



VIA ELECTRONIC MAIL

November 3, 2017

Richelle Hanson, Project Manager
Voluntary Cleanup Program
Maryland Department of the Environment
Land and Materials Administration
1800 Washington Blvd., Suite 625
Baltimore, Maryland 21230

Subject: **Quarterly Status Report No. 4 - Offsite Area
Former Kop-Flex Facility Site, Hanover, Maryland**

Dear Richelle:

On behalf of EMERSUB 16 LLC, a subsidiary of Emerson Electric Co., WSP USA Inc. (WSP) is submitting this quarterly status report describing the investigation and remediation activities conducted in the third quarter 2017 in the offsite portion of the Former Kop-Flex Facility Site in Hanover, Maryland. The report also describes the activities planned for the fourth quarter of 2017.

If you have any questions, please do not hesitate to contact us at 703-709-6500.

King regards,

Robert E. Johnson
Senior Technical Manager
Water & Environment

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K:\Emerson\Kop-Flex\Reporting>Status Reports\MDE Reports\2017\Offsite Area\October 2017

Encl.

cc: Mr. Erich Weissbart, U.S. Environmental Protection Agency, Region III
 Mr. Stephen Clarke, Emerson Electric Co.
 Sheila Harvey, Esquire, Pillsbury Winthrop Shaw Pittman

QUARTERLY PROGRESS REPORT NO. 4 – OFFSITE AREA

FORMER KOP-FLEX FACILITY SITE
JULY 2017 THROUGH SEPTEMBER 2017

Site Name: Former Kop-Flex Facility
Site Address: 7565 Harmans Road
Hanover, Maryland 21076

Consultant: WSP USA Inc.
Address: 13530 Dulles Technology Drive, Suite 300
Herndon, Virginia 20171
Phone No.: (703) 709-6500

Project Coordinator: Eric Johnson, WSP USA
Alternate: Lisa Bryda, WSP USA

1.0 Offsite Activities Conducted During July 2017 through September 2017

1.1 Residential Well Sampling

Phase 1,2, and 4 Areas

- WSP continued with sampling of the residential wells in the Phase 1, 2, and 4 areas during the reporting period. As of the end of September 2017, water samples have been collected from 12 wells in the previously sampled Phase 1 & 2 areas and 17 wells in the new Phase 4 area. The homeowner at 7773 Ricker Road contacted MDE and refused the resampling of the potable well on the property. The status of the residential well sampling activities as of the end of the reporting period is depicted in Figure 1.

Table 1 summarizes the analytical results for the 29 wells sampled through September 2017. Copies of the certified laboratory reports for these well samples are included in Enclosure A. No site-related volatile organic compounds (VOCs), including 1,4-dioxane, have been detected at concentrations above the comparative criteria in any of the samples collected to date from the wells in the Phase 1 & 2 areas or from the new Phase 4 area.

- In late September 2017, WSP sent, via Federal Express, letters to the identified property owners in both the Phase 1 & 2 areas and Phase 4 area whose wells had not been sampled prior to mid-September. For wells that had been previously sampled, the letter notified the homeowner/occupant that WSP would be contacting them to schedule a date and time to conduct the sampling activities. For those properties with wells that had not been sampled, the correspondence requested approval from the homeowner to access the property to collect a water sample(s) and gather information concerning the well and treatment equipment for the home water system.

Well-Specific Monitoring

- Given previous concentrations of 1,1-dichloroethene (DCE) and 1,4-dioxane slightly above and below the comparative criteria in the untreated well water at 1227 Old Camp Meade Road, MDE has requested that quarterly sampling be conducted of the potable well. On July 25, 2017, pre- and post-treatment water samples were collected from the potable well at 1227 Old Camp Meade Road. The location of this property is shown in Figure 1. A copy of the certified laboratory analytical report is included in Enclosure B.

Site-related VOCs were present in both the pre- and post-treatment water samples from the well. In the untreated water, 1,1-dichloroethene (DCE) and 1,4-dioxane were detected at concentrations of 6.7 micrograms per liter ($\mu\text{g/l}$) and 3.8 $\mu\text{g/l}$, respectively, neither of which exceed the groundwater comparative criteria. The treated water sample had a 1,1-DCE concentration below the method reporting limit of 0.5 $\mu\text{g/l}$ and a concentration of 1,4-dioxane at 3.1 $\mu\text{g/l}$. Trace levels of other chlorinated VOCs, which are below their respective comparative criteria, were also present in both the pre- and post-treatment samples. WSP communicated the analytical results for these water samples to the homeowner and MDE.



- Water samples were collected on September 25, 2017, from the following residences with potable wells designated for regular monitoring:
 - 1227 Old Camp Meade Road
 - 7740 Twin Oaks Road

The locations of these properties are shown in Figure 1. The residential well at 854 Reece Road was not sampled due to the inability to obtain access from the homeowner. A copy of the certified laboratory analytical report is included in Enclosure C.

The analytical results for these two residential wells were received on October 9, 2017. The water sample collected from the well at 7740 Twin Oaks Road had a 1,1-DCE concentration of 11.3 µg/l, which exceeded the U.S. Environmental Protection Agency (EPA) federal drinking water standard and MDE groundwater quality standard of 7 µg/l. Other site-related VOCs, including 1,4-dioxane, were present at trace to very low levels that did not exceed their respective comparative criteria. WSP verbally communicated the analytical results for this water sample to the homeowner and MDE on October 9, 2017. Given the concentration of 1,1-DCE greater than the drinking water standards, EMERSUB 16 and WSP immediately initiated the delivery of bottled water to the home for cooking and drinking purposes. EMERSUB 16 and WSP have begun evaluating the options for providing a new source of potable water to the residence, including connection of the home to the public water system.

The pre-treatment water sample collected from 1227 Old Camp Meade Road had a 1,1-DCE concentration of 7.8 µg/l, which exceeded the USEPA federal drinking water standard and MDE groundwater quality standard of 7 µg/l. This compound was not detected above the applicable groundwater quality standard in the post-treatment sample. In addition, 1,4-dioxane was detected at concentrations of 4.6 µg/l in the untreated water and 3.5 µg/l in the treated water. Other site-related VOCs were present in the well sample at trace levels that were below their respective comparative criteria. WSP verbally communicated the 1,4-dioxane results for the water samples collected from this well to MDE on October 10, 2017.

1.2 Quarterly Offsite Groundwater Sampling

- The offsite monitoring wells located south of the Site were sampled on August 31, 2017, using a passive sampling device (HydraSleeve™). The sample retrieval depths for each monitoring well are consistent with those from the previous monitoring events and are provided in the table below.

Well ID	Depth to Water (feet BGS)	Well Depth (feet BGS)	Well Screen Interval (feet BGS)	Sample Interval (feet BGS)
MW-24D	55.82	128.5	118.5 - 128.5	124.5 - 127
MW-25	14.09	40	30 - 40	35 - 37.5
MW-25D-130	61.38	130	120 - 130	125 - 127.5
MW-25D-190	60.36	192	180 - 190	185 - 187.5
MW-28	27.20	45	35 - 45	40 - 42.5
MW-28D	94.55	210	200 - 210	205 - 207.5
MW-31D	115.67	280	270 - 280	275 - 277.5
MW-33D-235	133.39	235	225 - 235	230 - 232.5
MW-33D-295	133.14	295	285 - 295	290 - 292.5
MW-35D	133.55	298	288 - 298	293 - 295.5

- The August 2017 analytical results for the offsite monitoring well samples are presented in Table 2. A copy of the certified laboratory analytical report for these samples is provided in Enclosure D. Historical groundwater sampling data for the offsite monitoring wells can be found in Table 3. No site-related VOCs were detected in the samples from the two shallow wells (MW-25 and MW-28) screened in the unconfined zone of the Lower Patapsco aquifer. Concentrations of the primary site-related VOCs in the confined Lower Patapsco aquifer south of Maryland Route 100 are provided in Figure 2. For the deep wells at the MW-25/MW-25D location, the total concentration of site-related VOCs in the MW-25D-130 sample (266.9 µg/l), which is screened from 120-130 feet BGS, is significantly higher than the concentration of 135.6 µg/l for the deeper well at this location (MW-25D-192). The lower VOC concentrations in the sample from MW-25D-192 are consistent with the vertical distribution of constituents in areas onsite and a short distance



downgradient, of the Site. The sampling data for the deep monitoring wells located further downgradient (MW-28D, MW-31D, MW-35D, and the paired MW-33D wells) indicate non-detect to very low concentrations of site-related VOCs, with no concentrations in exceedance of the Groundwater Quality Standards in any of these samples. Overall, the concentrations of the primary site-related VOCs in the confined portion of the Lower Patapsco aquifer are consistent with the levels detected in the May 2017 groundwater quality samples.

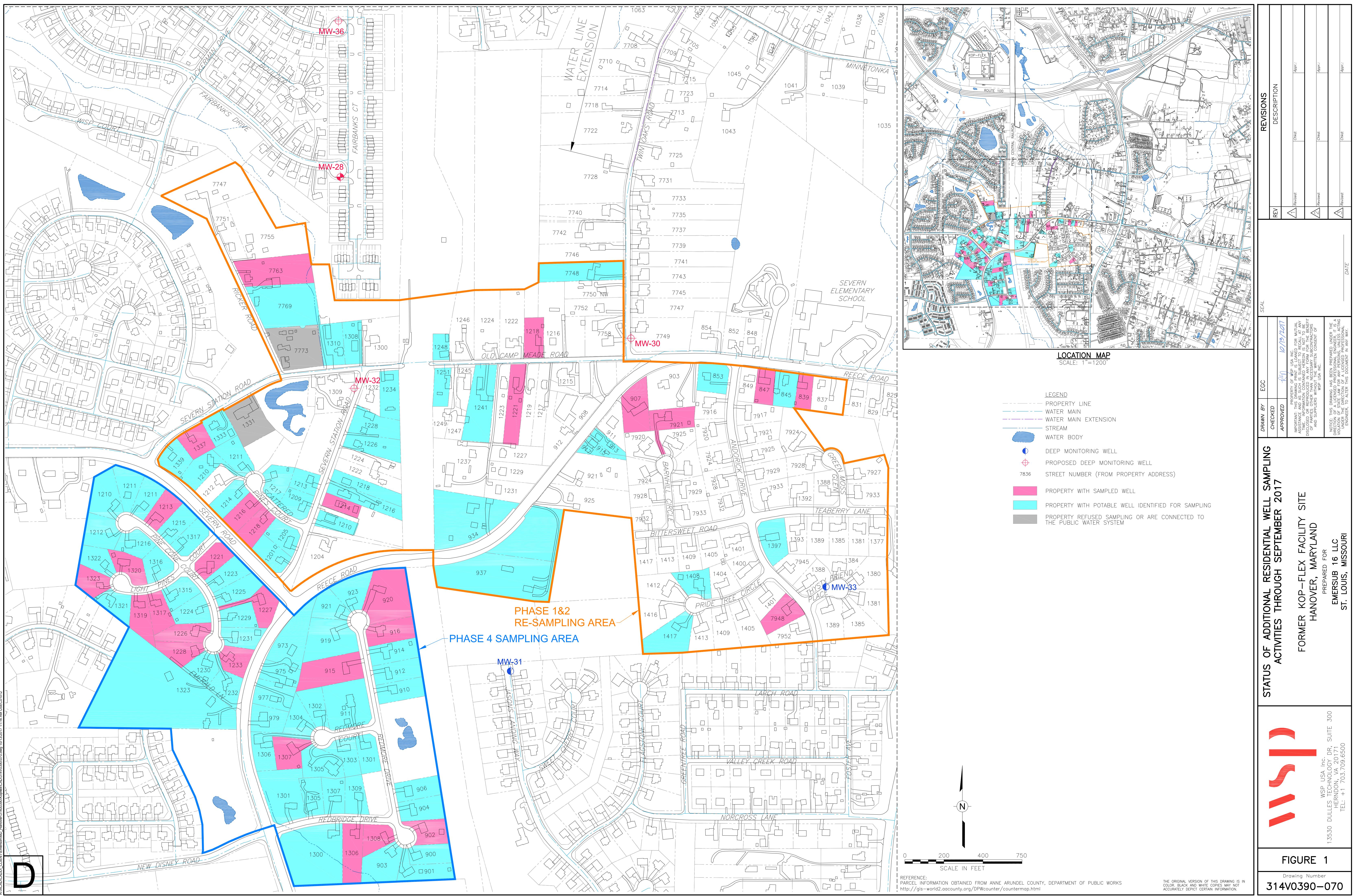
2.0 Planned Offsite Activities For Next Reporting Period (October 2017 Through December 2017)

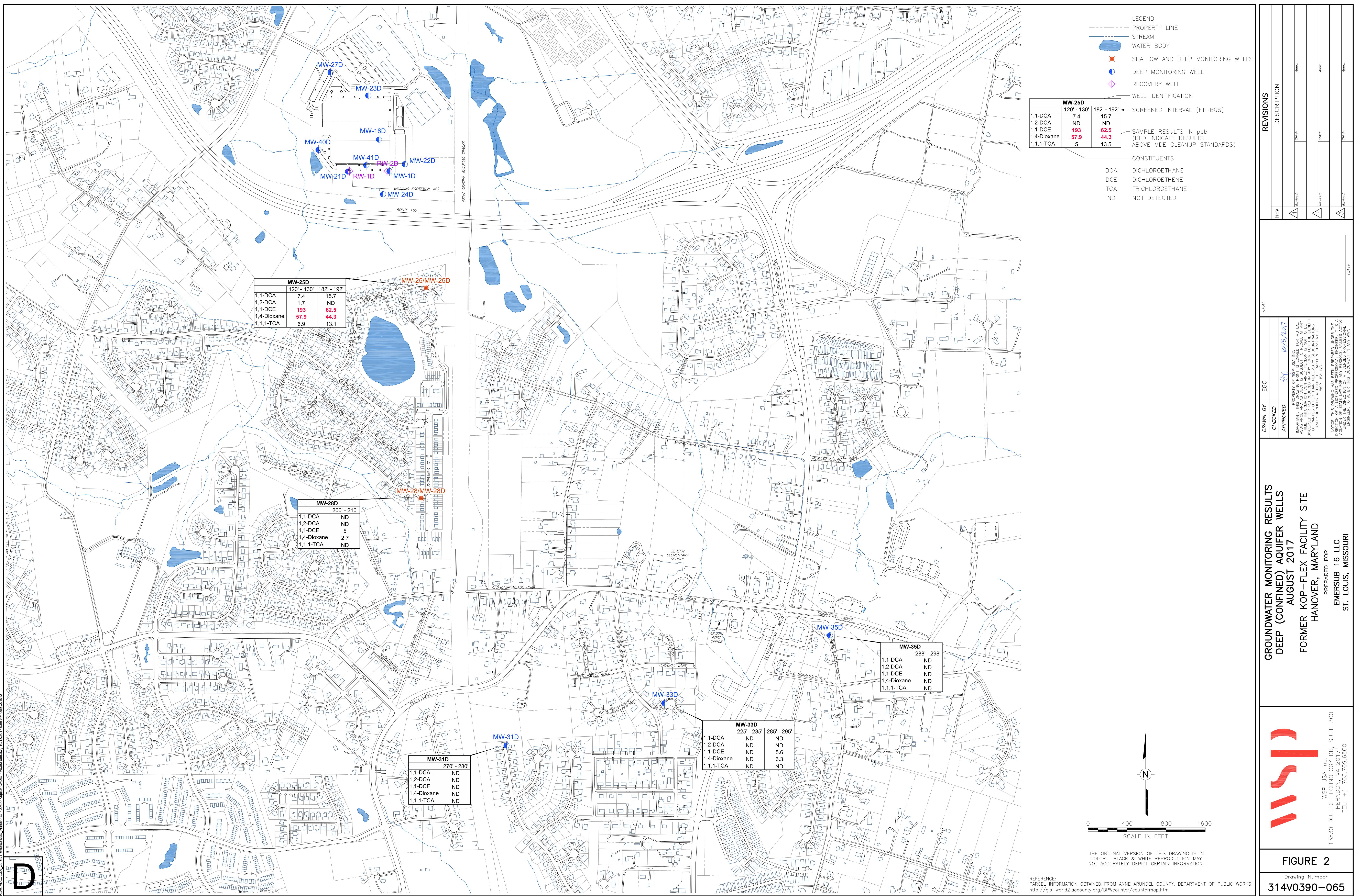
- Continue to communicate with Anne Arundel County Department of Public Works regarding its review of the Right-of-Way permit applications for the additional offsite groundwater monitoring wells. Upon issuance of the permits, begin installation of monitoring wells in accordance with the approved Offsite Groundwater Monitoring Plan.
- Continue to conduct sampling of designated residential wells in the Phase 1 & 2 areas and new Phase 4 area in accordance with the sampling plan approved by MDE.
- Continue with monitoring of untreated and treated water from the residential well at 1227 Old Camp Meade Road.
- Complete the public water service connection for the residence at 1245 Old Camp Meade Road and subsequent abandonment of the water supply well on the property.
- Conduct quarterly sampling of the offsite monitoring wells in residential areas south of Maryland Route 100 in late November or early December 2017.
- Execute an access agreement for the performance of groundwater profiling and well installation activities at the adjoining Verizon property immediately to the north of the Site.

3.0 Key Personnel/Facility Changes

During the reporting period, there were no changes to either key project personnel or conditions relevant to the performance of the ongoing work at the site.

FIGURES





TABLES

Table 1

Residential Well Sampling Results
Phase 1 and 2 Area Re-sampling and Phase 4 Area
Former Kop-Flex Facility Site
Hanover, Maryland
June 2017 through September 2017

Address	Sample ID	Sampling Date	Parameter:	Acetone	Bromoform	Chloroform	Dibromochloromethane	1,2-Dichloroethane	1,1-Dichloroethylene	Methyl Tert Butyl Ether	1,1,1-Trichloroethane	Tetrachloroethylene	Trichloroethylene	1,4-Dioxane	
			Units:	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	
		Groundwater Standard:													
Phase 1 & 2 Area															
7948 Andorick Drive	RW-7948AND-060617	6/6/2017	5 U	0.5 U	0.36 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.4 U	
7921 Barnhill Circle	RW-7921BHC-060617	6/6/2017	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	4.2	0.5 U	0.5 U	0.5 U	0.5 U	0.4 U	
	RW-7921BHC-060617-F	6/6/2017	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	4.4	0.5 U	0.5 U	0.5 U	0.5 U	0.4 U	
1218 Old Camp Meade	RW-1218OCM-060617	6/6/2017	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.79	0.5 U	0.5 U	0.5 U	0.5 U	0.4 U	
1221 Old Camp Meade	RW-1221OCM-062217	6/22/2017	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.86	0.5 U	0.5 U	0.5 U	0.5 U	0.24 J	
839 Reece Road	RW-839RR-062217	6/22/2017	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.5	0.5 U	0.5 U	0.5 U	0.5 U	0.4 U	
	RW-839RR-062217-F	6/22/2017	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.6	0.5 U	0.5 U	0.5 U	0.5 U	0.4 U	
847 Reece Road	RW-847RR-062217	6/22/2017	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.3	0.5 U	0.5 U	0.5 U	0.5 U	0.34 J	
907 Reece Road	RW-907REE-060617	6/6/2017	5 U	0.5 U	0.5 U	0.5 U	0.35 J	0.5 U	1.6	0.5 U	0.5 U	0.5 U	0.5 U	0.19 J	
	RW-907REE-060617-F	6/6/2017	5 U	0.5 U	0.5 U	0.5 U	0.35 J	0.5 U	1.6	0.5 U	0.5 U	0.5 U	0.5 U	0.4 U	
7763 Ricker Road	RW-7763RICK-080817	8/8/2017	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.4 U	
1214 Severn Station Road	RW-1214SSTA-080817	8/8/2017	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.33 J	0.5 U	0.5 U	0.5 U	0.4 U	
1337 Severn Station Road	RW-1337SSTA-080917	8/9/2017	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.28 J	0.5 U	0.5 U	0.5 U	0.4 U	
Phase 4 Area															
1317 Light Pines Court	RW-1319LP-092517	9/25/2017	5 U	0.5 U	0.42 J	0.5 U	0.5 U	0.5 U	0.47 J	0.5 U	0.5 U	0.5 U	0.5 U	0.4 U	
	RW-1317LP-092517-F	9/25/2017	5 U	0.5 U	0.36 J	0.5 U	0.5 U	0.5 U	0.37 J	0.5 U	0.5 U	0.5 U	0.5 U	0.4 U	
1319 Light Pines Court	RW-1319LP-092517	9/25/2017	5 U	0.5 U	0.36 J	0.5 U	0.5 U	0.5 U	0.5	0.5 U	0.5 U	0.5 U	0.5 U	0.4 U	
1320 Light Pines Court	RW-1320LP-071117	7/7/2017	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.4 U	
	RW-1320LP-071117-F	7/7/2017	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.4 U	
1323 Light Pines Court	RW-1323LP-080817	8/8/2017	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2 J	
	RW-1323LP-080817-F	8/8/2017	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.23 J	
1213 Pine Cone Court	RW-1213PCC-071117	7/7/2017	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.4 U	
	RW-1213PCC-071117-F	7/7/2017	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.4 U	
1221 Pine Cone Court	RW-1221PCC-062217	6/21/2017	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.1 J	0.5 U	0.5 U	0.5 U	0.4 U	
	RW-1221PCC-062217-F	6/21/2017	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.095 J	0.5 U	0.5 U	0.5 U	0.5 U	0.4 U	
1226 Pine Cone Court	RW-1226PCC-071117	7/7/2017	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.19 J	0.5 U	0.5 U	0.5 U	0.5 U	0.4 U	
	RW-1226PCC-071117-F	7/7/2017	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.18 J	0.5 U	0.5 U	0.5 U	0.5 U	0.4 U	
1227 Pine Cone Court	RW-1227PCC-062217	6/21/2017	4.20 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.50 U	0.5 U	0.5 U	0.5 U	0.5 U	0.4 U	
	RW-1227PCC-062217-F	6/21/2017	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.4 U	
1228 Pine Cone Court	RW-1228PCC-062217	6/21/2017	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.23 J	0.5 U	0.5 U	0.5 U	0.5 U	0.4 U	
	RW-1228PCC-062217-F	6/21/2017	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.24 J	0.5 U	0.5 U	0.5 U	0.5 U	0.4 U	
1233 Pine Cone Court	RW-1233PCC-062617	6/23/2017	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.18 J	
	RW-1233PCC-062617-F	6/23/2017	3.9 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.27 J	
1306 Redbridge Drive	RW-1306RB-062117	6/21/2017	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.50	0.5 U	0.5 U	0.5 U	0.5 U	0.49	
	RW-1306RB-062117-F	6/21/2017	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.43 J	0.5 U	0.5 U	0.5 U	0.5 U	0.46	
1308 Redbridge Drive	RW-1308RB-092517	9/25/2017	5 U	0.5 U	0.39 J	0.5 U	0.5 U	0.5 U	0.5	0.5 U	0.5 U	0.5 U	0.5 U	0.53	
	RW-1308RB-092517-F	9/25/2017	5 U	0.5 U	0.34 J	0.5 U	0.5 U	0.5 U	0.43 J	0.5 U	0.5 U	0.5 U	0.5 U	0.55	
916 Redmore Court	RW-916RMC-062317	6/23/2017	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.29 J	0.5 U	0.5 U	0.5 U	0.5 U	0.92	
1307 Redmore Court	RW-1307RMC-062217	6/22/2017	5 U	0.5 U	0.39 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.4 U	
	RW-1307RMC-062217-F	6/22/2017	5 U	0.5 U	0.42 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.4 U	
902 Redmore Drive	RW-902RMD-071117	7/7/2017	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.37 J	0.5 U	0.5 U	0.5 U	0.5 U	0.25 J	
	RW-902RMD-071117-F	7/7/2017	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.36 J	0.5 U	0.5 U	0.5 U	0.5 U	0.4 U	
915 Redmore Drive	RW-915RMD-062217	6/21/2017	4.10 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.15 J	0.5 U	0.5 U	0.5 U	0.5 U	0.19 J	
	RW-915RMD-062217-F	6/21/2017	5 U												

Table 2

Quarterly Offsite Monitoring Well Sample Results
Former Kop-Flex Facility Site
Hanover, Maryland
August 2017

Parameters (a)	Well ID: Sampling Date:	UNCONFINED ZONE				CONFINED ZONE					
		MW-25 31-Aug-17	MW-28 31-Aug-17	MW-24D 31-Aug-17	MW-25D-130 31-Aug-17	MW-25D-192 31-Aug-17	MW-28D 31-Aug-17	MW-31D 31-Aug-17	MW-33D-235 31-Aug-17	MW-33D-295 31-Aug-17	MW-35D 31-Aug-17
		Groundwater Quality Standards ($\mu\text{g/L}$) (b)									
Benzene		5	1.0 U	1.0 U	1.0 U	1.0 U	1.2	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane		90	1.0 U	1.0 U	39.8	7.4	15.7	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane		5	1.0 U	1.0 U	5.2	1.7	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene		7	1.0 U	1.0 U	663	193	62.5	5.0	1.0 U	1.0 U	5.6
1,4-Dioxane		6.7 (c)	2.0 U	2.0 U	199	57.9	44.3	2.7	2.0 U	2.0 U	6.3
1,1,1-Trichloroethane		200	1.0 U	1.0 U	9.5	6.9	13.1	1.0 U	1.0 U	1.0 U	1.0 U

a/ U = not detected above the method detection limit.

Bolded values indicate an exceedence of the Groundwater Quality Standards

All sample concentrations in micrograms per liter ($\mu\text{g/L}$)

b/ Source: [http://www.mde.maryland.gov/assets/document/Final%20Update%20No%202.1%20dated%205-20-08\(1\).pdf](http://www.mde.maryland.gov/assets/document/Final%20Update%20No%202.1%20dated%205-20-08(1).pdf)

c/ Value represents the MDE risk-based action level.

Table 3

**Historical Offsite Groundwater Sampling Results
Former Kop-Flex Facility Site
Hanover, Maryland
2015 to Present**

Well ID	Sample Date	Chloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	1,4-Dioxane	Methylene Chloride	1,1,1-Trichloroethane	1,1,2-Trichloroethane	Trichloroethene	Vinyl chloride
		Groundwater Cleanup Standards (µg/L)	3.6	90	5	7	70	6.7	5	200	5	2
Groundwater Monitoring Wells												
MW-25	3/19/2015	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	6/24/2015	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	9/23/2015	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	1/6/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	3/23/2016	1.0 U	1.0 U	1.0 U	1.5	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	7/20/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	9/8/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	12/8/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	2/21/2017	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/2/2017	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	8/31/2017	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
MW-28	3/17/2015	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	6/23/2015	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	9/22/2015	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	1/5/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	3/22/2016	1.0 U	1.0 U	1.0 U	6.2	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	7/19/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	9/7/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	12/8/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	2/21/2017	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/2/2017	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	8/31/2017	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
MW-45	3/24/2017	1.0 U	1.0 U	1.0 U	1.9	1.0 U	2.3	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
MW-24D	6/19/2015	20.0 U	92.5	20.0 U	2,100	20.0 U	728	40.0 U	53.3	20.0 U	20.0 U	20.0 U
	3/22/2016	12.5 U	88.0	15.7	1780	12.5 U	561	39.4	38.6	12.5 U	12.5 U	12.5 U
	7/20/2016	12.5 U	95.8	13.9	1970	8.1 J	492	22.6 J	39.2	12.5 U	11.9 J	12.5 U
	12/8/2016	5.0 U	36.1	5.2	701	5.0 U	192	10.0 U	9.0	5.0 U	5.0 U	5.0 U
	5/2/2017	5.0 U	40.4	5.6	830	5.0 U	216	10.0 U	10.2	5.0 U	5.0 U	5.0 U

Table 3

**Historical Offsite Groundwater Sampling Results
Former Kop-Flex Facility Site
Hanover, Maryland
2015 to Present**

Well ID	Sample Date	Chloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	1,4-Dioxane	Methylene Chloride	1,1,1-Trichloroethane	1,1,2-Trichloroethane	Trichloroethene	Vinyl chloride
	Groundwater Cleanup Standards (µg/L)	3.6	90	5	7	70	6.7	5	200	5	5	2
	8/31/2017	5.0 U	39.8	5.2	663	5.0 U	199	10.0 U	9.5	5.0 U	5.0 U	5.0 U
MW-25D-130	3/19/2015	10.0 U	38.6	10.8	854	10.0 U	446	200 U	8,930	100 U	100 U	100 U
	6/24/2015	1.0 U	37.1	8.9	1,030	4.6	303	2.0 U	46.3	1.2	6.8	1.0 U
	9/23/2015	10.0 U	29.7	10.0 U	697	10.0 U	295	20.0 U	32.3	10.0 U	14.2	10.0 U
	1/7/2016	5.0 U	33.4	9.7	800	5.0 U	398	10.0 U	5.0 U	5.0 U	6.1	5.0 U
	3/23/2016	5.0 U	24.5	8.0	676	5.0 U	302	10.0 U	26.2	5.0 U	5.0	5.0 U
	7/19/2016	10.0 U	39.3	10.2	1,090	4.9 J	367	14.3 J	37.0	10.0 U	6.5 J	10.0 U
	9/9/2016	5.0 U	27.9	6.4	661	5.0 U	241	12.0	25.0	5.0 U	5.0 U	5.0 U
	12/8/2016	1.0 U	6.7	1.5	171	1.0 U	13.6	2.0 U	6.9	1.0 U	1.0 U	1.0 U
	2/21/2017	1.0 U	7.2	1.7	194	1.0 U	69.1	2.0 U	7.0	1.0 U	1.2	1.0 U
	5/2/2017	2.0 U	6.5	2.0 U	174	2.0 U	61.0	4.0 U	5.0	2.0 U	2.0 U	2.0 U
	8/31/2017	2.0 U	7.4	1.7	193	2.0 U	57.9	4.0 U	6.9	2.0 U	2.0 U	2.0 U
MW-25D-192	3/19/2015	1.0 U	11.7	1.0 U	53.0	1.0 U	49.4	2.0 U	13.7	1.0 U	1.0 U	1.0 U
	6/25/2015	1.0 U	11.9	1.0 U	59.4	1.0 U	39.8	2.0 U	14.2	1.0 U	1.0 U	1.0 U
	9/22/2015	1.0 U	13.9	1.0 U	51.4	1.0 U	45.0	2.0 U	12.9	1.0 U	1.3	1.0 U
	1/7/2016	1.0 U	11.7	1.0 U	47.2	1.0 U	41.7	2.0 U	12.5	1.0 U	1.0 U	1.0 U
	3/23/2016	1.0 U	10.3	1.0 U	43.3	1.0 U	42.2	2.0 U	11.3	1.0 U	1.0 U	1.0 U
	7/20/2016	1.0 U	11.7	0.73 J	54.9	1.0 U	54.4	2.0 U	11.1	1.0 U	1.0 U	1.0 U
	9/8/2016	1.0 U	12.9	1.0 U	56.8	1.0 U	39.3	2.0 U	12.6	1.0 U	1.0 U	1.0 U
	12/8/2016	1.0 U	16.1	1.0 U	64.6	1.0 U	51.3	2.0 U	13.3	1.0 U	1.0 U	1.0 U
	2/21/2017	1.0 U	14.0	1.0 U	63.3	1.0 U	52.1	2.0 U	11.6	1.0 U	1.0 U	1.0 U
	5/2/2017	1.0 U	16.9	1.0 U	81.0	1.0 U	53.1	2.0 U	13.5	1.0 U	1.0 U	1.0 U
	8/31/2017	1.0 U	15.7	1.0 U	62.5	1.0 U	44.3	2.0 U	13.1	1.0 U	1.0 U	1.0 U
MW-28D	3/17/2015	1.0 U	1.0 U	1.0 U	10.6	1.0 U	5.0	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	6/23/2015	1.0 U	1.0 U	1.0 U	12.8	1.0 U	4.5	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	9/22/2015	1.0 U	1.0 U	1.0 U	14.3	1.0 U	4.4	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	1/5/2016	1.0 U	1.0 U	1.0 U	11.5	1.0 U	5.5	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	3/23/2016	1.0 U	1.0 U	1.0 U	9.1	1.0 U	4.0	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	7/19/2016	1.0 U	1.0 U	0.25 J	10.1	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	9/7/2016	1.0 U	1.0 U	1.0 U	12.0	1.0 U	5.0	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U

Table 3

**Historical Offsite Groundwater Sampling Results
Former Kop-Flex Facility Site
Hanover, Maryland
2015 to Present**

Well ID	Sample Date	Chloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	1,4-Dioxane	Methylene Chloride	1,1,1-Trichloroethane	1,1,2-Trichloroethane	Trichloroethene	Vinyl chloride
	Groundwater Cleanup Standards (µg/L)	3.6	90	5	7	70	6.7	5	200	5	5	2
	12/8/2016	1.0 U	1.0 U	1.0 U	6.3	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	2/21/2017	1.0 U	1.0 U	1.0 U	4.6	1.0 U	3.0	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/2/2017	1.0 U	1.0 U	1.0 U	5.8	1.0 U	2.7	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	8/31/2017	1.0 U	1.0 U	1.0 U	5.0	1.0 U	2.7	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
MW-31D	3/17/2015	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	6/24/2015	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	9/22/2015	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	1/6/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	3/21/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	7/19/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	9/6/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	12/8/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	2/21/2017	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/2/2017	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
MW-33D-235	8/31/2017	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	3/18/2015	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	6/23/2015	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	9/21/2015	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	1/4/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	3/21/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	7/18/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	9/7/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	12/8/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	2/21/2017	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
MW-33D-295	5/2/2017	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	8/31/2017	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	3/18/2015	1.0 U	1.0 U	1.0 U	4.6	1.0 U	8.0	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	6/23/2015	1.0 U	1.0 U	1.0 U	3.3	1.0 U	6.8	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	9/21/2015	1.0 U	1.0 U	1.0 U	4.8	1.0 U	6.8	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	1/4/2016	1.0 U	1.0 U	1.0 U	3.7	1.0 U	7.6	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U

Table 3

**Historical Offsite Groundwater Sampling Results
Former Kop-Flex Facility Site
Hanover, Maryland
2015 to Present**

Well ID	Sample Date	Chloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	1,4-Dioxane	Methylene Chloride	1,1,1-Trichloroethane	1,1,2-Trichloroethane	Trichloroethene	Vinyl chloride
	Groundwater Cleanup Standards (µg/L)	3.6	90	5	7	70	6.7	5	200	5	5	2
	3/21/2016	1.0 U	1.0 U	1.0 U	3.9	1.0 U	7.8	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	7/18/2016	1.0 U	1.0 U	0.36 J	3.2	1.0 U	5.1	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	9/7/2016	1.0 U	1.0 U	1.0 U	3.8	1.0 U	7.4	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	12/8/2016	1.0 U	1.0 U	1.0 U	5.4	1.0 U	7.4	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	2/21/2017	1.0 U	1.0 U	1.0 U	4.0	1.0 U	6.8	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/2/2017	1.0 U	1.0 U	1.0 U	5.3	1.0 U	7.4	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	8/31/2017	1.0 U	1.0 U	1.0 U	5.6	1.0 U	6.3	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
MW-35D	3/18/2015	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	6/22/2015	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	9/21/2015	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	1/6/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	4/15/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	7/18/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	9/6/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	12/8/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	2/21/2017	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	5/2/2017	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	8/31/2017	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U

a/ U = not detected above the method detection limit.

Bolded values indicate an exceedence of the Groundwater Quality Standards

All sample concentrations in micrograms per liter (µg/l)

**ENCLOSURE A - LABORATORY ANALYTICAL REPORTS FOR RESIDENTIAL
WELL SAMPLES, PHASE 1 & 2 AREA RE-SAMPLING AND
PHASE 4 AREA (JULY 2017 THROUGH SEPTEMBER 2017)**



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New Jersey

07/25/17

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Automated Report

Technical Report for

WSP Environment & Energy

Kop-Flex, Hanover, MD

SGS Accutest Job Number: JC46796

Sampling Date: 07/11/17



Report to:

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Total number of pages in report: 97



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Sample Summary

WSP Environment & Energy

Job No: JC46796

Kop-Flex, Hanover, MD

Sample Number	Collected Date	Time By	Matrix Received	Code Type	Client Sample ID
JC46796-1	07/11/17	15:30 GW	07/12/17	AQ Trip Blank Water	TRIP BLANK
JC46796-2	07/11/17	09:30 GW	07/12/17	AQ Ground Water	RW-1226PC-071117-F
JC46796-3	07/11/17	09:45 GW	07/12/17	AQ Ground Water	RW-1226PC-071117
JC46796-4	07/11/17	10:20 GW	07/12/17	AQ Ground Water	RW-1320LP-071117-F
JC46796-5	07/11/17	10:30 GW	07/12/17	AQ Ground Water	RW-1320LP-071117
JC46796-6	07/11/17	12:00 GW	07/12/17	AQ Ground Water	RW-920RMD-071117-F
JC46796-7	07/11/17	12:10 GW	07/12/17	AQ Ground Water	RW-920RMD-071117
JC46796-8	07/11/17	09:00 GW	07/12/17	AQ Ground Water	RW-1000RMD-071117
JC46796-9	07/11/17	14:05 GW	07/12/17	AQ Ground Water	RW-902RMD-071117-F
JC46796-10	07/11/17	14:15 GW	07/12/17	AQ Ground Water	RW-902RMD-071117
JC46796-11	07/11/17	15:20 GW	07/12/17	AQ Ground Water	RW-1213PC-071117-F
JC46796-12	07/11/17	15:30 GW	07/12/17	AQ Ground Water	RW-1213PC-071117

Summary of Hits

Job Number: JC46796
Account: WSP Environment & Energy
Project: Kop-Flex, Hanover, MD
Collected: 07/11/17

Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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JC46796-1 TRIP BLANK

No hits reported in this sample.

JC46796-2 RW-1226PC-071117-F

Methyl Tert Butyl Ether ^a	0.18 J	0.50	0.080	ug/l	EPA 524.2 REV 4.1
--------------------------------------	--------	------	-------	------	-------------------

JC46796-3 RW-1226PC-071117

Methyl Tert Butyl Ether ^a	0.19 J	0.50	0.080	ug/l	EPA 524.2 REV 4.1
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JC46796-4 RW-1320LP-071117-F

No hits reported in this sample.

JC46796-5 RW-1320LP-071117

No hits reported in this sample.

JC46796-6 RW-920RMD-071117-F

Methyl Tert Butyl Ether ^a	0.097 J	0.50	0.080	ug/l	EPA 524.2 REV 4.1
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JC46796-7 RW-920RMD-071117

Methyl Tert Butyl Ether ^a	0.097 J	0.50	0.080	ug/l	EPA 524.2 REV 4.1
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JC46796-8 RW-1000RMD-071117

Methyl Tert Butyl Ether ^a	0.097 J	0.50	0.080	ug/l	EPA 524.2 REV 4.1
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JC46796-9 RW-902RMD-071117-F

Methyl Tert Butyl Ether ^a	0.36 J	0.50	0.080	ug/l	EPA 524.2 REV 4.1
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JC46796-10 RW-902RMD-071117

Methyl Tert Butyl Ether ^a	0.37 J	0.50	0.080	ug/l	EPA 524.2 REV 4.1
1,4-Dioxane	0.25 J	0.40	0.18	ug/l	SW846 8260C BY SIM

JC46796-11 RW-1213PC-071117-F

No hits reported in this sample.

Summary of Hits

Job Number: JC46796
Account: WSP Environment & Energy
Project: Kop-Flex, Hanover, MD
Collected: 07/11/17

Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Analyte						

JC46796-12 RW-1213PC-071117

No hits reported in this sample.

(a) EPA 524.2 is not a certified method for non-potable water samples.



