/2020 1135								
Date Received: 06/16/2020								
RunPrep Method15030B	Analytical Method 8260D	Dilution 1	Analysi 06/24/20	s Date Analyst 20 1631 JAN	Prep Da	te Batch 57934		
Parameter		Nu	CAS mber	Analytical Method	Result Q	LOQ	Units	Run
Benzene		71	-43-2	8260D	ND	5.0	ug/L	1
Ethylbenzene		100	-41-4	8260D	ND	5.0	ug/L	1
Toluene		108	-88-3	8260D	ND	5.0	ug/L	1
Xylenes (total)		1330	-20-7	8260D	ND	5.0	ug/L	1
Surrogate	Q %	Run 1 Recovery	Acceptan Limits	се				
1,2-Dichloroethane-d4		113	70-130					
Toluene-d8		108	70-130					
Bromofluorobenzene		106	70-130					

 LOQ = Limit of Quantitation
 B = Detected in the method blank
 E = Quantitation of compound exceeded the calibration range

 ND = Not detected at or above the LOQ
 N = Recovery is out of criteria
 P = The RPD between two GC columns exceeds 40%

 H = Out of holding time
 W = Reported on wet weight basis

Client: Apex Companies, LLC

Description: SW-8

Date Sampled:06/16/2020 1135

Laboratory ID: VF16086-009

Matrix: Aqueous

Date Received: 06/16/2020

Run	Prep Method	Analytical Method	Dilution	Analysi	s Date Analyst	Prep Date	Batch	
1	3520C	8270E	1	06/24/20	20 2222 JCG	06/22/2020 1542	57709	

D	C	AS Analytical				_
Parameter	Numb	ber Method	Result Q	LOQ	Units	Run
Acenaphthene	83-32	2-9 8270E	ND	10	ug/L	1
Acenaphthylene	208-96	6-8 8270E	ND	10	ug/L	1
Anthracene	120-12	2-7 8270E	ND	10	ug/L	1
Benzo(a)anthracene	56-55	5-3 8270E	ND	10	ug/L	1
Benzo(a)pyrene	50-32	2-8 8270E	ND	10	ug/L	1
Benzo(b)fluoranthene	205-99	9-2 8270E	ND	10	ug/L	1
Benzo(g,h,i)perylene	191-24	l-2 8270E	ND	10	ug/L	1
Benzo(k)fluoranthene	207-08	8-9 8270E	ND	10	ug/L	1
Chrysene	218-01	-9 8270E	ND	10	ug/L	1
Dibenzo(a,h)anthracene	53-70)-3 8270E	ND	10	ug/L	1
Fluoranthene	206-44	-0 8270E	ND	10	ug/L	1
Fluorene	86-73	B-7 8270E	ND	10	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39	9-5 8270E	ND	10	ug/L	1
Naphthalene	91-20)-3 8270E	ND	10	ug/L	1
Phenanthrene	85-01	I-8 8270E	ND	10	ug/L	1
Pyrene	129-00	0-0 8270E	ND	10	ug/L	1
Surrogate	Run 1 Ao Q % Recovery	cceptance Limits				
2-Fluorobiphenyl	74	37-129				
Nitrobenzene-d5	64	38-127				
Terphenyl-d14	81	10-148				

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range
ND = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%
H = Out of holding time	W = Reported on wet weight basis	

Volatile Organic Compounds by GC/MS

Client: Apex Companies,	LLC					Laboratory I	D: VF16086-010	
Description: SW-9						Matri	ix: Aqueous	
Date Sampled:06/16/2020 1150								
Date Received: 06/16/2020								
RunPrep Method15030B	Analytical Method 8260D	Dilution 1	Analys 06/24/20	i s Date Analyst 020 1654 JAN	Prep D	ate Batch 57934		
Parameter		Nur	CAS nber	Analytical Method	Result (Q LO(Q Units	Run
Benzene		71-	43-2	8260D	ND	5	.0 ug/L	1
Ethylbenzene		100-	41-4	8260D	ND	5	.0 ug/L	1
Toluene		108-	88-3	8260D	ND	5	.0 ug/L	1
Xylenes (total)		1330-	20-7	8260D	ND	5	.0 ug/L	1
Surrogate	Q %I	Run 1 Recovery	Acceptar Limits	ice				
1,2-Dichloroethane-d4		110	70-13)				
Toluene-d8		106	70-13)				
Bromofluorobenzene		104	70-13)				