ACCUTEST
New Jersey

Section 3

3

Sample Results

Report of Analysis

Report of Analysis

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Client Sample ID:	TRIP BLANK	Date Sampled:	07/11/17
Lab Sample ID:	JC46796-1	Date Received:	07/12/17
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Kop-Flex, Hanover, MD		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	1B110677.D	1	07/24/17 12:33	BK	n/a	n/a	V1B5273
Run #2							

Purge Volume	
Run #1	5.0 ml
Run #2	

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND	0.50	0.25	ug/l	
74-97-5	Bromochloromethane	ND	0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform ^b	ND	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND	0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND	0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND	0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	ND	0.50	0.33	ug/l	
74-87-3	Chloromethane	ND	0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND	0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND	0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.0	0.25	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.50	0.29	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND	0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND	0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.094	ug/l	
74-95-3	Dibromomethane	ND	0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	0.28	ug/l	

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TRIP BLANK	Date Sampled:	07/11/17
Lab Sample ID:	JC46796-1	Date Received:	07/12/17
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Kop-Flex, Hanover, MD		

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND	0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND	0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	0.50	0.080	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
91-20-3	Naphthalene	ND	0.50	0.18	ug/l	
103-65-1	n-Propylbenzene	ND	0.50	0.26	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	103%		70-130%
460-00-4	4-Bromofluorobenzene	95%		70-130%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

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Client Sample ID:	TRIP BLANK	Date Sampled:	07/11/17
Lab Sample ID:	JC46796-1	Date Received:	07/12/17
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Kop-Flex, Hanover, MD		

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
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- (a) EPA 524.2 is not a certified method for non-potable water samples.
 (b) This compound in BS is outside in house QC limits bias high.

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

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Client Sample ID:	TRIP BLANK	Date Sampled:	07/11/17
Lab Sample ID:	JC46796-1	Date Received:	07/12/17
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	SW846 8260C BY SIM		
Project:	Kop-Flex, Hanover, MD		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3A156652.D	1	07/13/17 12:28	PR	n/a	n/a	V3A6751
Run #2							

Purge Volume	
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
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123-91-1	1,4-Dioxane	ND	0.40	0.18	ug/l	
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CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
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17647-74-4	1,4-Dioxane-d8	115%		51-175%
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ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RW-1226PC-071117-F	Date Sampled:	07/11/17
Lab Sample ID:	JC46796-2	Date Received:	07/12/17
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Kop-Flex, Hanover, MD		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	1B110678.D	1	07/24/17 13:05	BK	n/a	n/a	V1B5273
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND	0.50	0.25	ug/l	
74-97-5	Bromochloromethane	ND	0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform ^b	ND	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND	0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND	0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND	0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	ND	0.50	0.33	ug/l	
74-87-3	Chloromethane	ND	0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND	0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND	0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.0	0.25	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.50	0.29	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND	0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND	0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.094	ug/l	
74-95-3	Dibromomethane	ND	0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	0.28	ug/l	

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RW-1226PC-071117-F	Date Sampled:	07/11/17
Lab Sample ID:	JC46796-2	Date Received:	07/12/17
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Kop-Flex, Hanover, MD		

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND	0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND	0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.18	0.50	0.080	ug/l	J
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
91-20-3	Naphthalene	ND	0.50	0.18	ug/l	
103-65-1	n-Propylbenzene	ND	0.50	0.26	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	104%		70-130%
460-00-4	4-Bromofluorobenzene	97%		70-130%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

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Client Sample ID:	RW-1226PC-071117-F	Date Sampled:	07/11/17
Lab Sample ID:	JC46796-2	Date Received:	07/12/17
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Kop-Flex, Hanover, MD		

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
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- (a) EPA 524.2 is not a certified method for non-potable water samples.
 (b) This compound in BS is outside in house QC limits bias high.

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID: RW-1226PC-071117-F
Lab Sample ID: JC46796-2
Matrix: AQ - Ground Water
Method: SW846 8260C BY SIM
Project: Kop-Flex, Hanover, MD

Date Sampled: 07/11/17
Date Received: 07/12/17
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3A156653.D	1	07/13/17 12:54	PR	n/a	n/a	V3A6751
Run #2							

Purge Volume
Run #1 5.0 ml
Run #2

CAS No.	Compound	Result	RL	MDL	Units	Q
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123-91-1	1,4-Dioxane	ND	0.40	0.18	ug/l	
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CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
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17647-74-4	1,4-Dioxane-d8	123%		51-175%
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ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

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3**Client Sample ID:** RW-1226PC-071117**Lab Sample ID:** JC46796-3**Matrix:** AQ - Ground Water**Method:** EPA 524.2 REV 4.1**Project:** Kop-Flex, Hanover, MD**Date Sampled:** 07/11/17**Date Received:** 07/12/17**Percent Solids:** n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	1B110679.D	1	07/24/17 13:37	BK	n/a	n/a	V1B5273
Run #2							

Purge Volume

Run #1 5.0 ml

Run #2

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND	0.50	0.25	ug/l	
74-97-5	Bromochloromethane	ND	0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform ^b	ND	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND	0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND	0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND	0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	ND	0.50	0.33	ug/l	
74-87-3	Chloromethane	ND	0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND	0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND	0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.0	0.25	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.50	0.29	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND	0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND	0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.094	ug/l	
74-95-3	Dibromomethane	ND	0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	0.28	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: RW-1226PC-071117
Lab Sample ID: JC46796-3
Matrix: AQ - Ground Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, MD

Date Sampled: 07/11/17
Date Received: 07/12/17
Percent Solids: n/a

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND	0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND	0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.19	0.50	0.080	ug/l	J
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
91-20-3	Naphthalene	ND	0.50	0.18	ug/l	
103-65-1	n-Propylbenzene	ND	0.50	0.26	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	105%		70-130%
460-00-4	4-Bromofluorobenzene	96%		70-130%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID: RW-1226PC-071117
Lab Sample ID: JC46796-3
Matrix: AQ - Ground Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, MD

Date Sampled: 07/11/17
Date Received: 07/12/17
Percent Solids: n/a

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
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- (a) EPA 524.2 is not a certified method for non-potable water samples.
- (b) This compound in BS is outside in house QC limits bias high.

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID: RW-1226PC-071117
Lab Sample ID: JC46796-3
Matrix: AQ - Ground Water
Method: SW846 8260C BY SIM
Project: Kop-Flex, Hanover, MD

Date Sampled: 07/11/17
Date Received: 07/12/17
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3A156654.D	1	07/13/17 13:20	PR	n/a	n/a	V3A6751
Run #2							

Purge Volume
Run #1 5.0 ml
Run #2

CAS No.	Compound	Result	RL	MDL	Units	Q
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123-91-1	1,4-Dioxane	ND	0.40	0.18	ug/l	
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CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
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17647-74-4	1,4-Dioxane-d8	118%		51-175%
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ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID: RW-1320LP-071117-F
Lab Sample ID: JC46796-4
Matrix: AQ - Ground Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, MD

Date Sampled: 07/11/17
Date Received: 07/12/17
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	1B110680.D	1	07/24/17 14:08	BK	n/a	n/a	V1B5273
Run #2							

Purge Volume	
Run #1	5.0 ml
Run #2	

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND	0.50	0.25	ug/l	
74-97-5	Bromochloromethane	ND	0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform ^b	ND	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND	0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND	0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND	0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	ND	0.50	0.33	ug/l	
74-87-3	Chloromethane	ND	0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND	0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND	0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.0	0.25	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.50	0.29	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND	0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND	0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.094	ug/l	
74-95-3	Dibromomethane	ND	0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	0.28	ug/l	

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: RW-1320LP-071117-F
Lab Sample ID: JC46796-4
Matrix: AQ - Ground Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, MD

Date Sampled: 07/11/17
Date Received: 07/12/17
Percent Solids: n/a

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND	0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND	0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	0.50	0.080	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
91-20-3	Naphthalene	ND	0.50	0.18	ug/l	
103-65-1	n-Propylbenzene	ND	0.50	0.26	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	103%		70-130%
460-00-4	4-Bromofluorobenzene	94%		70-130%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

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Client Sample ID:	RW-1320LP-071117-F	Date Sampled:	07/11/17
Lab Sample ID:	JC46796-4	Date Received:	07/12/17
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Kop-Flex, Hanover, MD		

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
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- (a) EPA 524.2 is not a certified method for non-potable water samples.
 (b) This compound in BS is outside in house QC limits bias high.

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

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3**Client Sample ID:** RW-1320LP-071117-F**Lab Sample ID:** JC46796-4**Matrix:** AQ - Ground Water**Method:** SW846 8260C BY SIM**Project:** Kop-Flex, Hanover, MD**Date Sampled:** 07/11/17**Date Received:** 07/12/17**Percent Solids:** n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3A156655.D	1	07/13/17 13:46	PR	n/a	n/a	V3A6751
Run #2							

Purge Volume

Run #1 5.0 ml

Run #2

CAS No.	Compound	Result	RL	MDL	Units	Q
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123-91-1	1,4-Dioxane	ND	0.40	0.18	ug/l	
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CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
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17647-74-4	1,4-Dioxane-d8	120%		51-175%
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ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

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Client Sample ID: RW-1320LP-071117
Lab Sample ID: JC46796-5
Matrix: AQ - Ground Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, MD

Date Sampled: 07/11/17
Date Received: 07/12/17
Percent Solids: n/a

Run #1 ^a	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	1B110484.D	1	07/14/17 12:47	BK	n/a	n/a	V1B5264

Purge Volume	
Run #1	5.0 ml
Run #2	

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND	0.50	0.25	ug/l	
74-97-5	Bromo(chloromethane)	ND	0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform	ND	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND	0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND	0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND	0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	ND	0.50	0.33	ug/l	
74-87-3	Chloromethane	ND	0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND	0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND	0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.0	0.25	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.50	0.29	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND	0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND	0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.094	ug/l	
74-95-3	Dibromomethane	ND	0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	0.28	ug/l	

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: RW-1320LP-071117
Lab Sample ID: JC46796-5
Matrix: AQ - Ground Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, MD

Date Sampled: 07/11/17
Date Received: 07/12/17
Percent Solids: n/a

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND	0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND	0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	0.50	0.080	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
91-20-3	Naphthalene	ND	0.50	0.18	ug/l	
103-65-1	n-Propylbenzene	ND	0.50	0.26	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	92%		70-130%
460-00-4	4-Bromofluorobenzene	86%		70-130%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

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Client Sample ID: RW-1320LP-071117
Lab Sample ID: JC46796-5
Matrix: AQ - Ground Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, MD

Date Sampled: 07/11/17
Date Received: 07/12/17
Percent Solids: n/a

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
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(a) EPA 524.2 is not a certified method for non-potable water samples.

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID: RW-1320LP-071117
Lab Sample ID: JC46796-5
Matrix: AQ - Ground Water
Method: SW846 8260C BY SIM
Project: Kop-Flex, Hanover, MD

Date Sampled: 07/11/17
Date Received: 07/12/17
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3A156656.D	1	07/13/17 14:12	PR	n/a	n/a	V3A6751
Run #2							

Purge Volume
Run #1 5.0 ml
Run #2

CAS No.	Compound	Result	RL	MDL	Units	Q
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123-91-1	1,4-Dioxane	ND	0.40	0.18	ug/l	
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CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
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17647-74-4	1,4-Dioxane-d8	97%		51-175%
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ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

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Client Sample ID: RW-920RMD-071117-F
Lab Sample ID: JC46796-6
Matrix: AQ - Ground Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, MD

Date Sampled: 07/11/17
Date Received: 07/12/17
Percent Solids: n/a

Run #1 ^a	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	1B110589.D	1	07/21/17 12:51	BK	n/a	n/a	V1B5269

Purge Volume	
Run #1	5.0 ml
Run #2	

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND	0.50	0.25	ug/l	
74-97-5	Bromo(chloromethane)	ND	0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform	ND	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND	0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND	0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND	0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	ND	0.50	0.33	ug/l	
74-87-3	Chloromethane	ND	0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND	0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND	0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.0	0.25	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.50	0.29	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND	0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND	0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.094	ug/l	
74-95-3	Dibromomethane	ND	0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	0.28	ug/l	

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: RW-920RMD-071117-F
Lab Sample ID: JC46796-6
Matrix: AQ - Ground Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, MD

Date Sampled: 07/11/17
Date Received: 07/12/17
Percent Solids: n/a

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND	0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND	0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.097	0.50	0.080	ug/l	J
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
91-20-3	Naphthalene	ND	0.50	0.18	ug/l	
103-65-1	n-Propylbenzene	ND	0.50	0.26	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	101%		70-130%
460-00-4	4-Bromofluorobenzene	99%		70-130%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID: RW-920RMD-071117-F
Lab Sample ID: JC46796-6
Matrix: AQ - Ground Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, MD

Date Sampled: 07/11/17
Date Received: 07/12/17
Percent Solids: n/a

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
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(a) EPA 524.2 is not a certified method for non-potable water samples.

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID: RW-920RMD-071117-F
Lab Sample ID: JC46796-6
Matrix: AQ - Ground Water
Method: SW846 8260C BY SIM
Project: Kop-Flex, Hanover, MD

Date Sampled: 07/11/17
Date Received: 07/12/17
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3A156660.D	1	07/13/17 15:57	PR	n/a	n/a	V3A6751
Run #2							

Purge Volume
Run #1 5.0 ml
Run #2

CAS No.	Compound	Result	RL	MDL	Units	Q
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123-91-1	1,4-Dioxane	ND	0.40	0.18	ug/l	
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CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
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17647-74-4	1,4-Dioxane-d8	114%		51-175%
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ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

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3**Client Sample ID:** RW-920RMD-071117**Lab Sample ID:** JC46796-7**Date Sampled:** 07/11/17**Matrix:** AQ - Ground Water**Date Received:** 07/12/17**Method:** EPA 524.2 REV 4.1**Percent Solids:** n/a**Project:** Kop-Flex, Hanover, MD

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	1B110590.D	1	07/21/17 13:23	BK	n/a	n/a	V1B5269
Run #2							

Purge Volume

Run #1 5.0 ml

Run #2

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND	0.50	0.25	ug/l	
74-97-5	Bromochloromethane	ND	0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform	ND	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND	0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND	0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND	0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	ND	0.50	0.33	ug/l	
74-87-3	Chloromethane	ND	0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND	0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND	0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.0	0.25	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.50	0.29	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND	0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND	0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.094	ug/l	
74-95-3	Dibromomethane	ND	0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	0.28	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: RW-920RMD-071117
Lab Sample ID: JC46796-7
Matrix: AQ - Ground Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, MD

Date Sampled: 07/11/17
Date Received: 07/12/17
Percent Solids: n/a

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND	0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND	0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.097	0.50	0.080	ug/l	J
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
91-20-3	Naphthalene	ND	0.50	0.18	ug/l	
103-65-1	n-Propylbenzene	ND	0.50	0.26	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	101%		70-130%
460-00-4	4-Bromofluorobenzene	98%		70-130%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID: RW-920RMD-071117
Lab Sample ID: JC46796-7
Matrix: AQ - Ground Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, MD

Date Sampled: 07/11/17
Date Received: 07/12/17
Percent Solids: n/a

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
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(a) EPA 524.2 is not a certified method for non-potable water samples.

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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3**Client Sample ID:** RW-920RMD-071117**Lab Sample ID:** JC46796-7**Matrix:** AQ - Ground Water**Method:** SW846 8260C BY SIM**Project:** Kop-Flex, Hanover, MD**Date Sampled:** 07/11/17**Date Received:** 07/12/17**Percent Solids:** n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3A156661.D	1	07/13/17 16:23	PR	n/a	n/a	V3A6751
Run #2							

Purge Volume

Run #1 5.0 ml

Run #2

CAS No.	Compound	Result	RL	MDL	Units	Q
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123-91-1	1,4-Dioxane	ND	0.40	0.18	ug/l	
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CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
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17647-74-4	1,4-Dioxane-d8	109%		51-175%
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ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

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Client Sample ID: RW-1000RMD-071117
Lab Sample ID: JC46796-8
Matrix: AQ - Ground Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, MD

Date Sampled: 07/11/17
Date Received: 07/12/17
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	1B110591.D	1	07/21/17 13:54	BK	n/a	n/a	V1B5269
Run #2							

Purge Volume	
Run #1	5.0 ml
Run #2	

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND	0.50	0.25	ug/l	
74-97-5	Bromo(chloromethane)	ND	0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform	ND	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND	0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND	0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND	0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	ND	0.50	0.33	ug/l	
74-87-3	Chloromethane	ND	0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND	0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND	0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.0	0.25	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.50	0.29	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND	0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND	0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.094	ug/l	
74-95-3	Dibromomethane	ND	0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	0.28	ug/l	

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: RW-1000RMD-071117
Lab Sample ID: JC46796-8
Matrix: AQ - Ground Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, MD

Date Sampled: 07/11/17
Date Received: 07/12/17
Percent Solids: n/a

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND	0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND	0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.097	0.50	0.080	ug/l	J
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
91-20-3	Naphthalene	ND	0.50	0.18	ug/l	
103-65-1	n-Propylbenzene	ND	0.50	0.26	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	101%		70-130%
460-00-4	4-Bromofluorobenzene	99%		70-130%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

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Client Sample ID: RW-1000RMD-071117
Lab Sample ID: JC46796-8
Matrix: AQ - Ground Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, MD

Date Sampled: 07/11/17
Date Received: 07/12/17
Percent Solids: n/a

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
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(a) EPA 524.2 is not a certified method for non-potable water samples.

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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3

Client Sample ID: RW-1000RMD-071117**Lab Sample ID:** JC46796-8**Matrix:** AQ - Ground Water**Method:** SW846 8260C BY SIM**Project:** Kop-Flex, Hanover, MD**Date Sampled:** 07/11/17**Date Received:** 07/12/17**Percent Solids:** n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3A156662.D	1	07/13/17 16:49	PR	n/a	n/a	V3A6751
Run #2							

Purge Volume

Run #1 5.0 ml

Run #2

CAS No.	Compound	Result	RL	MDL	Units	Q
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123-91-1	1,4-Dioxane	ND	0.40	0.18	ug/l	
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CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
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17647-74-4	1,4-Dioxane-d8	107%		51-175%
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ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

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Client Sample ID: RW-902RMD-071117-F
Lab Sample ID: JC46796-9
Matrix: AQ - Ground Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, MD

Date Sampled: 07/11/17
Date Received: 07/12/17
Percent Solids: n/a

Run #1 ^a	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	1B110594.D	1	07/21/17 15:27	BK	n/a	n/a	V1B5269

Purge Volume	
Run #1	5.0 ml
Run #2	

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND	0.50	0.25	ug/l	
74-97-5	Bromo(chloromethane)	ND	0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform	ND	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND	0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND	0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND	0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	ND	0.50	0.33	ug/l	
74-87-3	Chloromethane	ND	0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND	0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND	0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.0	0.25	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.50	0.29	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND	0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND	0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.094	ug/l	
74-95-3	Dibromomethane	ND	0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	0.28	ug/l	

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: RW-902RMD-071117-F
Lab Sample ID: JC46796-9
Matrix: AQ - Ground Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, MD

Date Sampled: 07/11/17
Date Received: 07/12/17
Percent Solids: n/a

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND	0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND	0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.36	0.50	0.080	ug/l	J
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
91-20-3	Naphthalene	ND	0.50	0.18	ug/l	
103-65-1	n-Propylbenzene	ND	0.50	0.26	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	100%		70-130%
460-00-4	4-Bromofluorobenzene	98%		70-130%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

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Client Sample ID: RW-902RMD-071117-F
Lab Sample ID: JC46796-9
Matrix: AQ - Ground Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, MD

Date Sampled: 07/11/17
Date Received: 07/12/17
Percent Solids: n/a

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
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(a) EPA 524.2 is not a certified method for non-potable water samples.

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID: RW-902RMD-071117-F
Lab Sample ID: JC46796-9
Matrix: AQ - Ground Water
Method: SW846 8260C BY SIM
Project: Kop-Flex, Hanover, MD

Date Sampled: 07/11/17
Date Received: 07/12/17
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3A156663.D	1	07/13/17 17:16	PR	n/a	n/a	V3A6751
Run #2							

Purge Volume
Run #1 5.0 ml
Run #2

CAS No.	Compound	Result	RL	MDL	Units	Q
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123-91-1	1,4-Dioxane	ND	0.40	0.18	ug/l	
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CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
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17647-74-4	1,4-Dioxane-d8	119%		51-175%
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ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

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Client Sample ID:	RW-902RMD-071117	Date Sampled:	07/11/17
Lab Sample ID:	JC46796-10	Date Received:	07/12/17
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Kop-Flex, Hanover, MD		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	1B110595.D	1	07/21/17 15:59	BK	n/a	n/a	V1B5269
Run #2							

Purge Volume	
Run #1	5.0 ml
Run #2	

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND	0.50	0.25	ug/l	
74-97-5	Bromochloromethane	ND	0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform	ND	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND	0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND	0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND	0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	ND	0.50	0.33	ug/l	
74-87-3	Chloromethane	ND	0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND	0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND	0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.0	0.25	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.50	0.29	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND	0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND	0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.094	ug/l	
74-95-3	Dibromomethane	ND	0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	0.28	ug/l	

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID: RW-902RMD-071117
Lab Sample ID: JC46796-10
Matrix: AQ - Ground Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, MD

Date Sampled: 07/11/17
Date Received: 07/12/17
Percent Solids: n/a

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND	0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND	0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.37	0.50	0.080	ug/l	J
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
91-20-3	Naphthalene	ND	0.50	0.18	ug/l	
103-65-1	n-Propylbenzene	ND	0.50	0.26	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	103%		70-130%
460-00-4	4-Bromofluorobenzene	100%		70-130%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

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3

Client Sample ID: RW-902RMD-071117
Lab Sample ID: JC46796-10
Matrix: AQ - Ground Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, MD

Date Sampled: 07/11/17
Date Received: 07/12/17
Percent Solids: n/a

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
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(a) EPA 524.2 is not a certified method for non-potable water samples.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID:	RW-902RMD-071117	Date Sampled:	07/11/17
Lab Sample ID:	JC46796-10	Date Received:	07/12/17
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C BY SIM		
Project:	Kop-Flex, Hanover, MD		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3A156664.D	1	07/13/17 17:42	PR	n/a	n/a	V3A6751
Run #2							

Purge Volume	
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
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123-91-1	1,4-Dioxane	0.25	0.40	0.18	ug/l	J
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CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
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17647-74-4	1,4-Dioxane-d8	113%		51-175%
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ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID:	RW-1213PC-071117-F	Date Sampled:	07/11/17
Lab Sample ID:	JC46796-11	Date Received:	07/12/17
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Kop-Flex, Hanover, MD		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	1B110596.D	1	07/21/17 16:31	BK	n/a	n/a	V1B5269
Run #2							

Purge Volume	
Run #1	5.0 ml
Run #2	

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND	0.50	0.25	ug/l	
74-97-5	Bromochloromethane	ND	0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform	ND	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND	0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND	0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND	0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	ND	0.50	0.33	ug/l	
74-87-3	Chloromethane	ND	0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND	0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND	0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.0	0.25	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.50	0.29	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND	0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND	0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.094	ug/l	
74-95-3	Dibromomethane	ND	0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	0.28	ug/l	

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 2 of 3

Client Sample ID:	RW-1213PC-071117-F	Date Sampled:	07/11/17
Lab Sample ID:	JC46796-11	Date Received:	07/12/17
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Kop-Flex, Hanover, MD		

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND	0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND	0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	0.50	0.080	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
91-20-3	Naphthalene	ND	0.50	0.18	ug/l	
103-65-1	n-Propylbenzene	ND	0.50	0.26	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	102%		70-130%
460-00-4	4-Bromofluorobenzene	101%		70-130%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 3 of 3

Client Sample ID:	RW-1213PC-071117-F	Date Sampled:	07/11/17
Lab Sample ID:	JC46796-11	Date Received:	07/12/17
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Kop-Flex, Hanover, MD		

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
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(a) EPA 524.2 is not a certified method for non-potable water samples.

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Page 1 of 1

Client Sample ID:	RW-1213PC-071117-F	Date Sampled:	07/11/17
Lab Sample ID:	JC46796-11	Date Received:	07/12/17
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C BY SIM		
Project:	Kop-Flex, Hanover, MD		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3A156665.D	1	07/13/17 18:08	PR	n/a	n/a	V3A6751
Run #2							

Purge Volume	
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
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123-91-1	1,4-Dioxane	ND	0.40	0.18	ug/l	
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CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
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17647-74-4	1,4-Dioxane-d8	111%		51-175%
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ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 3

Client Sample ID:	RW-1213PC-071117	Date Sampled:	07/11/17
Lab Sample ID:	JC46796-12	Date Received:	07/12/17
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Kop-Flex, Hanover, MD		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	1B110681.D	1	07/24/17 14:40	BK	n/a	n/a	V1B5273
Run #2							

Purge Volume	
Run #1	5.0 ml
Run #2	

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND	0.50	0.25	ug/l	
74-97-5	Bromochloromethane	ND	0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform ^b	ND	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND	0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND	0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND	0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	ND	0.50	0.33	ug/l	
74-87-3	Chloromethane	ND	0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND	0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND	0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.0	0.25	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.50	0.29	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND	0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND	0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.094	ug/l	
74-95-3	Dibromomethane	ND	0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	0.28	ug/l	

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: RW-1213PC-071117
Lab Sample ID: JC46796-12
Matrix: AQ - Ground Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, MD

Date Sampled: 07/11/17
Date Received: 07/12/17
Percent Solids: n/a

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND	0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND	0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	0.50	0.080	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
91-20-3	Naphthalene	ND	0.50	0.18	ug/l	
103-65-1	n-Propylbenzene	ND	0.50	0.26	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	106%		70-130%
460-00-4	4-Bromofluorobenzene	96%		70-130%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Page 3 of 3

Client Sample ID:	RW-1213PC-071117	Date Sampled:	07/11/17
Lab Sample ID:	JC46796-12	Date Received:	07/12/17
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Kop-Flex, Hanover, MD		

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
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- (a) EPA 524.2 is not a certified method for non-potable water samples.
(b) This compound in BS is outside in house QC limits bias high.

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Page 1 of 1

Client Sample ID: RW-1213PC-071117
Lab Sample ID: JC46796-12
Matrix: AQ - Ground Water
Method: SW846 8260C BY SIM
Project: Kop-Flex, Hanover, MD

Date Sampled: 07/11/17
Date Received: 07/12/17
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3A156666.D	1	07/13/17 18:34	PR	n/a	n/a	V3A6751
Run #2							

Purge Volume
Run #1 5.0 ml
Run #2

CAS No.	Compound	Result	RL	MDL	Units	Q
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123-91-1	1,4-Dioxane	ND	0.40	0.18	ug/l	
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CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
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17647-74-4	1,4-Dioxane-d8	116%		51-175%
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ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms**Custody Documents and Other Forms**

Includes the following where applicable:

- Chain of Custody



6W
WTB
ACCUTEST

CHAIN OF CUSTODY

SGS Accutest - Dayton
2235 Route 130, Dayton, NJ 08810
TEL 732-329-0200 FAX: 732-329-3480
www.accutest.com

PAGE 1 OF 1

FED-EX Tracking # 725069314158 Requisition Order Control #

SGS Accutest Quide # SGS Accutest Job # JC46796

Client / Reporting Information		Project Information			Requested Analysis (see TEST CODE sheet)						Quality Check				
Company Name WSP	Project Name: Kop - Flex														
Street Address 13530 Dukes Technology Dr	Street														
City State 5, VA 20171	City	State	Billing Information (if different from Report to)												
Project Contact Eric Johnson eric.johnson@wsp.com	E-mail	Project #	Company Name accounts payable@wsp.com			Street Address									
Phone # 703 709 6500	Fax #	Client Purchase Order #	City			State	Zip								
Sampler(s) Name(s) Molly Long Ben Foster	Phone #	Project Manager Eric Johnson	Attention: Eric Johnson												
SGS Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection			Matrix	# of bottles	Number of preserved bottles						LAB USE ONLY	
			Date	Time	Sampled by			NIGHT	NIGHT	HHD3	HSD34	NONE	DI/WHR		
1	trip blank		7/11/17	0930	GW	6	X						X X	V286	
2	RW-1226PL-071117-F			0945		6	X						X Y	V285	
3	RW-1226PC-071117			1020		6	X						X Y		
4	RW-1320LP-071117-F			1030		6	X						X X		
5	RW-1320LP-071117			1200		6	X						X X		
6	RW-9202RMD-071117-F			1210		6	X						X X		
7	RW-9202RMD-071117			0900		6	X						X X		
8	RW-1000RMD-071117			1405		6	X						X X		
9	RW-902RMD-071117-F			1415		6	X						X X		
10	RW-902RMD-071117			1520		6	X						X X		
11	RW-1213PC-071117-F			1530		6	X						X X		
Turnaround Time (Business days)			Data Deliverable Information						Comments / Special Instructions						
<input checked="" type="checkbox"/> Std. 10 Business Days <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 3 Day RUSH <input type="checkbox"/> 2 Day RUSH <input type="checkbox"/> 1 Day RUSH <input type="checkbox"/> other _____			Approved By (SGS Accutest PM): _____ Date: _____ Received By: _____						Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> FULL1 (Level 3+4) <input type="checkbox"/> NJ Reduced <input type="checkbox"/> Commercial "C" <input type="checkbox"/> NYASP Category A <input type="checkbox"/> NYASP Category B <input type="checkbox"/> State Forms <input type="checkbox"/> EDD Format <input type="checkbox"/> Other <input type="checkbox"/> <small>NJ Data of Known Quality Protocol Reporting Commercial "A" = Results Only, Commercial "B" = Results + QC Summary NJ Reduced = Results + QC Summary + Partial Raw data</small>						
Emergency & Rush T/A data available VIA Lablink			Initial Assessment 26/02						Label Verification BB						
Sample inventory is verified upon receipt in the laboratory.															
Relinquished by Sampler: Ben Foster 1			Date Time: 7/11/17 1800 1	Received By: FedEx	Relinquished By: FedEx	Date Time: 7/11/17 2	Received By: DL								
Relinquished by Sampler: 3 3			Date Time:	Received By: 3	Relinquished By: 4	Date Time: 950 4	Received By: 4								
Relinquished by: 5 5			Date Time:	Received By: 5	Custody Seal # 438	<input checked="" type="checkbox"/> Intact <input type="checkbox"/> Not Intact	Preserved where applicable	On Ice <input checked="" type="checkbox"/> 34%	Delivery Temp. 34%						

JC46796: Chain of Custody

Page 1 of 2

SGS Accutest Sample Receipt Summary

Job Number: JC46796 Client: _____ Project: _____
 Date / Time Received: 7/12/2017 9:50:00 AM Delivery Method: _____ Airbill #'s: _____

Cooler Temps (Raw Measured) °C: Cooler 1: (3.4);

Cooler Temps (Corrected) °C: Cooler 1: (4.7);

Cooler Security	<u>Y or N</u>	<u>Y or N</u>	Sample Integrity - Documentation	<u>Y or N</u>		
1. Custody Seals Present:	<input checked="" type="checkbox"/> <input type="checkbox"/>	3. COC Present:	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/>		
2. Custody Seals Intact:	<input checked="" type="checkbox"/> <input type="checkbox"/>	4. Smpl Dates/Time OK	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/>		
Cooler Temperature		<u>Y or N</u>	Sample Integrity - Condition			
1. Temp criteria achieved:	<input checked="" type="checkbox"/> <input type="checkbox"/>		1. Sample rcvd within HT:	<input checked="" type="checkbox"/> <input type="checkbox"/>		
2. Cooler temp verification:	IR Gun		2. All containers accounted for:	<input checked="" type="checkbox"/> <input type="checkbox"/>		
3. Cooler media:	Ice (Bag)		3. Condition of sample:	Intact		
4. No. Coolers:	1					
Quality Control Preservation		<u>Y or N</u>	<u>N/A</u>	Sample Integrity - Instructions	<u>Y or N</u>	<u>N/A</u>
1. Trip Blank present / cooler:	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		1. Analysis requested is clear:	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	
2. Trip Blank listed on COC:	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		2. Bottles received for unspecified tests	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
3. Samples preserved properly:	<input checked="" type="checkbox"/> <input type="checkbox"/>		3. Sufficient volume rcvd for analysis:	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	
4. VOCs headspace free:	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		4. Compositing instructions clear:	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/>	
			5. Filtering instructions clear:	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/>	

Comments

SM089-02
Rev. Date 12/1/16

JC46796: Chain of Custody

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GC/MS Volatiles

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Surrogate Recovery Summaries

Method Blank Summary

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Job Number: JC46796

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5264-MB	1B110482.D	1	07/14/17	BK	n/a	n/a	V1B5264

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC46796-5

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND	0.50	0.25	ug/l	
74-97-5	Bromochloromethane	ND	0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform	ND	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND	0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND	0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND	0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	ND	0.50	0.33	ug/l	
74-87-3	Chloromethane	ND	0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND	0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND	0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.0	0.25	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.50	0.29	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND	0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND	0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.094	ug/l	
74-95-3	Dibromomethane	ND	0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	0.28	ug/l	
95-50-1	o-Dichlorobenzene	ND	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	

Method Blank Summary

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Job Number: JC46796

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5264-MB	1B110482.D	1	07/14/17	BK	n/a	n/a	V1B5264

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC46796-5

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND	0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND	0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	0.50	0.080	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
91-20-3	Naphthalene	ND	0.50	0.18	ug/l	
103-65-1	n-Propylbenzene	ND	0.50	0.26	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	0.50	0.24	ug/l	

CAS No. Surrogate Recoveries

Limits

2199-69-1	1,2-Dichlorobenzene-d4	91%	70-130%
460-00-4	4-Bromofluorobenzene	84%	70-130%

5.1.1
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Job Number: JC46796

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5269-MB	1B110585.D	1	07/21/17	BK	n/a	n/a	V1B5269

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC46796-6, JC46796-7, JC46796-8, JC46796-9, JC46796-10, JC46796-11

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND	0.50	0.25	ug/l	
74-97-5	Bromochloromethane	ND	0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform	ND	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND	0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND	0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND	0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	ND	0.50	0.33	ug/l	
74-87-3	Chloromethane	ND	0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND	0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND	0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.0	0.25	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.50	0.29	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND	0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND	0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.094	ug/l	
74-95-3	Dibromomethane	ND	0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	0.28	ug/l	
95-50-1	o-Dichlorobenzene	ND	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	

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Job Number: JC46796

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5269-MB	1B110585.D	1	07/21/17	BK	n/a	n/a	V1B5269

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC46796-6, JC46796-7, JC46796-8, JC46796-9, JC46796-10, JC46796-11

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND	0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND	0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	0.50	0.080	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
91-20-3	Naphthalene	ND	0.50	0.18	ug/l	
103-65-1	n-Propylbenzene	ND	0.50	0.26	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	0.50	0.24	ug/l	

CAS No. Surrogate Recoveries

Limits

2199-69-1	1,2-Dichlorobenzene-d4	99%	70-130%
460-00-4	4-Bromofluorobenzene	100%	70-130%

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Job Number: JC46796

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5269-MB	1B110585.D	1	07/21/17	BK	n/a	n/a	V1B5269

The QC reported here applies to the following samples:

Method:

JC46796-6, JC46796-7, JC46796-8, JC46796-9, JC46796-10, JC46796-11

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

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Job Number: JC46796

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5273-MB	1B110674.D	1	07/24/17	BK	n/a	n/a	V1B5273

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC46796-1, JC46796-2, JC46796-3, JC46796-4, JC46796-12

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND	0.50	0.25	ug/l	
74-97-5	Bromochloromethane	ND	0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform	ND	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND	0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND	0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND	0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	ND	0.50	0.33	ug/l	
74-87-3	Chloromethane	ND	0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND	0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND	0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.0	0.25	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.50	0.29	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND	0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND	0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.094	ug/l	
74-95-3	Dibromomethane	ND	0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	0.28	ug/l	
95-50-1	o-Dichlorobenzene	ND	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	

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Job Number: JC46796

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5273-MB	1B110674.D	1	07/24/17	BK	n/a	n/a	V1B5273

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC46796-1, JC46796-2, JC46796-3, JC46796-4, JC46796-12

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND	0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND	0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	0.50	0.080	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
91-20-3	Naphthalene	ND	0.50	0.18	ug/l	
103-65-1	n-Propylbenzene	ND	0.50	0.26	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Limits	
2199-69-1	1,2-Dichlorobenzene-d4	104%	70-130%
460-00-4	4-Bromofluorobenzene	96%	70-130%

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Job Number: JC46796

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5273-MB	1B110674.D	1	07/24/17	BK	n/a	n/a	V1B5273

The QC reported here applies to the following samples:

Method:

JC46796-1, JC46796-2, JC46796-3, JC46796-4, JC46796-12

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

Method Blank Summary

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Job Number: JC46796

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3A6751-MB	3A156649.D	1	07/13/17	PR	n/a	n/a	V3A6751

The QC reported here applies to the following samples:

Method: SW846 8260C BY SIM

JC46796-1, JC46796-2, JC46796-3, JC46796-4, JC46796-5, JC46796-6, JC46796-7, JC46796-8, JC46796-9, JC46796-10, JC46796-11, JC46796-12

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	ND	0.40	0.18	ug/l	

CAS No.	Surrogate Recoveries	Limits
17647-74-4	1,4-Dioxane-d8	108% 51-175%

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Blank Spike Summary

Page 1 of 2

Job Number: JC46796

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5264-BS	1B110483.D	1	07/14/17	BK	n/a	n/a	V1B5264

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC46796-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	20	20.4	102	70-130
78-93-3	2-Butanone	20	18.3	92	70-130
71-43-2	Benzene	5	4.8	96	70-130
108-86-1	Bromobenzene	5	4.7	94	70-130
74-97-5	Bromochloromethane	5	5.1	102	70-130
75-27-4	Bromodichloromethane	5	4.8	96	70-130
75-25-2	Bromoform	5	4.8	96	70-130
74-83-9	Bromomethane	2	1.5	75	70-130
104-51-8	n-Butylbenzene	5	4.0	80	70-130
135-98-8	sec-Butylbenzene	5	4.4	88	70-130
98-06-6	tert-Butylbenzene	5	4.0	80	70-130
75-15-0	Carbon disulfide	5	4.8	96	70-130
108-90-7	Chlorobenzene	5	4.7	94	70-130
75-00-3	Chloroethane	2	1.6	80	70-130
67-66-3	Chloroform	5	4.8	96	70-130
74-87-3	Chloromethane	2	1.5	75	70-130
95-49-8	o-Chlorotoluene	5	4.6	92	70-130
106-43-4	p-Chlorotoluene	5	4.7	94	70-130
56-23-5	Carbon tetrachloride	5	4.9	98	70-130
75-34-3	1,1-Dichloroethane	5	4.8	96	70-130
75-35-4	1,1-Dichloroethylene	5	4.5	90	70-130
563-58-6	1,1-Dichloropropene	5	4.5	90	70-130
96-12-8	1,2-Dibromo-3-chloropropane	5	4.6	92	70-130
106-93-4	1,2-Dibromoethane	5	4.5	90	70-130
107-06-2	1,2-Dichloroethane	5	4.9	98	70-130
78-87-5	1,2-Dichloropropane	5	4.8	96	70-130
142-28-9	1,3-Dichloropropane	5	5.0	100	70-130
594-20-7	2,2-Dichloropropane	5	5.0	100	70-130
124-48-1	Dibromochloromethane	5	4.6	92	70-130
74-95-3	Dibromomethane	5	5.0	100	70-130
75-71-8	Dichlorodifluoromethane	2	1.4	70	70-130
541-73-1	m-Dichlorobenzene	5	5.0	100	70-130
95-50-1	o-Dichlorobenzene	5	4.8	96	70-130
106-46-7	p-Dichlorobenzene	5	4.8	96	70-130
156-60-5	trans-1,2-Dichloroethylene	5	4.5	90	70-130
156-59-2	cis-1,2-Dichloroethylene	5	4.6	92	70-130

* = Outside of Control Limits.