LOQ = Limit of QuantitationB = Detected in the method blankE = Quantitation of compound exceeded the calibration rangeND = Not detected at or above the LOQN = Recovery is out of criteriaP = The RPD between two GC columns exceeds 40%H = Out of holding timeW = Reported on wet weight basis

Client: Apex Companies, LLC

Description: SW-9

Date Sampled:06/16/2020 1150

Laboratory ID: VF16086-010

Matrix: Aqueous

Date Received: 06/16/2020

Run	Prep Method	Analytical Method	Dilution	Analysis Date Analyst	Prep Date	Batch
1	3520C	8270E	1	06/24/2020 1936 JCG	06/22/2020 1542	57709

	c	AS Analytical				_
Parameter	Num	ber Method	Result Q	LOQ	Units	Run
Acenaphthene	83-32	2-9 8270E	ND	10	ug/L	1
Acenaphthylene	208-96	6-8 8270E	ND	10	ug/L	1
Anthracene	120-12	2-7 8270E	ND	10	ug/L	1
Benzo(a)anthracene	56-55	5-3 8270E	ND	10	ug/L	1
Benzo(a)pyrene	50-32	2-8 8270E	ND	10	ug/L	1
Benzo(b)fluoranthene	205-99	9-2 8270E	ND	10	ug/L	1
Benzo(g,h,i)perylene	191-24	4-2 8270E	ND	10	ug/L	1
Benzo(k)fluoranthene	207-08	3-9 8270E	ND	10	ug/L	1
Chrysene	218-01	1-9 8270E	ND	10	ug/L	1
Dibenzo(a,h)anthracene	53-70	0-3 8270E	ND	10	ug/L	1
Fluoranthene	206-44	4-0 8270E	ND	10	ug/L	1
Fluorene	86-73	3-7 8270E	ND	10	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39	9-5 8270E	ND	10	ug/L	1
Naphthalene	91-20	0-3 8270E	ND	10	ug/L	1
Phenanthrene	85-01	1-8 8270E	ND	10	ug/L	1
Pyrene	129-00	0-0 8270E	ND	10	ug/L	1
Surrogate	Run 1 A Q % Recovery	cceptance Limits				
2-Fluorobiphenyl	82	37-129				
Nitrobenzene-d5	69	38-127				
Terphenyl-d14	75	10-148				

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range
ND = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%
H = Out of holding time	W = Reported on wet weight basis	

Volatile Organic Compounds by GC/MS

Client: Apex Companies,	Client: Apex Companies, LLC				Laboratory ID: VF16086-011			
Description: FD061620						Matrix: Aqueous		
Date Sampled:06/16/2020 1000								
Date Received: 06/16/2020								
RunPrep Method15030B	Analytical Method 8260D	Dilution 1	Analysi 06/24/20	s Date Analyst 20 1716 JAN	Prep Da	te Batch 57934		
Parameter		Nu	CAS mber	Analytical Method	Result Q	LOQ	Units	Run
Benzene		71	-43-2	8260D	ND	5.0	ug/L	1
Ethylbenzene		100·	-41-4	8260D	ND	5.0	ug/L	1
Toluene		108·	-88-3	8260D	ND	5.0	ug/L	1
Xylenes (total)		1330	-20-7	8260D	ND	5.0	ug/L	1
Surrogate	Q %	Run 1 Recovery	Acceptan Limits	се				
1,2-Dichloroethane-d4		113	70-130					
Toluene-d8		106	70-130					
Bromofluorobenzene		106	70-130					

LOQ = Limit of QuantitationB = Detected in the method blankE = Quantitation of compound exceeded the calibration rangeND = Not detected at or above the LOQN = Recovery is out of criteriaP = The RPD between two GC columns exceeds 40%H = Out of holding timeW = Reported on wet weight basis

Client: Apex Companies, LLC

Description: FD061620

Date Sampled:06/16/2020 1000

Laboratory ID: VF16086-011

Matrix: Aqueous

Date Received: 06/16/2020

Run 1	Prep Method 3520C	Analytical Method 8270E	Dilution 1	Analys 06/24/20	is Date Analyst D20 2000 JCG	Prep Date 06/22/2020 1542	Batch 57709	
				CAS	Analytical			

Parameter	Number	Method	Result Q	LOQ	Units	Run
Acenaphthene	83-32-9	8270E	ND	10	ug/L	1
Acenaphthylene	208-96-8	8270E	ND	10	ug/L	1
Anthracene	120-12-7	8270E	ND	10	ug/L	1
Benzo(a)anthracene	56-55-3	8270E	ND	10	ug/L	1
Benzo(a)pyrene	50-32-8	8270E	ND	10	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270E	ND	10	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270E	ND	10	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270E	ND	10	ug/L	1
Chrysene	218-01-9	8270E	ND	10	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270E	ND	10	ug/L	1
Fluoranthene	206-44-0	8270E	ND	10	ug/L	1
Fluorene	86-73-7	8270E	ND	10	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270E	ND	10	ug/L	1
Naphthalene	91-20-3	8270E	ND	10	ug/L	1
Phenanthrene	85-01-8	8270E	ND	10	ug/L	1
Pyrene	129-00-0	8270E	ND	10	ug/L	1
Surrogate	Run 1 Accept Q % Recovery Lim	ance its				
2-Fluorobiphenyl	82 37-1	29				
Nitrobenzene-d5	71 38-1	27				
Terphenyl-d14	76 10-1	48				

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range
ND = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%
H = Out of holding time	W = Reported on wet weight basis	

QC Summary

			3		····· j ····		
Sample ID: VQ57934-001 Batch: 57934 Analytical Method: 8260D				Pre	Matrix: Aqueous p Method: 5030B		
Parameter	Res	ult	Q	Dil	LOQ	Units	Analysis Date
Benzene	ND			1	5.0	ug/L	06/24/2020 1019
Ethylbenzene	ND			1	5.0	ug/L	06/24/2020 1019
Toluene	ND			1	5.0	ug/L	06/24/2020 1019
Xylenes (total)	ND			1	5.0	ug/L	06/24/2020 1019
Surrogate	Q	% Rec	Ac	ceptance Limit			
1,2-Dichloroethane-d4		106		70-130			
Toluene-d8		108		70-130			
Bromofluorobenzene		102		70-130			

LOQ = Limit of Quantitation P = The RPD between two GC columns exceeds 40% N = Recovery is out of criteria + = RPD is out of criteria DL = Detection Limit J = Estimated result < LOQ and \ge DL LOD = Limit of Detection ND = Not detected at or above the LOQ Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: VQ57934-002 Batch: 57934 Analytical Method: 8260D	Matrix: Aqueous Prep Method: 5030B								
Parameter	Spi Amo (ug,	ke Junt /L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date	
Benzene	50		50		1	99	70-130	06/24/2020 0858	
Ethylbenzene	50		53		1	106	70-130	06/24/2020 0858	
Toluene	50		52		1	103	70-130	06/24/2020 0858	
Xylenes (total)	100		100		1	104	70-130	06/24/2020 0858	
Surrogate	Q	% Rec	Acceptar Limit	nce					
1,2-Dichloroethane-d4		102	70-13	0					
Toluene-d8		101	70-13	0					
Bromofluorobenzene		99	70-13	0					

LOQ = Limit of Quantitation DL = Detection Limit J = Estimated result < LOQ and \ge DL

P = The RPD between two GC columns exceeds 40%

N = Recovery is out of criteria

LOD = Limit of Detection

ND = Not detected at or above the LOQ

+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MB

Sample ID: VQ57268-001	Matrix: Aqueous
Batch: 57268	Prep Method: 3520C
Analytical Method: 8270E	Prep Date: 06/17/2020 1030

Parameter	Result	Q D	il LOQ	Units	Analysis Date
Acenaphthene	ND	1	10	ug/L	06/19/2020 1040
Acenaphthylene	ND	1	10	ug/L	06/19/2020 1040
Anthracene	ND	1	10	ug/L	06/19/2020 1040
Benzo(a)anthracene	ND	1	10	ug/L	06/19/2020 1040
Benzo(a)pyrene	ND	1	10	ug/L	06/19/2020 1040
Benzo(b)fluoranthene	ND	1	10	ug/L	06/19/2020 1040
Benzo(g,h,i)perylene	ND	1	10	ug/L	06/19/2020 1040
Benzo(k)fluoranthene	ND	1	10	ug/L	06/19/2020 1040
Chrysene	ND	1	10	ug/L	06/19/2020 1040
Dibenzo(a,h)anthracene	ND	1	10	ug/L	06/19/2020 1040
Fluoranthene	ND	1	10	ug/L	06/19/2020 1040
Fluorene	ND	1	10	ug/L	06/19/2020 1040
Indeno(1,2,3-c,d)pyrene	ND	1	10	ug/L	06/19/2020 1040
Naphthalene	ND	1	10	ug/L	06/19/2020 1040
Phenanthrene	ND	1	10	ug/L	06/19/2020 1040
Pyrene	ND	1	10	ug/L	06/19/2020 1040
Surrogate	Q % R	Acceptar ec Limit	ice		
2-Fluorobiphenyl	84	37-129)		
Nitrobenzene-d5	76	38-12	7		
Terphenyl-d14	97	10-148	3		