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Blank Spike Summary

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Job Number: JC46796

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5264-BS	1B110483.D	1	07/14/17	BK	n/a	n/a	V1B5264

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC46796-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
10061-01-5	cis-1,3-Dichloropropene	5	4.1	82	70-130
10061-02-6	trans-1,3-Dichloropropene	5	4.6	92	70-130
100-41-4	Ethylbenzene	5	4.5	90	70-130
87-68-3	Hexachlorobutadiene	5	4.8	96	70-130
591-78-6	2-Hexanone	20	16.8	84	70-130
98-82-8	Isopropylbenzene	5	3.9	78	70-130
99-87-6	p-Isopropyltoluene	5	4.1	82	70-130
75-09-2	Methylene chloride	5	5.0	100	70-130
1634-04-4	Methyl Tert Butyl Ether	5	4.4	88	70-130
108-10-1	4-Methyl-2-pentanone	20	18.4	92	70-130
91-20-3	Naphthalene	5	3.6	72	70-130
103-65-1	n-Propylbenzene	5	4.5	90	70-130
100-42-5	Styrene	5	4.4	88	70-130
630-20-6	1,1,1,2-Tetrachloroethane	5	4.9	98	70-130
71-55-6	1,1,1-Trichloroethane	5	4.8	96	70-130
79-34-5	1,1,2,2-Tetrachloroethane	5	4.9	98	70-130
79-00-5	1,1,2-Trichloroethane	5	4.8	96	70-130
87-61-6	1,2,3-Trichlorobenzene	5	4.5	90	70-130
96-18-4	1,2,3-Trichloropropane	5	5.2	104	70-130
120-82-1	1,2,4-Trichlorobenzene	5	4.2	84	70-130
95-63-6	1,2,4-Trimethylbenzene	5	4.4	88	70-130
108-67-8	1,3,5-Trimethylbenzene	5	4.4	88	70-130
127-18-4	Tetrachloroethylene	5	4.7	94	70-130
108-88-3	Toluene	5	4.4	88	70-130
79-01-6	Trichloroethylene	5	4.6	92	70-130
75-69-4	Trichlorofluoromethane	2	1.6	80	70-130
75-01-4	Vinyl chloride	2	1.4	70	70-130
	m,p-Xylene	10	9.3	93	70-130
95-47-6	o-Xylene	5	4.3	86	70-130
1330-20-7	Xylenes (total)	15	13.6	91	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
2199-69-1	1,2-Dichlorobenzene-d4	102%	70-130%
460-00-4	4-Bromofluorobenzene	91%	70-130%

* = Outside of Control Limits.

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Blank Spike Summary

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Job Number: JC46796

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5269-BS	1B110586.D	1	07/21/17	BK	n/a	n/a	V1B5269

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC46796-6, JC46796-7, JC46796-8, JC46796-9, JC46796-10, JC46796-11

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	20	18.5	93	70-130
78-93-3	2-Butanone	20	19.5	98	70-130
71-43-2	Benzene	5	4.8	96	70-130
108-86-1	Bromobenzene	5	5.0	100	70-130
74-97-5	Bromochloromethane	5	4.8	96	70-130
75-27-4	Bromodichloromethane	5	5.0	100	70-130
75-25-2	Bromoform	5	5.2	104	70-130
74-83-9	Bromomethane	2	2.1	105	70-130
104-51-8	n-Butylbenzene	5	4.9	98	70-130
135-98-8	sec-Butylbenzene	5	4.8	96	70-130
98-06-6	tert-Butylbenzene	5	4.9	98	70-130
75-15-0	Carbon disulfide	5	4.7	94	70-130
108-90-7	Chlorobenzene	5	4.9	98	70-130
75-00-3	Chloroethane	2	2.0	100	70-130
67-66-3	Chloroform	5	4.8	96	70-130
74-87-3	Chloromethane	2	2.1	105	70-130
95-49-8	o-Chlorotoluene	5	4.9	98	70-130
106-43-4	p-Chlorotoluene	5	4.9	98	70-130
56-23-5	Carbon tetrachloride	5	5.0	100	70-130
75-34-3	1,1-Dichloroethane	5	4.8	96	70-130
75-35-4	1,1-Dichloroethylene	5	4.8	96	70-130
563-58-6	1,1-Dichloropropene	5	4.8	96	70-130
96-12-8	1,2-Dibromo-3-chloropropane	5	4.8	96	70-130
106-93-4	1,2-Dibromoethane	5	5.0	100	70-130
107-06-2	1,2-Dichloroethane	5	4.8	96	70-130
78-87-5	1,2-Dichloropropane	5	4.9	98	70-130
142-28-9	1,3-Dichloropropane	5	4.9	98	70-130
594-20-7	2,2-Dichloropropane	5	5.1	102	70-130
124-48-1	Dibromochloromethane	5	5.1	102	70-130
74-95-3	Dibromomethane	5	5.0	100	70-130
75-71-8	Dichlorodifluoromethane	2	2.1	105	70-130
541-73-1	m-Dichlorobenzene	5	5.0	100	70-130
95-50-1	o-Dichlorobenzene	5	4.9	98	70-130
106-46-7	p-Dichlorobenzene	5	5.0	100	70-130
156-60-5	trans-1,2-Dichloroethylene	5	4.6	92	70-130
156-59-2	cis-1,2-Dichloroethylene	5	4.6	92	70-130

* = Outside of Control Limits.

Blank Spike Summary

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Job Number: JC46796

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5269-BS	1B110586.D	1	07/21/17	BK	n/a	n/a	V1B5269

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC46796-6, JC46796-7, JC46796-8, JC46796-9, JC46796-10, JC46796-11

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
10061-01-5	cis-1,3-Dichloropropene	5	4.9	98	70-130
10061-02-6	trans-1,3-Dichloropropene	5	4.9	98	70-130
100-41-4	Ethylbenzene	5	4.8	96	70-130
87-68-3	Hexachlorobutadiene	5	5.0	100	70-130
591-78-6	2-Hexanone	20	19.2	96	70-130
98-82-8	Isopropylbenzene	5	4.9	98	70-130
99-87-6	p-Isopropyltoluene	5	4.9	98	70-130
75-09-2	Methylene chloride	5	4.8	96	70-130
1634-04-4	Methyl Tert Butyl Ether	5	4.8	96	70-130
108-10-1	4-Methyl-2-pentanone	20	19.4	97	70-130
91-20-3	Naphthalene	5	4.8	96	70-130
103-65-1	n-Propylbenzene	5	4.8	96	70-130
100-42-5	Styrene	5	4.9	98	70-130
630-20-6	1,1,1,2-Tetrachloroethane	5	5.0	100	70-130
71-55-6	1,1,1-Trichloroethane	5	4.7	94	70-130
79-34-5	1,1,2,2-Tetrachloroethane	5	4.9	98	70-130
79-00-5	1,1,2-Trichloroethane	5	4.8	96	70-130
87-61-6	1,2,3-Trichlorobenzene	5	4.9	98	70-130
96-18-4	1,2,3-Trichloropropane	5	5.1	102	70-130
120-82-1	1,2,4-Trichlorobenzene	5	5.0	100	70-130
95-63-6	1,2,4-Trimethylbenzene	5	4.9	98	70-130
108-67-8	1,3,5-Trimethylbenzene	5	4.9	98	70-130
127-18-4	Tetrachloroethylene	5	4.8	96	70-130
108-88-3	Toluene	5	4.8	96	70-130
79-01-6	Trichloroethylene	5	4.9	98	70-130
75-69-4	Trichlorofluoromethane	2	2.0	100	70-130
75-01-4	Vinyl chloride	2	2.1	105	70-130
	m,p-Xylene	10	10	100	70-130
95-47-6	o-Xylene	5	4.9	98	70-130
1330-20-7	Xylenes (total)	15	14.9	99	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
2199-69-1	1,2-Dichlorobenzene-d4	102%	70-130%
460-00-4	4-Bromofluorobenzene	100%	70-130%

* = Outside of Control Limits.

Blank Spike Summary

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Job Number: JC46796

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3A6751-BS	3A156650.D	1	07/13/17	PR	n/a	n/a	V3A6751

The QC reported here applies to the following samples:

Method: SW846 8260C BY SIM

JC46796-1, JC46796-2, JC46796-3, JC46796-4, JC46796-5, JC46796-6, JC46796-7, JC46796-8, JC46796-9, JC46796-10, JC46796-11, JC46796-12

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
123-91-1	1,4-Dioxane	20	20.1	101	58-138

CAS No.	Surrogate Recoveries	BSP	Limits
17647-74-4	1,4-Dioxane-d8	104%	51-175%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

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Job Number: JC46796

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5273-BS	1B110675.D	1	07/24/17	BK	n/a	n/a	V1B5273
V1B5273-BSD	1B110684.D	1	07/24/17	BK	n/a	n/a	V1B5273

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC46796-1, JC46796-2, JC46796-3, JC46796-4, JC46796-12

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	20	19.9	100	17.8	89	11	70-130/30
78-93-3	2-Butanone	20	20.2	101	17.6	88	14	70-130/30
71-43-2	Benzene	5	5.0	100	4.6	92	8	70-130/30
108-86-1	Bromobenzene	5	5.4	108	4.9	98	10	70-130/30
74-97-5	Bromochloromethane	5	5.1	102	4.7	94	8	70-130/30
75-27-4	Bromodichloromethane	5	5.7	114	5.1	102	11	70-130/30
75-25-2	Bromoform	5	7.0	140* ^a	6.0	120	15	70-130/30
74-83-9	Bromomethane	2	2.1	105	1.9	95	10	70-130/30
104-51-8	n-Butylbenzene	5	4.8	96	4.1	82	16	70-130/30
135-98-8	sec-Butylbenzene	5	4.9	98	4.3	86	13	70-130/30
98-06-6	tert-Butylbenzene	5	4.9	98	4.2	84	15	70-130/30
75-15-0	Carbon disulfide	5	5.0	100	4.6	92	8	70-130/30
108-90-7	Chlorobenzene	5	5.2	104	4.7	94	10	70-130/30
75-00-3	Chloroethane	2	1.9	95	1.8	90	5	70-130/30
67-66-3	Chloroform	5	5.2	104	4.8	96	8	70-130/30
74-87-3	Chloromethane	2	1.9	95	1.7	85	11	70-130/30
95-49-8	o-Chlorotoluene	5	5.2	104	4.6	92	12	70-130/30
106-43-4	p-Chlorotoluene	5	5.0	100	4.5	90	11	70-130/30
56-23-5	Carbon tetrachloride	5	6.2	124	5.6	112	10	70-130/30
75-34-3	1,1-Dichloroethane	5	4.9	98	4.6	92	6	70-130/30
75-35-4	1,1-Dichloroethylene	5	4.9	98	4.6	92	6	70-130/30
563-58-6	1,1-Dichloropropene	5	4.8	96	4.3	86	11	70-130/30
96-12-8	1,2-Dibromo-3-chloropropane	5	5.8	116	5.1	102	13	70-130/30
106-93-4	1,2-Dibromoethane	5	5.2	104	4.7	94	10	70-130/30
107-06-2	1,2-Dichloroethane	5	5.3	106	4.9	98	8	70-130/30
78-87-5	1,2-Dichloropropane	5	5.0	100	4.5	90	11	70-130/30
142-28-9	1,3-Dichloropropane	5	5.2	104	4.7	94	10	70-130/30
594-20-7	2,2-Dichloropropane	5	5.6	112	4.8	96	15	70-130/30
124-48-1	Dibromochloromethane	5	6.3	126	5.5	110	14	70-130/30
74-95-3	Dibromomethane	5	5.3	106	4.8	96	10	70-130/30
75-71-8	Dichlorodifluoromethane	2	1.7	85	1.6	80	6	70-130/30
541-73-1	m-Dichlorobenzene	5	5.5	110	5.0	100	10	70-130/30
95-50-1	o-Dichlorobenzene	5	5.5	110	5.0	100	10	70-130/30
106-46-7	p-Dichlorobenzene	5	5.3	106	4.9	98	8	70-130/30
156-60-5	trans-1,2-Dichloroethylene	5	4.8	96	4.3	86	11	70-130/30
156-59-2	cis-1,2-Dichloroethylene	5	4.8	96	4.4	88	9	70-130/30

* = Outside of Control Limits.

5.3.1
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Blank Spike/Blank Spike Duplicate Summary

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Job Number: JC46796

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5273-BS	1B110675.D	1	07/24/17	BK	n/a	n/a	V1B5273
V1B5273-BSD	1B110684.D	1	07/24/17	BK	n/a	n/a	V1B5273

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC46796-1, JC46796-2, JC46796-3, JC46796-4, JC46796-12

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	5	5.0	100	4.2	84	17	70-130/30
10061-02-6	trans-1,3-Dichloropropene	5	5.3	106	4.6	92	14	70-130/30
100-41-4	Ethylbenzene	5	4.9	98	4.4	88	11	70-130/30
87-68-3	Hexachlorobutadiene	5	5.6	112	5.0	100	11	70-130/30
591-78-6	2-Hexanone	20	18.3	92	16.3	82	12	70-130/30
98-82-8	Isopropylbenzene	5	4.8	96	4.2	84	13	70-130/30
99-87-6	p-Isopropyltoluene	5	4.9	98	4.3	86	13	70-130/30
75-09-2	Methylene chloride	5	5.0	100	4.7	94	6	70-130/30
1634-04-4	Methyl Tert Butyl Ether	5	4.8	96	4.2	84	13	70-130/30
108-10-1	4-Methyl-2-pentanone	20	19.2	96	17.2	86	11	70-130/30
91-20-3	Naphthalene	5	5.0	100	4.5	90	11	70-130/30
103-65-1	n-Propylbenzene	5	4.9	98	4.4	88	11	70-130/30
100-42-5	Styrene	5	4.9	98	4.3	86	13	70-130/30
630-20-6	1,1,1,2-Tetrachloroethane	5	5.9	118	5.4	108	9	70-130/30
71-55-6	1,1,1-Trichloroethane	5	5.2	104	4.8	96	8	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	5	5.3	106	4.9	98	8	70-130/30
79-00-5	1,1,2-Trichloroethane	5	5.2	104	4.7	94	10	70-130/30
87-61-6	1,2,3-Trichlorobenzene	5	5.3	106	4.9	98	8	70-130/30
96-18-4	1,2,3-Trichloropropane	5	5.5	110	5.1	102	8	70-130/30
120-82-1	1,2,4-Trichlorobenzene	5	5.3	106	4.8	96	10	70-130/30
95-63-6	1,2,4-Trimethylbenzene	5	5.0	100	4.5	90	11	70-130/30
108-67-8	1,3,5-Trimethylbenzene	5	5.0	100	4.4	88	13	70-130/30
127-18-4	Tetrachloroethylene	5	5.1	102	4.6	92	10	70-130/30
108-88-3	Toluene	5	4.8	96	4.4	88	9	70-130/30
79-01-6	Trichloroethylene	5	5.1	102	4.7	94	8	70-130/30
75-69-4	Trichlorofluoromethane	2	2.1	105	1.9	95	10	70-130/30
75-01-4	Vinyl chloride	2	1.8	90	1.7	85	6	70-130/30
	m,p-Xylene	10	10.2	102	9.0	90	13	70-130/30
95-47-6	o-Xylene	5	4.8	96	4.4	88	9	70-130/30
1330-20-7	Xylenes (total)	15	15.0	100	13.4	89	11	70-130/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
2199-69-1	1,2-Dichlorobenzene-d4	107%	108%	70-130%
460-00-4	4-Bromofluorobenzene	98%	99%	70-130%

* = Outside of Control Limits.

5.3.1
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Blank Spike/Blank Spike Duplicate Summary

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Job Number: JC46796

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5273-BS	1B110675.D	1	07/24/17	BK	n/a	n/a	V1B5273
V1B5273-BSD	1B110684.D	1	07/24/17	BK	n/a	n/a	V1B5273

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC46796-1, JC46796-2, JC46796-3, JC46796-4, JC46796-12

(a) High percent recoveries and no associated positive reported in the QC batch.

* = Outside of Control Limits.

Matrix Spike Summary

Page 1 of 3

Job Number: JC46796

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC47117-1MS	1B110685.D	1	07/24/17	BK	n/a	n/a	V1B5273
JC47117-1 ^a	1B110682.D	1	07/24/17	BK	n/a	n/a	V1B5273

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC46796-1, JC46796-2, JC46796-3, JC46796-4, JC46796-12

CAS No.	Compound	JC47117-1 ug/l	Spike Q	MS ug/l	MS %	Limits
67-64-1	Acetone	ND	20	19.2	96	41-142
78-93-3	2-Butanone	ND	20	20.4	102	55-129
71-43-2	Benzene	ND	5	5.2	104	53-138
108-86-1	Bromobenzene	ND	5	5.8	116	54-138
74-97-5	Bromochloromethane	ND	5	5.2	104	55-140
75-27-4	Bromodichloromethane	ND	5	6.0	120	57-147
75-25-2	Bromoform	ND	5	7.3	146* ^b	47-137
74-83-9	Bromomethane	ND	2	2.1	105	40-162
104-51-8	n-Butylbenzene	ND	5	5.2	104	45-144
135-98-8	sec-Butylbenzene	ND	5	5.2	104	46-145
98-06-6	tert-Butylbenzene	ND	5	5.1	102	48-141
75-15-0	Carbon disulfide	ND	5	5.4	108	35-127
108-90-7	Chlorobenzene	ND	5	5.5	110	54-135
75-00-3	Chloroethane	ND	2	2.0	100	38-153
67-66-3	Chloroform	ND	5	5.5	110	57-151
74-87-3	Chloromethane	ND	2	1.9	95	39-165
95-49-8	o-Chlorotoluene	ND	5	5.4	108	55-142
106-43-4	p-Chlorotoluene	ND	5	5.3	106	55-139
56-23-5	Carbon tetrachloride	ND	5	6.5	130	49-170
75-34-3	1,1-Dichloroethane	ND	5	5.2	104	55-149
75-35-4	1,1-Dichloroethylene	ND	5	5.4	108	42-142
563-58-6	1,1-Dichloropropene	ND	5	5.1	102	46-151
96-12-8	1,2-Dibromo-3-chloropropane	ND	5	6.1	122	48-141
106-93-4	1,2-Dibromoethane	ND	5	5.5	110	57-135
107-06-2	1,2-Dichloroethane	ND	5	5.4	108	59-166
78-87-5	1,2-Dichloropropane	ND	5	5.1	102	53-142
142-28-9	1,3-Dichloropropane	ND	5	5.4	108	58-143
594-20-7	2,2-Dichloropropane	ND	5	5.9	118	38-165
124-48-1	Dibromochloromethane	ND	5	6.6	132	55-138
74-95-3	Dibromomethane	ND	5	5.5	110	61-144
75-71-8	Dichlorodifluoromethane	ND	2	1.9	95	23-172
541-73-1	m-Dichlorobenzene	ND	5	5.8	116	53-138
95-50-1	o-Dichlorobenzene	ND	5	5.7	114	54-140
106-46-7	p-Dichlorobenzene	ND	5	5.7	114	53-137
156-60-5	trans-1,2-Dichloroethylene	ND	5	5.1	102	47-148
156-59-2	cis-1,2-Dichloroethylene	ND	5	5.0	100	51-146

* = Outside of Control Limits.

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Matrix Spike Summary

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Job Number: JC46796

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC47117-1MS	1B110685.D	1	07/24/17	BK	n/a	n/a	V1B5273
JC47117-1 ^a	1B110682.D	1	07/24/17	BK	n/a	n/a	V1B5273

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC46796-1, JC46796-2, JC46796-3, JC46796-4, JC46796-12

CAS No.	Compound	JC47117-1 ug/l	Spike Q	MS ug/l	MS %	Limits
10061-01-5	cis-1,3-Dichloropropene	ND	5	5.0	100	51-136
10061-02-6	trans-1,3-Dichloropropene	ND	5	5.4	108	54-142
100-41-4	Ethylbenzene	ND	5	5.1	102	51-138
87-68-3	Hexachlorobutadiene	ND	5	6.1	122	40-154
591-78-6	2-Hexanone	ND	20	20.0	100	53-128
98-82-8	Isopropylbenzene	ND	5	5.0	100	49-139
99-87-6	p-Isopropyltoluene	ND	5	5.2	104	45-141
75-09-2	Methylene chloride	ND	5	5.2	104	54-137
1634-04-4	Methyl Tert Butyl Ether	ND	5	4.9	98	53-143
108-10-1	4-Methyl-2-pentanone	ND	20	20.8	104	58-127
91-20-3	Naphthalene	ND	5	5.2	104	44-140
103-65-1	n-Propylbenzene	ND	5	5.3	106	50-142
100-42-5	Styrene	ND	5	5.2	104	23-130
630-20-6	1,1,1,2-Tetrachloroethane	ND	5	6.3	126	57-144
71-55-6	1,1,1-Trichloroethane	ND	5	5.5	110	52-164
79-34-5	1,1,2,2-Tetrachloroethane	ND	5	5.9	118	58-138
79-00-5	1,1,2-Trichloroethane	ND	5	5.6	112	59-139
87-61-6	1,2,3-Trichlorobenzene	ND	5	5.6	112	47-141
96-18-4	1,2,3-Trichloropropane	ND	5	6.2	124	56-148
120-82-1	1,2,4-Trichlorobenzene	ND	5	5.6	112	46-137
95-63-6	1,2,4-Trimethylbenzene	ND	5	5.3	106	41-138
108-67-8	1,3,5-Trimethylbenzene	ND	5	5.3	106	45-138
127-18-4	Tetrachloroethylene	ND	5	5.4	108	45-145
108-88-3	Toluene	ND	5	5.0	100	52-134
79-01-6	Trichloroethylene	ND	5	5.3	106	54-143
75-69-4	Trichlorofluoromethane	ND	2	2.2	110	36-167
75-01-4	Vinyl chloride	ND	2	2.0	100	35-162
	m,p-Xylene	ND	10	10.6	106	49-135
95-47-6	o-Xylene	ND	5	5.1	102	49-134
1330-20-7	Xylenes (total)	ND	15	15.8	105	50-134

CAS No.	Surrogate Recoveries	MS	JC47117-1	Limits
2199-69-1	1,2-Dichlorobenzene-d4	108%	104%	70-130%
460-00-4	4-Bromofluorobenzene	99%	95%	70-130%

* = Outside of Control Limits.

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Matrix Spike Summary

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Job Number: JC46796

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC47117-1MS	1B110685.D	1	07/24/17	BK	n/a	n/a	V1B5273
JC47117-1 ^a	1B110682.D	1	07/24/17	BK	n/a	n/a	V1B5273

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC46796-1, JC46796-2, JC46796-3, JC46796-4, JC46796-12

(a) EPA 524.2 is not a certified method for non-potable water samples.

(b) Outside in house control limits.

* = Outside of Control Limits.

Matrix Spike Summary

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Job Number: JC46796

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC46796-2MS	3A156657.D	1	07/13/17	PR	n/a	n/a	V3A6751
JC46796-2	3A156653.D	1	07/13/17	PR	n/a	n/a	V3A6751

The QC reported here applies to the following samples:

Method: SW846 8260C BY SIM

JC46796-1, JC46796-2, JC46796-3, JC46796-4, JC46796-5, JC46796-6, JC46796-7, JC46796-8, JC46796-9, JC46796-10, JC46796-11, JC46796-12

CAS No.	Compound	JC46796-2		Spike	MS	MS	Limits
		ug/l	Q	ug/l	ug/l	%	
123-91-1	1,4-Dioxane	ND		20	20.8	104	36-166

CAS No.	Surrogate Recoveries	MS	JC46796-2	Limits
17647-74-4	1,4-Dioxane-d8	112%	123%	51-175%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

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Job Number: JC46796

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC46860-2MS	1B110488.D	1	07/14/17	BK	n/a	n/a	V1B5264
JC46860-2MSD	1B110489.D	1	07/14/17	BK	n/a	n/a	V1B5264
JC46860-2	1B110486.D	1	07/14/17	BK	n/a	n/a	V1B5264

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC46796-5

CAS No.	Compound	JC46860-2		Spike	MS	MS	Spike	MSD	MSD	RPD	Limits Rec/RPD
		ug/l	Q	ug/l	ug/l	%	ug/l	ug/l	%		
67-64-1	Acetone	ND		20	17.4	87	20	18.5	93	6	41-142/24
78-93-3	2-Butanone	ND		20	14.7	74	20	16.3	82	10	55-129/31
71-43-2	Benzene	ND		5	4.2	84	5	4.5	90	7	53-138/16
108-86-1	Bromobenzene	ND		5	3.9	78	5	4.3	86	10	54-138/17
74-97-5	Bromochloromethane	ND		5	4.3	86	5	4.5	90	5	55-140/13
75-27-4	Bromodichloromethane	ND		5	4.1	82	5	4.4	88	7	57-147/11
75-25-2	Bromoform	ND		5	3.9	78	5	4.3	86	10	47-137/13
74-83-9	Bromomethane	ND		2	1.7	85	2	1.6	80	6	40-162/27
104-51-8	n-Butylbenzene	ND		5	3.3	66	5	3.7	74	11	45-144/19
135-98-8	sec-Butylbenzene	ND		5	3.6	72	5	3.9	78	8	46-145/20
98-06-6	tert-Butylbenzene	ND		5	3.3	66	5	3.6	72	9	48-141/17
75-15-0	Carbon disulfide	ND		5	4.4	88	5	4.6	92	4	35-127/32
108-90-7	Chlorobenzene	ND		5	4.0	80	5	4.3	86	7	54-135/15
75-00-3	Chloroethane	ND		2	1.8	90	2	1.8	90	0	38-153/43
67-66-3	Chloroform	ND		5	4.2	84	5	4.4	88	5	57-151/13
74-87-3	Chloromethane	ND		2	1.7	85	2	1.7	85	0	39-165/35
95-49-8	o-Chlorotoluene	ND		5	3.8	76	5	4.2	84	10	55-142/15
106-43-4	p-Chlorotoluene	ND		5	3.9	78	5	4.2	84	7	55-139/20
56-23-5	Carbon tetrachloride	ND		5	4.4	88	5	4.7	94	7	49-170/24
75-34-3	1,1-Dichloroethane	ND		5	4.2	84	5	4.5	90	7	55-149/13
75-35-4	1,1-Dichloroethylene	ND		5	4.4	88	5	4.5	90	2	42-142/20
563-58-6	1,1-Dichloropropene	ND		5	3.9	78	5	4.2	84	7	46-151/21
96-12-8	1,2-Dibromo-3-chloropropane	ND		5	4.0	80	5	4.4	88	10	48-141/27
106-93-4	1,2-Dibromoethane	ND		5	3.7	74	5	4.1	82	10	57-135/10
107-06-2	1,2-Dichloroethane	ND		5	4.2	84	5	4.4	88	5	59-166/15
78-87-5	1,2-Dichloropropane	ND		5	4.1	82	5	4.4	88	7	53-142/11
142-28-9	1,3-Dichloropropane	ND		5	4.2	84	5	4.5	90	7	58-143/13
594-20-7	2,2-Dichloropropane	ND		5	4.4	88	5	4.7	94	7	38-165/19
124-48-1	Dibromochloromethane	ND		5	4.0	80	5	4.2	84	5	55-138/15
74-95-3	Dibromomethane	ND		5	4.3	86	5	4.5	90	5	61-144/10
75-71-8	Dichlorodifluoromethane	ND		2	1.6	80	2	1.6	80	0	23-172/30
541-73-1	m-Dichlorobenzene	ND		5	4.2	84	5	4.6	92	9	53-138/17
95-50-1	o-Dichlorobenzene	ND		5	4.1	82	5	4.4	88	7	54-140/11
106-46-7	p-Dichlorobenzene	ND		5	4.0	80	5	4.3	86	7	53-137/14
156-60-5	trans-1,2-Dichloroethylene	ND		5	4.3	86	5	4.4	88	2	47-148/22
156-59-2	cis-1,2-Dichloroethylene	0.34	J	5	4.1	75	5	4.5	83	9	51-146/14

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Page 2 of 3

Job Number: JC46796

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC46860-2MS	1B110488.D	1	07/14/17	BK	n/a	n/a	V1B5264
JC46860-2MSD	1B110489.D	1	07/14/17	BK	n/a	n/a	V1B5264
JC46860-2	1B110486.D	1	07/14/17	BK	n/a	n/a	V1B5264

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC46796-5

CAS No.	Compound	JC46860-2		Spike	MS	MS	Spike	MSD	MSD	RPD	Limits Rec/RPD
		ug/l	Q	ug/l	ug/l	%	ug/l	ug/l	%		
10061-01-5	cis-1,3-Dichloropropene	ND	5	3.3	66	5	3.7	74	11	51-136/11	
10061-02-6	trans-1,3-Dichloropropene	ND	5	3.7	74	5	4.2	84	13* a	54-142/10	
100-41-4	Ethylbenzene	ND	5	3.7	74	5	4.0	80	8	51-138/18	
87-68-3	Hexachlorobutadiene	ND	5	4.1	82	5	4.6	92	11	40-154/21	
591-78-6	2-Hexanone	ND	20	13.5	68	20	15.2	76	12	53-128/29	
98-82-8	Isopropylbenzene	ND	5	3.2	64	5	3.5	70	9	49-139/16	
99-87-6	p-Isopropyltoluene	ND	5	3.4	68	5	3.7	74	8	45-141/17	
75-09-2	Methylene chloride	ND	5	4.3	86	5	4.4	88	2	54-137/14	
1634-04-4	Methyl Tert Butyl Ether	ND	5	3.6	72	5	3.5	70	3	53-143/10	
108-10-1	4-Methyl-2-pentanone	ND	20	14.9	75	20	16.4	82	10	58-127/32	
91-20-3	Naphthalene	ND	5	2.9	58	5	3.3	66	13	44-140/14	
103-65-1	n-Propylbenzene	ND	5	3.7	74	5	4.1	82	10	50-142/20	
100-42-5	Styrene	ND	5	3.5	70	5	3.9	78	11	23-130/20	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5	4.1	82	5	4.3	86	5	57-144/11	
71-55-6	1,1,1-Trichloroethane	ND	5	4.3	86	5	4.6	92	7	52-164/13	
79-34-5	1,1,2,2-Tetrachloroethane	ND	5	4.2	84	5	4.5	90	7	58-138/10	
79-00-5	1,1,2-Trichloroethane	ND	5	4.0	80	5	4.3	86	7	59-139/11	
87-61-6	1,2,3-Trichlorobenzene	ND	5	3.6	72	5	4.1	82	13	47-141/17	
96-18-4	1,2,3-Trichloropropane	ND	5	4.2	84	5	4.5	90	7	56-148/15	
120-82-1	1,2,4-Trichlorobenzene	ND	5	3.3	66	5	3.8	76	14	46-137/17	
95-63-6	1,2,4-Trimethylbenzene	ND	5	3.5	70	5	3.9	78	11	41-138/16	
108-67-8	1,3,5-Trimethylbenzene	ND	5	3.6	72	5	3.9	78	8	45-138/16	
127-18-4	Tetrachloroethylene	ND	5	4.2	84	5	4.5	90	7	45-145/19	
108-88-3	Toluene	ND	5	3.7	74	5	4.0	80	8	52-134/19	
79-01-6	Trichloroethylene	ND	5	4.0	80	5	4.3	86	7	54-143/15	
75-69-4	Trichlorofluoromethane	ND	2	1.7	85	2	1.7	85	0	36-167/28	
75-01-4	Vinyl chloride	ND	2	1.7	85	2	1.7	85	0	35-162/30	
	m,p-Xylene	ND	10	7.6	76	10	8.4	84	10	49-135/18	
95-47-6	o-Xylene	ND	5	3.4	68	5	3.7	74	8	49-134/19	
1330-20-7	Xylenes (total)	ND	15	11.0	73	15	12.1	81	10	50-134/18	

CAS No.	Surrogate Recoveries	MS	MSD	JC46860-2	Limits
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2199-69-1	1,2-Dichlorobenzene-d4	101%	99%	93%	70-130%
460-00-4	4-Bromofluorobenzene	90%	92%	87%	70-130%

* = Outside of Control Limits.

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Matrix Spike/Matrix Spike Duplicate Summary

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Job Number: JC46796

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC46860-2MS	1B110488.D	1	07/14/17	BK	n/a	n/a	V1B5264
JC46860-2MSD	1B110489.D	1	07/14/17	BK	n/a	n/a	V1B5264
JC46860-2	1B110486.D	1	07/14/17	BK	n/a	n/a	V1B5264

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC46796-5

(a) Analytical precision exceeds in-house control limits.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

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Job Number: JC46796

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC46810-2MS	1B110592.D	1	07/21/17	BK	n/a	n/a	V1B5269
JC46810-2MSD	1B110597.D	1	07/21/17	BK	n/a	n/a	V1B5269
JC46810-2	1B110588.D	1	07/21/17	BK	n/a	n/a	V1B5269

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC46796-6, JC46796-7, JC46796-8, JC46796-9, JC46796-10, JC46796-11

CAS No.	Compound	JC46810-2		Spike	MS	MS	Spike	MSD	MSD	RPD	Limits Rec/RPD
		ug/l	Q	ug/l	ug/l	%	ug/l	ug/l	%		
67-64-1	Acetone	ND		20	16.0	80	20	18.7	94	16	41-142/24
78-93-3	2-Butanone	ND		20	17.0	85	20	21.8	109	25	55-129/31
71-43-2	Benzene	ND		5	3.9	78	5	4.2	84	7	53-138/16
108-86-1	Bromobenzene	ND		5	4.3	86	5	4.7	94	9	54-138/17
74-97-5	Bromochloromethane	ND		5	3.8	76	5	4.1	82	8	55-140/13
75-27-4	Bromodichloromethane	ND		5	4.2	84	5	4.5	90	7	57-147/11
75-25-2	Bromoform	ND		5	4.5	90	5	5.6	112	22* a	47-137/13
74-83-9	Bromomethane	ND		2	1.7	85	2	1.7	85	0	40-162/27
104-51-8	n-Butylbenzene	ND		5	4.1	82	5	4.5	90	9	45-144/19
135-98-8	sec-Butylbenzene	ND		5	4.2	84	5	4.5	90	7	46-145/20
98-06-6	tert-Butylbenzene	ND		5	4.1	82	5	4.5	90	9	48-141/17
75-15-0	Carbon disulfide	ND		5	4.1	82	5	4.2	84	2	35-127/32
108-90-7	Chlorobenzene	ND		5	4.2	84	5	4.5	90	7	54-135/15
75-00-3	Chloroethane	ND		2	1.7	85	2	1.7	85	0	38-153/43
67-66-3	Chloroform	ND		5	4.0	80	5	4.3	86	7	57-151/13
74-87-3	Chloromethane	ND		2	1.7	85	2	1.7	85	0	39-165/35
95-49-8	o-Chlorotoluene	ND		5	4.2	84	5	4.6	92	9	55-142/15
106-43-4	p-Chlorotoluene	ND		5	4.1	82	5	4.5	90	9	55-139/20
56-23-5	Carbon tetrachloride	ND		5	4.4	88	5	4.6	92	4	49-170/24
75-34-3	1,1-Dichloroethane	0.32	J	5	4.3	80	5	4.6	86	7	55-149/13
75-35-4	1,1-Dichloroethylene	ND		5	4.3	86	5	4.4	88	2	42-142/20
563-58-6	1,1-Dichloropropene	ND		5	4.1	82	5	4.2	84	2	46-151/21
96-12-8	1,2-Dibromo-3-chloropropane	ND		5	4.5	90	5	6.4	128	35* a	48-141/27
106-93-4	1,2-Dibromoethane	ND		5	4.2	84	5	4.7	94	11* b	57-135/10
107-06-2	1,2-Dichloroethane	ND		5	4.0	80	5	4.4	88	10	59-166/15
78-87-5	1,2-Dichloropropane	ND		5	4.0	80	5	4.3	86	7	53-142/11
142-28-9	1,3-Dichloropropane	ND		5	4.2	84	5	4.7	94	11	58-143/13
594-20-7	2,2-Dichloropropane	ND		5	4.3	86	5	4.5	90	5	38-165/19
124-48-1	Dibromochloromethane	ND		5	4.3	86	5	4.9	98	13	55-138/15
74-95-3	Dibromomethane	ND		5	4.1	82	5	4.6	92	11* b	61-144/10
75-71-8	Dichlorodifluoromethane	ND		2	1.7	85	2	1.7	85	0	23-172/30
541-73-1	m-Dichlorobenzene	ND		5	4.2	84	5	4.7	94	11	53-138/17
95-50-1	o-Dichlorobenzene	ND		5	4.2	84	5	4.9	98	15* b	54-140/11
106-46-7	p-Dichlorobenzene	ND		5	4.2	84	5	4.8	96	13	53-137/14
156-60-5	trans-1,2-Dichloroethylene	ND		5	4.0	80	5	4.1	82	2	47-148/22
156-59-2	cis-1,2-Dichloroethylene	ND		5	3.9	78	5	4.1	82	5	51-146/14

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Page 2 of 3

Job Number: JC46796

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC46810-2MS	1B110592.D	1	07/21/17	BK	n/a	n/a	V1B5269
JC46810-2MSD	1B110597.D	1	07/21/17	BK	n/a	n/a	V1B5269
JC46810-2	1B110588.D	1	07/21/17	BK	n/a	n/a	V1B5269

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC46796-6, JC46796-7, JC46796-8, JC46796-9, JC46796-10, JC46796-11

CAS No.	Compound	JC46810-2		Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits
		ug/l	Q								Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	ND	5	4.0	80	5	4.4	88	10	51-136/11	
10061-02-6	trans-1,3-Dichloropropene	ND	5	4.2	84	5	4.6	92	9	54-142/10	
100-41-4	Ethylbenzene	ND	5	4.1	82	5	4.3	86	5	51-138/18	
87-68-3	Hexachlorobutadiene	ND	5	4.3	86	5	4.8	96	11	40-154/21	
591-78-6	2-Hexanone	ND	20	18.0	90	20	24.4	122	30* a	53-128/29	
98-82-8	Isopropylbenzene	ND	5	4.1	82	5	4.4	88	7	49-139/16	
99-87-6	p-Isopropyltoluene	ND	5	4.2	84	5	4.5	90	7	45-141/17	
75-09-2	Methylene chloride	ND	5	4.0	80	5	4.1	82	2	54-137/14	
1634-04-4	Methyl Tert Butyl Ether	ND	5	3.8	76	5	4.3	86	12* b	53-143/10	
108-10-1	4-Methyl-2-pentanone	ND	20	18.0	90	20	22.9	115	24	58-127/32	
91-20-3	Naphthalene	ND	5	4.2	84	5	5.4	108	25* a	44-140/14	
103-65-1	n-Propylbenzene	ND	5	4.1	82	5	4.5	90	9	50-142/20	
100-42-5	Styrene	ND	5	4.0	80	5	4.4	88	10	23-130/20	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5	4.4	88	5	4.7	94	7	57-144/11	
71-55-6	1,1,1-Trichloroethane	ND	5	4.1	82	5	4.3	86	5	52-164/13	
79-34-5	1,1,2,2-Tetrachloroethane	ND	5	4.5	90	5	5.8	116	25* a	58-138/10	
79-00-5	1,1,2-Trichloroethane	ND	5	4.3	86	5	4.9	98	13* b	59-139/11	
87-61-6	1,2,3-Trichlorobenzene	ND	5	4.2	84	5	5.0	100	17	47-141/17	
96-18-4	1,2,3-Trichloropropane	ND	5	4.6	92	5	5.7	114	21* a	56-148/15	
120-82-1	1,2,4-Trichlorobenzene	ND	5	4.2	84	5	4.8	96	13	46-137/17	
95-63-6	1,2,4-Trimethylbenzene	ND	5	4.1	82	5	4.5	90	9	41-138/16	
108-67-8	1,3,5-Trimethylbenzene	ND	5	4.1	82	5	4.4	88	7	45-138/16	
127-18-4	Tetrachloroethylene	ND	5	4.0	80	5	4.3	86	7	45-145/19	
108-88-3	Toluene	ND	5	4.0	80	5	4.3	86	7	52-134/19	
79-01-6	Trichloroethylene	ND	5	4.1	82	5	4.4	88	7	54-143/15	
75-69-4	Trichlorofluoromethane	ND	2	1.7	85	2	1.7	85	0	36-167/28	
75-01-4	Vinyl chloride	ND	2	1.8	90	2	1.8	90	0	35-162/30	
	m,p-Xylene	ND	10	8.3	83	10	9.0	90	8	49-135/18	
95-47-6	o-Xylene	ND	5	4.1	82	5	4.4	88	7	49-134/19	
1330-20-7	Xylenes (total)	ND	15	12.4	83	15	13.5	90	8	50-134/18	

CAS No.	Surrogate Recoveries	MS	MSD	JC46810-2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	102%	104%	100%	70-130%
460-00-4	4-Bromofluorobenzene	100%	102%	99%	70-130%

* = Outside of Control Limits.

5.5.2
5

Matrix Spike/Matrix Spike Duplicate Summary

Page 3 of 3

Job Number: JC46796

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC46810-2MS	1B110592.D	1	07/21/17	BK	n/a	n/a	V1B5269
JC46810-2MSD	1B110597.D	1	07/21/17	BK	n/a	n/a	V1B5269
JC46810-2	1B110588.D	1	07/21/17	BK	n/a	n/a	V1B5269

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC46796-6, JC46796-7, JC46796-8, JC46796-9, JC46796-10, JC46796-11

- (a) Outside in house control limits.
- (b) Analytical precision exceeds in-house control limits.