 LOQ = Limit of Quantitation
 P = The RPD between two GC columns exceeds 40%
 N = Recovery is out of criteria

 DL = Detection Limit
 J = Estimated result < LOQ and ≥ DL</td>
 + = RPD is out of criteria

 LOD = Limit of Detection
 ND = Not detected at or above the LOQ

 Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: VQ57268-002 Batch: 57268 Analytical Method: 8270E		Matrix: Aqueous Prep Method: 3520C Prep Date: 06/17/2020 1030									
Parameter	Spike Amount (ug/L)	Result (ug/L) C	Q Dil	% Rec	% Rec Limit	Analysis Date					
Acenaphthene	40	30	1	75	30-122	06/19/2020 1105					
Acenaphthylene	40	36	1	89	30-130	06/19/2020 1105					
Anthracene	40	33	1	82	30-123	06/19/2020 1105					
Benzo(a)anthracene	40	34	1	84	40-125	06/19/2020 1105					
Benzo(a)pyrene	40	32	1	81	40-128	06/19/2020 1105					
Benzo(b)fluoranthene	40	34	1	85	30-130	06/19/2020 1105					
Benzo(g,h,i)perylene	40	36	1	91	30-130	06/19/2020 1105					
Benzo(k)fluoranthene	40	36	1	91	30-130	06/19/2020 1105					
Chrysene	40	37	1	91	30-130	06/19/2020 1105					
Dibenzo(a,h)anthracene	40	35	1	88	30-130	06/19/2020 1105					
Fluoranthene	40	34	1	84	40-128	06/19/2020 1105					
Fluorene	40	31	1	77	30-124	06/19/2020 1105					
Indeno(1,2,3-c,d)pyrene	40	35	1	87	30-130	06/19/2020 1105					
Naphthalene	40	29	1	72	30-130	06/19/2020 1105					
Phenanthrene	40	30	1	76	40-123	06/19/2020 1105					
Pyrene	40	36	1	91	40-126	06/19/2020 1105					
Surrogate	Q % Rec	Acceptance Limit									
2-Fluorobiphenyl	81	37-129									
Nitrobenzene-d5	73	38-127									
Terphenyl-d14	93	10-148									

 LOQ = Limit of Quantitation
 P = The RPD between two GC columns exceeds 40%
 N = Recovery is out of criteria

 DL = Detection Limit
 J = Estimated result < LOQ and ≥ DL</td>
 + = RPD is out of criteria

 LOD = Limit of Detection
 ND = Not detected at or above the LOQ
 + = RPD is out of criteria

 Note: Calculations are performed before rounding to avoid round-off errors in calculated results
 + = RPD is out of criteria

Semivolatile Organic Compounds by GC/MS - MB

Sample ID: VQ57530-001	Matrix: Aqueous
Batch: 57530	Prep Method: 3520C
Analytical Method: 8270E	Prep Date: 06/19/2020 1700

Parameter	Result	: (Q Dil	LOQ	Units	Analysis Date
Acenaphthene	ND		1	10	ug/L	06/22/2020 1123
Acenaphthylene	ND		1	10	ug/L	06/22/2020 1123
Anthracene	ND		1	10	ug/L	06/22/2020 1123
Benzo(a)anthracene	ND		1	10	ug/L	06/22/2020 1123
Benzo(a)pyrene	ND		1	10	ug/L	06/22/2020 1123
Benzo(b)fluoranthene	ND		1	10	ug/L	06/22/2020 1123
Benzo(g,h,i)perylene	ND		1	10	ug/L	06/22/2020 1123
Benzo(k)fluoranthene	ND		1	10	ug/L	06/22/2020 1123
Chrysene	ND		1	10	ug/L	06/22/2020 1123
Dibenzo(a,h)anthracene	ND		1	10	ug/L	06/22/2020 1123
Fluoranthene	ND		1	10	ug/L	06/22/2020 1123
Fluorene	ND		1	10	ug/L	06/22/2020 1123
Indeno(1,2,3-c,d)pyrene	ND		1	10	ug/L	06/22/2020 1123
Naphthalene	ND		1	10	ug/L	06/22/2020 1123
Phenanthrene	ND		1	10	ug/L	06/22/2020 1123
Pyrene	ND		1	10	ug/L	06/22/2020 1123
Surrogate	Q	% Rec	Acceptance Limit	•		
2-Fluorobiphenyl		84	37-129			
Nitrobenzene-d5		77	38-127			
Terphenyl-d14		101	10-148			

Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: ∨Q57530-002 Batch: 57530 Analytical Method: 8270E	Matrix: Aqueous Prep Method: 3520C Prep Date: 06/19/2020 1700									
Parameter	Spik Amou (ug/L	e ınt _)	Resul (ug/L)	t) Q	Dil	% Rec	% Rec Limit	Analysis Date		
Acenaphthene	40		29		1	74	30-122	06/22/2020 1148		
Acenaphthylene	40		35		1	87	30-130	06/22/2020 1148		
Anthracene	40		31		1	77	30-123	06/22/2020 1148		
Benzo(a)anthracene	40		32		1	80	40-125	06/22/2020 1148		
Benzo(a)pyrene	40		31		1	76	40-128	06/22/2020 1148		
Benzo(b)fluoranthene	40		32		1	80	30-130	06/22/2020 1148		
Benzo(g,h,i)perylene	40		37		1	91	30-130	06/22/2020 1148		
Benzo(k)fluoranthene	40		34		1	85	30-130	06/22/2020 1148		
Chrysene	40		35		1	87	30-130	06/22/2020 1148		
Dibenzo(a,h)anthracene	40		35		1	88	30-130	06/22/2020 1148		
Fluoranthene	40		33		1	81	40-128	06/22/2020 1148		
Fluorene	40		29		1	73	30-124	06/22/2020 1148		
Indeno(1,2,3-c,d)pyrene	40		35		1	89	30-130	06/22/2020 1148		
Naphthalene	40		28		1	70	30-130	06/22/2020 1148		
Phenanthrene	40		30		1	75	40-123	06/22/2020 1148		
Pyrene	40		35		1	89	40-126	06/22/2020 1148		
Surrogate	Q	% Rec	Acc	eptance Limit						
2-Fluorobiphenyl		80	3	37-129						
Nitrobenzene-d5		69	3	38-127						
Terphenyl-d14		92	1	10-148						

LOQ = Limit of QuantitationP = The RPD between two GC columns exceeds 40%N = Recovery is out of criteriaDL = Detection LimitJ = Estimated result < LOQ and \geq DL+ = RPD is out of criteriaLOD = Limit of DetectionND = Not detected at or above the LOQNote: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MB

Sample ID: VQ57709-001	Matrix: Aqueous
Batch: 57709	Prep Method: 3520C
Analytical Method: 8270E	Prep Date: 06/22/2020 1542

Parameter	Resu	lt	Q	Dil	LOQ	Units	Analysis Date
Acenaphthene	ND			1	10	ug/L	06/24/2020 1425
Acenaphthylene	ND			1	10	ug/L	06/24/2020 1425
Anthracene	ND			1	10	ug/L	06/24/2020 1425
Benzo(a)anthracene	ND			1	10	ug/L	06/24/2020 1425
Benzo(a)pyrene	ND			1	10	ug/L	06/24/2020 1425
Benzo(b)fluoranthene	ND			1	10	ug/L	06/24/2020 1425
Benzo(g,h,i)perylene	ND			1	10	ug/L	06/24/2020 1425
Benzo(k)fluoranthene	ND			1	10	ug/L	06/24/2020 1425
Chrysene	ND			1	10	ug/L	06/24/2020 1425
Dibenzo(a,h)anthracene	ND			1	10	ug/L	06/24/2020 1425
Fluoranthene	ND			1	10	ug/L	06/24/2020 1425
Fluorene	ND			1	10	ug/L	06/24/2020 1425
Indeno(1,2,3-c,d)pyrene	ND			1	10	ug/L	06/24/2020 1425
Naphthalene	ND			1	10	ug/L	06/24/2020 1425
Phenanthrene	ND			1	10	ug/L	06/24/2020 1425
Pyrene	ND			1	10	ug/L	06/24/2020 1425
Surrogate	Q	% Rec	Accept Lim	ance it			
2-Fluorobiphenyl		67	37-1	29			
Nitrobenzene-d5		66	38-1	27			
Terphenyl-d14		80	10-1	48			