* = Outside of Control Limits.

Duplicate Summary

Page 1 of 2

Job Number: JC46796

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC47079-2DUP	1B110688A.D	4	07/24/17	BK	n/a	n/a	V1B5273
JC47079-2	1B110688.D	4	07/24/17	BK	n/a	n/a	V1B5273

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC46796-1, JC46796-2, JC46796-3, JC46796-4, JC46796-12

CAS No.	Compound	JC47079-2		DUP	Q	RPD	Limits
		ug/l	Q	ug/l			
67-64-1	Acetone	ND	ND	ND	nc	10	
78-93-3	2-Butanone	ND	ND	ND	nc	12	
71-43-2	Benzene	ND	ND	ND	nc	10	
108-86-1	Bromobenzene	ND	ND	ND	nc	10	
74-97-5	Bromochloromethane	ND	ND	ND	nc	10	
75-27-4	Bromodichloromethane	ND	ND	ND	nc	10	
75-25-2	Bromoform	ND	ND	ND	nc	10	
74-83-9	Bromomethane	ND	ND	ND	nc	10	
104-51-8	n-Butylbenzene	ND	ND	ND	nc	10	
135-98-8	sec-Butylbenzene	ND	ND	ND	nc	10	
98-06-6	tert-Butylbenzene	ND	ND	ND	nc	10	
75-15-0	Carbon disulfide	ND	ND	ND	nc	19	
108-90-7	Chlorobenzene	ND	ND	ND	nc	10	
75-00-3	Chloroethane	ND	ND	ND	nc	10	
67-66-3	Chloroform	ND	ND	ND	nc	12	
74-87-3	Chloromethane	ND	ND	ND	nc	10	
95-49-8	o-Chlorotoluene	ND	ND	ND	nc	10	
106-43-4	p-Chlorotoluene	ND	ND	ND	nc	10	
56-23-5	Carbon tetrachloride	ND	ND	ND	nc	10	
75-34-3	1,1-Dichloroethane	ND	ND	ND	nc	10	
75-35-4	1,1-Dichloroethylene	ND	ND	ND	nc	10	
563-58-6	1,1-Dichloropropene	ND	ND	ND	nc	10	
96-12-8	1,2-Dibromo-3-chloropropane	ND	ND	ND	nc	10	
106-93-4	1,2-Dibromoethane	ND	ND	ND	nc	10	
107-06-2	1,2-Dichloroethane	ND	ND	ND	nc	10	
78-87-5	1,2-Dichloropropane	ND	ND	ND	nc	10	
142-28-9	1,3-Dichloropropane	ND	ND	ND	nc	10	
594-20-7	2,2-Dichloropropane	ND	ND	ND	nc	10	
124-48-1	Dibromochloromethane	ND	ND	ND	nc	10	
74-95-3	Dibromomethane	ND	ND	ND	nc	10	
75-71-8	Dichlorodifluoromethane	ND	ND	ND	nc	10	
541-73-1	m-Dichlorobenzene	ND	ND	ND	nc	10	
95-50-1	o-Dichlorobenzene	ND	ND	ND	nc	10	
106-46-7	p-Dichlorobenzene	ND	ND	ND	nc	10	
156-60-5	trans-1,2-Dichloroethylene	ND	ND	ND	nc	10	
156-59-2	cis-1,2-Dichloroethylene	ND	ND	ND	nc	10	

* = Outside of Control Limits.

5.6.1
5

Duplicate Summary

Page 2 of 2

Job Number: JC46796
 Account: ESCVAR WSP Environment & Energy
 Project: Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC47079-2DUP	1B110688A.D	4	07/24/17	BK	n/a	n/a	V1B5273
JC47079-2	1B110688.D	4	07/24/17	BK	n/a	n/a	V1B5273

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC46796-1, JC46796-2, JC46796-3, JC46796-4, JC46796-12

CAS No.	Compound	JC47079-2		Q	RPD	Limits
		ug/l	ug/l			
10061-01-5	cis-1,3-Dichloropropene	ND	ND	nc	10	
10061-02-6	trans-1,3-Dichloropropene	ND	ND	nc	10	
100-41-4	Ethylbenzene	ND	ND	nc	10	
87-68-3	Hexachlorobutadiene	ND	ND	nc	10	
591-78-6	2-Hexanone	ND	ND	nc	10	
98-82-8	Isopropylbenzene	ND	ND	nc	10	
99-87-6	p-Isopropyltoluene	ND	ND	nc	10	
75-09-2	Methylene chloride	ND	ND	nc	10	
1634-04-4	Methyl Tert Butyl Ether	91.7	91.7	0	10	
108-10-1	4-Methyl-2-pentanone	ND	ND	nc	10	
91-20-3	Naphthalene	ND	ND	nc	10	
103-65-1	n-Propylbenzene	ND	ND	nc	10	
100-42-5	Styrene	ND	ND	nc	10	
630-20-6	1,1,1,2-Tetrachloroethane	ND	ND	nc	10	
71-55-6	1,1,1-Trichloroethane	ND	ND	nc	10	
79-34-5	1,1,2,2-Tetrachloroethane	ND	ND	nc	10	
79-00-5	1,1,2-Trichloroethane	ND	ND	nc	10	
87-61-6	1,2,3-Trichlorobenzene	ND	ND	nc	10	
96-18-4	1,2,3-Trichloropropane	ND	ND	nc	10	
120-82-1	1,2,4-Trichlorobenzene	ND	ND	nc	10	
95-63-6	1,2,4-Trimethylbenzene	ND	ND	nc	10	
108-67-8	1,3,5-Trimethylbenzene	ND	ND	nc	10	
127-18-4	Tetrachloroethylene	ND	ND	nc	10	
108-88-3	Toluene	ND	ND	nc	10	
79-01-6	Trichloroethylene	ND	ND	nc	10	
75-69-4	Trichlorofluoromethane	ND	ND	nc	10	
75-01-4	Vinyl chloride	ND	ND	nc	10	
	m,p-Xylene	ND	ND	nc	10	
95-47-6	o-Xylene	ND	ND	nc	10	
1330-20-7	Xylenes (total)	ND	ND	nc	10	

CAS No.	Surrogate Recoveries	DUP	JC47079-2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	104%	104%	70-130%
460-00-4	4-Bromofluorobenzene	94%	94%	70-130%

* = Outside of Control Limits.

5.6.1
5

Duplicate Summary

Job Number: JC46796
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC46796-3DUP	3A156659.D	1	07/13/17	PR	n/a	n/a	V3A6751
JC46796-3	3A156654.D	1	07/13/17	PR	n/a	n/a	V3A6751

The QC reported here applies to the following samples:

Method: SW846 8260C BY SIM

JC46796-1, JC46796-2, JC46796-3, JC46796-4, JC46796-5, JC46796-6, JC46796-7, JC46796-8, JC46796-9, JC46796-10, JC46796-11, JC46796-12

CAS No.	Compound	JC46796-3		DUP	Q	ug/l	RPD	Limits
		ug/l	Q	ND				
123-91-1	1,4-Dioxane			ND			nc	37

CAS No.	Surrogate Recoveries	DUP	JC46796-3	Limits
17647-74-4	1,4-Dioxane-d8	100%	118%	51-175%

* = Outside of Control Limits.

Instrument Performance Check (BFB)

Page 1 of 1

Job Number: JC46796

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample: V1B5256-BFB
Lab File ID: 1B110311.D
Instrument ID: GCMS1B

Injection Date: 07/03/17
Injection Time: 16:03

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	14.99 - 40.0% of mass 95	3336	17.8	Pass
75	30.0 - 80.0% of mass 95	8666	46.2	Pass
95	Base peak, 100% relative abundance	18776	100.0	Pass
96	5.0 - 9.0% of mass 95	1216	6.48	Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) ^a Pass
174	50.0 - 120.0% of mass 95	15232	81.1	Pass
175	5.0 - 9.0% of mass 174	991	5.28	(6.51) ^a Pass
176	95.0 - 101.0% of mass 174	14490	77.2	(95.1) ^a Pass
177	5.0 - 9.0% of mass 176	902	4.80	(6.22) ^b Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V1B5256-IC5256	1B110312.D	07/03/17	16:35	00:32	Initial cal 0.2
V1B5256-IC5256	1B110313.D	07/03/17	17:06	01:03	Initial cal 0.5
V1B5256-IC5256	1B110314.D	07/03/17	17:38	01:35	Initial cal 1
V1B5256-IC5256	1B110315.D	07/03/17	18:09	02:06	Initial cal 2
V1B5256-IC5256	1B110316.D	07/03/17	18:40	02:37	Initial cal 5
V1B5256-ICC5256	1B110317.D	07/03/17	19:12	03:09	Initial cal 10
V1B5256-IC5256	1B110318.D	07/03/17	19:44	03:41	Initial cal 20
V1B5256-IC5256	1B110319.D	07/03/17	20:15	04:12	Initial cal 40
V1B5256-IC5256	1B110320.D	07/03/17	20:47	04:44	Initial cal 80
V1B5256-ICV5256	1B110323.D	07/03/17	22:22	06:19	Initial cal verification 10

Instrument Performance Check (BFB)

Page 1 of 1

Job Number: JC46796

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample: V1B5264-BFB
Lab File ID: 1B110480.D
Instrument ID: GCMS1B

Injection Date: 07/14/17
Injection Time: 09:56

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	14.99 - 40.0% of mass 95	3062	17.4	Pass
75	30.0 - 80.0% of mass 95	8248	46.7	Pass
95	Base peak, 100% relative abundance	17645	100.0	Pass
96	5.0 - 9.0% of mass 95	1298	7.36	Pass
173	Less than 2.0% of mass 174	193	1.09	(1.33) ^a Pass
174	50.0 - 120.0% of mass 95	14529	82.3	Pass
175	5.0 - 9.0% of mass 174	1115	6.32	(7.67) ^a Pass
176	95.0 - 101.0% of mass 174	14241	80.7	(98.0) ^a Pass
177	5.0 - 9.0% of mass 176	977	5.54	(6.86) ^b Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V1B5264-CC5256	1B110481.D	07/14/17	10:32	00:36	Continuing cal 5
V1B5264-MB	1B110482.D	07/14/17	11:17	01:21	Method Blank
V1B5264-BS	1B110483.D	07/14/17	11:58	02:02	Blank Spike
JC46796-5	1B110484.D	07/14/17	12:47	02:51	RW-1320LP-071117
ZZZZZZ	1B110485.D	07/14/17	13:18	03:22	(unrelated sample)
JC46860-2	1B110486.D	07/14/17	13:50	03:54	(used for QC only; not part of job JC46796)
ZZZZZZ	1B110487.D	07/14/17	14:22	04:26	(unrelated sample)
JC46860-2MS	1B110488.D	07/14/17	14:54	04:58	Matrix Spike
JC46860-2MSD	1B110489.D	07/14/17	15:26	05:30	Matrix Spike Duplicate
ZZZZZZ	1B110490.D	07/14/17	15:57	06:01	(unrelated sample)
ZZZZZZ	1B110491.D	07/14/17	16:29	06:33	(unrelated sample)
ZZZZZZ	1B110492.D	07/14/17	17:00	07:04	(unrelated sample)
ZZZZZZ	1B110493.D	07/14/17	17:31	07:35	(unrelated sample)

Instrument Performance Check (BFB)

Page 1 of 1

Job Number: JC46796

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample: V1B5268-BFB
Lab File ID: 1B110568.D
Instrument ID: GCMS1B

Injection Date: 07/20/17
Injection Time: 21:59

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	14.99 - 40.0% of mass 95	3940	16.5	Pass
75	30.0 - 80.0% of mass 95	10825	45.4	Pass
95	Base peak, 100% relative abundance	23835	100.0	Pass
96	5.0 - 9.0% of mass 95	1703	7.14	Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) ^a Pass
174	50.0 - 120.0% of mass 95	18035	75.7	Pass
175	5.0 - 9.0% of mass 174	1394	5.85	(7.73) ^a Pass
176	95.0 - 101.0% of mass 174	17372	72.9	(96.3) ^a Pass
177	5.0 - 9.0% of mass 176	1169	4.90	(6.73) ^b Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V1B5268-IC5268	1B110569.D	07/20/17	22:36	00:37	Initial cal 0.2
V1B5268-IC5268	1B110570.D	07/20/17	23:07	01:08	Initial cal 0.5
V1B5268-IC5268	1B110571.D	07/20/17	23:39	01:40	Initial cal 1
V1B5268-IC5268	1B110572.D	07/21/17	00:11	02:12	Initial cal 2
V1B5268-IC5268	1B110573.D	07/21/17	00:43	02:44	Initial cal 5
V1B5268-IC5268	1B110574.D	07/21/17	01:14	03:15	Initial cal 10
V1B5268-IC5268	1B110575.D	07/21/17	01:45	03:46	Initial cal 20
V1B5268-IC5268	1B110576.D	07/21/17	02:17	04:18	Initial cal 40
V1B5268-IC5268	1B110577.D	07/21/17	02:49	04:50	Initial cal 80
V1B5268-ICV5268	1B110580.D	07/21/17	04:24	06:25	Initial cal verification 10

Instrument Performance Check (BFB)

Page 1 of 1

Job Number: JC46796

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample: V1B5269-BFB
Lab File ID: 1B110583.D
Instrument ID: GCMS1B

Injection Date: 07/21/17
Injection Time: 09:09

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	14.99 - 40.0% of mass 95	3408	17.3	Pass
75	30.0 - 80.0% of mass 95	9125	46.2	Pass
95	Base peak, 100% relative abundance	19749	100.0	Pass
96	5.0 - 9.0% of mass 95	1344	6.81	Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) ^a Pass
174	50.0 - 120.0% of mass 95	14784	74.9	Pass
175	5.0 - 9.0% of mass 174	1197	6.06	(8.10) ^a Pass
176	95.0 - 101.0% of mass 174	14367	72.7	(97.2) ^a Pass
177	5.0 - 9.0% of mass 176	911	4.61	(6.34) ^b Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V1B5269-CC5268	1B110584.D	07/21/17	09:42	00:33	Continuing cal 5
V1B5269-MB	1B110585.D	07/21/17	10:31	01:22	Method Blank
V1B5269-BS	1B110586.D	07/21/17	11:09	02:00	Blank Spike
ZZZZZZ	1B110587.D	07/21/17	11:48	02:39	(unrelated sample)
JC46810-2	1B110588.D	07/21/17	12:19	03:10	(used for QC only; not part of job JC46796)
JC46796-6	1B110589.D	07/21/17	12:51	03:42	RW-920RMD-071117-F
JC46796-7	1B110590.D	07/21/17	13:23	04:14	RW-920RMD-071117
JC46796-8	1B110591.D	07/21/17	13:54	04:45	RW-1000RMD-071117
JC46810-2MS	1B110592.D	07/21/17	14:25	05:16	Matrix Spike
JC46796-9	1B110594.D	07/21/17	15:27	06:18	RW-902RMD-071117-F
JC46796-10	1B110595.D	07/21/17	15:59	06:50	RW-902RMD-071117
JC46796-11	1B110596.D	07/21/17	16:31	07:22	RW-1213PC-071117-F
JC46810-2MSD	1B110597.D	07/21/17	17:03	07:54	Matrix Spike Duplicate
ZZZZZZ	1B110598.D	07/21/17	17:34	08:25	(unrelated sample)
ZZZZZZ	1B110599.D	07/21/17	18:06	08:57	(unrelated sample)
ZZZZZZ	1B110600.D	07/21/17	18:38	09:29	(unrelated sample)
ZZZZZZ	1B110601.D	07/21/17	19:09	10:00	(unrelated sample)
ZZZZZZ	1B110602.D	07/21/17	19:41	10:32	(unrelated sample)
ZZZZZZ	1B110603.D	07/21/17	20:12	11:03	(unrelated sample)
ZZZZZZ	1B110604.D	07/21/17	20:44	11:35	(unrelated sample)

Instrument Performance Check (BFB)

Page 1 of 1

Job Number: JC46796

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample: V1B5273-BFB
Lab File ID: 1B110672.D
Instrument ID: GCMS1B

Injection Date: 07/24/17
Injection Time: 08:52

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	14.99 - 40.0% of mass 95	2750	17.2	Pass
75	30.0 - 80.0% of mass 95	7482	46.8	Pass
95	Base peak, 100% relative abundance	15975	100.0	Pass
96	5.0 - 9.0% of mass 95	1158	7.25	Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) ^a Pass
174	50.0 - 120.0% of mass 95	12958	81.1	Pass
175	5.0 - 9.0% of mass 174	965	6.04	(7.45) ^a Pass
176	95.0 - 101.0% of mass 174	12539	78.5	(96.8) ^a Pass
177	5.0 - 9.0% of mass 176	827	5.18	(6.60) ^b Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V1B5273-CC5268	1B110673.D	07/24/17	09:24	00:32	Continuing cal 5
V1B5273-MB	1B110674.D	07/24/17	10:07	01:15	Method Blank
V1B5273-BS	1B110675.D	07/24/17	10:46	01:54	Blank Spike
ZZZZZZ	1B110676.D	07/24/17	12:01	03:09	(unrelated sample)
JC46796-1	1B110677.D	07/24/17	12:33	03:41	TRIP BLANK
JC46796-2	1B110678.D	07/24/17	13:05	04:13	RW-1226PC-071117-F
JC46796-3	1B110679.D	07/24/17	13:37	04:45	RW-1226PC-071117
JC46796-4	1B110680.D	07/24/17	14:08	05:16	RW-1320LP-071117-F
JC46796-12	1B110681.D	07/24/17	14:40	05:48	RW-1213PC-071117
JC47117-1	1B110682.D	07/24/17	15:12	06:20	(used for QC only; not part of job JC46796)
JC47117-2	1B110683.D	07/24/17	15:44	06:52	(used for QC only; not part of job JC46796)
V1B5273-BSD	1B110684.D	07/24/17	16:15	07:23	Blank Spike Duplicate
JC47117-1MS	1B110685.D	07/24/17	16:47	07:55	Matrix Spike
JC47079-2DUP	1B110688A.D	07/24/17	18:23	09:31	Duplicate
JC47079-2	1B110688.D	07/24/17	18:23	09:31	(used for QC only; not part of job JC46796)
ZZZZZZ	1B110691.D	07/24/17	19:57	11:05	(unrelated sample)
ZZZZZZ	1B110692.D	07/24/17	20:29	11:37	(unrelated sample)

Instrument Performance Check (BFB)

Page 1 of 1

Job Number: JC46796

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample: V3A6742-BFB
Lab File ID: 3A156398.D
Instrument ID: GCMS3A

Injection Date: 06/26/17

Injection Time: 16:42

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	15.0 - 40.0% of mass 95	1719	18.9	Pass
75	30.0 - 60.0% of mass 95	4463	49.0	Pass
95	Base peak, 100% relative abundance	9112	100.0	Pass
96	5.0 - 9.0% of mass 95	697	7.65	Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) ^a Pass
174	50.0 - 120.0% of mass 95	7087	77.8	Pass
175	5.0 - 9.0% of mass 174	580	6.37	(8.18) ^a Pass
176	95.0 - 101.0% of mass 174	6908	75.8	(97.5) ^a Pass
177	5.0 - 9.0% of mass 176	521	5.72	(7.54) ^b Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V3A6742-IC6742	3A156399.D	06/26/17	17:11	00:29	Initial cal 0.25
V3A6742-IC6742	3A156400.D	06/26/17	17:36	00:54	Initial cal 0.4
V3A6742-IC6742	3A156401.D	06/26/17	18:02	01:20	Initial cal 1
V3A6742-IC6742	3A156402.D	06/26/17	18:28	01:46	Initial cal 2
V3A6742-IC6742	3A156403.D	06/26/17	18:54	02:12	Initial cal 5
V3A6742-ICC6742	3A156404.D	06/26/17	19:19	02:37	Initial cal 20
V3A6742-IC6742	3A156405.D	06/26/17	19:45	03:03	Initial cal 50
V3A6742-IC6742	3A156406.D	06/26/17	20:11	03:29	Initial cal 100
V3A6742-IC6742	3A156407.D	06/26/17	20:37	03:55	Initial cal 200
V3A6742-ICV6742	3A156411.D	06/26/17	22:20	05:38	Initial cal verification 20

Instrument Performance Check (BFB)

Page 1 of 1

Job Number: JC46796

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample: V3A6751-BFB
Lab File ID: 3A156647.D
Instrument ID: GCMS3A

Injection Date: 07/13/17
Injection Time: 09:56

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	15.0 - 40.0% of mass 95	3335	16.8	Pass
75	30.0 - 60.0% of mass 95	8738	43.9	Pass
95	Base peak, 100% relative abundance	19888	100.0	Pass
96	5.0 - 9.0% of mass 95	1392	7.00	Pass
173	Less than 2.0% of mass 174	72	0.36	(0.43) ^a Pass
174	50.0 - 120.0% of mass 95	16813	84.5	Pass
175	5.0 - 9.0% of mass 174	1185	5.96	(7.05) ^a Pass
176	95.0 - 101.0% of mass 174	16311	82.0	(97.0) ^a Pass
177	5.0 - 9.0% of mass 176	1047	5.26	(6.42) ^b Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V3A6751-CC6742	3A156648.D	07/13/17	10:33	00:37	Continuing cal 5
V3A6751-MB	3A156649.D	07/13/17	11:06	01:10	Method Blank
V3A6751-BS	3A156650.D	07/13/17	11:36	01:40	Blank Spike
JC46796-1	3A156652.D	07/13/17	12:28	02:32	TRIP BLANK
JC46796-2	3A156653.D	07/13/17	12:54	02:58	RW-1226PC-071117-F
JC46796-3	3A156654.D	07/13/17	13:20	03:24	RW-1226PC-071117
JC46796-4	3A156655.D	07/13/17	13:46	03:50	RW-1320LP-071117-F
JC46796-5	3A156656.D	07/13/17	14:12	04:16	RW-1320LP-071117
JC46796-2MS	3A156657.D	07/13/17	14:38	04:42	Matrix Spike
JC46796-3DUP	3A156659.D	07/13/17	15:31	05:35	Duplicate
JC46796-6	3A156660.D	07/13/17	15:57	06:01	RW-920RMD-071117-F
JC46796-7	3A156661.D	07/13/17	16:23	06:27	RW-920RMD-071117
JC46796-8	3A156662.D	07/13/17	16:49	06:53	RW-1000RMD-071117
JC46796-9	3A156663.D	07/13/17	17:16	07:20	RW-902RMD-071117-F
JC46796-10	3A156664.D	07/13/17	17:42	07:46	RW-902RMD-071117
JC46796-11	3A156665.D	07/13/17	18:08	08:12	RW-1213PC-071117-F
JC46796-12	3A156666.D	07/13/17	18:34	08:38	RW-1213PC-071117

Volatile Surrogate Recovery Summary

Page 1 of 1

Job Number: JC46796

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Method: EPA 524.2 REV 4.1

Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2
JC46796-1	1B110677.D	103	95
JC46796-2	1B110678.D	104	97
JC46796-3	1B110679.D	105	96
JC46796-4	1B110680.D	103	94
JC46796-5	1B110484.D	92	86
JC46796-6	1B110589.D	101	99
JC46796-7	1B110590.D	101	98
JC46796-8	1B110591.D	101	99
JC46796-9	1B110594.D	100	98
JC46796-10	1B110595.D	103	100
JC46796-11	1B110596.D	102	101
JC46796-12	1B110681.D	106	96
JC46810-2MS	1B110592.D	102	100
JC46810-2MSD	1B110597.D	104	102
JC46860-2MS	1B110488.D	101	90
JC46860-2MSD	1B110489.D	99	92
JC47079-2DUP	1B110688A.D	104	94
JC47117-1MS	1B110685.D	108	99
V1B5264-BS	1B110483.D	102	91
V1B5264-MB	1B110482.D	91	84
V1B5269-BS	1B110586.D	102	100
V1B5269-MB	1B110585.D	99	100
V1B5273-BS	1B110675.D	107	98
V1B5273-BSD	1B110684.D	108	99
V1B5273-MB	1B110674.D	104	96

Surrogate
Compounds

Recovery
Limits

S1 = 1,2-Dichlorobenzene-d4

70-130%

S2 = 4-Bromofluorobenzene

70-130%

5.8.1
5

Volatile Surrogate Recovery Summary

Page 1 of 1

Job Number: JC46796

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Method: SW846 8260C BY SIM

Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1
JC46796-1	3A156652.D	115
JC46796-2	3A156653.D	123
JC46796-3	3A156654.D	118
JC46796-4	3A156655.D	120
JC46796-5	3A156656.D	97
JC46796-6	3A156660.D	114
JC46796-7	3A156661.D	109
JC46796-8	3A156662.D	107
JC46796-9	3A156663.D	119
JC46796-10	3A156664.D	113
JC46796-11	3A156665.D	111
JC46796-12	3A156666.D	116
JC46796-2MS	3A156657.D	112
JC46796-3DUP	3A156659.D	100
V3A6751-BS	3A156650.D	104
V3A6751-MB	3A156649.D	108

Surrogate Compounds	Recovery Limits
S1 = 1,4-Dioxane-d8	51-175%

5.8.2
5



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Automated Report

Technical Report for

WSP Environment & Energy

Kop-Flex, Hanover, VA

31400899-3

SGS Accutest Job Number: JC48685

Sampling Dates: 08/08/17 - 08/09/17



Report to:

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Total number of pages in report: 68



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Sample Summary

WSP Environment & Energy

Job No: JC48685

Kop-Flex, Hanover, VA
Project No: 31400899-3

Sample Number	Collected Date	Time By	Matrix Received	Code Type	Client Sample ID	
JC48685-1	08/08/17	09:40	MK/BF	08/10/17 AQ	Ground Water	RW-1323LP-080817
JC48685-2	08/08/17	09:55	MK/BF	08/10/17 AQ	Ground Water	RW-1323LP-080817-F
JC48685-3	08/08/17	11:25	MK/BF	08/10/17 AQ	Ground Water	RW-7763RICK-080817
JC48685-4	08/08/17	14:25	MK/BF	08/10/17 AQ	Ground Water	RW-KF100-080817
JC48685-5	08/08/17	14:15	MK/BF	08/10/17 AQ	Ground Water	RW-1214SSTA-080817
JC48685-6	08/09/17	11:35	MK/BF	08/10/17 AQ	Trip Blank Water	TRIP BLANK
JC48685-7	08/09/17	09:35	MK/BF	08/10/17 AQ	Ground Water	RW-1216SPC-080917
JC48685-8	08/09/17	09:55	MK/BF	08/10/17 AQ	Ground Water	RW-1216SPC-080917-F
JC48685-9	08/09/17	10:40	MK/BF	08/10/17 AQ	Ground Water	RW-1337SSTA-080917
JC48685-10	08/09/17	11:35	MK/BF	08/10/17 AQ	Ground Water	RW-1215OCM-080917

Summary of Hits

Job Number: JC48685
Account: WSP Environment & Energy
Project: Kop-Flex, Hanover, VA
Collected: 08/08/17 thru 08/09/17

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC48685-1	RW-1323LP-080817					
1,4-Dioxane		0.20 J	0.40	0.18	ug/l	SW846 8260C BY SIM
JC48685-2	RW-1323LP-080817-F					
1,4-Dioxane		0.23 J	0.40	0.18	ug/l	SW846 8260C BY SIM
JC48685-3	RW-7763RICK-080817					
No hits reported in this sample.						
JC48685-4	RW-KF100-080817					
No hits reported in this sample.						
JC48685-5	RW-1214SSTA-080817					
Methyl Tert Butyl Ether ^a		0.33 J	0.50	0.080	ug/l	EPA 524.2 REV 4.1
JC48685-6	TRIP BLANK					
No hits reported in this sample.						
JC48685-7	RW-1216SPC-080917					
Bromoform ^a		0.47 J	0.50	0.40	ug/l	EPA 524.2 REV 4.1
Chloroform ^a		0.41 J	0.50	0.33	ug/l	EPA 524.2 REV 4.1
Dibromochloromethane ^a		0.44 J	0.50	0.094	ug/l	EPA 524.2 REV 4.1
Methyl Tert Butyl Ether ^a		0.096 J	0.50	0.080	ug/l	EPA 524.2 REV 4.1
JC48685-8	RW-1216SPC-080917-F					
Bromodichloromethane ^a		0.61	0.50	0.36	ug/l	EPA 524.2 REV 4.1
Bromoform ^a		0.65	0.50	0.40	ug/l	EPA 524.2 REV 4.1
Chloroform ^a		0.74	0.50	0.33	ug/l	EPA 524.2 REV 4.1
Dibromochloromethane ^a		0.66	0.50	0.094	ug/l	EPA 524.2 REV 4.1
Methyl Tert Butyl Ether ^a		0.092 J	0.50	0.080	ug/l	EPA 524.2 REV 4.1
JC48685-9	RW-1337SSTA-080917					
Methyl Tert Butyl Ether ^a		0.28 J	0.50	0.080	ug/l	EPA 524.2 REV 4.1

Summary of Hits

Job Number: JC48685
Account: WSP Environment & Energy
Project: Kop-Flex, Hanover, VA
Collected: 08/08/17 thru 08/09/17

Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Analyte						

JC48685-10 RW-1215OCM-080917

Methyl Tert Butyl Ether ^a	1.1	0.50	0.080	ug/l	EPA 524.2 REV 4.1
1,4-Dioxane	0.21 J	0.40	0.18	ug/l	SW846 8260C BY SIM

(a) EPA 524.2 is not a certified method for non-potable water samples.

Sample Results

Report of Analysis

Report of Analysis

Page 1 of 3

3

Client Sample ID: RW-1323LP-080817**Lab Sample ID:** JC48685-1**Matrix:** AQ - Ground Water**Method:** EPA 524.2 REV 4.1**Project:** Kop-Flex, Hanover, VA**Date Sampled:** 08/08/17**Date Received:** 08/10/17**Percent Solids:** n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	1B111155.D	1	08/15/17 01:39	BK	n/a	n/a	V1B5299
Run #2							

Purge Volume

Run #1 5.0 ml

Run #2

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND	0.50	0.25	ug/l	
74-97-5	Bromochloromethane	ND	0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform	ND	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND	0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND	0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND	0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	ND	0.50	0.33	ug/l	
74-87-3	Chloromethane	ND	0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND	0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND	0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.0	0.25	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.50	0.29	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND	0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND	0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.094	ug/l	
74-95-3	Dibromomethane	ND	0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	0.28	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: RW-1323LP-080817
Lab Sample ID: JC48685-1
Matrix: AQ - Ground Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, VA

Date Sampled: 08/08/17
Date Received: 08/10/17
Percent Solids: n/a

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND	0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND	0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	0.50	0.080	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
91-20-3	Naphthalene	ND	0.50	0.18	ug/l	
103-65-1	n-Propylbenzene	ND	0.50	0.26	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	97%		70-130%
460-00-4	4-Bromofluorobenzene	92%		70-130%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID: RW-1323LP-080817
Lab Sample ID: JC48685-1
Matrix: AQ - Ground Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, VA

Date Sampled: 08/08/17
Date Received: 08/10/17
Percent Solids: n/a

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
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(a) EPA 524.2 is not a certified method for non-potable water samples.

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID: RW-1323LP-080817
Lab Sample ID: JC48685-1
Matrix: AQ - Ground Water
Method: SW846 8260C BY SIM
Project: Kop-Flex, Hanover, VA

Date Sampled: 08/08/17
Date Received: 08/10/17
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3A157030.D	1	08/12/17 01:35	PR	n/a	n/a	V3A6767
Run #2							

Purge Volume
Run #1 5.0 ml
Run #2

CAS No.	Compound	Result	RL	MDL	Units	Q
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123-91-1	1,4-Dioxane	0.20	0.40	0.18	ug/l	J
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CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
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17647-74-4	1,4-Dioxane-d8	94%		51-175%
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ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID:	RW-1323LP-080817-F	Date Sampled:	08/08/17
Lab Sample ID:	JC48685-2	Date Received:	08/10/17
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Kop-Flex, Hanover, VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	1B111156.D	1	08/15/17 02:10	BK	n/a	n/a	V1B5299
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND	0.50	0.25	ug/l	
74-97-5	Bromochloromethane	ND	0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform	ND	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND	0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND	0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND	0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	ND	0.50	0.33	ug/l	
74-87-3	Chloromethane	ND	0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND	0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND	0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.0	0.25	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.50	0.29	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND	0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND	0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.094	ug/l	
74-95-3	Dibromomethane	ND	0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	0.28	ug/l	

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RW-1323LP-080817-F	Date Sampled:	08/08/17
Lab Sample ID:	JC48685-2	Date Received:	08/10/17
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Kop-Flex, Hanover, VA		

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND	0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND	0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	0.50	0.080	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
91-20-3	Naphthalene	ND	0.50	0.18	ug/l	
103-65-1	n-Propylbenzene	ND	0.50	0.26	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	99%		70-130%
460-00-4	4-Bromofluorobenzene	96%		70-130%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID:	RW-1323LP-080817-F	Date Sampled:	08/08/17
Lab Sample ID:	JC48685-2	Date Received:	08/10/17
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Kop-Flex, Hanover, VA		

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
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(a) EPA 524.2 is not a certified method for non-potable water samples.

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

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Client Sample ID:	RW-1323LP-080817-F	Date Sampled:	08/08/17
Lab Sample ID:	JC48685-2	Date Received:	08/10/17
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C BY SIM		
Project:	Kop-Flex, Hanover, VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3A157024.D	1	08/11/17 22:43	PR	n/a	n/a	V3A6767
Run #2							

Purge Volume	
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	0.23	0.40	0.18	ug/l	J
CAS No. Surrogate Recoveries Run# 1 Run# 2 Limits						
17647-74-4	1,4-Dioxane-d8	112%			51-175%	

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID: RW-7763RICK-080817**Lab Sample ID:** JC48685-3**Matrix:** AQ - Ground Water**Method:** EPA 524.2 REV 4.1**Project:** Kop-Flex, Hanover, VA**Date Sampled:** 08/08/17**Date Received:** 08/10/17**Percent Solids:** n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	1B111157.D	1	08/15/17 02:42	BK	n/a	n/a	V1B5299
Run #2							

Purge Volume

Run #1 5.0 ml

Run #2

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND	0.50	0.25	ug/l	
74-97-5	Bromochloromethane	ND	0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform	ND	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND	0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND	0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND	0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	ND	0.50	0.33	ug/l	
74-87-3	Chloromethane	ND	0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND	0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND	0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.0	0.25	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.50	0.29	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND	0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND	0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.094	ug/l	
74-95-3	Dibromomethane	ND	0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	0.28	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis**Client Sample ID:** RW-7763RICK-080817**Lab Sample ID:** JC48685-3**Matrix:** AQ - Ground Water**Method:** EPA 524.2 REV 4.1**Project:** Kop-Flex, Hanover, VA**Date Sampled:** 08/08/17**Date Received:** 08/10/17**Percent Solids:** n/a**VOA List**

CAS No.	Compound	Result	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND	0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND	0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	0.50	0.080	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
91-20-3	Naphthalene	ND	0.50	0.18	ug/l	
103-65-1	n-Propylbenzene	ND	0.50	0.26	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	98%		70-130%
460-00-4	4-Bromofluorobenzene	95%		70-130%

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID: RW-7763RICK-080817
Lab Sample ID: JC48685-3
Matrix: AQ - Ground Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, VA

Date Sampled: 08/08/17
Date Received: 08/10/17
Percent Solids: n/a

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
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(a) EPA 524.2 is not a certified method for non-potable water samples.

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

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3.3
3

Client Sample ID: RW-7763RICK-080817
Lab Sample ID: JC48685-3
Matrix: AQ - Ground Water
Method: SW846 8260C BY SIM
Project: Kop-Flex, Hanover, VA

Date Sampled: 08/08/17
Date Received: 08/10/17
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3A157025.D	1	08/11/17 23:09	PR	n/a	n/a	V3A6767
Run #2							

Purge Volume
Run #1 5.0 ml
Run #2

CAS No.	Compound	Result	RL	MDL	Units	Q
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123-91-1	1,4-Dioxane	ND	0.40	0.18	ug/l	
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CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
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17647-74-4	1,4-Dioxane-d8	111%		51-175%
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ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

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3

Client Sample ID:	RW-KF100-080817	Date Sampled:	08/08/17
Lab Sample ID:	JC48685-4	Date Received:	08/10/17
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Kop-Flex, Hanover, VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	1B111158.D	1	08/15/17 03:14	BK	n/a	n/a	V1B5299
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND	0.50	0.25	ug/l	
74-97-5	Bromochloromethane	ND	0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform	ND	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND	0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND	0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND	0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	ND	0.50	0.33	ug/l	
74-87-3	Chloromethane	ND	0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND	0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND	0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.0	0.25	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.50	0.29	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND	0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND	0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.094	ug/l	
74-95-3	Dibromomethane	ND	0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	0.28	ug/l	

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RW-KF100-080817	Date Sampled:	08/08/17
Lab Sample ID:	JC48685-4	Date Received:	08/10/17
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Kop-Flex, Hanover, VA		

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND	0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND	0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	0.50	0.080	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
91-20-3	Naphthalene	ND	0.50	0.18	ug/l	
103-65-1	n-Propylbenzene	ND	0.50	0.26	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	97%		70-130%
460-00-4	4-Bromofluorobenzene	93%		70-130%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

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Client Sample ID:	RW-KF100-080817	Date Sampled:	08/08/17
Lab Sample ID:	JC48685-4	Date Received:	08/10/17
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Kop-Flex, Hanover, VA		

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
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(a) EPA 524.2 is not a certified method for non-potable water samples.

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

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3

Client Sample ID: RW-KF100-080817
Lab Sample ID: JC48685-4
Matrix: AQ - Ground Water
Method: SW846 8260C BY SIM
Project: Kop-Flex, Hanover, VA

Date Sampled: 08/08/17
Date Received: 08/10/17
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3A157026.D	1	08/11/17 23:35	PR	n/a	n/a	V3A6767
Run #2							

Purge Volume
Run #1 5.0 ml
Run #2

CAS No.	Compound	Result	RL	MDL	Units	Q
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123-91-1	1,4-Dioxane	ND	0.40	0.18	ug/l	
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CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
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17647-74-4	1,4-Dioxane-d8	102%		51-175%
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ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

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3**Client Sample ID:** RW-1214SSTA-080817**Lab Sample ID:** JC48685-5**Matrix:** AQ - Ground Water**Method:** EPA 524.2 REV 4.1**Project:** Kop-Flex, Hanover, VA**Date Sampled:** 08/08/17**Date Received:** 08/10/17**Percent Solids:** n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	1B111159.D	1	08/15/17 03:46	BK	n/a	n/a	V1B5299
Run #2							

Purge Volume

Run #1 5.0 ml

Run #2

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND	0.50	0.25	ug/l	
74-97-5	Bromochloromethane	ND	0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform	ND	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND	0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND	0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND	0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	ND	0.50	0.33	ug/l	
74-87-3	Chloromethane	ND	0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND	0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND	0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.0	0.25	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.50	0.29	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND	0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND	0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.094	ug/l	
74-95-3	Dibromomethane	ND	0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	0.28	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis**Client Sample ID:** RW-1214SSTA-080817**Lab Sample ID:** JC48685-5**Matrix:** AQ - Ground Water**Method:** EPA 524.2 REV 4.1**Project:** Kop-Flex, Hanover, VA**Date Sampled:** 08/08/17**Date Received:** 08/10/17**Percent Solids:** n/a**VOA List**

CAS No.	Compound	Result	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND	0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND	0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.33	0.50	0.080	ug/l	J
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
91-20-3	Naphthalene	ND	0.50	0.18	ug/l	
103-65-1	n-Propylbenzene	ND	0.50	0.26	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	98%		70-130%
460-00-4	4-Bromofluorobenzene	93%		70-130%

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

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3.5
3

Client Sample ID: RW-1214SSTA-080817
Lab Sample ID: JC48685-5
Matrix: AQ - Ground Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, VA

Date Sampled: 08/08/17
Date Received: 08/10/17
Percent Solids: n/a

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
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(a) EPA 524.2 is not a certified method for non-potable water samples.