LOQ = Limit of QuantitationP = The RPD between two GC columns exceeds 40%N = Recovery is out of criteriaDL = Detection LimitJ = Estimated result < LOQ and \geq DL+ = RPD is out of criteriaLOD = Limit of DetectionND = Not detected at or above the LOQNote: Calculations are performed before round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: VQ57709-002 Batch: 57709 Analytical Method: 8270E	2	Matrix: Aqueous Prep Method: 3520C Prep Date: 06/22/2020 1542									
Parameter	Spike Amount (ug/L)	Result (ug/L) G	Dil	% Rec	% Rec Limit	Analysis Date					
Acenaphthene	40	31	1	77	30-122	06/24/2020 1449					
Acenaphthylene	40	27	1	68	30-130	06/24/2020 1449					
Anthracene	40	27	1	68	30-123	06/24/2020 1449					
Benzo(a)anthracene	40	32	1	80	40-125	06/24/2020 1449					
Benzo(a)pyrene	40	28	1	71	40-128	06/24/2020 1449					
Benzo(b)fluoranthene	40	30	1	74	30-130	06/24/2020 1449					
Benzo(g,h,i)perylene	40	32	1	80	30-130	06/24/2020 1449					
Benzo(k)fluoranthene	40	29	1	73	30-130	06/24/2020 1449					
Chrysene	40	32	1	79	30-130	06/24/2020 1449					
Dibenzo(a,h)anthracene	40	32	1	81	30-130	06/24/2020 1449					
Fluoranthene	40	27	1	67	40-128	06/24/2020 1449					
Fluorene	40	25	1	64	30-124	06/24/2020 1449					
Indeno(1,2,3-c,d)pyrene	40	30	1	75	30-130	06/24/2020 1449					
Naphthalene	40	32	1	79	30-130	06/24/2020 1449					
Phenanthrene	40	27	1	68	40-123	06/24/2020 1449					
Pyrene	40	32	1	81	40-126	06/24/2020 1449					
Surrogate	Q % Rec	Acceptance Limit									
2-Fluorobiphenyl	70	37-129									
Nitrobenzene-d5	80	38-127									
Terphenyl-d14	75	10-148									

Semivolatile Organic Compounds by GC/MS - MS

Sample ID: VF16086-009MS Batch: 57709 Analytical Method: 8270E	3		Matrix: Aqueous Prep Method: 3520C Prep Date: 06/22/2020 1542						
Parameter	Sample Amount (ug/L)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date	
Acenaphthene	ND	80	75		1	93	30-122	06/24/2020 2246	
Acenaphthylene	ND	80	67		1	83	30-130	06/24/2020 2246	
Anthracene	ND	80	67		1	83	30-123	06/24/2020 2246	
Benzo(a)anthracene	ND	80	70		1	88	40-125	06/24/2020 2246	
Benzo(a)pyrene	ND	80	56		1	70	40-128	06/24/2020 2246	
Benzo(b)fluoranthene	ND	80	59		1	74	30-130	06/24/2020 2246	
Benzo(g,h,i)perylene	ND	80	70		1	88	30-130	06/24/2020 2246	
Benzo(k)fluoranthene	ND	80	63		1	78	30-130	06/24/2020 2246	
Chrysene	ND	80	74		1	92	30-130	06/24/2020 2246	
Dibenzo(a,h)anthracene	ND	80	64		1	81	30-130	06/24/2020 2246	
Fluoranthene	ND	80	68		1	85	40-128	06/24/2020 2246	
Fluorene	ND	80	64		1	80	30-124	06/24/2020 2246	
Indeno(1,2,3-c,d)pyrene	ND	80	61		1	76	30-130	06/24/2020 2246	
Naphthalene	ND	80	66		1	83	30-130	06/24/2020 2246	
Phenanthrene	ND	80	61		1	76	40-123	06/24/2020 2246	
Pyrene	ND	80	77		1	96	40-126	06/24/2020 2246	
Surrogate	Q % R	ec Ac	ceptance Limit						
2-Fluorobiphenyl	76		37-129						
Nitrobenzene-d5	63		38-127						
Terphenyl-d14	80		10-148						

LOQ = Limit of QuantitationP = The RPD between two GC columns exceeds 40%N = Recovery is out of criteriaDL = Detection LimitJ = Estimated result < LOQ and \geq DL+ = RPD is out of criteriaLOD = Limit of DetectionND = Not detected at or above the LOQND = Not detected at or above the LOQNote: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MSD

Sample ID: VF16086-009MD Batch: 57709 Analytical Method: 8270E	Matrix: Aqueous Prep Method: 3520C Prep Date: 06/22/2020 1542										
Parameter	Samp Amou (ug/l	ole Int -)	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Acenaphthene	ND		80	72		1	91	2.8	30-122	40	06/24/2020 2310
Acenaphthylene	ND		80	68		1	85	2.5	30-130	40	06/24/2020 2310
Anthracene	ND		80	68		1	85	1.3	30-123	40	06/24/2020 2310
Benzo(a)anthracene	ND		80	69		1	87	1.4	40-125	40	06/24/2020 2310
Benzo(a)pyrene	ND		80	61		1	76	7.3	40-128	40	06/24/2020 2310
Benzo(b)fluoranthene	ND		80	63		1	79	5.7	30-130	40	06/24/2020 2310
Benzo(g,h,i)perylene	ND		80	75		1	93	6.0	30-130	40	06/24/2020 2310
Benzo(k)fluoranthene	ND		80	66		1	83	5.1	30-130	40	06/24/2020 2310
Chrysene	ND		80	73		1	92	0.33	30-130	40	06/24/2020 2310
Dibenzo(a,h)anthracene	ND		80	68		1	85	4.9	30-130	40	06/24/2020 2310
Fluoranthene	ND		80	66		1	83	2.1	40-128	40	06/24/2020 2310
Fluorene	ND		80	63		1	79	1.9	30-124	40	06/24/2020 2310
Indeno(1,2,3-c,d)pyrene	ND		80	66		1	83	8.6	30-130	40	06/24/2020 2310
Naphthalene	ND		80	69		1	86	4.2	30-130	40	06/24/2020 2310
Phenanthrene	ND		80	62		1	78	2.4	40-123	40	06/24/2020 2310
Pyrene	ND		80	75		1	94	2.7	40-126	40	06/24/2020 2310
Surrogate	Q	% Rec	Ac	ceptance Limit							
2-Fluorobiphenyl		79		37-129							
Nitrobenzene-d5		65		38-127							
Terphenyl-d14		80		10-148							

Chain of Custody and Miscellaneous Documents

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Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

PACE ANALYTICAL SERVICES, LLC

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Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)

106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

PACE ANALYTICAL SERVICES, LLC

Shealy Environmental Services, Inc. Document Number: MEROISC-14

Sample Receipt Checklist (SRC)

Page 1 of 1 Prioritive Date: \$/2/2018

Client: Apex	Cooler Inspected by/date: MLH2 / 06/16/2020 Lot # VR1608
Means of receipt:	SESI Client UPS FedEx Other:
Yes No	1. Were custody seals present on the cooler?6
Yes No	NA 2. If custody seals were present, were they intact and unbroken?
pH Strip (D: NA	Chlorine Strip ID: NA Testeri by NA
Original temperature	upon receipt / Derived (Corrected) temperature upon receipt %Solid Span-Cup ID: NA
3.0 / 3.0 °C NA	/NA °C NA /NA °C NA /NA °C
Method: V Tempera	ature Blank Against Bottles IR Gun ID: 5 IR Gun Correction Factor: 0 °C
Method of coolant:	Wet Ice Lice Packs Dry Ice None
Yes 🖸 No 💆	TNA 3. If temperature of any cooler exceeded 6.0°C, was Project Manager Notified?
	PM was Notified by: phone / email / face-to-face (circle one).
	NA.4. Is the commercial courier's packing slip attached to this form?
Ves Noi	Were proper custody procedures (relinquished/received) followed?
Ves No	7. Were sample it is listed on the COC?
V Yes I No	Were sample its listed on all sample containers?
V Yes No	9. Was collection date & time listed on the COC?
V Yes INO	Vas concerton date & time listed on all sample containers?
V Yes No	11. Were larte to be preferred life 1 and 200 agree with the COC?
	11. were tests to be performed listed on the COC?
V Yes 🗆 No	12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)?
V Yes No	13. Was adequate sample volume available?
Yes No	14. Were all samples received within 16 the helding time of 48 here.
Yes No	15. Were any samples containers missingleyease (gingle only and b) whichever comes first?
	16. For VOA and RSK-175 samples were hubbles recent Stress in 17/12
	NA in any of the VOA vials?
	NA[17, Were all DRO/metals/nutrient samples received at a pH of <2?
	NA[18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
Yes No Z	NA 15. were an applicable NH/TKN/cyanide/phenol/625 (< 0.5mg/L) samples free of residual chlorine?
Ves No Z	NA 20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc)
Ver Via	correctly transcribed from the COC into the comment section in LIMS?
	21. was the quote number listed on the container label? If yes, Quote # NA
Sample Preservation	(Must be completed for any sample(s) incorrectly preserved or with headspace.)
Sample(s) NA	were received incorrectly preserved and were adjusted accordingly.
in sample receiving wi	th NAmL of circle one: H2SO4, HNO3, IICI, NaOH using SR # NA
1 line of preservation	NA If more than one preservative is needed, please note in the comments below.
Sample(s) NA	were received with bubbles >6 mm in diameter
Samples(s) NA	were received with TRC > 0.5 molt. (If kit0 is made the
adjusted accordingly in	sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Shealy ID: <u>NA</u>
SR barcode labels appl	led by: MLH2/BMG Date: 06/16/2020
Comments:	
· · · · · · · · ·	