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

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3.5
3**Client Sample ID:** RW-1214SSTA-080817**Lab Sample ID:** JC48685-5**Matrix:** AQ - Ground Water**Method:** SW846 8260C BY SIM**Project:** Kop-Flex, Hanover, VA**Date Sampled:** 08/08/17**Date Received:** 08/10/17**Percent Solids:** n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3A157027.D	1	08/12/17 00:00	PR	n/a	n/a	V3A6767
Run #2							

Purge Volume

Run #1 5.0 ml

Run #2

CAS No.	Compound	Result	RL	MDL	Units	Q
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123-91-1	1,4-Dioxane	ND	0.40	0.18	ug/l	
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CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
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17647-74-4	1,4-Dioxane-d8	98%		51-175%
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ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

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3

Client Sample ID:	TRIP BLANK	Date Sampled:	08/09/17
Lab Sample ID:	JC48685-6	Date Received:	08/10/17
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Kop-Flex, Hanover, VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	1B111160.D	1	08/15/17 04:18	BK	n/a	n/a	V1B5299
Run #2							

Purge Volume	
Run #1	5.0 ml
Run #2	

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND	0.50	0.25	ug/l	
74-97-5	Bromochloromethane	ND	0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform	ND	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND	0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND	0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND	0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	ND	0.50	0.33	ug/l	
74-87-3	Chloromethane	ND	0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND	0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND	0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.0	0.25	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.50	0.29	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND	0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND	0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.094	ug/l	
74-95-3	Dibromomethane	ND	0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	0.28	ug/l	

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TRIP BLANK	Date Sampled:	08/09/17
Lab Sample ID:	JC48685-6	Date Received:	08/10/17
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Kop-Flex, Hanover, VA		

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND	0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND	0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	0.50	0.080	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
91-20-3	Naphthalene	ND	0.50	0.18	ug/l	
103-65-1	n-Propylbenzene	ND	0.50	0.26	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	99%		70-130%
460-00-4	4-Bromofluorobenzene	92%		70-130%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

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Client Sample ID:	TRIP BLANK	Date Sampled:	08/09/17
Lab Sample ID:	JC48685-6	Date Received:	08/10/17
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Kop-Flex, Hanover, VA		

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
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(a) (pH= 5) Sample is not acid preserved per method/client criteria. Sample analyzed within 7 days holding time.
 524.2 is not a certified metod for non-potable water.

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

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Client Sample ID: RW-1216SPC-080917
Lab Sample ID: JC48685-7
Matrix: AQ - Ground Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, VA

Date Sampled: 08/09/17
Date Received: 08/10/17
Percent Solids: n/a

Run #1 ^a	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	1B111161.D	1	08/15/17 04:49	BK	n/a	n/a	V1B5299

Purge Volume	
Run #1	5.0 ml
Run #2	

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND	0.50	0.25	ug/l	
74-97-5	Bromo(chloromethane)	ND	0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform	0.47	0.50	0.40	ug/l	J
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND	0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND	0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND	0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	0.41	0.50	0.33	ug/l	J
74-87-3	Chloromethane	ND	0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND	0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND	0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.0	0.25	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.50	0.29	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND	0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND	0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	0.44	0.50	0.094	ug/l	J
74-95-3	Dibromomethane	ND	0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	0.28	ug/l	

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

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Client Sample ID: RW-1216SPC-080917
Lab Sample ID: JC48685-7
Matrix: AQ - Ground Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, VA

Date Sampled: 08/09/17
Date Received: 08/10/17
Percent Solids: n/a

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND	0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND	0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.096	0.50	0.080	ug/l	J
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
91-20-3	Naphthalene	ND	0.50	0.18	ug/l	
103-65-1	n-Propylbenzene	ND	0.50	0.26	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	96%		70-130%
460-00-4	4-Bromofluorobenzene	92%		70-130%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

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Client Sample ID: RW-1216SPC-080917
Lab Sample ID: JC48685-7
Matrix: AQ - Ground Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, VA

Date Sampled: 08/09/17
Date Received: 08/10/17
Percent Solids: n/a

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
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(a) EPA 524.2 is not a certified method for non-potable water samples.

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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3**Client Sample ID:** RW-1216SPC-080917**Lab Sample ID:** JC48685-7**Matrix:** AQ - Ground Water**Method:** SW846 8260C BY SIM**Project:** Kop-Flex, Hanover, VA**Date Sampled:** 08/09/17**Date Received:** 08/10/17**Percent Solids:** n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3A157031.D	1	08/12/17 02:01	PR	n/a	n/a	V3A6767
Run #2							

Purge Volume

Run #1 5.0 ml

Run #2

CAS No.	Compound	Result	RL	MDL	Units	Q
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123-91-1	1,4-Dioxane	ND	0.40	0.18	ug/l	
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CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
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17647-74-4	1,4-Dioxane-d8	102%		51-175%
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ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

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Client Sample ID: RW-1216SPC-080917-F**Lab Sample ID:** JC48685-8**Matrix:** AQ - Ground Water**Method:** EPA 524.2 REV 4.1**Project:** Kop-Flex, Hanover, VA**Date Sampled:** 08/09/17**Date Received:** 08/10/17**Percent Solids:** n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	1B111162.D	1	08/15/17 05:21	BK	n/a	n/a	V1B5299
Run #2							

Purge Volume

Run #1 5.0 ml

Run #2

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND	0.50	0.25	ug/l	
74-97-5	Bromo(chloromethane)	ND	0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	0.61	0.50	0.36	ug/l	
75-25-2	Bromoform	0.65	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND	0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND	0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND	0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	0.74	0.50	0.33	ug/l	
74-87-3	Chloromethane	ND	0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND	0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND	0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.0	0.25	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.50	0.29	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND	0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND	0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	0.66	0.50	0.094	ug/l	
74-95-3	Dibromomethane	ND	0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	0.28	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: RW-1216SPC-080917-F
Lab Sample ID: JC48685-8
Matrix: AQ - Ground Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, VA

Date Sampled: 08/09/17
Date Received: 08/10/17
Percent Solids: n/a

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND	0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND	0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.092	0.50	0.080	ug/l	J
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
91-20-3	Naphthalene	ND	0.50	0.18	ug/l	
103-65-1	n-Propylbenzene	ND	0.50	0.26	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	99%		70-130%
460-00-4	4-Bromofluorobenzene	93%		70-130%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

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Client Sample ID: RW-1216SPC-080917-F
Lab Sample ID: JC48685-8
Matrix: AQ - Ground Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, VA

Date Sampled: 08/09/17
Date Received: 08/10/17
Percent Solids: n/a

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
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(a) EPA 524.2 is not a certified method for non-potable water samples.

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

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Client Sample ID:	RW-1216SPC-080917-F	Date Sampled:	08/09/17
Lab Sample ID:	JC48685-8	Date Received:	08/10/17
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260C BY SIM		
Project:	Kop-Flex, Hanover, VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3A157032.D	1	08/12/17 02:27	PR	n/a	n/a	V3A6767
Run #2							

Purge Volume	
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
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123-91-1	1,4-Dioxane	ND	0.40	0.18	ug/l	
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CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
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17647-74-4	1,4-Dioxane-d8	108%		51-175%
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ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RW-1337SSTA-080917	Date Sampled:	08/09/17
Lab Sample ID:	JC48685-9	Date Received:	08/10/17
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Kop-Flex, Hanover, VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	1B111163.D	1	08/15/17 05:53	BK	n/a	n/a	V1B5299
Run #2							

Purge Volume	
Run #1	5.0 ml
Run #2	

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND	0.50	0.25	ug/l	
74-97-5	Bromochloromethane	ND	0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform	ND	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND	0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND	0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND	0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	ND	0.50	0.33	ug/l	
74-87-3	Chloromethane	ND	0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND	0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND	0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.0	0.25	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.50	0.29	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND	0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND	0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.094	ug/l	
74-95-3	Dibromomethane	ND	0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	0.28	ug/l	

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: RW-1337SSTA-080917
Lab Sample ID: JC48685-9
Matrix: AQ - Ground Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, VA

Date Sampled: 08/09/17
Date Received: 08/10/17
Percent Solids: n/a

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND	0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND	0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.28	0.50	0.080	ug/l	J
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
91-20-3	Naphthalene	ND	0.50	0.18	ug/l	
103-65-1	n-Propylbenzene	ND	0.50	0.26	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	99%		70-130%
460-00-4	4-Bromofluorobenzene	92%		70-130%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

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3

Client Sample ID: RW-1337SSTA-080917
Lab Sample ID: JC48685-9
Matrix: AQ - Ground Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, VA

Date Sampled: 08/09/17
Date Received: 08/10/17
Percent Solids: n/a

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
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(a) EPA 524.2 is not a certified method for non-potable water samples.

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

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3**Client Sample ID:** RW-1337SSTA-080917**Lab Sample ID:** JC48685-9**Matrix:** AQ - Ground Water**Method:** SW846 8260C BY SIM**Project:** Kop-Flex, Hanover, VA**Date Sampled:** 08/09/17**Date Received:** 08/10/17**Percent Solids:** n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3A157033.D	1	08/12/17 02:53	PR	n/a	n/a	V3A6767
Run #2							

Purge Volume

Run #1 5.0 ml

Run #2

CAS No.	Compound	Result	RL	MDL	Units	Q
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123-91-1	1,4-Dioxane	ND	0.40	0.18	ug/l	
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CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
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17647-74-4	1,4-Dioxane-d8	105%		51-175%
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ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

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3.10
3**Client Sample ID:** RW-1215OCM-080917**Lab Sample ID:** JC48685-10**Date Sampled:** 08/09/17**Matrix:** AQ - Ground Water**Date Received:** 08/10/17**Method:** EPA 524.2 REV 4.1**Percent Solids:** n/a**Project:** Kop-Flex, Hanover, VA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	1B111164.D	1	08/15/17 06:25	BK	n/a	n/a	V1B5299
Run #2							

Purge Volume

Run #1 5.0 ml

Run #2

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND	0.50	0.25	ug/l	
74-97-5	Bromochloromethane	ND	0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform	ND	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND	0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND	0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND	0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	ND	0.50	0.33	ug/l	
74-87-3	Chloromethane	ND	0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND	0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND	0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.0	0.25	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.50	0.29	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND	0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND	0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.094	ug/l	
74-95-3	Dibromomethane	ND	0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	0.28	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: RW-1215OCM-080917
Lab Sample ID: JC48685-10
Matrix: AQ - Ground Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, VA

Date Sampled: 08/09/17
Date Received: 08/10/17
Percent Solids: n/a

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND	0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND	0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	1.1	0.50	0.080	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
91-20-3	Naphthalene	ND	0.50	0.18	ug/l	
103-65-1	n-Propylbenzene	ND	0.50	0.26	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	97%		70-130%
460-00-4	4-Bromofluorobenzene	94%		70-130%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

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3.10
3

Client Sample ID: RW-1215OCM-080917
Lab Sample ID: JC48685-10
Matrix: AQ - Ground Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, VA

Date Sampled: 08/09/17
Date Received: 08/10/17
Percent Solids: n/a

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
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(a) EPA 524.2 is not a certified method for non-potable water samples.

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

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3.10
3**Client Sample ID:** RW-1215OCM-080917**Lab Sample ID:** JC48685-10**Matrix:** AQ - Ground Water**Method:** SW846 8260C BY SIM**Project:** Kop-Flex, Hanover, VA**Date Sampled:** 08/09/17**Date Received:** 08/10/17**Percent Solids:** n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3A157034.D	1	08/12/17 03:18	PR	n/a	n/a	V3A6767
Run #2							

Purge Volume

Run #1 5.0 ml

Run #2

CAS No.	Compound	Result	RL	MDL	Units	Q
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123-91-1 1,4-Dioxane 0.21 0.40 0.18 ug/l J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
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17647-74-4 1,4-Dioxane-d8 107% 51-175%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Misc. Forms**Custody Documents and Other Forms**

Includes the following where applicable:

- Chain of Custody

DW, WTB

CHAIN-OF-CUSTODY RECORD

JC48685

Page 1 of 1

WSP USA Office Address 13530 Dulles Technology Drive Suite 300				Requested Analyses & Preservatives									
Project Name Kopflex		WSP USA Contact Name Eric Johnson		No. 008092 WSP									
Project Location Hanover, VA		WSP USA Contact E-mail eric.johnson @wsp.com		Laboratory Name & Location SGS Acutest									
Project Number & Task 31400899-3		WSP USA Contact Phone (703)705-6500		Laboratory Project Manager Rocas Pickett									
Sampler(s) Name(s) Maria Kopflex Ben Foster		Sampler(s) Signature(s)		Requested Turn-Around-Time									
Sample Identification		Matrix	Collection Start* Date Time	Collection Stop* Date Time	Number of Containers VOCs (EPA 524.2) 1, 4 diisane (EPA 8226B sum)								
RW-1323LP-080817		Aq	8/8 0940										
RW-1323LP-080817-F		Aq	8/8 0955										
RW-7763RICK-080817		Aq	8/8 1125										
RW-KF100-080817		Aq	8/8 1425										
RW-1214SSTA-080817		Aq	8/8 1415										
Top Blank		Aq	- -	*									
RW-1216SPC-080917		Aq	8/9/17 0935										
RW-1216SPC-080917-F		Aq	8/9/17 0955										
RW-1337 SSSTA-080917		Aq	8/9/17 1040										
RW-1215OCM-080917		Aq	8/9/12 1135										
Relinquished By (Signature) <i>Barry Foster</i>		Date 8/9/17	Time 9:15	Received By (Signature) FedEx	Date 8/10/17	Time 9:15	Shipment Method FedEx	Tracking Number(s) 809475369227					
Relinquished By (Signature) <i>FedX</i>		Date 8/10/17	Time 9:15	Received By (Signature)	Date 8/10/17	Time 9:15	Number of Packages 1	Custody Seal Number(s) 08231					

*Use stop time/date for composite and/or air samples; use only start time/date for all other samples.

Matrix: AQ = Aqueous, S = Soil, SI = Sediment, A = Air, W = Wipe, B = Bulk, O = Other (detail in comments)

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JC48685: Chain of Custody

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SGS Accutest Sample Receipt Summary

Job Number: JC48685 Client: _____ Project: _____
 Date / Time Received: 8/10/2017 9:15:00 AM Delivery Method: _____ Airbill #'s: _____

Cooler Temps (Raw Measured) °C: Cooler 1: (1.1);

Cooler Temps (Corrected) °C: Cooler 1: (0.4);

Cooler Security	<u>Y or N</u>	<u>Y or N</u>	Sample Integrity - Documentation	<u>Y or N</u>		
1. Custody Seals Present:	<input checked="" type="checkbox"/> <input type="checkbox"/>	3. COC Present:	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/>		
2. Custody Seals Intact:	<input checked="" type="checkbox"/> <input type="checkbox"/>	4. Smpl Dates/Time OK	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/>		
Cooler Temperature		<u>Y or N</u>	Sample Integrity - Condition			
1. Temp criteria achieved:	<input checked="" type="checkbox"/> <input type="checkbox"/>		1. Sample rcvd within HT:	<input checked="" type="checkbox"/> <input type="checkbox"/>		
2. Cooler temp verification:	IR Gun		2. All containers accounted for:	<input checked="" type="checkbox"/> <input type="checkbox"/>		
3. Cooler media:	Ice (Bag)		3. Condition of sample:	Intact		
4. No. Coolers:	1					
Quality Control Preservation		<u>Y or N</u>	<u>N/A</u>	Sample Integrity - Instructions	<u>Y or N</u>	<u>N/A</u>
1. Trip Blank present / cooler:	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		1. Analysis requested is clear:	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	
2. Trip Blank listed on COC:	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		2. Bottles received for unspecified tests	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
3. Samples preserved properly:	<input checked="" type="checkbox"/> <input type="checkbox"/>		3. Sufficient volume rcvd for analysis:	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	
4. VOCs headspace free:	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		4. Compositing instructions clear:	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/>	
			5. Filtering instructions clear:	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/>	

Comments

SM089-02
Rev. Date 12/1/16

JC48685: Chain of Custody

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4.1

4

MS Volatiles**5****QC Data Summaries**

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Surrogate Recovery Summaries

Method Blank Summary

Page 1 of 3

Job Number: JC48685

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5299-MB	1B111147.D	1	08/14/17	BK	n/a	n/a	V1B5299

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC48685-1, JC48685-2, JC48685-3, JC48685-4, JC48685-5, JC48685-6, JC48685-7, JC48685-8, JC48685-9, JC48685-10

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND	0.50	0.25	ug/l	
74-97-5	Bromochloromethane	ND	0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform	ND	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND	0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND	0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND	0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	ND	0.50	0.33	ug/l	
74-87-3	Chloromethane	ND	0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND	0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND	0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.0	0.25	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.50	0.29	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND	0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND	0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.094	ug/l	
74-95-3	Dibromomethane	ND	0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	0.28	ug/l	
95-50-1	o-Dichlorobenzene	ND	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	

Method Blank Summary

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Job Number: JC48685

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5299-MB	1B111147.D	1	08/14/17	BK	n/a	n/a	V1B5299

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC48685-1, JC48685-2, JC48685-3, JC48685-4, JC48685-5, JC48685-6, JC48685-7, JC48685-8, JC48685-9, JC48685-10

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND	0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND	0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	0.50	0.080	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
91-20-3	Naphthalene	ND	0.50	0.18	ug/l	
103-65-1	n-Propylbenzene	ND	0.50	0.26	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Limits	
2199-69-1	1,2-Dichlorobenzene-d4	98%	70-130%
460-00-4	4-Bromofluorobenzene	95%	70-130%

Method Blank Summary

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Job Number: JC48685

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5299-MB	1B111147.D	1	08/14/17	BK	n/a	n/a	V1B5299

The QC reported here applies to the following samples:

Method:

JC48685-1, JC48685-2, JC48685-3, JC48685-4, JC48685-5, JC48685-6, JC48685-7, JC48685-8, JC48685-9, JC48685-10

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

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Job Number: JC48685

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3A6767-MB	3A157020.D	1	08/11/17	PR	n/a	n/a	V3A6767

The QC reported here applies to the following samples:

Method: SW846 8260C BY SIM

JC48685-1, JC48685-2, JC48685-3, JC48685-4, JC48685-5, JC48685-7, JC48685-8, JC48685-9, JC48685-10

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	ND	0.40	0.18	ug/l	

CAS No. Surrogate Recoveries Limits

17647-74-4 1,4-Dioxane-d8 92% 51-175%

Blank Spike Summary

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Job Number: JC48685

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3A6767-BS	3A157021.D	1	08/11/17	PR	n/a	n/a	V3A6767

The QC reported here applies to the following samples:

Method: SW846 8260C BY SIM

JC48685-1, JC48685-2, JC48685-3, JC48685-4, JC48685-5, JC48685-7, JC48685-8, JC48685-9, JC48685-10

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
123-91-1	1,4-Dioxane	20	18.5	93	58-138

CAS No.	Surrogate Recoveries	BSP	Limits
17647-74-4	1,4-Dioxane-d8	92%	51-175%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

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Job Number: JC48685

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5299-BS	1B111148.D	1	08/14/17	BK	n/a	n/a	V1B5299
V1B5299-BSD	1B111149.D	1	08/14/17	BK	n/a	n/a	V1B5299

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC48685-1, JC48685-2, JC48685-3, JC48685-4, JC48685-5, JC48685-6, JC48685-7, JC48685-8, JC48685-9, JC48685-10

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	20	18.1	91	17.8	89	2	70-130/30
78-93-3	2-Butanone	20	17.1	86	17.2	86	1	70-130/30
71-43-2	Benzene	5	4.1	82	4.1	82	0	70-130/30
108-86-1	Bromobenzene	5	4.3	86	4.3	86	0	70-130/30
74-97-5	Bromochloromethane	5	4.4	88	4.3	86	2	70-130/30
75-27-4	Bromodichloromethane	5	4.6	92	4.6	92	0	70-130/30
75-25-2	Bromoform	5	4.7	94	4.6	92	2	70-130/30
74-83-9	Bromomethane	2	1.9	95	2.0	100	5	70-130/30
104-51-8	n-Butylbenzene	5	4.1	82	4.1	82	0	70-130/30
135-98-8	sec-Butylbenzene	5	4.2	84	4.1	82	2	70-130/30
98-06-6	tert-Butylbenzene	5	4.1	82	4.1	82	0	70-130/30
75-15-0	Carbon disulfide	5	4.3	86	4.3	86	0	70-130/30
108-90-7	Chlorobenzene	5	4.2	84	4.2	84	0	70-130/30
75-00-3	Chloroethane	2	1.9	95	1.9	95	0	70-130/30
67-66-3	Chloroform	5	4.2	84	4.1	82	2	70-130/30
74-87-3	Chloromethane	2	2.0	100	2.0	100	0	70-130/30
95-49-8	o-Chlorotoluene	5	4.3	86	4.1	82	5	70-130/30
106-43-4	p-Chlorotoluene	5	4.2	84	4.1	82	2	70-130/30
56-23-5	Carbon tetrachloride	5	4.7	94	4.6	92	2	70-130/30
75-34-3	1,1-Dichloroethane	5	4.2	84	4.3	86	2	70-130/30
75-35-4	1,1-Dichloroethylene	5	4.5	90	4.4	88	2	70-130/30
563-58-6	1,1-Dichloropropene	5	4.2	84	4.2	84	0	70-130/30
96-12-8	1,2-Dibromo-3-chloropropane	5	4.6	92	4.5	90	2	70-130/30
106-93-4	1,2-Dibromoethane	5	4.4	88	4.3	86	2	70-130/30
107-06-2	1,2-Dichloroethane	5	4.4	88	4.4	88	0	70-130/30
78-87-5	1,2-Dichloropropane	5	4.3	86	4.2	84	2	70-130/30
142-28-9	1,3-Dichloropropane	5	4.4	88	4.3	86	2	70-130/30
594-20-7	2,2-Dichloropropane	5	4.1	82	4.1	82	0	70-130/30
124-48-1	Dibromochloromethane	5	4.6	92	4.6	92	0	70-130/30
74-95-3	Dibromomethane	5	4.6	92	4.4	88	4	70-130/30
75-71-8	Dichlorodifluoromethane	2	2.2	110	2.1	105	5	70-130/30
541-73-1	m-Dichlorobenzene	5	4.3	86	4.3	86	0	70-130/30
95-50-1	o-Dichlorobenzene	5	4.3	86	4.2	84	2	70-130/30
106-46-7	p-Dichlorobenzene	5	4.3	86	4.3	86	0	70-130/30
156-60-5	trans-1,2-Dichloroethylene	5	4.3	86	4.2	84	2	70-130/30
156-59-2	cis-1,2-Dichloroethylene	5	4.2	84	4.1	82	2	70-130/30

* = Outside of Control Limits.

5.3.1
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Blank Spike/Blank Spike Duplicate Summary

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Job Number: JC48685

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5299-BS	1B111148.D	1	08/14/17	BK	n/a	n/a	V1B5299
V1B5299-BSD	1B111149.D	1	08/14/17	BK	n/a	n/a	V1B5299

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC48685-1, JC48685-2, JC48685-3, JC48685-4, JC48685-5, JC48685-6, JC48685-7, JC48685-8, JC48685-9, JC48685-10

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	5	4.0	80	4.1	82	2	70-130/30
10061-02-6	trans-1,3-Dichloropropene	5	4.2	84	4.1	82	2	70-130/30
100-41-4	Ethylbenzene	5	4.2	84	4.1	82	2	70-130/30
87-68-3	Hexachlorobutadiene	5	4.3	86	4.2	84	2	70-130/30
591-78-6	2-Hexanone	20	16.8	84	17.0	85	1	70-130/30
98-82-8	Isopropylbenzene	5	4.1	82	4.0	80	2	70-130/30
99-87-6	p-Isopropyltoluene	5	4.1	82	4.0	80	2	70-130/30
75-09-2	Methylene chloride	5	4.1	82	4.1	82	0	70-130/30
1634-04-4	Methyl Tert Butyl Ether	5	4.3	86	4.2	84	2	70-130/30
108-10-1	4-Methyl-2-pentanone	20	16.9	85	16.7	84	1	70-130/30
91-20-3	Naphthalene	5	4.1	82	4.0	80	2	70-130/30
103-65-1	n-Propylbenzene	5	4.2	84	4.1	82	2	70-130/30
100-42-5	Styrene	5	4.1	82	4.1	82	0	70-130/30
630-20-6	1,1,1,2-Tetrachloroethane	5	4.5	90	4.4	88	2	70-130/30
71-55-6	1,1,1-Trichloroethane	5	4.5	90	4.4	88	2	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	5	4.4	88	4.4	88	0	70-130/30
79-00-5	1,1,2-Trichloroethane	5	4.4	88	4.4	88	0	70-130/30
87-61-6	1,2,3-Trichlorobenzene	5	4.3	86	4.2	84	2	70-130/30
96-18-4	1,2,3-Trichloropropane	5	4.6	92	4.5	90	2	70-130/30
120-82-1	1,2,4-Trichlorobenzene	5	4.2	84	4.2	84	0	70-130/30
95-63-6	1,2,4-Trimethylbenzene	5	4.1	82	4.1	82	0	70-130/30
108-67-8	1,3,5-Trimethylbenzene	5	4.1	82	4.1	82	0	70-130/30
127-18-4	Tetrachloroethylene	5	4.5	90	4.3	86	5	70-130/30
108-88-3	Toluene	5	4.1	82	4.1	82	0	70-130/30
79-01-6	Trichloroethylene	5	4.3	86	4.2	84	2	70-130/30
75-69-4	Trichlorofluoromethane	2	1.9	95	1.8	90	5	70-130/30
75-01-4	Vinyl chloride	2	2.0	100	1.9	95	5	70-130/30
	m,p-Xylene	10	8.4	84	8.2	82	2	70-130/30
95-47-6	o-Xylene	5	4.1	82	4.1	82	0	70-130/30
1330-20-7	Xylenes (total)	15	12.4	83	12.3	82	1	70-130/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
2199-69-1	1,2-Dichlorobenzene-d4	100%	101%	70-130%
460-00-4	4-Bromofluorobenzene	98%	99%	70-130%

* = Outside of Control Limits.

5.3.1
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Matrix Spike Summary

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Job Number: JC48685

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC48573-2MS	1B111153.D	1	08/15/17	BK	n/a	n/a	V1B5299
JC48573-2	1B111151.D	1	08/14/17	BK	n/a	n/a	V1B5299

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC48685-1, JC48685-2, JC48685-3, JC48685-4, JC48685-5, JC48685-6, JC48685-7, JC48685-8, JC48685-9, JC48685-10

CAS No.	Compound	JC48573-2		Spike	MS	MS	Limits
		ug/l	Q	ug/l	ug/l	%	
67-64-1	Acetone	ND	20	17.2	86	41-142	
78-93-3	2-Butanone	ND	20	15.9	80	55-129	
71-43-2	Benzene	ND	5	4.1	82	53-138	
108-86-1	Bromobenzene	ND	5	4.3	86	54-138	
74-97-5	Bromochloromethane	ND	5	4.2	84	55-140	
75-27-4	Bromodichloromethane	ND	5	4.4	88	57-147	
75-25-2	Bromoform	ND	5	4.6	92	47-137	
74-83-9	Bromomethane	ND	2	2.4	120	40-162	
104-51-8	n-Butylbenzene	ND	5	4.1	82	45-144	
135-98-8	sec-Butylbenzene	ND	5	4.1	82	46-145	
98-06-6	tert-Butylbenzene	ND	5	4.0	80	48-141	
75-15-0	Carbon disulfide	0.61	5	5.1	90	35-127	
108-90-7	Chlorobenzene	ND	5	4.2	84	54-135	
75-00-3	Chloroethane	ND	2	2.5	125	38-153	
67-66-3	Chloroform	ND	5	4.2	84	57-151	
74-87-3	Chloromethane	ND	2	2.7	135	39-165	
95-49-8	o-Chlorotoluene	ND	5	4.1	82	55-142	
106-43-4	p-Chlorotoluene	ND	5	4.1	82	55-139	
56-23-5	Carbon tetrachloride	ND	5	4.9	98	49-170	
75-34-3	1,1-Dichloroethane	ND	5	4.3	86	55-149	
75-35-4	1,1-Dichloroethylene	ND	5	4.8	96	42-142	
563-58-6	1,1-Dichloropropene	ND	5	4.4	88	46-151	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5	4.7	94	48-141	
106-93-4	1,2-Dibromoethane	ND	5	4.2	84	57-135	
107-06-2	1,2-Dichloroethane	ND	5	4.4	88	59-166	
78-87-5	1,2-Dichloropropane	ND	5	4.1	82	53-142	
142-28-9	1,3-Dichloropropane	ND	5	4.2	84	58-143	
594-20-7	2,2-Dichloropropane	ND	5	4.0	80	38-165	
124-48-1	Dibromochloromethane	ND	5	4.5	90	55-138	
74-95-3	Dibromomethane	ND	5	4.3	86	61-144	
75-71-8	Dichlorodifluoromethane	ND	2	2.8	140	23-172	
541-73-1	m-Dichlorobenzene	ND	5	4.2	84	53-138	
95-50-1	o-Dichlorobenzene	ND	5	4.2	84	54-140	
106-46-7	p-Dichlorobenzene	ND	5	4.2	84	53-137	
156-60-5	trans-1,2-Dichloroethylene	ND	5	4.4	88	47-148	
156-59-2	cis-1,2-Dichloroethylene	ND	5	4.1	82	51-146	

* = Outside of Control Limits.

5.4.1
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Matrix Spike Summary

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Job Number: JC48685

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC48573-2MS	1B111153.D	1	08/15/17	BK	n/a	n/a	V1B5299
JC48573-2	1B111151.D	1	08/14/17	BK	n/a	n/a	V1B5299

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC48685-1, JC48685-2, JC48685-3, JC48685-4, JC48685-5, JC48685-6, JC48685-7, JC48685-8, JC48685-9, JC48685-10

CAS No.	Compound	JC48573-2		Spike	MS	MS	Limits
		ug/l	Q	ug/l	ug/l	%	
10061-01-5	cis-1,3-Dichloropropene	ND	5	3.9	78	51-136	
10061-02-6	trans-1,3-Dichloropropene	ND	5	4.0	80	54-142	
100-41-4	Ethylbenzene	ND	5	4.1	82	51-138	
87-68-3	Hexachlorobutadiene	ND	5	4.3	86	40-154	
591-78-6	2-Hexanone	ND	20	16.6	83	53-128	
98-82-8	Isopropylbenzene	ND	5	4.0	80	49-139	
99-87-6	p-Isopropyltoluene	ND	5	4.0	80	45-141	
75-09-2	Methylene chloride	ND	5	4.2	84	54-137	
1634-04-4	Methyl Tert Butyl Ether	ND	5	4.1	82	53-143	
108-10-1	4-Methyl-2-pentanone	ND	20	16.2	81	58-127	
91-20-3	Naphthalene	ND	5	4.0	80	44-140	
103-65-1	n-Propylbenzene	ND	5	4.1	82	50-142	
100-42-5	Styrene	ND	5	3.9	78	23-130	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5	4.4	88	57-144	
71-55-6	1,1,1-Trichloroethane	ND	5	4.6	92	52-164	
79-34-5	1,1,2,2-Tetrachloroethane	ND	5	4.4	88	58-138	
79-00-5	1,1,2-Trichloroethane	ND	5	4.3	86	59-139	
87-61-6	1,2,3-Trichlorobenzene	ND	5	4.1	82	47-141	
96-18-4	1,2,3-Trichloropropane	ND	5	4.6	92	56-148	
120-82-1	1,2,4-Trichlorobenzene	ND	5	4.0	80	46-137	
95-63-6	1,2,4-Trimethylbenzene	ND	5	4.0	80	41-138	
108-67-8	1,3,5-Trimethylbenzene	ND	5	4.0	80	45-138	
127-18-4	Tetrachloroethylene	ND	5	4.5	90	45-145	
108-88-3	Toluene	ND	5	4.1	82	52-134	
79-01-6	Trichloroethylene	ND	5	4.2	84	54-143	
75-69-4	Trichlorofluoromethane	ND	2	2.6	130	36-167	
75-01-4	Vinyl chloride	ND	2	2.7	135	35-162	
	m,p-Xylene	ND	10	8.2	82	49-135	
95-47-6	o-Xylene	ND	5	3.9	78	49-134	
1330-20-7	Xylenes (total)	ND	15	12.2	81	50-134	

CAS No.	Surrogate Recoveries	MS	JC48573-2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	101%	96%	70-130%
460-00-4	4-Bromofluorobenzene	99%	94%	70-130%

* = Outside of Control Limits.

5.4.1
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Matrix Spike Summary

Page 1 of 1

Job Number: JC48685

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC48685-2MS	3A157028.D	1	08/12/17	PR	n/a	n/a	V3A6767
JC48685-2	3A157024.D	1	08/11/17	PR	n/a	n/a	V3A6767

The QC reported here applies to the following samples:

Method: SW846 8260C BY SIM

JC48685-1, JC48685-2, JC48685-3, JC48685-4, JC48685-5, JC48685-7, JC48685-8, JC48685-9, JC48685-10

CAS No.	Compound	JC48685-2		Spike	MS	MS	Limits
		ug/l	Q	ug/l	ug/l	%	
123-91-1	1,4-Dioxane	0.23	J	20	22.5	111	36-166

CAS No.	Surrogate Recoveries	MS	JC48685-2	Limits
17647-74-4	1,4-Dioxane-d8	100%	112%	51-175%

* = Outside of Control Limits.

Duplicate Summary

Page 1 of 2

Job Number: JC48685

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC48573-3DUP	1B111154.D	1	08/15/17	BK	n/a	n/a	V1B5299
JC48573-3	1B111152.D	1	08/15/17	BK	n/a	n/a	V1B5299

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC48685-1, JC48685-2, JC48685-3, JC48685-4, JC48685-5, JC48685-6, JC48685-7, JC48685-8, JC48685-9, JC48685-10

CAS No.	Compound	JC48573-3		Q	RPD	Limits
		ug/l	ug/l			
67-64-1	Acetone	ND	ND	nc	10	
78-93-3	2-Butanone	ND	ND	nc	12	
71-43-2	Benzene	ND	ND	nc	10	
108-86-1	Bromobenzene	ND	ND	nc	10	
74-97-5	Bromochloromethane	ND	ND	nc	10	
75-27-4	Bromodichloromethane	ND	ND	nc	10	
75-25-2	Bromoform	ND	ND	nc	10	
74-83-9	Bromomethane	ND	ND	nc	10	
104-51-8	n-Butylbenzene	ND	ND	nc	10	
135-98-8	sec-Butylbenzene	ND	ND	nc	10	
98-06-6	tert-Butylbenzene	ND	ND	nc	10	
75-15-0	Carbon disulfide	ND	ND	nc	19	
108-90-7	Chlorobenzene	ND	ND	nc	10	
75-00-3	Chloroethane	ND	ND	nc	10	
67-66-3	Chloroform	ND	ND	nc	12	
74-87-3	Chloromethane	ND	ND	nc	10	
95-49-8	o-Chlorotoluene	ND	ND	nc	10	
106-43-4	p-Chlorotoluene	ND	ND	nc	10	
56-23-5	Carbon tetrachloride	ND	ND	nc	10	
75-34-3	1,1-Dichloroethane	ND	ND	nc	10	
75-35-4	1,1-Dichloroethylene	ND	ND	nc	10	
563-58-6	1,1-Dichloropropene	ND	ND	nc	10	
96-12-8	1,2-Dibromo-3-chloropropane	ND	ND	nc	10	
106-93-4	1,2-Dibromoethane	ND	ND	nc	10	
107-06-2	1,2-Dichloroethane	ND	ND	nc	10	
78-87-5	1,2-Dichloropropane	ND	ND	nc	10	
142-28-9	1,3-Dichloropropane	ND	ND	nc	10	
594-20-7	2,2-Dichloropropane	ND	ND	nc	10	
124-48-1	Dibromochloromethane	ND	ND	nc	10	
74-95-3	Dibromomethane	ND	ND	nc	10	
75-71-8	Dichlorodifluoromethane	ND	ND	nc	10	
541-73-1	m-Dichlorobenzene	ND	ND	nc	10	
95-50-1	o-Dichlorobenzene	ND	ND	nc	10	
106-46-7	p-Dichlorobenzene	ND	ND	nc	10	
156-60-5	trans-1,2-Dichloroethylene	ND	ND	nc	10	
156-59-2	cis-1,2-Dichloroethylene	ND	ND	nc	10	

* = Outside of Control Limits.

5.5.1
5

Duplicate Summary

Page 2 of 2

Job Number: JC48685

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC48573-3DUP	1B111154.D	1	08/15/17	BK	n/a	n/a	V1B5299
JC48573-3	1B111152.D	1	08/15/17	BK	n/a	n/a	V1B5299

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC48685-1, JC48685-2, JC48685-3, JC48685-4, JC48685-5, JC48685-6, JC48685-7, JC48685-8, JC48685-9, JC48685-10

CAS No.	Compound	JC48573-3		Q	RPD	Limits
		ug/l	ug/l			
10061-01-5	cis-1,3-Dichloropropene	ND	ND	nc	10	
10061-02-6	trans-1,3-Dichloropropene	ND	ND	nc	10	
100-41-4	Ethylbenzene	ND	ND	nc	10	
87-68-3	Hexachlorobutadiene	ND	ND	nc	10	
591-78-6	2-Hexanone	ND	ND	nc	10	
98-82-8	Isopropylbenzene	ND	ND	nc	10	
99-87-6	p-Isopropyltoluene	ND	ND	nc	10	
75-09-2	Methylene chloride	ND	ND	nc	10	
1634-04-4	Methyl Tert Butyl Ether	ND	ND	nc	10	
108-10-1	4-Methyl-2-pentanone	ND	ND	nc	10	
91-20-3	Naphthalene	ND	ND	nc	10	
103-65-1	n-Propylbenzene	ND	ND	nc	10	
100-42-5	Styrene	ND	ND	nc	10	
630-20-6	1,1,1,2-Tetrachloroethane	ND	ND	nc	10	
71-55-6	1,1,1-Trichloroethane	ND	ND	nc	10	
79-34-5	1,1,2,2-Tetrachloroethane	ND	ND	nc	10	
79-00-5	1,1,2-Trichloroethane	ND	ND	nc	10	
87-61-6	1,2,3-Trichlorobenzene	ND	ND	nc	10	
96-18-4	1,2,3-Trichloropropane	ND	ND	nc	10	
120-82-1	1,2,4-Trichlorobenzene	ND	ND	nc	10	
95-63-6	1,2,4-Trimethylbenzene	ND	ND	nc	10	
108-67-8	1,3,5-Trimethylbenzene	ND	ND	nc	10	
127-18-4	Tetrachloroethylene	ND	ND	nc	10	
108-88-3	Toluene	ND	ND	nc	10	
79-01-6	Trichloroethylene	ND	ND	nc	10	
75-69-4	Trichlorofluoromethane	ND	ND	nc	10	
75-01-4	Vinyl chloride	ND	ND	nc	10	
	m,p-Xylene	ND	ND	nc	10	
95-47-6	o-Xylene	ND	ND	nc	10	
1330-20-7	Xylenes (total)	ND	ND	nc	10	

CAS No.	Surrogate Recoveries	DUP	JC48573-3	Limits
2199-69-1	1,2-Dichlorobenzene-d4	98%	100%	70-130%
460-00-4	4-Bromofluorobenzene	95%	96%	70-130%

* = Outside of Control Limits.

5.5.1
5

Duplicate Summary

Job Number: JC48685

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC48685-1DUP	3A157023.D	1	08/11/17	PR	n/a	n/a	V3A6767
JC48685-1	3A157030.D	1	08/12/17	PR	n/a	n/a	V3A6767

The QC reported here applies to the following samples:

Method: SW846 8260C BY SIM

JC48685-1, JC48685-2, JC48685-3, JC48685-4, JC48685-5, JC48685-7, JC48685-8, JC48685-9, JC48685-10

CAS No.	Compound	JC48685-1		DUP		Q	RPD	Limits
		ug/l	ug/l	Q	ug/l			
123-91-1	1,4-Dioxane	0.20		J	0.26	J	26	37

CAS No.	Surrogate Recoveries	DUP	JC48685-1	Limits
17647-74-4	1,4-Dioxane-d8	102%	94%	51-175%

* = Outside of Control Limits.