APPENDIX C

DATA EVALUATION MEMORANDUM

Apex Companies, LLC

Memo

Re:	Evaluation of Analytical Data for Surface Water Samples Collected in June 2020 Congaree River, Columbia, South Carolina
Date:	July 6, 2020
From:	James Dunmyre
To:	Bill Zeli

Sample Identification

SW-01	SW-04	SW-07
SW-02	SW-05	SW-08
SW-03	SW-06	SW-09

Overview

Nine surface water samples were collected during the week of June 15, 2020.

The samples collected during the June 2020 surface water sampling event were submitted to Pace Analytical Services, LLC (Pace) located in West Columbia, South Carolina for the analyses of polynuclear aromatic hydrocarbons (PAHs) by EPA Method 8270E and BTEX via EPA Method 8260D. The analytical results were reported in one sample delivery group (SDG) – VF16086. A Level II data package was provided for the SDG.

Two quality assurance/quality control (QA/QC) samples were also collected. The QA/QC samples collected included one blind field duplicate (FD061620 duplicate of SW-05) and one trip blank.

Summary

Quality control (QC) measures associated with the analytical data were reviewed following the U.S. EPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 2017) to determine the accuracy and precision of the data reported. These QC measures included sample preservation, holding times, surrogate recoveries, laboratory and trip blank results, field duplicate results, MS/MSD results, and laboratory control sample (LCS) results.

Recommendations for Data Usability

The reviewed QC results did not indicate that any significant problems existed with data precision and accuracy, as reported. All BTEX and PAH data should be considered usable for intended data uses.

APPENDIX D

SUMMARY OF SURFACE WATER QUALITY

TABLE D-1

SUMMARY OF SURFACE WATER QUALITY

Congaree River Project Columbia, South Carolina

Date Sampled	Entity	Parameters		Sample Locations							
			CR-SW-14			CR-SW-13	CR-SW-06	CR-SW-08	CR-SW-10		
3/21/2017	DHEC	BTEX	ND			ND	ND	ND	ND		
		PAH	ND			ND	ND	ND	ND		
			SW-01	SW-02	SW-03	SW-04	SW-05	SW-06	SW-07	SW-08	SW-09
9/21/2017	SCE&G	BTEX	ND	ND	ND	ND	ND	ND	ND	ND	ND
		PAH	ND	ND	ND	ND	ND	ND	ND	ND	ND
			SW-01	SW-02	SW-03	SW-04	SW-05	SW-06	SW-07	SW-08	SW-09
3/20/2018	SCE&G	BTEX	ND	ND	ND	ND	ND	ND	ND	ND	ND
		PAH	ND	ND	ND	ND	ND	ND	ND	ND	ND
			SW-01	SW-02	SW-03	SW-04	SW-05	SW-06	SW-07	SW-08	SW-09
10/2/2018	SCE&G	BTEX	ND	ND	ND	ND	ND	ND	ND	ND	ND
		PAH	ND	ND	ND	ND	ND	ND	ND	ND	ND
			SW-01	SW-02	SW-03	SW-04	SW-05	SW-06	SW-07	SW-08	SW-09
5/3/2019	DESC	BTEX	ND	ND	ND	ND	ND	ND	ND	ND	ND
		PAH	ND	ND	ND	ND	ND	ND	ND	ND	ND
			SW-01	SW-02	SW-03	SW-04	SW-05	SW-06	SW-07	SW-08	SW-09
6/16/2020	DESC	BTEX	ND	ND	ND	ND	ND	ND	ND	ND	ND
		PAH	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

1. ND - constituents were not detected above the reporting limit.