Instrument Performance Check (BFB)

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Job Number: JC48685

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample: V1B5296-BFB
Lab File ID: 1B111103.D
Instrument ID: GCMS1B

Injection Date: 08/12/17
Injection Time: 16:55

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	14.99 - 40.0% of mass 95	16612	15.2	Pass
75	30.0 - 80.0% of mass 95	47288	43.3	Pass
95	Base peak, 100% relative abundance	109179	100.0	Pass
96	5.0 - 9.0% of mass 95	7231	6.62	Pass
173	Less than 2.0% of mass 174	431	0.39	(0.47) ^a Pass
174	50.0 - 120.0% of mass 95	91827	84.1	Pass
175	5.0 - 9.0% of mass 174	6550	6.00	(7.13) ^a Pass
176	95.0 - 101.0% of mass 174	89272	81.8	(97.2) ^a Pass
177	5.0 - 9.0% of mass 176	5923	5.43	(6.63) ^b Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V1B5296-IC5296	1B111104.D	08/12/17	17:29	00:34	Initial cal 0.2
V1B5296-IC5296	1B111105.D	08/12/17	18:01	01:06	Initial cal 0.5
V1B5296-IC5296	1B111106.D	08/12/17	18:33	01:38	Initial cal 1
V1B5296-IC5296	1B111107.D	08/12/17	19:04	02:09	Initial cal 2
V1B5296-IC5296	1B111108.D	08/12/17	19:36	02:41	Initial cal 5
V1B5296-ICC5296	1B111109.D	08/12/17	20:08	03:13	Initial cal 10
V1B5296-IC5296	1B111110.D	08/12/17	20:40	03:45	Initial cal 20
V1B5296-IC5296	1B111111.D	08/12/17	21:12	04:17	Initial cal 40
V1B5296-IC5296	1B111112.D	08/12/17	21:42	04:47	Initial cal 80
V1B5296-ICV5296	1B111115.D	08/12/17	23:16	06:21	Initial cal verification 10
V1B5297-MB	1B111117.D	08/13/17	00:19	07:24	Method Blank
V1B5297-BS	1B111118.D	08/13/17	00:50	07:55	Blank Spike

Instrument Performance Check (BFB)

Job Number: JC48685

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample: V1B5299-BFB
Lab File ID: 1B111145.D
Instrument ID: GCMS1B

Injection Date: 08/14/17
Injection Time: 20:25

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	14.99 - 40.0% of mass 95	2501	16.9	Pass
75	30.0 - 80.0% of mass 95	6670	45.1	Pass
95	Base peak, 100% relative abundance	14792	100.0	Pass
96	5.0 - 9.0% of mass 95	1129	7.63	Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) ^a Pass
174	50.0 - 120.0% of mass 95	12322	83.3	Pass
175	5.0 - 9.0% of mass 174	978	6.61	(7.94) ^a Pass
176	95.0 - 101.0% of mass 174	11811	79.8	(95.9) ^a Pass
177	5.0 - 9.0% of mass 176	816	5.52	(6.91) ^b Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V1B5299-CC5296	1B111146.D	08/14/17	20:56	00:31	Continuing cal 10
V1B5299-MB	1B111147.D	08/14/17	21:27	01:02	Method Blank
V1B5299-BS	1B111148.D	08/14/17	21:58	01:33	Blank Spike
V1B5299-BSD	1B111149.D	08/14/17	22:30	02:05	Blank Spike Duplicate
ZZZZZZ	1B111150.D	08/14/17	23:01	02:36	(unrelated sample)
JC48573-2	1B111151.D	08/14/17	23:33	03:08	(used for QC only; not part of job JC48685)
JC48573-3	1B111152.D	08/15/17	00:05	03:40	(used for QC only; not part of job JC48685)
JC48573-2MS	1B111153.D	08/15/17	00:36	04:11	Matrix Spike
JC48573-3DUP	1B111154.D	08/15/17	01:08	04:43	Duplicate
JC48685-1	1B111155.D	08/15/17	01:39	05:14	RW-1323LP-080817
JC48685-2	1B111156.D	08/15/17	02:10	05:45	RW-1323LP-080817-F
JC48685-3	1B111157.D	08/15/17	02:42	06:17	RW-7763RICK-080817
JC48685-4	1B111158.D	08/15/17	03:14	06:49	RW-KF100-080817
JC48685-5	1B111159.D	08/15/17	03:46	07:21	RW-1214SSTA-080817
JC48685-6	1B111160.D	08/15/17	04:18	07:53	TRIP BLANK
JC48685-7	1B111161.D	08/15/17	04:49	08:24	RW-1216SPC-080917
JC48685-8	1B111162.D	08/15/17	05:21	08:56	RW-1216SPC-080917-F
JC48685-9	1B111163.D	08/15/17	05:53	09:28	RW-1337SSTA-080917
JC48685-10	1B111164.D	08/15/17	06:25	10:00	RW-1215OCM-080917
ZZZZZZ	1B111165.D	08/15/17	06:56	10:31	(unrelated sample)
ZZZZZZ	1B111166.D	08/15/17	07:28	11:03	(unrelated sample)
ZZZZZZ	1B111167.D	08/15/17	07:59	11:34	(unrelated sample)

Instrument Performance Check (BFB)

Page 1 of 1

Job Number: JC48685
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample:	V3A6765-BFB	Injection Date:	08/03/17
Lab File ID:	3A156949.D	Injection Time:	21:08
Instrument ID:	GCMS3A		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	15.0 - 40.0% of mass 95	6931	18.2	Pass
75	30.0 - 60.0% of mass 95	18428	48.4	Pass
95	Base peak, 100% relative abundance	38104	100.0	Pass
96	5.0 - 9.0% of mass 95	2736	7.18	Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) ^a Pass
174	50.0 - 120.0% of mass 95	31890	83.7	Pass
175	5.0 - 9.0% of mass 174	2266	5.95	(7.11) ^a Pass
176	95.0 - 101.0% of mass 174	31408	82.4	(98.5) ^a Pass
177	5.0 - 9.0% of mass 176	2027	5.32	(6.45) ^b Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V3A6765-IC6765	3A156950.D	08/03/17	21:42	00:34	Initial cal 0.25
V3A6765-IC6765	3A156951.D	08/03/17	22:07	00:59	Initial cal 0.4
V3A6765-IC6765	3A156952.D	08/03/17	22:33	01:25	Initial cal 1
V3A6765-IC6765	3A156953.D	08/03/17	22:59	01:51	Initial cal 2
V3A6765-IC6765	3A156954.D	08/03/17	23:25	02:17	Initial cal 5
V3A6765-IC6765	3A156955.D	08/03/17	23:51	02:43	Initial cal 20
V3A6765-ICC6765	3A156956.D	08/04/17	00:17	03:09	Initial cal 50
V3A6765-IC6765	3A156957.D	08/04/17	00:43	03:35	Initial cal 100
V3A6765-IC6765	3A156958.D	08/04/17	01:09	04:01	Initial cal 200
V3A6765-ICV6765	3A156962.D	08/04/17	02:53	05:45	Initial cal verification 20

Instrument Performance Check (BFB)

Page 1 of 1

Job Number: JC48685

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample:	V3A6767-BFB	Injection Date:	08/11/17
Lab File ID:	3A157017.D	Injection Time:	19:24
Instrument ID:	GCMS3A		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	15.0 - 40.0% of mass 95	3370	18.2	Pass
75	30.0 - 60.0% of mass 95	8407	45.4	Pass
95	Base peak, 100% relative abundance	18517	100.0	Pass
96	5.0 - 9.0% of mass 95	1076	5.81	Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) ^a Pass
174	50.0 - 120.0% of mass 95	15580	84.1	Pass
175	5.0 - 9.0% of mass 174	1032	5.57	(6.62) ^a Pass
176	95.0 - 101.0% of mass 174	15499	83.7	(99.5) ^a Pass
177	5.0 - 9.0% of mass 176	1195	6.45	(7.71) ^b Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V3A6767-CC6765	3A157019.D	08/11/17	20:21	00:57	Continuing cal 20
V3A6767-MB	3A157020.D	08/11/17	20:51	01:27	Method Blank
V3A6767-BS	3A157021.D	08/11/17	21:23	01:59	Blank Spike
ZZZZZZ	3A157022.D	08/11/17	21:52	02:28	(unrelated sample)
JC48685-1DUP	3A157023.D	08/11/17	22:18	02:54	Duplicate
JC48685-2	3A157024.D	08/11/17	22:43	03:19	RW-1323LP-080817-F
JC48685-3	3A157025.D	08/11/17	23:09	03:45	RW-7763RICK-080817
JC48685-4	3A157026.D	08/11/17	23:35	04:11	RW-KF100-080817
JC48685-5	3A157027.D	08/12/17	00:00	04:36	RW-1214SSTA-080817
JC48685-2MS	3A157028.D	08/12/17	00:44	05:20	Matrix Spike
JC48685-1	3A157030.D	08/12/17	01:35	06:11	RW-1323LP-080817
JC48685-7	3A157031.D	08/12/17	02:01	06:37	RW-1216SPC-080917
JC48685-8	3A157032.D	08/12/17	02:27	07:03	RW-1216SPC-080917-F
JC48685-9	3A157033.D	08/12/17	02:53	07:29	RW-1337SSTA-080917
JC48685-10	3A157034.D	08/12/17	03:18	07:54	RW-1215OCM-080917
ZZZZZZ	3A157035.D	08/12/17	03:44	08:20	(unrelated sample)
ZZZZZZ	3A157036.D	08/12/17	04:10	08:46	(unrelated sample)
ZZZZZZ	3A157037.D	08/12/17	04:36	09:12	(unrelated sample)

Surrogate Recovery Summary

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Job Number: JC48685

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Method: EPA 524.2 REV 4.1

Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2
JC48685-1	1B111155.D	97	92
JC48685-2	1B111156.D	99	96
JC48685-3	1B111157.D	98	95
JC48685-4	1B111158.D	97	93
JC48685-5	1B111159.D	98	93
JC48685-6	1B111160.D	99	92
JC48685-7	1B111161.D	96	92
JC48685-8	1B111162.D	99	93
JC48685-9	1B111163.D	99	92
JC48685-10	1B111164.D	97	94
JC48573-2MS	1B111153.D	101	99
JC48573-3DUP	1B111154.D	98	95
V1B5299-BS	1B111148.D	100	98
V1B5299-BSD	1B111149.D	101	99
V1B5299-MB	1B111147.D	98	95

Surrogate Compounds	Recovery Limits
S1 = 1,2-Dichlorobenzene-d4	70-130%
S2 = 4-Bromofluorobenzene	70-130%

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Surrogate Recovery Summary

Page 1 of 1

Job Number: JC48685

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Method: SW846 8260C BY SIM

Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1
JC48685-1	3A157030.D	94
JC48685-2	3A157024.D	112
JC48685-3	3A157025.D	111
JC48685-4	3A157026.D	102
JC48685-5	3A157027.D	98
JC48685-7	3A157031.D	102
JC48685-8	3A157032.D	108
JC48685-9	3A157033.D	105
JC48685-10	3A157034.D	107
JC48685-1DUP	3A157023.D	102
JC48685-2MS	3A157028.D	100
V3A6767-BS	3A157021.D	92
V3A6767-MB	3A157020.D	92

Surrogate Compounds	Recovery Limits
S1 = 1,4-Dioxane-d8	51-175%

5.7.2
5



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Automated Report

Technical Report for

WSP Environment & Energy

Kop-Flex, Hanover, VA

31400309

SGS Accutest Job Number: JC51755

Sampling Date: 09/25/17



Report to:

WSP
11190 Sunrise Valley Drive Suite 300
Reston, VA 20190
eric.johnson@wspgroup.com

ATTN: Eric Johnson

Total number of pages in report: 79



Test results contained within this data package meet the requirements
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Nancy F. Cole

Nancy Cole
Laboratory Director

Client Service contact: Rocus Peters 732-329-0200

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Sample Summary

WSP Environment & Energy

Job No: JC51755

Kop-Flex, Hanover, VA
Project No: 31400309

Sample Number	Collected Date	Time By	Matrix Received	Code Type	Client Sample ID
JC51755-1	09/25/17	09:45 DW	09/26/17	DW Drinking Water	RW-12270CM-092517
JC51755-2	09/25/17	10:15 DW	09/26/17	DW Drinking Water	RW-1000-092517
JC51755-3	09/25/17	15:00 DW	09/26/17	DW Drinking Water TB	TB-092517
JC51755-4	09/25/17	09:35 DW	09/26/17	DW Drinking Water	RW-12270CM-092517-F
JC51755-5	09/25/17	11:25 DW	09/26/17	DW Drinking Water	RW-1308RB-092517-F
JC51755-6	09/25/17	11:35 DW	09/26/17	DW Drinking Water	RW-1308RB-092517
JC51755-7	09/25/17	13:05 DW	09/26/17	DW Drinking Water	RW-1319LP-092517
JC51755-8	09/25/17	14:00 DW	09/26/17	DW Drinking Water	RW-1317LP-092517-F
JC51755-9	09/25/17	14:05 DW	09/26/17	DW Drinking Water	RW-1317LP-092517
JC51755-10	09/25/17	15:00 DW	09/26/17	DW Drinking Water	RW-7740TO-092517

Summary of Hits

Job Number: JC51755
Account: WSP Environment & Energy
Project: Kop-Flex, Hanover, VA
Collected: 09/25/17

Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC51755-1 RW-12270CM-092517						
1,1-Dichloroethane	0.18 J	0.50	0.13	ug/l	EPA 524.2 REV 4.1	
1,1-Dichloroethylene	7.8	0.50	0.23	ug/l	EPA 524.2 REV 4.1	
1,1,1-Trichloroethane	0.41 J	0.50	0.12	ug/l	EPA 524.2 REV 4.1	
1,4-Dioxane ^a	4.6	0.40	0.29	ug/l	SW846 8260C BY SIM	
JC51755-2 RW-1000-092517						
1,1-Dichloroethane	0.15 J	0.50	0.13	ug/l	EPA 524.2 REV 4.1	
1,1-Dichloroethylene	7.0	0.50	0.23	ug/l	EPA 524.2 REV 4.1	
1,1,1-Trichloroethane	0.40 J	0.50	0.12	ug/l	EPA 524.2 REV 4.1	
1,4-Dioxane ^a	4.4	0.40	0.29	ug/l	SW846 8260C BY SIM	
JC51755-3 TB-092517						
No hits reported in this sample.						
JC51755-4 RW-1227OCM-092517-F						
1,1-Dichloroethane	0.15 J	0.50	0.13	ug/l	EPA 524.2 REV 4.1	
1,1-Dichloroethylene	1.7	0.50	0.23	ug/l	EPA 524.2 REV 4.1	
1,1,1-Trichloroethane	0.37 J	0.50	0.12	ug/l	EPA 524.2 REV 4.1	
1,4-Dioxane ^b	3.5	0.40	0.29	ug/l	SW846 8260C BY SIM	
JC51755-5 RW-1308RB-092517-F						
Chloroform	0.34 J	0.50	0.33	ug/l	EPA 524.2 REV 4.1	
Methyl Tert Butyl Ether	0.43 J	0.50	0.080	ug/l	EPA 524.2 REV 4.1	
1,4-Dioxane ^b	0.55	0.40	0.29	ug/l	SW846 8260C BY SIM	
JC51755-6 RW-1308RB-092517						
Chloroform	0.39 J	0.50	0.33	ug/l	EPA 524.2 REV 4.1	
Methyl Tert Butyl Ether	0.50	0.50	0.080	ug/l	EPA 524.2 REV 4.1	
Naphthalene	0.30 J	0.50	0.18	ug/l	EPA 524.2 REV 4.1	
1,4-Dioxane ^b	0.53	0.40	0.29	ug/l	SW846 8260C BY SIM	
JC51755-7 RW-1319LP-092517						
Chloroform	0.36 J	0.50	0.33	ug/l	EPA 524.2 REV 4.1	
Methyl Tert Butyl Ether	0.50	0.50	0.080	ug/l	EPA 524.2 REV 4.1	

Summary of Hits

Job Number: JC51755
Account: WSP Environment & Energy
Project: Kop-Flex, Hanover, VA
Collected: 09/25/17

Lab Sample ID Analyte	Client Sample ID Qual	Result/ RL	MDL	Units	Method
JC51755-8 RW-1317LP-092517-F					
Chloroform	0.36 J	0.50	0.33	ug/l	EPA 524.2 REV 4.1
Methyl Tert Butyl Ether	0.37 J	0.50	0.080	ug/l	EPA 524.2 REV 4.1
JC51755-9 RW-1317LP-092517					
Chloroform	0.42 J	0.50	0.33	ug/l	EPA 524.2 REV 4.1
Methyl Tert Butyl Ether	0.47 J	0.50	0.080	ug/l	EPA 524.2 REV 4.1
JC51755-10 RW-7740TO-092517					
1,1-Dichloroethane	0.35 J	0.50	0.13	ug/l	EPA 524.2 REV 4.1
1,1-Dichloroethylene	11.3	0.50	0.23	ug/l	EPA 524.2 REV 4.1
1,1,1-Trichloroethane	0.86	0.50	0.12	ug/l	EPA 524.2 REV 4.1
1,4-Dioxane ^b	4.8	0.40	0.29	ug/l	SW846 8260C BY SIM

(a) (pH= 4) Sample is not acid preserved per method/client criteria. Sample analyzed within 7 days holding time.

(b) (pH= 5) Sample is not acid preserved per method/client criteria. Sample analyzed within 7 days holding time.

Sample Results

Report of Analysis

Report of Analysis

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Client Sample ID: RW-12270CM-092517**Lab Sample ID:** JC51755-1**Date Sampled:** 09/25/17**Matrix:** DW - Drinking Water**Date Received:** 09/26/17**Method:** EPA 524.2 REV 4.1**Percent Solids:** n/a**Project:** Kop-Flex, Hanover, VA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1B111863.D	1	09/28/17 10:42	BK	n/a	n/a	V1B5331
Run #2							

Purge Volume

Run #1 5.0 ml

Run #2

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
67-64-1	Acetone	ND		5.0	3.8	ug/l	
78-93-3	2-Butanone	ND		5.0	2.5	ug/l	
71-43-2	Benzene	ND	5.0	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND		0.50	0.25	ug/l	
74-97-5	Bromo(chloromethane)	ND		0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	ND		0.50	0.36	ug/l	
75-25-2	Bromoform ^a	ND		0.50	0.40	ug/l	
74-83-9	Bromomethane	ND		0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND		0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND		0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND		0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND		0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	100	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND		0.50	0.071	ug/l	
67-66-3	Chloroform	ND		0.50	0.33	ug/l	
74-87-3	Chloromethane	ND		0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND		0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND		0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	5.0	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	0.18		0.50	0.13	ug/l	J
75-35-4	1,1-Dichloroethylene	7.8	7.0	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND		0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND		0.20	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND		0.050	0.50	0.29	ug/l
107-06-2	1,2-Dichloroethane	ND		5.0	0.50	0.28	ug/l
78-87-5	1,2-Dichloropropane	ND	5.0	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND		0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND		0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	ND		0.50	0.094	ug/l	
74-95-3	Dibromomethane	ND		0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND		0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND		0.50	0.28	ug/l	

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

MCL = Maximum Contamination Level (40 CFR 141)

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: RW-12270CM-092517
Lab Sample ID: JC51755-1
Matrix: DW - Drinking Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, VA

Date Sampled: 09/25/17
Date Received: 09/26/17
Percent Solids: n/a

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	600	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	75	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	100	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	70	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND		0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND		0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	700	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND		0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND		2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND		0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND		0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	5.0	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND		0.50	0.080	ug/l	
108-10-1	4-Methyl-2-pentanone	ND		2.0	1.5	ug/l	
91-20-3	Naphthalene	ND		0.50	0.18	ug/l	
103-65-1	n-Propylbenzene	ND		0.50	0.26	ug/l	
100-42-5	Styrene	ND	100	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND		0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	0.41	200	0.50	0.12	ug/l	J
79-34-5	1,1,2,2-Tetrachloroethane	ND		0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	5.0	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND		0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND		0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	70	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND		0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND		0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	5.0	0.50	0.12	ug/l	
108-88-3	Toluene	ND	1000	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	5.0	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND		1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	2.0	0.50	0.056	ug/l	
	m,p-Xylene	ND		0.50	0.26	ug/l	
95-47-6	o-Xylene	ND		0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	10000	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	96%		70-130%
460-00-4	4-Bromofluorobenzene	93%		70-130%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

MCL = Maximum Contamination Level (40 CFR 141)

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID: RW-12270CM-092517
Lab Sample ID: JC51755-1
Matrix: DW - Drinking Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, VA

Date Sampled: 09/25/17
Date Received: 09/26/17
Percent Solids: n/a

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
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(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected MDL = Method Detection Limit
MCL = Maximum Contamination Level (40 CFR 141)
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

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3

Client Sample ID: RW-12270CM-092517**Lab Sample ID:** JC51755-1**Matrix:** DW - Drinking Water**Method:** SW846 8260C BY SIM**Project:** Kop-Flex, Hanover, VA**Date Sampled:** 09/25/17**Date Received:** 09/26/17**Percent Solids:** n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	3A157692.D	1	09/28/17 20:27	PR	n/a	n/a	V3A6789
Run #2							

Purge Volume

Run #1 5.0 ml

Run #2

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
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123-91-1	1,4-Dioxane	4.6		0.40	0.29	ug/l	
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CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
----------------	-----------------------------	---------------	---------------	---------------

17647-74-4	1,4-Dioxane-d8	175%		51-175%
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(a) (pH= 4) Sample is not acid preserved per method/client criteria. Sample analyzed within 7 days holding time.

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

MCL = Maximum Contamination Level (40 CFR 141)

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID:	RW-1000-092517	Date Sampled:	09/25/17
Lab Sample ID:	JC51755-2	Date Received:	09/26/17
Matrix:	DW - Drinking Water	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Kop-Flex, Hanover, VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1B111864.D	1	09/28/17 11:13	BK	n/a	n/a	V1B5331
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
67-64-1	Acetone	ND		5.0	3.8	ug/l	
78-93-3	2-Butanone	ND		5.0	2.5	ug/l	
71-43-2	Benzene	ND	5.0	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND		0.50	0.25	ug/l	
74-97-5	Bromochloromethane	ND		0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	ND		0.50	0.36	ug/l	
75-25-2	Bromoform ^a	ND		0.50	0.40	ug/l	
74-83-9	Bromomethane	ND		0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND		0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND		0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND		0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND		0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	100	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND		0.50	0.071	ug/l	
67-66-3	Chloroform	ND		0.50	0.33	ug/l	
74-87-3	Chloromethane	ND		0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND		0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND		0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	5.0	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	0.15		0.50	0.13	ug/l	J
75-35-4	1,1-Dichloroethylene	7.0	7.0	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND		0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND		0.20	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND		0.050	0.50	0.29	ug/l
107-06-2	1,2-Dichloroethane	ND		5.0	0.50	0.28	ug/l
78-87-5	1,2-Dichloropropane	ND	5.0	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND		0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND		0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	ND		0.50	0.094	ug/l	
74-95-3	Dibromomethane	ND		0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND		0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND		0.50	0.28	ug/l	

ND = Not detected MDL = Method Detection Limit

MCL = Maximum Contamination Level (40 CFR 141)

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RW-1000-092517	Date Sampled:	09/25/17
Lab Sample ID:	JC51755-2	Date Received:	09/26/17
Matrix:	DW - Drinking Water	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Kop-Flex, Hanover, VA		

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	600	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	75	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	100	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	70	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND		0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND		0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	700	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND		0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND		2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND		0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND		0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	5.0	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND		0.50	0.080	ug/l	
108-10-1	4-Methyl-2-pentanone	ND		2.0	1.5	ug/l	
91-20-3	Naphthalene	ND		0.50	0.18	ug/l	
103-65-1	n-Propylbenzene	ND		0.50	0.26	ug/l	
100-42-5	Styrene	ND	100	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND		0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	0.40	200	0.50	0.12	ug/l	J
79-34-5	1,1,2,2-Tetrachloroethane	ND		0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	5.0	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND		0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND		0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	70	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND		0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND		0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	5.0	0.50	0.12	ug/l	
108-88-3	Toluene	ND	1000	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	5.0	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND		1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	2.0	0.50	0.056	ug/l	
	m,p-Xylene	ND		0.50	0.26	ug/l	
95-47-6	o-Xylene	ND		0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	10000	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	97%		70-130%
460-00-4	4-Bromofluorobenzene	92%		70-130%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

MCL = Maximum Contamination Level (40 CFR 141)

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

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Client Sample ID:	RW-1000-092517	Date Sampled:	09/25/17
Lab Sample ID:	JC51755-2	Date Received:	09/26/17
Matrix:	DW - Drinking Water	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Kop-Flex, Hanover, VA		

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
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(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected MDL = Method Detection Limit
 MCL = Maximum Contamination Level (40 CFR 141)
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RW-1000-092517	Date Sampled:	09/25/17
Lab Sample ID:	JC51755-2	Date Received:	09/26/17
Matrix:	DW - Drinking Water	Percent Solids:	n/a
Method:	SW846 8260C BY SIM		
Project:	Kop-Flex, Hanover, VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	3A157693.D	1	09/28/17 20:53	PR	n/a	n/a	V3A6789
Run #2							

Purge Volume	
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
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123-91-1	1,4-Dioxane	4.4		0.40	0.29	ug/l	
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CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
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17647-74-4	1,4-Dioxane-d8	174%		51-175%
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(a) (pH= 4) Sample is not acid preserved per method/client criteria. Sample analyzed within 7 days holding time.

ND = Not detected MDL = Method Detection Limit
 MCL = Maximum Contamination Level (40 CFR 141)
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	TB-092517	Date Sampled:	09/25/17
Lab Sample ID:	JC51755-3	Date Received:	09/26/17
Matrix:	DW - Drinking Water TB	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Kop-Flex, Hanover, VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1B111875.D	1	09/28/17 17:03	BK	n/a	n/a	V1B5331
Run #2							

Purge Volume	
Run #1	5.0 ml
Run #2	

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
67-64-1	Acetone	ND		5.0	3.8	ug/l	
78-93-3	2-Butanone	ND		5.0	2.5	ug/l	
71-43-2	Benzene	ND	5.0	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND		0.50	0.25	ug/l	
74-97-5	Bromochloromethane	ND		0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	ND		0.50	0.36	ug/l	
75-25-2	Bromoform ^a	ND		0.50	0.40	ug/l	
74-83-9	Bromomethane	ND		0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND		0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND		0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND		0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND		0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	100	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND		0.50	0.071	ug/l	
67-66-3	Chloroform	ND		0.50	0.33	ug/l	
74-87-3	Chloromethane	ND		0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND		0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND		0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	5.0	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND		0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	7.0	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND		0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND		0.20	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND		0.050	0.50	0.29	ug/l
107-06-2	1,2-Dichloroethane	ND		5.0	0.50	0.28	ug/l
78-87-5	1,2-Dichloropropane	ND	5.0	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND		0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND		0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	ND		0.50	0.094	ug/l	
74-95-3	Dibromomethane	ND		0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND		0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND		0.50	0.28	ug/l	

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

MCL = Maximum Contamination Level (40 CFR 141)

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TB-092517	Date Sampled:	09/25/17
Lab Sample ID:	JC51755-3	Date Received:	09/26/17
Matrix:	DW - Drinking Water TB	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Kop-Flex, Hanover, VA		

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	600	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	75	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	100	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	70	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND		0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND		0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	700	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND		0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND		2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND		0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND		0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	5.0	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND		0.50	0.080	ug/l	
108-10-1	4-Methyl-2-pentanone	ND		2.0	1.5	ug/l	
91-20-3	Naphthalene	ND		0.50	0.18	ug/l	
103-65-1	n-Propylbenzene	ND		0.50	0.26	ug/l	
100-42-5	Styrene	ND	100	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND		0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	200	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND		0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	5.0	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND		0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND		0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	70	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND		0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND		0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	5.0	0.50	0.12	ug/l	
108-88-3	Toluene	ND	1000	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	5.0	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND		1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	2.0	0.50	0.056	ug/l	
	m,p-Xylene	ND		0.50	0.26	ug/l	
95-47-6	o-Xylene	ND		0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	10000	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	96%		70-130%
460-00-4	4-Bromofluorobenzene	88%		70-130%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

MCL = Maximum Contamination Level (40 CFR 141)

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

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Client Sample ID:	TB-092517	Date Sampled:	09/25/17
Lab Sample ID:	JC51755-3	Date Received:	09/26/17
Matrix:	DW - Drinking Water TB	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Kop-Flex, Hanover, VA		

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
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(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected MDL = Method Detection Limit
 MCL = Maximum Contamination Level (40 CFR 141)
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	TB-092517	Date Sampled:	09/25/17
Lab Sample ID:	JC51755-3	Date Received:	09/26/17
Matrix:	DW - Drinking Water TB	Percent Solids:	n/a
Method:	SW846 8260C BY SIM		
Project:	Kop-Flex, Hanover, VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	3A157694.D	1	09/28/17 21:18	PR	n/a	n/a	V3A6789
Run #2							

Purge Volume	
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
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123-91-1	1,4-Dioxane	ND		0.40	0.29	ug/l	
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CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
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17647-74-4	1,4-Dioxane-d8	150%		51-175%
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(a) (pH= 5) Sample is not acid preserved per method/client criteria. Sample analyzed within 7 days holding time.

ND = Not detected MCL = Method Detection Limit
 MCL = Maximum Contamination Level (40 CFR 141)
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID: RW-1227OCM-092517-F
Lab Sample ID: JC51755-4
Matrix: DW - Drinking Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, VA

Date Sampled: 09/25/17
Date Received: 09/26/17
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1B111876.D	1	09/28/17 17:35	BK	n/a	n/a	V1B5331
Run #2							

Purge Volume	
Run #1	5.0 ml
Run #2	

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
67-64-1	Acetone	ND		5.0	3.8	ug/l	
78-93-3	2-Butanone	ND		5.0	2.5	ug/l	
71-43-2	Benzene	ND	5.0	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND		0.50	0.25	ug/l	
74-97-5	Bromo(chloromethane)	ND		0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	ND		0.50	0.36	ug/l	
75-25-2	Bromoform ^a	ND		0.50	0.40	ug/l	
74-83-9	Bromomethane	ND		0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND		0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND		0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND		0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND		0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	100	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND		0.50	0.071	ug/l	
67-66-3	Chloroform	ND		0.50	0.33	ug/l	
74-87-3	Chloromethane	ND		0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND		0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND		0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	5.0	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	0.15		0.50	0.13	ug/l	J
75-35-4	1,1-Dichloroethylene	1.7	7.0	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND		0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND		0.20	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND		0.050	0.50	0.29	ug/l
107-06-2	1,2-Dichloroethane	ND		5.0	0.50	0.28	ug/l
78-87-5	1,2-Dichloropropane	ND	5.0	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND		0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND		0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	ND		0.50	0.094	ug/l	
74-95-3	Dibromomethane	ND		0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND		0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND		0.50	0.28	ug/l	

ND = Not detected MDL = Method Detection Limit

MCL = Maximum Contamination Level (40 CFR 141)

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: RW-1227OCM-092517-F
Lab Sample ID: JC51755-4
Matrix: DW - Drinking Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, VA

Date Sampled: 09/25/17
Date Received: 09/26/17
Percent Solids: n/a

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	600	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	75	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	100	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	70	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND		0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND		0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	700	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND		0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND		2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND		0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND		0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	5.0	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND		0.50	0.080	ug/l	
108-10-1	4-Methyl-2-pentanone	ND		2.0	1.5	ug/l	
91-20-3	Naphthalene	ND		0.50	0.18	ug/l	
103-65-1	n-Propylbenzene	ND		0.50	0.26	ug/l	
100-42-5	Styrene	ND	100	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND		0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	0.37	200	0.50	0.12	ug/l	J
79-34-5	1,1,2,2-Tetrachloroethane	ND		0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	5.0	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND		0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND		0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	70	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND		0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND		0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	5.0	0.50	0.12	ug/l	
108-88-3	Toluene	ND	1000	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	5.0	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND		1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	2.0	0.50	0.056	ug/l	
	m,p-Xylene	ND		0.50	0.26	ug/l	
95-47-6	o-Xylene	ND		0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	10000	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	95%		70-130%
460-00-4	4-Bromofluorobenzene	87%		70-130%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

MCL = Maximum Contamination Level (40 CFR 141)

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

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Client Sample ID:	RW-1227OCM-092517-F	Date Sampled:	09/25/17
Lab Sample ID:	JC51755-4	Date Received:	09/26/17
Matrix:	DW - Drinking Water	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Kop-Flex, Hanover, VA		

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
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(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected MDL = Method Detection Limit
 MCL = Maximum Contamination Level (40 CFR 141)
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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3**Client Sample ID:** RW-1227OCM-092517-F**Lab Sample ID:** JC51755-4**Matrix:** DW - Drinking Water**Method:** SW846 8260C BY SIM**Project:** Kop-Flex, Hanover, VA**Date Sampled:** 09/25/17**Date Received:** 09/26/17**Percent Solids:** n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	3A157695.D	1	09/28/17 21:44	PR	n/a	n/a	V3A6789
Run #2							

Purge Volume

Run #1 5.0 ml

Run #2

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
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123-91-1	1,4-Dioxane	3.5		0.40	0.29	ug/l	
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CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
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17647-74-4	1,4-Dioxane-d8	136%		51-175%
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(a) (pH= 5) Sample is not acid preserved per method/client criteria. Sample analyzed within 7 days holding time.

ND = Not detected MDL = Method Detection Limit
 MCL = Maximum Contamination Level (40 CFR 141)
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID: RW-1308RB-092517-F
Lab Sample ID: JC51755-5
Matrix: DW - Drinking Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, VA

Date Sampled: 09/25/17
Date Received: 09/26/17
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1B111877.D	1	09/28/17 18:07	BK	n/a	n/a	V1B5331
Run #2							

Purge Volume	
Run #1	5.0 ml
Run #2	

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
67-64-1	Acetone	ND		5.0	3.8	ug/l	
78-93-3	2-Butanone	ND		5.0	2.5	ug/l	
71-43-2	Benzene	ND	5.0	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND		0.50	0.25	ug/l	
74-97-5	Bromo(chloromethane)	ND		0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	ND		0.50	0.36	ug/l	
75-25-2	Bromoform ^a	ND		0.50	0.40	ug/l	
74-83-9	Bromomethane	ND		0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND		0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND		0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND		0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND		0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	100	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND		0.50	0.071	ug/l	
67-66-3	Chloroform	0.34		0.50	0.33	ug/l	J
74-87-3	Chloromethane	ND		0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND		0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND		0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	5.0	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND		0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	7.0	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND		0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND		0.20	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND		0.050	0.50	0.29	ug/l
107-06-2	1,2-Dichloroethane	ND		5.0	0.50	0.28	ug/l
78-87-5	1,2-Dichloropropane	ND	5.0	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND		0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND		0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	ND		0.50	0.094	ug/l	
74-95-3	Dibromomethane	ND		0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND		0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND		0.50	0.28	ug/l	

ND = Not detected MDL = Method Detection Limit

MCL = Maximum Contamination Level (40 CFR 141)

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RW-1308RB-092517-F	Date Sampled:	09/25/17
Lab Sample ID:	JC51755-5	Date Received:	09/26/17
Matrix:	DW - Drinking Water	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Kop-Flex, Hanover, VA		

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	600	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	75	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	100	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	70	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND		0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND		0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	700	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND		0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND		2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND		0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND		0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	5.0	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.43		0.50	0.080	ug/l	J
108-10-1	4-Methyl-2-pentanone	ND		2.0	1.5	ug/l	
91-20-3	Naphthalene	ND		0.50	0.18	ug/l	
103-65-1	n-Propylbenzene	ND		0.50	0.26	ug/l	
100-42-5	Styrene	ND	100	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND		0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	200	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND		0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	5.0	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND		0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND		0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	70	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND		0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND		0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	5.0	0.50	0.12	ug/l	
108-88-3	Toluene	ND	1000	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	5.0	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND		1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	2.0	0.50	0.056	ug/l	
	m,p-Xylene	ND		0.50	0.26	ug/l	
95-47-6	o-Xylene	ND		0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	10000	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	94%		70-130%
460-00-4	4-Bromofluorobenzene	87%		70-130%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

MCL = Maximum Contamination Level (40 CFR 141)

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

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Client Sample ID: RW-1308RB-092517-F
Lab Sample ID: JC51755-5
Matrix: DW - Drinking Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, VA

Date Sampled: 09/25/17
Date Received: 09/26/17
Percent Solids: n/a

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
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(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected MDL = Method Detection Limit
MCL = Maximum Contamination Level (40 CFR 141)
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

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Client Sample ID: RW-1308RB-092517-F
Lab Sample ID: JC51755-5
Matrix: DW - Drinking Water
Method: SW846 8260C BY SIM
Project: Kop-Flex, Hanover, VA

Date Sampled: 09/25/17
Date Received: 09/26/17
Percent Solids: n/a

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	3A157696.D	1	09/28/17 22:10	PR	n/a	n/a	V3A6789
Run #2							

Purge Volume
Run #1 5.0 ml
Run #2

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
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123-91-1	1,4-Dioxane	0.55		0.40	0.29	ug/l	
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CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
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17647-74-4	1,4-Dioxane-d8	142%		51-175%
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(a) (pH= 5) Sample is not acid preserved per method/client criteria. Sample analyzed within 7 days holding time.

ND = Not detected MDL = Method Detection Limit
MCL = Maximum Contamination Level (40 CFR 141)
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

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Client Sample ID: RW-1308RB-092517
Lab Sample ID: JC51755-6
Matrix: DW - Drinking Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, VA

Date Sampled: 09/25/17
Date Received: 09/26/17
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1B111878.D	1	09/28/17 18:39	BK	n/a	n/a	V1B5331
Run #2							

Purge Volume	
Run #1	5.0 ml
Run #2	

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
67-64-1	Acetone	ND		5.0	3.8	ug/l	
78-93-3	2-Butanone	ND		5.0	2.5	ug/l	
71-43-2	Benzene	ND	5.0	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND		0.50	0.25	ug/l	
74-97-5	Bromochloromethane	ND		0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	ND		0.50	0.36	ug/l	
75-25-2	Bromoform ^a	ND		0.50	0.40	ug/l	
74-83-9	Bromomethane	ND		0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND		0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND		0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND		0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND		0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	100	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND		0.50	0.071	ug/l	
67-66-3	Chloroform	0.39		0.50	0.33	ug/l	J
74-87-3	Chloromethane	ND		0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND		0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND		0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	5.0	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND		0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	7.0	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND		0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND		0.20	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND		0.050	0.50	0.29	ug/l
107-06-2	1,2-Dichloroethane	ND		5.0	0.50	0.28	ug/l
78-87-5	1,2-Dichloropropane	ND	5.0	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND		0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND		0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	ND		0.50	0.094	ug/l	
74-95-3	Dibromomethane	ND		0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND		0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND		0.50	0.28	ug/l	

ND = Not detected MDL = Method Detection Limit

MCL = Maximum Contamination Level (40 CFR 141)

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: RW-1308RB-092517
Lab Sample ID: JC51755-6
Matrix: DW - Drinking Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, VA

Date Sampled: 09/25/17
Date Received: 09/26/17
Percent Solids: n/a

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	600	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	75	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	100	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	70	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND		0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND		0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	700	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND		0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND		2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND		0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND		0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	5.0	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.50		0.50	0.080	ug/l	
108-10-1	4-Methyl-2-pentanone	ND		2.0	1.5	ug/l	
91-20-3	Naphthalene	0.30		0.50	0.18	ug/l	J
103-65-1	n-Propylbenzene	ND		0.50	0.26	ug/l	
100-42-5	Styrene	ND	100	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND		0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	200	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND		0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	5.0	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND		0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND		0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	70	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND		0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND		0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	5.0	0.50	0.12	ug/l	
108-88-3	Toluene	ND	1000	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	5.0	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND		1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	2.0	0.50	0.056	ug/l	
	m,p-Xylene	ND		0.50	0.26	ug/l	
95-47-6	o-Xylene	ND		0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	10000	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	93%		70-130%
460-00-4	4-Bromofluorobenzene	86%		70-130%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

MCL = Maximum Contamination Level (40 CFR 141)

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

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Client Sample ID:	RW-1308RB-092517	Date Sampled:	09/25/17
Lab Sample ID:	JC51755-6	Date Received:	09/26/17
Matrix:	DW - Drinking Water	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Kop-Flex, Hanover, VA		

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
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(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected MDL = Method Detection Limit
 MCL = Maximum Contamination Level (40 CFR 141)
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID: RW-1308RB-092517
Lab Sample ID: JC51755-6
Matrix: DW - Drinking Water
Method: SW846 8260C BY SIM
Project: Kop-Flex, Hanover, VA

Date Sampled: 09/25/17
Date Received: 09/26/17
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	3A157697.D	1	09/28/17 22:35	PR	n/a	n/a	V3A6789
Run #2							

Purge Volume
Run #1 5.0 ml
Run #2

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
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123-91-1	1,4-Dioxane	0.53		0.40	0.29	ug/l	
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CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
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17647-74-4	1,4-Dioxane-d8	140%		51-175%
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(a) (pH= 5) Sample is not acid preserved per method/client criteria. Sample analyzed within 7 days holding time.

ND = Not detected MDL = Method Detection Limit
MCL = Maximum Contamination Level (40 CFR 141)
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

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Client Sample ID: RW-1319LP-092517
Lab Sample ID: JC51755-7
Matrix: DW - Drinking Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, VA

Date Sampled: 09/25/17
Date Received: 09/26/17
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1B111899.D	1	09/29/17 12:19	BK	n/a	n/a	V1B5333
Run #2							

Purge Volume	
Run #1	5.0 ml
Run #2	

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
67-64-1	Acetone	ND		5.0	3.8	ug/l	
78-93-3	2-Butanone	ND		5.0	2.5	ug/l	
71-43-2	Benzene	ND	5.0	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND		0.50	0.25	ug/l	
74-97-5	Bromo(chloromethane)	ND		0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	ND		0.50	0.36	ug/l	
75-25-2	Bromoform	ND		0.50	0.40	ug/l	
74-83-9	Bromomethane	ND		0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND		0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND		0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND		0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND		0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	100	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND		0.50	0.071	ug/l	
67-66-3	Chloroform	0.36		0.50	0.33	ug/l	J
74-87-3	Chloromethane	ND		0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND		0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND		0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	5.0	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND		0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	7.0	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND		0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND		0.20	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND		0.050	0.50	0.29	ug/l
107-06-2	1,2-Dichloroethane	ND		5.0	0.50	0.28	ug/l
78-87-5	1,2-Dichloropropane	ND	5.0	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND		0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND		0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	ND		0.50	0.094	ug/l	
74-95-3	Dibromomethane	ND		0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND		0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND		0.50	0.28	ug/l	

ND = Not detected MDL = Method Detection Limit

MCL = Maximum Contamination Level (40 CFR 141)

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: RW-1319LP-092517
Lab Sample ID: JC51755-7
Matrix: DW - Drinking Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, VA

Date Sampled: 09/25/17
Date Received: 09/26/17
Percent Solids: n/a

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	600	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	75	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	100	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	70	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND		0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND		0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	700	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND		0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND		2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND		0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND		0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	5.0	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.50		0.50	0.080	ug/l	
108-10-1	4-Methyl-2-pentanone	ND		2.0	1.5	ug/l	
91-20-3	Naphthalene	ND		0.50	0.18	ug/l	
103-65-1	n-Propylbenzene	ND		0.50	0.26	ug/l	
100-42-5	Styrene	ND	100	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND		0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	200	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND		0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	5.0	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND		0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND		0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	70	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND		0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND		0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	5.0	0.50	0.12	ug/l	
108-88-3	Toluene	ND	1000	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	5.0	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND		1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	2.0	0.50	0.056	ug/l	
	m,p-Xylene	ND		0.50	0.26	ug/l	
95-47-6	o-Xylene	ND		0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	10000	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	91%		70-130%
460-00-4	4-Bromofluorobenzene	81%		70-130%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

MCL = Maximum Contamination Level (40 CFR 141)

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

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Client Sample ID: RW-1319LP-092517
Lab Sample ID: JC51755-7
Matrix: DW - Drinking Water
Method: SW846 8260C BY SIM
Project: Kop-Flex, Hanover, VA

Date Sampled: 09/25/17
Date Received: 09/26/17
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	3A157711.D	1	09/29/17 13:50	PR	n/a	n/a	V3A6790
Run #2							

Purge Volume
Run #1 5.0 ml
Run #2

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
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123-91-1	1,4-Dioxane	ND		0.40	0.29	ug/l	
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CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
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17647-74-4	1,4-Dioxane-d8	118%		51-175%
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(a) (pH= 5) Sample is not acid preserved per method/client criteria. Sample analyzed within 7 days holding time.

ND = Not detected MCL = Maximum Contamination Level (40 CFR 141)
MDL = Method Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

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Client Sample ID: RW-1317LP-092517-F
Lab Sample ID: JC51755-8
Matrix: DW - Drinking Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, VA

Date Sampled: 09/25/17
Date Received: 09/26/17
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1B111900.D	1	09/29/17 12:50	BK	n/a	n/a	V1B5333
Run #2							

Purge Volume	
Run #1	5.0 ml
Run #2	

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
67-64-1	Acetone	ND		5.0	3.8	ug/l	
78-93-3	2-Butanone	ND		5.0	2.5	ug/l	
71-43-2	Benzene	ND	5.0	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND		0.50	0.25	ug/l	
74-97-5	Bromochloromethane	ND		0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	ND		0.50	0.36	ug/l	
75-25-2	Bromoform	ND		0.50	0.40	ug/l	
74-83-9	Bromomethane	ND		0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND		0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND		0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND		0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND		0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	100	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND		0.50	0.071	ug/l	
67-66-3	Chloroform	0.36		0.50	0.33	ug/l	J
74-87-3	Chloromethane	ND		0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND		0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND		0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	5.0	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND		0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	7.0	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND		0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND		0.20	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND		0.050	0.50	0.29	ug/l
107-06-2	1,2-Dichloroethane	ND		5.0	0.50	0.28	ug/l
78-87-5	1,2-Dichloropropane	ND	5.0	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND		0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND		0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	ND		0.50	0.094	ug/l	
74-95-3	Dibromomethane	ND		0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND		0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND		0.50	0.28	ug/l	

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

MCL = Maximum Contamination Level (40 CFR 141)

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: RW-1317LP-092517-F
Lab Sample ID: JC51755-8
Matrix: DW - Drinking Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, VA

Date Sampled: 09/25/17
Date Received: 09/26/17
Percent Solids: n/a

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	600	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	75	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	100	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	70	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND		0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND		0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	700	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND		0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND		2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND		0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND		0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	5.0	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.37		0.50	0.080	ug/l	J
108-10-1	4-Methyl-2-pentanone	ND		2.0	1.5	ug/l	
91-20-3	Naphthalene	ND		0.50	0.18	ug/l	
103-65-1	n-Propylbenzene	ND		0.50	0.26	ug/l	
100-42-5	Styrene	ND	100	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND		0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	200	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND		0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	5.0	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND		0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND		0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	70	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND		0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND		0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	5.0	0.50	0.12	ug/l	
108-88-3	Toluene	ND	1000	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	5.0	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND		1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	2.0	0.50	0.056	ug/l	
	m,p-Xylene	ND		0.50	0.26	ug/l	
95-47-6	o-Xylene	ND		0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	10000	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	93%		70-130%
460-00-4	4-Bromofluorobenzene	79%		70-130%

ND = Not detected MCL = Method Detection Limit
MCL = Maximum Contamination Level (40 CFR 141)
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

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Client Sample ID: RW-1317LP-092517-F
Lab Sample ID: JC51755-8
Matrix: DW - Drinking Water
Method: SW846 8260C BY SIM
Project: Kop-Flex, Hanover, VA

Date Sampled: 09/25/17
Date Received: 09/26/17
Percent Solids: n/a

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	3A157712.D	1	09/29/17 14:15	PR	n/a	n/a	V3A6790
Run #2							

Purge Volume
Run #1 5.0 ml
Run #2

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
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123-91-1	1,4-Dioxane	ND		0.40	0.29	ug/l	
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CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
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17647-74-4	1,4-Dioxane-d8	113%		51-175%
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(a) (pH= 5) Sample is not acid preserved per method/client criteria. Sample analyzed within 7 days holding time.

ND = Not detected MCL = Maximum Contamination Level (40 CFR 141)
MCL = Method Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

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Client Sample ID: RW-1317LP-092517
Lab Sample ID: JC51755-9
Matrix: DW - Drinking Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, VA

Date Sampled: 09/25/17
Date Received: 09/26/17
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1B111913.D	1	09/29/17 19:41	BK	n/a	n/a	V1B5333
Run #2							

Purge Volume	
Run #1	5.0 ml
Run #2	

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
67-64-1	Acetone	ND		5.0	3.8	ug/l	
78-93-3	2-Butanone	ND		5.0	2.5	ug/l	
71-43-2	Benzene	ND	5.0	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND		0.50	0.25	ug/l	
74-97-5	Bromochloromethane	ND		0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	ND		0.50	0.36	ug/l	
75-25-2	Bromoform	ND		0.50	0.40	ug/l	
74-83-9	Bromomethane	ND		0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND		0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND		0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND		0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND		0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	100	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND		0.50	0.071	ug/l	
67-66-3	Chloroform	0.42		0.50	0.33	ug/l	J
74-87-3	Chloromethane	ND		0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND		0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND		0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	5.0	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND		0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	7.0	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND		0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND		0.20	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND		0.050	0.50	0.29	ug/l
107-06-2	1,2-Dichloroethane	ND		5.0	0.50	0.28	ug/l
78-87-5	1,2-Dichloropropane	ND	5.0	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND		0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND		0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	ND		0.50	0.094	ug/l	
74-95-3	Dibromomethane	ND		0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND		0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND		0.50	0.28	ug/l	

ND = Not detected MDL = Method Detection Limit

MCL = Maximum Contamination Level (40 CFR 141)

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

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Client Sample ID: RW-1317LP-092517
Lab Sample ID: JC51755-9
Matrix: DW - Drinking Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, VA

Date Sampled: 09/25/17
Date Received: 09/26/17
Percent Solids: n/a

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	600	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	75	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	100	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	70	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND		0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND		0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	700	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND		0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND		2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND		0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND		0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	5.0	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.47		0.50	0.080	ug/l	J
108-10-1	4-Methyl-2-pentanone	ND		2.0	1.5	ug/l	
91-20-3	Naphthalene	ND		0.50	0.18	ug/l	
103-65-1	n-Propylbenzene	ND		0.50	0.26	ug/l	
100-42-5	Styrene	ND	100	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND		0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	200	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND		0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	5.0	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND		0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND		0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	70	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND		0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND		0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	5.0	0.50	0.12	ug/l	
108-88-3	Toluene	ND	1000	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	5.0	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND		1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	2.0	0.50	0.056	ug/l	
	m,p-Xylene	ND		0.50	0.26	ug/l	
95-47-6	o-Xylene	ND		0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	10000	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	92%		70-130%
460-00-4	4-Bromofluorobenzene	78%		70-130%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

MCL = Maximum Contamination Level (40 CFR 141)

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

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Client Sample ID: RW-1317LP-092517
Lab Sample ID: JC51755-9
Matrix: DW - Drinking Water
Method: SW846 8260C BY SIM
Project: Kop-Flex, Hanover, VA

Date Sampled: 09/25/17
Date Received: 09/26/17
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	3A157713.D	1	09/29/17 14:41	PR	n/a	n/a	V3A6790
Run #2							

Purge Volume
Run #1 5.0 ml
Run #2

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
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123-91-1	1,4-Dioxane	ND		0.40	0.29	ug/l	
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CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
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17647-74-4	1,4-Dioxane-d8	117%		51-175%
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(a) (pH= 5) Sample is not acid preserved per method/client criteria. Sample analyzed within 7 days holding time.

ND = Not detected MCL = Maximum Contamination Level (40 CFR 141)
MDL = Method Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 2

Client Sample ID:	RW-7740TO-092517	Date Sampled:	09/25/17
Lab Sample ID:	JC51755-10	Date Received:	09/26/17
Matrix:	DW - Drinking Water	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Kop-Flex, Hanover, VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1B111914.D	1	09/29/17 20:13	BK	n/a	n/a	V1B5333
Run #2							

Purge Volume	
Run #1	5.0 ml
Run #2	

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
67-64-1	Acetone	ND		5.0	3.8	ug/l	
78-93-3	2-Butanone	ND		5.0	2.5	ug/l	
71-43-2	Benzene	ND	5.0	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND		0.50	0.25	ug/l	
74-97-5	Bromochloromethane	ND		0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	ND		0.50	0.36	ug/l	
75-25-2	Bromoform	ND		0.50	0.40	ug/l	
74-83-9	Bromomethane	ND		0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND		0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND		0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND		0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND		0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	100	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND		0.50	0.071	ug/l	
67-66-3	Chloroform	ND		0.50	0.33	ug/l	
74-87-3	Chloromethane	ND		0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND		0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND		0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	5.0	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	0.35		0.50	0.13	ug/l	J
75-35-4	1,1-Dichloroethylene	11.3	7.0	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND		0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND		0.20	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND		0.050	0.50	0.29	ug/l
107-06-2	1,2-Dichloroethane	ND		5.0	0.50	0.28	ug/l
78-87-5	1,2-Dichloropropane	ND	5.0	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND		0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND		0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	ND		0.50	0.094	ug/l	
74-95-3	Dibromomethane	ND		0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND		0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND		0.50	0.28	ug/l	

ND = Not detected MDL = Method Detection Limit

MCL = Maximum Contamination Level (40 CFR 141)

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 2 of 2

Client Sample ID:	RW-7740TO-092517	Date Sampled:	09/25/17
Lab Sample ID:	JC51755-10	Date Received:	09/26/17
Matrix:	DW - Drinking Water	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Kop-Flex, Hanover, VA		

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	600	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	75	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	100	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	70	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND		0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND		0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	700	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND		0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND		2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND		0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND		0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	5.0	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND		0.50	0.080	ug/l	
108-10-1	4-Methyl-2-pentanone	ND		2.0	1.5	ug/l	
91-20-3	Naphthalene	ND		0.50	0.18	ug/l	
103-65-1	n-Propylbenzene	ND		0.50	0.26	ug/l	
100-42-5	Styrene	ND	100	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND		0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	0.86	200	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND		0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	5.0	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND		0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND		0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	70	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND		0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND		0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	5.0	0.50	0.12	ug/l	
108-88-3	Toluene	ND	1000	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	5.0	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND		1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	2.0	0.50	0.056	ug/l	
	m,p-Xylene	ND		0.50	0.26	ug/l	
95-47-6	o-Xylene	ND		0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	10000	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	91%		70-130%
460-00-4	4-Bromofluorobenzene	77%		70-130%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

MCL = Maximum Contamination Level (40 CFR 141)

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Page 1 of 1

Client Sample ID:	RW-7740TO-092517	Date Sampled:	09/25/17
Lab Sample ID:	JC51755-10	Date Received:	09/26/17
Matrix:	DW - Drinking Water	Percent Solids:	n/a
Method:	SW846 8260C BY SIM		
Project:	Kop-Flex, Hanover, VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	3A157714.D	1	09/29/17 15:07	PR	n/a	n/a	V3A6790
Run #2							

Purge Volume	
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	4.8		0.40	0.29	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17647-74-4	1,4-Dioxane-d8	118%		51-175%

(a) (pH= 5) Sample is not acid preserved per method/client criteria. Sample analyzed within 7 days holding time.

ND = Not detected MDL = Method Detection Limit
 MCL = Maximum Contamination Level (40 CFR 141)
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Misc. Forms**Custody Documents and Other Forms**

Includes the following where applicable:

- Chain of Custody



WTB
ACCUTEST

CHAIN OF CUSTODY

SGS Accutest - Dayton
2235 Route 130, Dayton, NJ 08810
TEL: 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

PAGE 1 OF 1

FED-EX Tracking # 407930910849 Bottle Order Control #
SGS Accutest Quote # SGS Accutest Job # JC51755

Client / Reporting Information		Project Information						Requested Analysis (see TEST CODE sheet)						Matrix Codes					
Company Name WSP	Project Name: Kopflex	Street			Billing Information (if different from Report to)														
Street Address 13530 Dulles Technology Drive St 300		City Herndon VA	State 20171	City 	State 	Company Name 													
City Herndon VA	State 20171	E-mail eric.johnson@wsp.com	Project # 31400309 31400890	Street Address 															
Phone # 703-709-6500	Fax # 	Client Purchase Order # 		City 	State 	Zip 													
Sampler(s) Name(s) Marc Kaplan Chas Cesci	Phone # 	Project Manager Eric Johnson	Attention: 																
SGS Accutest Sample #	Field ID / Point of Collection	MEOH/DI/Vial #	Date	Time	Sampled by	Matrix	# of bottles	Number of preserved Bottles	ICP	NaOH	HNO3	H2SO4	None	DIN Water	MECH	ENCORE	8260 SIM 1mL 100°C 524	VOCs 524	LAB USE ONLY
1	RW-1227 OCu-092517		9/25/17	0945	MSK	DW	6	3		X	X								
2	RW-1000-092517		9/25/17	1015	MSK	DW	6	3		X	X								
3	TB-092617									X	X								
4	RW-1227 OCu-092517-F		9/25/17	0935	MSK	DW	6	3		X	X								
5	RW-1308 RB-092517-F		9/25/17	1125	MSK	DW	6	3		X	X								
6	RW-1308 RB-092517	*	9/25/17	1135	MSK	DW	6	3		X	X						V962		
7	RW-1319 LP-092517		9/25/17	1305	MSK	DW	6	3		X	X						V961		
8	RW-1317 LP-092517-F		9/25/17	1400	MSK	DW	6	3		X	X								
9	RW-1317 LP-092517		9/25/17	1405	MSK	DW	6	3		X	X								
10	RW-7740 TO-092517		9/25/17	1500	MSK	DW	6	3		X	X								
Turnaround Time (Business days)						Data Deliverable Information						Comments / Special Instructions							
<input checked="" type="checkbox"/> Std. 10 Business Days <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 3 Day RUSH <input type="checkbox"/> 2 Day RUSH <input type="checkbox"/> 1 Day RUSH <input type="checkbox"/> other						<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> FULL1 (Level 3+4) <input type="checkbox"/> NJ Reduced <input type="checkbox"/> Commercial "C" <input type="checkbox"/> NJ Data of Known Quality Protocol Reporting						<input type="checkbox"/> NYASP Category A <input type="checkbox"/> NYASP Category B <input type="checkbox"/> State Forms <input type="checkbox"/> EDD Format <input type="checkbox"/> Other							
INITIAL ASSESSMENT <u>ZAO</u>												VOCs 524 (3) 40mL VOA w/ HCl							
LABEL VERIFICATION <u>JS</u>												1,4 Dioxane 8260 SIM (3) 40mL VAA							
												* VOC QC verified on 9/26/17 • up to 9/16/17							
												Sample inventory is verified upon receipt in the Laboratory							
Emergency & Rush T/A data available VIA Lablink																			
Sample Custody must be documented below each time samples change possession, including courier delivery.																			
Relinquished by Sampler: <u>1</u>	Date Time: <u>9/25/17 1600</u>	Received By: <u>Fors</u>	Relinquished By: <u>2</u>	Date Time: <u>9/26/17 0915</u>	Received By: <u>Fors</u>	Relinquished By: <u>3</u>	Date Time: <u>9/26/17 0915</u>	Received By: <u>4</u>	Date Time: <u>9/26/17 0915</u>	Received By: <u>5</u>	Custody Seal # <u>08358</u>	<input type="checkbox"/> Intact	<input type="checkbox"/> Not Intact	Preserved where applicable	On Ice	Cooler Temp. <u>21°C IP</u>			

Form:SM088-01CRev.Date 9/13/16

JC51755: Chain of Custody

Page 1 of 2

SGS Accutest Sample Receipt Summary

Job Number: JC51755 Client: _____ Project: _____
 Date / Time Received: 9/26/2017 9:45:00 AM Delivery Method: _____ Airbill #'s: _____

Cooler Temps (Raw Measured) °C: Cooler 1: (2.1);

Cooler Temps (Corrected) °C: Cooler 1: (1.3);

Cooler Security	<u>Y or N</u>	<u>Y or N</u>	Sample Integrity - Documentation	<u>Y or N</u>		
1. Custody Seals Present:	<input checked="" type="checkbox"/> <input type="checkbox"/>	3. COC Present:	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/>		
2. Custody Seals Intact:	<input checked="" type="checkbox"/> <input type="checkbox"/>	4. Smpl Dates/Time OK	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/>		
Cooler Temperature		<u>Y or N</u>	Sample Integrity - Condition			
1. Temp criteria achieved:	<input checked="" type="checkbox"/> <input type="checkbox"/>		1. Sample rcvd within HT:	<input checked="" type="checkbox"/> <input type="checkbox"/>		
2. Cooler temp verification:	IR Gun		2. All containers accounted for:	<input checked="" type="checkbox"/> <input type="checkbox"/>		
3. Cooler media:	Ice (Bag)		3. Condition of sample:	Intact		
4. No. Coolers:	1					
Quality Control Preservation		<u>Y or N</u>	<u>N/A</u>	Sample Integrity - Instructions	<u>Y or N</u>	<u>N/A</u>
1. Trip Blank present / cooler:	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		1. Analysis requested is clear:	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	
2. Trip Blank listed on COC:	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		2. Bottles received for unspecified tests	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
3. Samples preserved properly:	<input checked="" type="checkbox"/> <input type="checkbox"/>		3. Sufficient volume rcvd for analysis:	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	
4. VOCs headspace free:	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		4. Compositing instructions clear:	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/>	
			5. Filtering instructions clear:	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/>	

Comments

SM089-02
Rev. Date 12/1/16

4.1

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JC51755: Chain of Custody
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MS Volatiles

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Surrogate Recovery Summaries

Method Blank Summary

Page 1 of 3

Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5331-MB	1B111861.D	1	09/28/17	BK	n/a	n/a	V1B5331

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC51755-1, JC51755-2, JC51755-3, JC51755-4, JC51755-5, JC51755-6

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND	0.50	0.25	ug/l	
74-97-5	Bromochloromethane	ND	0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform	ND	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND	0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND	0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND	0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	ND	0.50	0.33	ug/l	
74-87-3	Chloromethane	ND	0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND	0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND	0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.0	0.25	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.50	0.29	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND	0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND	0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.094	ug/l	
74-95-3	Dibromomethane	ND	0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	0.28	ug/l	
95-50-1	o-Dichlorobenzene	ND	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	

5.1.1
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Method Blank Summary

Page 2 of 3

Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5331-MB	1B111861.D	1	09/28/17	BK	n/a	n/a	V1B5331

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC51755-1, JC51755-2, JC51755-3, JC51755-4, JC51755-5, JC51755-6

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND	0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND	0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	0.50	0.080	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
91-20-3	Naphthalene	ND	0.50	0.18	ug/l	
103-65-1	n-Propylbenzene	ND	0.50	0.26	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	0.50	0.24	ug/l	

CAS No. Surrogate Recoveries

Limits

2199-69-1	1,2-Dichlorobenzene-d4	93%	70-130%
460-00-4	4-Bromofluorobenzene	91%	70-130%

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Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5331-MB	1B111861.D	1	09/28/17	BK	n/a	n/a	V1B5331

The QC reported here applies to the following samples:

Method:

JC51755-1, JC51755-2, JC51755-3, JC51755-4, JC51755-5, JC51755-6

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

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Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5333-MB	1B111896.D	1	09/29/17	BK	n/a	n/a	V1B5333

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC51755-7, JC51755-8, JC51755-9, JC51755-10

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND	0.50	0.25	ug/l	
74-97-5	Bromochloromethane	ND	0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform	ND	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND	0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND	0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND	0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	ND	0.50	0.33	ug/l	
74-87-3	Chloromethane	ND	0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND	0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND	0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.0	0.25	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.50	0.29	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND	0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND	0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.094	ug/l	
74-95-3	Dibromomethane	ND	0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	0.28	ug/l	
95-50-1	o-Dichlorobenzene	ND	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	

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Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5333-MB	1B111896.D	1	09/29/17	BK	n/a	n/a	V1B5333

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC51755-7, JC51755-8, JC51755-9, JC51755-10

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND	0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND	0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	0.50	0.080	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
91-20-3	Naphthalene	ND	0.50	0.18	ug/l	
103-65-1	n-Propylbenzene	ND	0.50	0.26	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Limits	
2199-69-1	1,2-Dichlorobenzene-d4	100%	70-130%
460-00-4	4-Bromofluorobenzene	89%	70-130%

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Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5333-MB	1B111896.D	1	09/29/17	BK	n/a	n/a	V1B5333

The QC reported here applies to the following samples:

Method:

JC51755-7, JC51755-8, JC51755-9, JC51755-10

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

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Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3A6789-MB	3A157674.D	1	09/28/17	PR	n/a	n/a	V3A6789

The QC reported here applies to the following samples:

Method: SW846 8260C BY SIM

JC51755-1, JC51755-2, JC51755-3, JC51755-4, JC51755-5, JC51755-6

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	ND	0.40	0.18	ug/l	

CAS No.	Surrogate Recoveries	Limits
17647-74-4	1,4-Dioxane-d8	95% 51-175%

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Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3A6790-MB	3A157708.D	1	09/29/17	PR	n/a	n/a	V3A6790

The QC reported here applies to the following samples:

Method: SW846 8260C BY SIM

JC51755-7, JC51755-8, JC51755-9, JC51755-10

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	ND	0.40	0.29	ug/l	

CAS No.	Surrogate Recoveries	Limits
17647-74-4	1,4-Dioxane-d8	121% 51-175%

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Blank Spike Summary

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Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5331-BS	1B111862.D	1	09/28/17	BK	n/a	n/a	V1B5331

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC51755-1, JC51755-2, JC51755-3, JC51755-4, JC51755-5, JC51755-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	20	20.0	100	70-130
78-93-3	2-Butanone	20	19.3	97	70-130
71-43-2	Benzene	5	4.8	96	70-130
108-86-1	Bromobenzene	5	4.9	98	70-130
74-97-5	Bromochloromethane	5	5.2	104	70-130
75-27-4	Bromodichloromethane	5	5.4	108	70-130
75-25-2	Bromoform	5	5.7	114	70-130
74-83-9	Bromomethane	2	1.4	70	70-130
104-51-8	n-Butylbenzene	5	4.7	94	70-130
135-98-8	sec-Butylbenzene	5	4.7	94	70-130
98-06-6	tert-Butylbenzene	5	4.5	90	70-130
75-15-0	Carbon disulfide	5	4.9	98	70-130
108-90-7	Chlorobenzene	5	4.8	96	70-130
75-00-3	Chloroethane	2	1.4	70	70-130
67-66-3	Chloroform	5	5.0	100	70-130
74-87-3	Chloromethane	2	1.5	75	70-130
95-49-8	o-Chlorotoluene	5	4.7	94	70-130
106-43-4	p-Chlorotoluene	5	4.7	94	70-130
56-23-5	Carbon tetrachloride	5	5.3	106	70-130
75-34-3	1,1-Dichloroethane	5	5.0	100	70-130
75-35-4	1,1-Dichloroethylene	5	4.8	96	70-130
563-58-6	1,1-Dichloropropene	5	4.7	94	70-130
96-12-8	1,2-Dibromo-3-chloropropane	5	5.0	100	70-130
106-93-4	1,2-Dibromoethane	5	4.7	94	70-130
107-06-2	1,2-Dichloroethane	5	4.8	96	70-130
78-87-5	1,2-Dichloropropane	5	4.8	96	70-130
142-28-9	1,3-Dichloropropane	5	4.8	96	70-130
594-20-7	2,2-Dichloropropane	5	5.0	100	70-130
124-48-1	Dibromochloromethane	5	5.5	110	70-130
74-95-3	Dibromomethane	5	5.1	102	70-130
75-71-8	Dichlorodifluoromethane	2	1.5	75	70-130
541-73-1	m-Dichlorobenzene	5	4.9	98	70-130
95-50-1	o-Dichlorobenzene	5	4.9	98	70-130
106-46-7	p-Dichlorobenzene	5	4.8	96	70-130
156-60-5	trans-1,2-Dichloroethylene	5	4.7	94	70-130
156-59-2	cis-1,2-Dichloroethylene	5	4.9	98	70-130

* = Outside of Control Limits.

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Blank Spike Summary

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Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5331-BS	1B111862.D	1	09/28/17	BK	n/a	n/a	V1B5331

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC51755-1, JC51755-2, JC51755-3, JC51755-4, JC51755-5, JC51755-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
10061-01-5	cis-1,3-Dichloropropene	5	4.8	96	70-130
10061-02-6	trans-1,3-Dichloropropene	5	4.9	98	70-130
100-41-4	Ethylbenzene	5	4.7	94	70-130
87-68-3	Hexachlorobutadiene	5	5.0	100	70-130
591-78-6	2-Hexanone	20	18.2	91	70-130
98-82-8	Isopropylbenzene	5	4.5	90	70-130
99-87-6	p-Isopropyltoluene	5	4.7	94	70-130
75-09-2	Methylene chloride	5	4.9	98	70-130
1634-04-4	Methyl Tert Butyl Ether	5	4.6	92	70-130
108-10-1	4-Methyl-2-pentanone	20	18.2	91	70-130
91-20-3	Naphthalene	5	4.5	90	70-130
103-65-1	n-Propylbenzene	5	4.7	94	70-130
100-42-5	Styrene	5	4.6	92	70-130
630-20-6	1,1,1,2-Tetrachloroethane	5	5.0	100	70-130
71-55-6	1,1,1-Trichloroethane	5	5.0	100	70-130
79-34-5	1,1,2,2-Tetrachloroethane	5	4.8	96	70-130
79-00-5	1,1,2-Trichloroethane	5	4.9	98	70-130
87-61-6	1,2,3-Trichlorobenzene	5	4.7	94	70-130
96-18-4	1,2,3-Trichloropropane	5	4.9	98	70-130
120-82-1	1,2,4-Trichlorobenzene	5	4.7	94	70-130
95-63-6	1,2,4-Trimethylbenzene	5	4.7	94	70-130
108-67-8	1,3,5-Trimethylbenzene	5	4.7	94	70-130
127-18-4	Tetrachloroethylene	5	5.0	100	70-130
108-88-3	Toluene	5	4.5	90	70-130
79-01-6	Trichloroethylene	5	4.8	96	70-130
75-69-4	Trichlorofluoromethane	2	1.5	75	70-130
75-01-4	Vinyl chloride	2	1.5	75	70-130
	m,p-Xylene	10	9.4	94	70-130
95-47-6	o-Xylene	5	4.7	94	70-130
1330-20-7	Xylenes (total)	15	14.1	94	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
2199-69-1	1,2-Dichlorobenzene-d4	101%	70-130%
460-00-4	4-Bromofluorobenzene	94%	70-130%

* = Outside of Control Limits.

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Blank Spike Summary

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Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5333-BS	1B111897.D	1	09/29/17	BK	n/a	n/a	V1B5333

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC51755-7, JC51755-8, JC51755-9, JC51755-10

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	20	21.1	106	70-130
78-93-3	2-Butanone	20	18.9	95	70-130
71-43-2	Benzene	5	4.9	98	70-130
108-86-1	Bromobenzene	5	4.8	96	70-130
74-97-5	Bromochloromethane	5	5.4	108	70-130
75-27-4	Bromodichloromethane	5	5.4	108	70-130
75-25-2	Bromoform	5	5.6	112	70-130
74-83-9	Bromomethane	2	1.5	75	70-130
104-51-8	n-Butylbenzene	5	4.4	88	70-130
135-98-8	sec-Butylbenzene	5	4.5	90	70-130
98-06-6	tert-Butylbenzene	5	4.2	84	70-130
75-15-0	Carbon disulfide	5	5.1	102	70-130
108-90-7	Chlorobenzene	5	4.9	98	70-130
75-00-3	Chloroethane	2	1.5	75	70-130
67-66-3	Chloroform	5	5.2	104	70-130
74-87-3	Chloromethane	2	1.6	80	70-130
95-49-8	o-Chlorotoluene	5	4.7	94	70-130
106-43-4	p-Chlorotoluene	5	4.6	92	70-130
56-23-5	Carbon tetrachloride	5	5.5	110	70-130
75-34-3	1,1-Dichloroethane	5	5.2	104	70-130
75-35-4	1,1-Dichloroethylene	5	4.9	98	70-130
563-58-6	1,1-Dichloropropene	5	4.6	92	70-130
96-12-8	1,2-Dibromo-3-chloropropane	5	5.0	100	70-130
106-93-4	1,2-Dibromoethane	5	4.7	94	70-130
107-06-2	1,2-Dichloroethane	5	5.0	100	70-130
78-87-5	1,2-Dichloropropane	5	5.0	100	70-130
142-28-9	1,3-Dichloropropane	5	5.0	100	70-130
594-20-7	2,2-Dichloropropane	5	5.3	106	70-130
124-48-1	Dibromochloromethane	5	5.5	110	70-130
74-95-3	Dibromomethane	5	5.2	104	70-130
75-71-8	Dichlorodifluoromethane	2	1.7	85	70-130
541-73-1	m-Dichlorobenzene	5	5.1	102	70-130
95-50-1	o-Dichlorobenzene	5	4.9	98	70-130
106-46-7	p-Dichlorobenzene	5	4.8	96	70-130
156-60-5	trans-1,2-Dichloroethylene	5	5.0	100	70-130
156-59-2	cis-1,2-Dichloroethylene	5	5.3	106	70-130

* = Outside of Control Limits.

Blank Spike Summary

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Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5333-BS	1B111897.D	1	09/29/17	BK	n/a	n/a	V1B5333

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC51755-7, JC51755-8, JC51755-9, JC51755-10

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
10061-01-5	cis-1,3-Dichloropropene	5	4.4	88	70-130
10061-02-6	trans-1,3-Dichloropropene	5	4.7	94	70-130
100-41-4	Ethylbenzene	5	4.5	90	70-130
87-68-3	Hexachlorobutadiene	5	5.1	102	70-130
591-78-6	2-Hexanone	20	17.4	87	70-130
98-82-8	Isopropylbenzene	5	4.2	84	70-130
99-87-6	p-Isopropyltoluene	5	4.4	88	70-130
75-09-2	Methylene chloride	5	5.1	102	70-130
1634-04-4	Methyl Tert Butyl Ether	5	4.5	90	70-130
108-10-1	4-Methyl-2-pentanone	20	18.3	92	70-130
91-20-3	Naphthalene	5	4.1	82	70-130
103-65-1	n-Propylbenzene	5	4.5	90	70-130
100-42-5	Styrene	5	4.4	88	70-130
630-20-6	1,1,1,2-Tetrachloroethane	5	5.2	104	70-130
71-55-6	1,1,1-Trichloroethane	5	5.2	104	70-130
79-34-5	1,1,2,2-Tetrachloroethane	5	5.0	100	70-130
79-00-5	1,1,2-Trichloroethane	5	5.1	102	70-130
87-61-6	1,2,3-Trichlorobenzene	5	4.6	92	70-130
96-18-4	1,2,3-Trichloropropane	5	5.0	100	70-130
120-82-1	1,2,4-Trichlorobenzene	5	4.4	88	70-130
95-63-6	1,2,4-Trimethylbenzene	5	4.6	92	70-130
108-67-8	1,3,5-Trimethylbenzene	5	4.6	92	70-130
127-18-4	Tetrachloroethylene	5	5.1	102	70-130
108-88-3	Toluene	5	4.5	90	70-130
79-01-6	Trichloroethylene	5	4.9	98	70-130
75-69-4	Trichlorofluoromethane	2	1.6	80	70-130
75-01-4	Vinyl chloride	2	1.5	75	70-130
	m,p-Xylene	10	9.0	90	70-130
95-47-6	o-Xylene	5	4.4	88	70-130
1330-20-7	Xylenes (total)	15	13.5	90	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
2199-69-1	1,2-Dichlorobenzene-d4	104%	70-130%
460-00-4	4-Bromofluorobenzene	91%	70-130%

* = Outside of Control Limits.

Blank Spike Summary

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Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3A6789-BS	3A157675.D	1	09/28/17	PR	n/a	n/a	V3A6789

The QC reported here applies to the following samples:

Method: SW846 8260C BY SIM

JC51755-1, JC51755-2, JC51755-3, JC51755-4, JC51755-5, JC51755-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
123-91-1	1,4-Dioxane	20	17.4	87	58-138

CAS No.	Surrogate Recoveries	BSP	Limits
17647-74-4	1,4-Dioxane-d8	90%	51-175%

* = Outside of Control Limits.

5.2.3
5

Blank Spike Summary

Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3A6790-BS	3A157709.D	1	09/29/17	PR	n/a	n/a	V3A6790

The QC reported here applies to the following samples:

Method: SW846 8260C BY SIM

JC51755-7, JC51755-8, JC51755-9, JC51755-10

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
123-91-1	1,4-Dioxane	20	21.4	107	58-138

CAS No.	Surrogate Recoveries	BSP	Limits
17647-74-4	1,4-Dioxane-d8	112%	51-175%

* = Outside of Control Limits.

Matrix Spike Summary

Page 1 of 2

Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC51755-1MS	1B111872.D	1	09/28/17	BK	n/a	n/a	V1B5331
JC51755-1	1B111863.D	1	09/28/17	BK	n/a	n/a	V1B5331

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC51755-1, JC51755-2, JC51755-3, JC51755-4, JC51755-5, JC51755-6

CAS No.	Compound	JC51755-1 ug/l	Spike Q	MS ug/l	MS %	Limits
67-64-1	Acetone	ND	20	20.5	103	41-142
78-93-3	2-Butanone	ND	20	16.8	84	55-129
71-43-2	Benzene	ND	5	4.5	90	53-138
108-86-1	Bromobenzene	ND	5	4.4	88	54-138
74-97-5	Bromochloromethane	ND	5	4.8	96	55-140
75-27-4	Bromodichloromethane	ND	5	4.8	96	57-147
75-25-2	Bromoform	ND	5	4.7	94	47-137
74-83-9	Bromomethane	ND	2	1.7	85	40-162
104-51-8	n-Butylbenzene	ND	5	4.2	84	45-144
135-98-8	sec-Butylbenzene	ND	5	4.3	86	46-145
98-06-6	tert-Butylbenzene	ND	5	4.1	82	48-141
75-15-0	Carbon disulfide	ND	5	4.6	92	35-127
108-90-7	Chlorobenzene	ND	5	4.4	88	54-135
75-00-3	Chloroethane	ND	2	1.8	90	38-153
67-66-3	Chloroform	ND	5	4.5	90	57-151
74-87-3	Chloromethane	ND	2	1.9	95	39-165
95-49-8	o-Chlorotoluene	ND	5	4.2	84	55-142
106-43-4	p-Chlorotoluene	ND	5	4.2	84	55-139
56-23-5	Carbon tetrachloride	ND	5	5.1	102	49-170
75-34-3	1,1-Dichloroethane	0.18	J	4.9	94	55-149
75-35-4	1,1-Dichloroethylene	7.8	5	11.0	64	42-142
563-58-6	1,1-Dichloropropene	ND	5	4.5	90	46-151
96-12-8	1,2-Dibromo-3-chloropropane	ND	5	4.4	88	48-141
106-93-4	1,2-Dibromoethane	ND	5	4.2	84	57-135
107-06-2	1,2-Dichloroethane	ND	5	4.6	92	59-166
78-87-5	1,2-Dichloropropane	ND	5	4.4	88	53-142
142-28-9	1,3-Dichloropropane	ND	5	4.5	90	58-143
594-20-7	2,2-Dichloropropane	ND	5	4.8	96	38-165
124-48-1	Dibromochloromethane	ND	5	4.8	96	55-138
74-95-3	Dibromomethane	ND	5	4.5	90	61-144
75-71-8	Dichlorodifluoromethane	ND	2	2.0	100	23-172
541-73-1	m-Dichlorobenzene	ND	5	4.5	90	53-138
95-50-1	o-Dichlorobenzene	ND	5	4.4	88	54-140
106-46-7	p-Dichlorobenzene	ND	5	4.4	88	53-137
156-60-5	trans-1,2-Dichloroethylene	ND	5	5.0	100	47-148
156-59-2	cis-1,2-Dichloroethylene	ND	5	4.8	96	51-146

* = Outside of Control Limits.

5.3.1
5

Matrix Spike Summary

Page 2 of 2

Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC51755-1MS	1B111872.D	1	09/28/17	BK	n/a	n/a	V1B5331
JC51755-1	1B111863.D	1	09/28/17	BK	n/a	n/a	V1B5331

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC51755-1, JC51755-2, JC51755-3, JC51755-4, JC51755-5, JC51755-6

CAS No.	Compound	JC51755-1 ug/l	Spike Q	MS ug/l	MS %	Limits
10061-01-5	cis-1,3-Dichloropropene	ND	5	4.0	80	51-136
10061-02-6	trans-1,3-Dichloropropene	ND	5	4.2	84	54-142
100-41-4	Ethylbenzene	ND	5	4.2	84	51-138
87-68-3	Hexachlorobutadiene	ND	5	4.6	92	40-154
591-78-6	2-Hexanone	ND	20	15.7	79	53-128
98-82-8	Isopropylbenzene	ND	5	4.1	82	49-139
99-87-6	p-Isopropyltoluene	ND	5	4.2	84	45-141
75-09-2	Methylene chloride	ND	5	4.7	94	54-137
1634-04-4	Methyl Tert Butyl Ether	ND	5	4.1	82	53-143
108-10-1	4-Methyl-2-pentanone	ND	20	16.1	81	58-127
91-20-3	Naphthalene	ND	5	3.8	76	44-140
103-65-1	n-Propylbenzene	ND	5	4.3	86	50-142
100-42-5	Styrene	ND	5	4.0	80	23-130
630-20-6	1,1,1,2-Tetrachloroethane	ND	5	4.5	90	57-144
71-55-6	1,1,1-Trichloroethane	0.41	J	5.2	96	52-164
79-34-5	1,1,2,2-Tetrachloroethane	ND	5	4.4	88	58-138
79-00-5	1,1,2-Trichloroethane	ND	5	4.5	90	59-139
87-61-6	1,2,3-Trichlorobenzene	ND	5	4.2	84	47-141
96-18-4	1,2,3-Trichloropropane	ND	5	4.5	90	56-148
120-82-1	1,2,4-Trichlorobenzene	ND	5	4.1	82	46-137
95-63-6	1,2,4-Trimethylbenzene	ND	5	4.1	82	41-138
108-67-8	1,3,5-Trimethylbenzene	ND	5	4.2	84	45-138
127-18-4	Tetrachloroethylene	ND	5	4.8	96	45-145
108-88-3	Toluene	ND	5	4.2	84	52-134
79-01-6	Trichloroethylene	ND	5	4.6	92	54-143
75-69-4	Trichlorofluoromethane	ND	2	1.9	95	36-167
75-01-4	Vinyl chloride	ND	2	1.8	90	35-162
	m,p-Xylene	ND	10	8.5	85	49-135
95-47-6	o-Xylene	ND	5	4.2	84	49-134
1330-20-7	Xylenes (total)	ND	15	12.7	85	50-134

CAS No.	Surrogate Recoveries	MS	JC51755-1	Limits
2199-69-1	1,2-Dichlorobenzene-d4	104%	96%	70-130%
460-00-4	4-Bromofluorobenzene	95%	93%	70-130%

* = Outside of Control Limits.

5.3.1
5

Matrix Spike Summary

Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC51755-7MS	1B111905.D	1	09/29/17	BK	n/a	n/a	V1B5333
JC51755-7	1B111899.D	1	09/29/17	BK	n/a	n/a	V1B5333

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC51755-7, JC51755-8, JC51755-9, JC51755-10

CAS No.	Compound	JC51755-7 ug/l	Spike Q	MS ug/l	MS %	Limits
67-64-1	Acetone	ND	20	20.7	104	41-142
78-93-3	2-Butanone	ND	20	17.4	87	55-129
71-43-2	Benzene	ND	5	3.9	78	53-138
108-86-1	Bromobenzene	ND	5	4.1	82	54-138
74-97-5	Bromochloromethane	ND	5	4.4	88	55-140
75-27-4	Bromodichloromethane	ND	5	4.5	90	57-147
75-25-2	Bromoform	ND	5	5.2	104	47-137
74-83-9	Bromomethane	ND	2	1.7	85	40-162
104-51-8	n-Butylbenzene	ND	5	3.4	68	45-144
135-98-8	sec-Butylbenzene	ND	5	3.5	70	46-145
98-06-6	tert-Butylbenzene	ND	5	3.3	66	48-141
75-15-0	Carbon disulfide	ND	5	4.1	82	35-127
108-90-7	Chlorobenzene	ND	5	4.0	80	54-135
75-00-3	Chloroethane	ND	2	1.7	85	38-153
67-66-3	Chloroform	0.36	J	4.4	81	57-151
74-87-3	Chloromethane	ND	2	1.9	95	39-165
95-49-8	o-Chlorotoluene	ND	5	3.8	76	55-142
106-43-4	p-Chlorotoluene	ND	5	3.8	76	55-139
56-23-5	Carbon tetrachloride	ND	5	4.5	90	49-170
75-34-3	1,1-Dichloroethane	ND	5	4.2	84	55-149
75-35-4	1,1-Dichloroethylene	ND	5	4.1	82	42-142
563-58-6	1,1-Dichloropropene	ND	5	3.7	74	46-151
96-12-8	1,2-Dibromo-3-chloropropane	ND	5	5.0	100	48-141
106-93-4	1,2-Dibromoethane	ND	5	4.2	84	57-135
107-06-2	1,2-Dichloroethane	ND	5	4.2	84	59-166
78-87-5	1,2-Dichloropropane	ND	5	4.1	82	53-142
142-28-9	1,3-Dichloropropane	ND	5	4.5	90	58-143
594-20-7	2,2-Dichloropropane	ND	5	4.3	86	38-165
124-48-1	Dibromochloromethane	ND	5	4.9	98	55-138
74-95-3	Dibromomethane	ND	5	4.5	90	61-144
75-71-8	Dichlorodifluoromethane	ND	2	2.0	100	23-172
541-73-1	m-Dichlorobenzene	ND	5	4.3	86	53-138
95-50-1	o-Dichlorobenzene	ND	5	4.3	86	54-140
106-46-7	p-Dichlorobenzene	ND	5	4.1	82	53-137
156-60-5	trans-1,2-Dichloroethylene	ND	5	4.1	82	47-148
156-59-2	cis-1,2-Dichloroethylene	ND	5	3.9	78	51-146

* = Outside of Control Limits.

Matrix Spike Summary

Page 2 of 2

Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC51755-7MS	1B111905.D	1	09/29/17	BK	n/a	n/a	V1B5333
JC51755-7	1B111899.D	1	09/29/17	BK	n/a	n/a	V1B5333

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC51755-7, JC51755-8, JC51755-9, JC51755-10

CAS No.	Compound	JC51755-7 ug/l	Spike Q	MS ug/l	MS %	Limits
10061-01-5	cis-1,3-Dichloropropene	ND	5	3.5	70	51-136
10061-02-6	trans-1,3-Dichloropropene	ND	5	4.1	82	54-142
100-41-4	Ethylbenzene	ND	5	3.6	72	51-138
87-68-3	Hexachlorobutadiene	ND	5	4.2	84	40-154
591-78-6	2-Hexanone	ND	20	16.6	83	53-128
98-82-8	Isopropylbenzene	ND	5	3.2	64	49-139
99-87-6	p-Isopropyltoluene	ND	5	3.5	70	45-141
75-09-2	Methylene chloride	ND	5	4.0	80	54-137
1634-04-4	Methyl Tert Butyl Ether	0.50	5	4.0	70	53-143
108-10-1	4-Methyl-2-pentanone	ND	20	17.4	87	58-127
91-20-3	Naphthalene	ND	5	3.7	74	44-140
103-65-1	n-Propylbenzene	ND	5	3.7	74	50-142
100-42-5	Styrene	ND	5	3.5	70	23-130
630-20-6	1,1,1,2-Tetrachloroethane	ND	5	4.4	88	57-144
71-55-6	1,1,1-Trichloroethane	ND	5	4.2	84	52-164
79-34-5	1,1,2,2-Tetrachloroethane	ND	5	4.9	98	58-138
79-00-5	1,1,2-Trichloroethane	ND	5	4.5	90	59-139
87-61-6	1,2,3-Trichlorobenzene	ND	5	3.9	78	47-141
96-18-4	1,2,3-Trichloropropane	ND	5	4.9	98	56-148
120-82-1	1,2,4-Trichlorobenzene	ND	5	3.6	72	46-137
95-63-6	1,2,4-Trimethylbenzene	ND	5	3.5	70	41-138
108-67-8	1,3,5-Trimethylbenzene	ND	5	3.6	72	45-138
127-18-4	Tetrachloroethylene	ND	5	4.0	80	45-145
108-88-3	Toluene	ND	5	3.5	70	52-134
79-01-6	Trichloroethylene	ND	5	4.0	80	54-143
75-69-4	Trichlorofluoromethane	ND	2	1.8	90	36-167
75-01-4	Vinyl chloride	ND	2	1.8	90	35-162
	m,p-Xylene	ND	10	7.1	71	49-135
95-47-6	o-Xylene	ND	5	3.5	70	49-134
1330-20-7	Xylenes (total)	ND	15	10.7	71	50-134

CAS No.	Surrogate Recoveries	MS	JC51755-7	Limits
2199-69-1	1,2-Dichlorobenzene-d4	105%	91%	70-130%
460-00-4	4-Bromofluorobenzene	88%	81%	70-130%

* = Outside of Control Limits.

5.3.2
5

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC51496-1MS	3A157688.D	1	09/28/17	PR	n/a	n/a	V3A6789
JC51496-1MSD	3A157689.D	1	09/28/17	PR	n/a	n/a	V3A6789
JC51496-1	3A157680.D	1	09/28/17	PR	n/a	n/a	V3A6789

The QC reported here applies to the following samples:

Method: SW846 8260C BY SIM

JC51755-1, JC51755-2, JC51755-3, JC51755-4, JC51755-5, JC51755-6

CAS No.	Compound	JC51496-1		Spike	MS	MS	Spike	MSD	MSD	RPD	Limits Rec/RPD
		ug/l	Q	ug/l	ug/l	%	ug/l	ug/l	%		
123-91-1	1,4-Dioxane	11.2		20	32.5	107	20	32.9	109	1	36-166/26

CAS No.	Surrogate Recoveries	MS	MSD	JC51496-1	Limits
17647-74-4	1,4-Dioxane-d8	116%	116%	122%	51-175%

* = Outside of Control Limits.

5.4.1
5

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC51789-2MS	3A157724.D	1	09/29/17	PR	n/a	n/a	V3A6790
JC51789-2MSD	3A157725.D	1	09/29/17	PR	n/a	n/a	V3A6790
JC51789-2	3A157715.D	1	09/29/17	PR	n/a	n/a	V3A6790

The QC reported here applies to the following samples:

Method: SW846 8260C BY SIM

JC51755-7, JC51755-8, JC51755-9, JC51755-10

CAS No.	Compound	JC51789-2		Spike	MS	MS	Spike	MSD	MSD	RPD	Limits Rec/RPD
		ug/l	Q	ug/l	ug/l	%	ug/l	ug/l	%		
123-91-1	1,4-Dioxane	5.2		20	38.2	165	20	37.6	162	2	36-166/26

CAS No.	Surrogate Recoveries	MS	MSD	JC51789-2	Limits
17647-74-4	1,4-Dioxane-d8	163%	156%	128%	51-175%

* = Outside of Control Limits.

5.4.2
5

Duplicate Summary

Page 1 of 3

Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC51755-2DUP	1B111871.D	1	09/28/17	BK	n/a	n/a	V1B5331
JC51755-2	1B111864.D	1	09/28/17	BK	n/a	n/a	V1B5331

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC51755-1, JC51755-2, JC51755-3, JC51755-4, JC51755-5, JC51755-6

CAS No.	Compound	JC51755-2		DUP	RPD	Limits
		ug/l	Q	ug/l		
67-64-1	Acetone	ND		ND	nc	10
78-93-3	2-Butanone	ND		ND	nc	12
71-43-2	Benzene	ND		ND	nc	10
108-86-1	Bromobenzene	ND		ND	nc	10
74-97-5	Bromochloromethane	ND		ND	nc	10
75-27-4	Bromodichloromethane	ND		ND	nc	10
75-25-2	Bromoform	ND		ND	nc	10
74-83-9	Bromomethane	ND		ND	nc	10
104-51-8	n-Butylbenzene	ND		ND	nc	10
135-98-8	sec-Butylbenzene	ND		ND	nc	10
98-06-6	tert-Butylbenzene	ND		ND	nc	10
75-15-0	Carbon disulfide	ND		ND	nc	19
108-90-7	Chlorobenzene	ND		ND	nc	10
75-00-3	Chloroethane	ND		ND	nc	10
67-66-3	Chloroform	ND		ND	nc	12
74-87-3	Chloromethane	ND		ND	nc	10
95-49-8	o-Chlorotoluene	ND		ND	nc	10
106-43-4	p-Chlorotoluene	ND		ND	nc	10
56-23-5	Carbon tetrachloride	ND		ND	nc	10
75-34-3	1,1-Dichloroethane	0.15	J	0.19	J	24* a
75-35-4	1,1-Dichloroethylene	7.0		7.8		11* a
563-58-6	1,1-Dichloropropene	ND		ND	nc	10
96-12-8	1,2-Dibromo-3-chloropropane	ND		ND	nc	10
106-93-4	1,2-Dibromoethane	ND		ND	nc	10
107-06-2	1,2-Dichloroethane	ND		ND	nc	10
78-87-5	1,2-Dichloropropane	ND		ND	nc	10
142-28-9	1,3-Dichloropropane	ND		ND	nc	10
594-20-7	2,2-Dichloropropane	ND		ND	nc	10
124-48-1	Dibromochloromethane	ND		ND	nc	10
74-95-3	Dibromomethane	ND		ND	nc	10
75-71-8	Dichlorodifluoromethane	ND		ND	nc	10
541-73-1	m-Dichlorobenzene	ND		ND	nc	10
95-50-1	o-Dichlorobenzene	ND		ND	nc	10
106-46-7	p-Dichlorobenzene	ND		ND	nc	10
156-60-5	trans-1,2-Dichloroethylene	ND		ND	nc	10
156-59-2	cis-1,2-Dichloroethylene	ND		ND	nc	10

* = Outside of Control Limits.

5.5.1
5

Duplicate Summary

Page 2 of 3

Job Number: JC51755
 Account: ESCVAR WSP Environment & Energy
 Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC51755-2DUP	1B111871.D	1	09/28/17	BK	n/a	n/a	V1B5331
JC51755-2	1B111864.D	1	09/28/17	BK	n/a	n/a	V1B5331

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC51755-1, JC51755-2, JC51755-3, JC51755-4, JC51755-5, JC51755-6

CAS No.	Compound	JC51755-2		Q	RPD	Limits	
		ug/l	ug/l				
10061-01-5	cis-1,3-Dichloropropene	ND	ND	nc	10		
10061-02-6	trans-1,3-Dichloropropene	ND	ND	nc	10		
100-41-4	Ethylbenzene	ND	ND	nc	10		
87-68-3	Hexachlorobutadiene	ND	ND	nc	10		
591-78-6	2-Hexanone	ND	ND	nc	10		
98-82-8	Isopropylbenzene	ND	ND	nc	10		
99-87-6	p-Isopropyltoluene	ND	ND	nc	10		
75-09-2	Methylene chloride	ND	ND	nc	10		
1634-04-4	Methyl Tert Butyl Ether	ND	ND	nc	10		
108-10-1	4-Methyl-2-pentanone	ND	ND	nc	10		
91-20-3	Naphthalene	ND	ND	nc	10		
103-65-1	n-Propylbenzene	ND	ND	nc	10		
100-42-5	Styrene	ND	ND	nc	10		
630-20-6	1,1,1,2-Tetrachloroethane	ND	ND	nc	10		
71-55-6	1,1,1-Trichloroethane	0.40	J	0.43	J	7	10
79-34-5	1,1,2,2-Tetrachloroethane	ND	ND	nc	10		
79-00-5	1,1,2-Trichloroethane	ND	ND	nc	10		
87-61-6	1,2,3-Trichlorobenzene	ND	ND	nc	10		
96-18-4	1,2,3-Trichloropropane	ND	ND	nc	10		
120-82-1	1,2,4-Trichlorobenzene	ND	ND	nc	10		
95-63-6	1,2,4-Trimethylbenzene	ND	ND	nc	10		
108-67-8	1,3,5-Trimethylbenzene	ND	ND	nc	10		
127-18-4	Tetrachloroethylene	ND	ND	nc	10		
108-88-3	Toluene	ND	ND	nc	10		
79-01-6	Trichloroethylene	ND	ND	nc	10		
75-69-4	Trichlorofluoromethane	ND	ND	nc	10		
75-01-4	Vinyl chloride	ND	ND	nc	10		
	m,p-Xylene	ND	ND	nc	10		
95-47-6	o-Xylene	ND	ND	nc	10		
1330-20-7	Xylenes (total)	ND	ND	nc	10		

CAS No.	Surrogate Recoveries	DUP	JC51755-2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	95%	97%	70-130%
460-00-4	4-Bromofluorobenzene	90%	92%	70-130%

* = Outside of Control Limits.

5.5.1
5

Duplicate Summary

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Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC51755-2DUP	1B111871.D	1	09/28/17	BK	n/a	n/a	V1B5331
JC51755-2	1B111864.D	1	09/28/17	BK	n/a	n/a	V1B5331

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC51755-1, JC51755-2, JC51755-3, JC51755-4, JC51755-5, JC51755-6

(a) Outside in house control limits.

* = Outside of Control Limits.

Duplicate Summary

Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC51755-8DUP	1B111906.D	1	09/29/17	BK	n/a	n/a	V1B5333
JC51755-8	1B111900.D	1	09/29/17	BK	n/a	n/a	V1B5333

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC51755-7, JC51755-8, JC51755-9, JC51755-10

CAS No.	Compound	JC51755-8		Q	RPD	Limits
		ug/l	DUP ug/l			
67-64-1	Acetone	ND	ND	nc	10	
78-93-3	2-Butanone	ND	ND	nc	12	
71-43-2	Benzene	ND	ND	nc	10	
108-86-1	Bromobenzene	ND	ND	nc	10	
74-97-5	Bromochloromethane	ND	ND	nc	10	
75-27-4	Bromodichloromethane	ND	ND	nc	10	
75-25-2	Bromoform	ND	ND	nc	10	
74-83-9	Bromomethane	ND	ND	nc	10	
104-51-8	n-Butylbenzene	ND	ND	nc	10	
135-98-8	sec-Butylbenzene	ND	ND	nc	10	
98-06-6	tert-Butylbenzene	ND	ND	nc	10	
75-15-0	Carbon disulfide	ND	ND	nc	19	
108-90-7	Chlorobenzene	ND	ND	nc	10	
75-00-3	Chloroethane	ND	ND	nc	10	
67-66-3	Chloroform	0.36	J 0.39	J	8	12
74-87-3	Chloromethane	ND	ND	nc	10	
95-49-8	o-Chlorotoluene	ND	ND	nc	10	
106-43-4	p-Chlorotoluene	ND	ND	nc	10	
56-23-5	Carbon tetrachloride	ND	ND	nc	10	
75-34-3	1,1-Dichloroethane	ND	ND	nc	10	
75-35-4	1,1-Dichloroethylene	ND	ND	nc	10	
563-58-6	1,1-Dichloropropene	ND	ND	nc	10	
96-12-8	1,2-Dibromo-3-chloropropane	ND	ND	nc	10	
106-93-4	1,2-Dibromoethane	ND	ND	nc	10	
107-06-2	1,2-Dichloroethane	ND	ND	nc	10	
78-87-5	1,2-Dichloropropane	ND	ND	nc	10	
142-28-9	1,3-Dichloropropane	ND	ND	nc	10	
594-20-7	2,2-Dichloropropane	ND	ND	nc	10	
124-48-1	Dibromochloromethane	ND	ND	nc	10	
74-95-3	Dibromomethane	ND	ND	nc	10	
75-71-8	Dichlorodifluoromethane	ND	ND	nc	10	
541-73-1	m-Dichlorobenzene	ND	ND	nc	10	
95-50-1	o-Dichlorobenzene	ND	ND	nc	10	
106-46-7	p-Dichlorobenzene	ND	ND	nc	10	
156-60-5	trans-1,2-Dichloroethylene	ND	ND	nc	10	
156-59-2	cis-1,2-Dichloroethylene	ND	ND	nc	10	

* = Outside of Control Limits.

Duplicate Summary

Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC51755-8DUP	1B111906.D	1	09/29/17	BK	n/a	n/a	V1B5333
JC51755-8	1B111900.D	1	09/29/17	BK	n/a	n/a	V1B5333

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC51755-7, JC51755-8, JC51755-9, JC51755-10

CAS No.	Compound	JC51755-8		Q	RPD	Limits
		ug/l	ug/l			
10061-01-5	cis-1,3-Dichloropropene	ND	ND	nc	10	
10061-02-6	trans-1,3-Dichloropropene	ND	ND	nc	10	
100-41-4	Ethylbenzene	ND	ND	nc	10	
87-68-3	Hexachlorobutadiene	ND	ND	nc	10	
591-78-6	2-Hexanone	ND	ND	nc	10	
98-82-8	Isopropylbenzene	ND	ND	nc	10	
99-87-6	p-Isopropyltoluene	ND	ND	nc	10	
75-09-2	Methylene chloride	ND	ND	nc	10	
1634-04-4	Methyl Tert Butyl Ether	0.37	J	0.41	J	10
108-10-1	4-Methyl-2-pentanone	ND	ND	nc	10	
91-20-3	Naphthalene	ND	ND	nc	10	
103-65-1	n-Propylbenzene	ND	ND	nc	10	
100-42-5	Styrene	ND	ND	nc	10	
630-20-6	1,1,1,2-Tetrachloroethane	ND	ND	nc	10	
71-55-6	1,1,1-Trichloroethane	ND	ND	nc	10	
79-34-5	1,1,2,2-Tetrachloroethane	ND	ND	nc	10	
79-00-5	1,1,2-Trichloroethane	ND	ND	nc	10	
87-61-6	1,2,3-Trichlorobenzene	ND	ND	nc	10	
96-18-4	1,2,3-Trichloropropane	ND	ND	nc	10	
120-82-1	1,2,4-Trichlorobenzene	ND	ND	nc	10	
95-63-6	1,2,4-Trimethylbenzene	ND	ND	nc	10	
108-67-8	1,3,5-Trimethylbenzene	ND	ND	nc	10	
127-18-4	Tetrachloroethylene	ND	ND	nc	10	
108-88-3	Toluene	ND	ND	nc	10	
79-01-6	Trichloroethylene	ND	ND	nc	10	
75-69-4	Trichlorofluoromethane	ND	ND	nc	10	
75-01-4	Vinyl chloride	ND	ND	nc	10	
	m,p-Xylene	ND	ND	nc	10	
95-47-6	o-Xylene	ND	ND	nc	10	
1330-20-7	Xylenes (total)	ND	ND	nc	10	

CAS No.	Surrogate Recoveries	DUP	JC51755-8	Limits
2199-69-1	1,2-Dichlorobenzene-d4	93%	93%	70-130%
460-00-4	4-Bromofluorobenzene	80%	79%	70-130%

* = Outside of Control Limits.

Instrument Performance Check (BFB)

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Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample: V1B5329-BFB
Lab File ID: 1B111819.D
Instrument ID: GCMS1B

Injection Date: 09/26/17
Injection Time: 10:17

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	14.99 - 40.0% of mass 95	3158	16.7	Pass
75	30.0 - 80.0% of mass 95	9257	48.9	Pass
95	Base peak, 100% relative abundance	18944	100.0	Pass
96	5.0 - 9.0% of mass 95	1411	7.45	Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) ^a Pass
174	50.0 - 120.0% of mass 95	14095	74.4	Pass
175	5.0 - 9.0% of mass 174	1059	5.59	(7.51) ^a Pass
176	95.0 - 101.0% of mass 174	13615	71.9	(96.6) ^a Pass
177	5.0 - 9.0% of mass 176	1047	5.53	(7.69) ^b Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V1B5329-IC5329	1B111820.D	09/26/17	11:02	00:45	Initial cal 0.2
V1B5329-IC5329	1B111821.D	09/26/17	11:34	01:17	Initial cal 0.5
V1B5329-IC5329	1B111822.D	09/26/17	12:05	01:48	Initial cal 1
V1B5329-IC5329	1B111823.D	09/26/17	12:37	02:20	Initial cal 2
V1B5329-IC5329	1B111824.D	09/26/17	13:09	02:52	Initial cal 5
V1B5329-ICC5329	1B111825.D	09/26/17	13:42	03:25	Initial cal 10
V1B5329-IC5329	1B111826.D	09/26/17	14:13	03:56	Initial cal 20
V1B5329-IC5329	1B111827.D	09/26/17	14:44	04:27	Initial cal 40
V1B5329-IC5329	1B111828.D	09/26/17	15:16	04:59	Initial cal 80
V1B5329-ICV5329	1B111831.D	09/26/17	16:50	06:33	Initial cal verification 10

Instrument Performance Check (BFB)

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Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample:	V1B5331-BFB	Injection Date:	09/28/17
Lab File ID:	1B111859.D	Injection Time:	08:05
Instrument ID:	GCMS1B		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	14.99 - 40.0% of mass 95	2750	16.9	Pass
75	30.0 - 80.0% of mass 95	7603	46.7	Pass
95	Base peak, 100% relative abundance	16272	100.0	Pass
96	5.0 - 9.0% of mass 95	1168	7.18	Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) ^a Pass
174	50.0 - 120.0% of mass 95	12922	79.4	Pass
175	5.0 - 9.0% of mass 174	974	5.99	(7.54) ^a Pass
176	95.0 - 101.0% of mass 174	12497	76.8	(96.7) ^a Pass
177	5.0 - 9.0% of mass 176	822	5.05	(6.58) ^b Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V1B5331-CC5329	1B111860.D	09/28/17	08:46	00:41	Continuing cal 5
V1B5331-MB	1B111861.D	09/28/17	09:26	01:21	Method Blank
V1B5331-BS	1B111862.D	09/28/17	09:57	01:52	Blank Spike
JC51755-1	1B111863.D	09/28/17	10:42	02:37	RW-12270CM-092517
JC51755-2	1B111864.D	09/28/17	11:13	03:08	RW-1000-092517
ZZZZZZ	1B111865.D	09/28/17	11:46	03:41	(unrelated sample)
ZZZZZZ	1B111866.D	09/28/17	12:17	04:12	(unrelated sample)
ZZZZZZ	1B111867.D	09/28/17	12:50	04:45	(unrelated sample)
ZZZZZZ	1B111868.D	09/28/17	13:21	05:16	(unrelated sample)
ZZZZZZ	1B111869.D	09/28/17	13:53	05:48	(unrelated sample)
ZZZZZZ	1B111870.D	09/28/17	14:25	06:20	(unrelated sample)
JC51755-2DUP	1B111871.D	09/28/17	14:57	06:52	Duplicate
JC51755-1MS	1B111872.D	09/28/17	15:29	07:24	Matrix Spike
ZZZZZZ	1B111873.D	09/28/17	16:00	07:55	(unrelated sample)
ZZZZZZ	1B111874.D	09/28/17	16:32	08:27	(unrelated sample)
JC51755-3	1B111875.D	09/28/17	17:03	08:58	TB-092517
JC51755-4	1B111876.D	09/28/17	17:35	09:30	RW-12270CM-092517-F
JC51755-5	1B111877.D	09/28/17	18:07	10:02	RW-1308RB-092517-F
JC51755-6	1B111878.D	09/28/17	18:39	10:34	RW-1308RB-092517
ZZZZZZ	1B111879.D	09/28/17	19:11	11:06	(unrelated sample)
ZZZZZZ	1B111880.D	09/28/17	19:42	11:37	(unrelated sample)

Instrument Performance Check (BFB)

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Job Number: JC51755

Account: ECSVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample:	V1B5333-BFB	Injection Date:	09/29/17
Lab File ID:	1B111894.D	Injection Time:	09:11
Instrument ID:	GCMS1B		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	14.99 - 40.0% of mass 95	1930	16.4	Pass
75	30.0 - 80.0% of mass 95	5570	47.2	Pass
95	Base peak, 100% relative abundance	11803	100.0	Pass
96	5.0 - 9.0% of mass 95	826	7.00	Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) ^a Pass
174	50.0 - 120.0% of mass 95	9961	84.4	Pass
175	5.0 - 9.0% of mass 174	756	6.41	(7.59) ^a Pass
176	95.0 - 101.0% of mass 174	9526	80.7	(95.6) ^a Pass
177	5.0 - 9.0% of mass 176	627	5.31	(6.58) ^b Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V1B5333-CC5329	1B111895.D	09/29/17	09:46	00:35	Continuing cal 5
V1B5333-MB	1B111896.D	09/29/17	10:31	01:20	Method Blank
V1B5333-BS	1B111897.D	09/29/17	11:03	01:52	Blank Spike
ZZZZZZ	1B111898.D	09/29/17	11:47	02:36	(unrelated sample)
JC51755-7	1B111899.D	09/29/17	12:19	03:08	RW-1319LP-092517
JC51755-8	1B111900.D	09/29/17	12:50	03:39	RW-1317LP-092517-F
ZZZZZZ	1B111901.D	09/29/17	13:22	04:11	(unrelated sample)
ZZZZZZ	1B111902.D	09/29/17	13:53	04:42	(unrelated sample)
ZZZZZZ	1B111903.D	09/29/17	14:25	05:14	(unrelated sample)
ZZZZZZ	1B111904.D	09/29/17	14:56	05:45	(unrelated sample)
JC51755-7MS	1B111905.D	09/29/17	15:28	06:17	Matrix Spike
JC51755-8DUP	1B111906.D	09/29/17	15:59	06:48	Duplicate
ZZZZZZ	1B111907.D	09/29/17	16:31	07:20	(unrelated sample)
ZZZZZZ	1B111908.D	09/29/17	17:02	07:51	(unrelated sample)
ZZZZZZ	1B111909.D	09/29/17	17:34	08:23	(unrelated sample)
ZZZZZZ	1B111910.D	09/29/17	18:06	08:55	(unrelated sample)
ZZZZZZ	1B111911.D	09/29/17	18:38	09:27	(unrelated sample)
ZZZZZZ	1B111912.D	09/29/17	19:09	09:58	(unrelated sample)
JC51755-9	1B111913.D	09/29/17	19:41	10:30	RW-1317LP-092517
JC51755-10	1B111914.D	09/29/17	20:13	11:02	RW-7740TO-092517

Instrument Performance Check (BFB)

Job Number: JC51755
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample:	V3A6787-BFB	Injection Date:	09/27/17
Lab File ID:	3A157637.D	Injection Time:	09:47
Instrument ID:	GCMS3A		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	15.0 - 40.0% of mass 95	8122	18.0	Pass
75	30.0 - 60.0% of mass 95	22219	49.3	Pass
95	Base peak, 100% relative abundance	45101	100.0	Pass
96	5.0 - 9.0% of mass 95	2935	6.51	Pass
173	Less than 2.0% of mass 174	240	0.53	(0.74) ^a Pass
174	50.0 - 120.0% of mass 95	32469	72.0	Pass
175	5.0 - 9.0% of mass 174	2483	5.51	(7.65) ^a Pass
176	95.0 - 101.0% of mass 174	30872	68.5	(95.1) ^a Pass
177	5.0 - 9.0% of mass 176	2102	4.66	(6.81) ^b Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V3A6787-IC6787	3A157638.D	09/27/17	10:21	00:34	Initial cal 0.25
V3A6787-IC6787	3A157639.D	09/27/17	10:47	01:00	Initial cal 0.4
V3A6787-IC6787	3A157640.D	09/27/17	11:13	01:26	Initial cal 1
V3A6787-IC6787	3A157641.D	09/27/17	11:39	01:52	Initial cal 2
V3A6787-IC6787	3A157642.D	09/27/17	12:06	02:19	Initial cal 5
V3A6787-ICC6787	3A157643.D	09/27/17	12:32	02:45	Initial cal 20
V3A6787-IC6787	3A157644.D	09/27/17	12:58	03:11	Initial cal 50
V3A6787-IC6787	3A157645.D	09/27/17	13:24	03:37	Initial cal 100
V3A6787-IC6787	3A157646.D	09/27/17	13:49	04:02	Initial cal 200
V3A6787-ICV6787	3A157649.D	09/27/17	15:08	05:21	Initial cal verification 20
V3A6785-MB2	3A157651.D	09/27/17	16:00	06:13	Method Blank
V3A6788-MB	3A157651.D	09/27/17	16:00	06:13	Method Blank
V3A6785-BS2	3A157652.D	09/27/17	16:26	06:39	Blank Spike
V3A6788-BS	3A157652.D	09/27/17	16:26	06:39	Blank Spike
JC51376-1DUP	3A157654.D	09/27/17	17:18	07:31	Duplicate
ZZZZZZ	3A157655.D	09/27/17	17:43	07:56	(unrelated sample)
JC51376-4MS	3A157656.D	09/27/17	18:09	08:22	Matrix Spike
JC51468-2	3A157658.D	09/27/17	19:02	09:15	(used for QC only; not part of job JC51755)
ZZZZZZ	3A157659.D	09/27/17	19:28	09:41	(unrelated sample)
JC51468-5	3A157660.D	09/27/17	19:54	10:07	(used for QC only; not part of job JC51755)
JC51468-5DUP	3A157661.D	09/27/17	20:27	10:40	Duplicate
JC51468-2MS	3A157662.D	09/27/17	20:54	11:07	Matrix Spike

Instrument Performance Check (BFB)

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Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample: V3A6789-BFB
Lab File ID: 3A157672.D
Instrument ID: GCMS3A

Injection Date: 09/28/17
Injection Time: 11:23

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	15.0 - 40.0% of mass 95	8398	19.7	Pass
75	30.0 - 60.0% of mass 95	22616	53.0	Pass
95	Base peak, 100% relative abundance	42680	100.0	Pass
96	5.0 - 9.0% of mass 95	3232	7.57	Pass
173	Less than 2.0% of mass 174	277	0.65	(0.92) ^a Pass
174	50.0 - 120.0% of mass 95	30258	70.9	Pass
175	5.0 - 9.0% of mass 174	2366	5.54	(7.82) ^a Pass
176	95.0 - 101.0% of mass 174	29322	68.7	(96.9) ^a Pass
177	5.0 - 9.0% of mass 176	1676	3.93	(5.72) ^b Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V3A6789-CC6787	3A157673.D	09/28/17	12:02	00:39	Continuing cal 20
V3A6789-MB	3A157674.D	09/28/17	12:30	01:07	Method Blank
V3A6789-BS	3A157675.D	09/28/17	12:56	01:33	Blank Spike
ZZZZZZ	3A157677.D	09/28/17	13:59	02:36	(unrelated sample)
ZZZZZZ	3A157679.D	09/28/17	14:50	03:27	(unrelated sample)
JC51496-1	3A157680.D	09/28/17	15:16	03:53	(used for QC only; not part of job JC51755)
ZZZZZZ	3A157681.D	09/28/17	15:42	04:19	(unrelated sample)
ZZZZZZ	3A157682.D	09/28/17	16:08	04:45	(unrelated sample)
ZZZZZZ	3A157683.D	09/28/17	16:34	05:11	(unrelated sample)
ZZZZZZ	3A157684.D	09/28/17	17:00	05:37	(unrelated sample)
ZZZZZZ	3A157685.D	09/28/17	17:26	06:03	(unrelated sample)
ZZZZZZ	3A157686.D	09/28/17	17:52	06:29	(unrelated sample)
ZZZZZZ	3A157687.D	09/28/17	18:17	06:54	(unrelated sample)
JC51496-1MS	3A157688.D	09/28/17	18:43	07:20	Matrix Spike
JC51496-1MSD	3A157689.D	09/28/17	19:09	07:46	Matrix Spike Duplicate
JC51755-1	3A157692.D	09/28/17	20:27	09:04	RW-12270CM-092517
JC51755-2	3A157693.D	09/28/17	20:53	09:30	RW-1000-092517
JC51755-3	3A157694.D	09/28/17	21:18	09:55	TB-092517
JC51755-4	3A157695.D	09/28/17	21:44	10:21	RW-1227OCM-092517-F
JC51755-5	3A157696.D	09/28/17	22:10	10:47	RW-1308RB-092517-F
JC51755-6	3A157697.D	09/28/17	22:35	11:12	RW-1308RB-092517
ZZZZZZ	3A157698.D	09/28/17	23:20	11:57	(unrelated sample)

Instrument Performance Check (BFB)

Page 1 of 1

Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample: V3A6790-BFB
Lab File ID: 3A157706.D
Instrument ID: GCMS3A

Injection Date: 09/29/17
Injection Time: 11:29

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	15.0 - 40.0% of mass 95	7443	19.8	Pass
75	30.0 - 60.0% of mass 95	20304	53.9	Pass
95	Base peak, 100% relative abundance	37651	100.0	Pass
96	5.0 - 9.0% of mass 95	2472	6.57	Pass
173	Less than 2.0% of mass 174	173	0.46	(0.67) ^a Pass
174	50.0 - 120.0% of mass 95	25939	68.9	Pass
175	5.0 - 9.0% of mass 174	1794	4.76	(6.92) ^a Pass
176	95.0 - 101.0% of mass 174	24939	66.2	(96.1) ^a Pass
177	5.0 - 9.0% of mass 176	1958	5.20	(7.85) ^b Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V3A6790-CC6787	3A157707.D	09/29/17	11:57	00:28	Continuing cal 20
V3A6790-MB	3A157708.D	09/29/17	12:30	01:01	Method Blank
V3A6790-BS	3A157709.D	09/29/17	12:56	01:27	Blank Spike
JC51755-7	3A157711.D	09/29/17	13:50	02:21	RW-1319LP-092517
JC51755-8	3A157712.D	09/29/17	14:15	02:46	RW-1317LP-092517-F
JC51755-9	3A157713.D	09/29/17	14:41	03:12	RW-1317LP-092517
JC51755-10	3A157714.D	09/29/17	15:07	03:38	RW-7740TO-092517
JC51789-2	3A157715.D	09/29/17	15:32	04:03	(used for QC only; not part of job JC51755)
ZZZZZZ	3A157716.D	09/29/17	15:58	04:29	(unrelated sample)
ZZZZZZ	3A157717.D	09/29/17	16:24	04:55	(unrelated sample)
ZZZZZZ	3A157719.D	09/29/17	17:16	05:47	(unrelated sample)
ZZZZZZ	3A157720.D	09/29/17	17:42	06:13	(unrelated sample)
ZZZZZZ	3A157721.D	09/29/17	18:07	06:38	(unrelated sample)
ZZZZZZ	3A157722.D	09/29/17	18:33	07:04	(unrelated sample)
ZZZZZZ	3A157723.D	09/29/17	18:59	07:30	(unrelated sample)
JC51789-2MS	3A157724.D	09/29/17	19:25	07:56	Matrix Spike
JC51789-2MSD	3A157725.D	09/29/17	19:50	08:21	Matrix Spike Duplicate
ZZZZZZ	3A157727.D	09/29/17	20:42	09:13	(unrelated sample)
ZZZZZZ	3A157728.D	09/29/17	21:08	09:39	(unrelated sample)

Surrogate Recovery Summary

Page 1 of 1

Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Method: EPA 524.2 REV 4.1

Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2
JC51755-1	1B111863.D	96	93
JC51755-2	1B111864.D	97	92
JC51755-3	1B111875.D	96	88
JC51755-4	1B111876.D	95	87
JC51755-5	1B111877.D	94	87
JC51755-6	1B111878.D	93	86
JC51755-7	1B111899.D	91	81
JC51755-8	1B111900.D	93	79
JC51755-9	1B111913.D	92	78
JC51755-10	1B111914.D	91	77
JC51755-1MS	1B111872.D	104	95
JC51755-2DUP	1B111871.D	95	90
JC51755-7MS	1B111905.D	105	88
JC51755-8DUP	1B111906.D	93	80
V1B5331-BS	1B111862.D	101	94
V1B5331-MB	1B111861.D	93	91
V1B5333-BS	1B111897.D	104	91
V1B5333-MB	1B111896.D	100	89

Surrogate Compounds Recovery Limits

S1 = 1,2-Dichlorobenzene-d4

70-130%

S2 = 4-Bromofluorobenzene

70-130%

5.7.1
5

Surrogate Recovery Summary

Page 1 of 1

Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Method: SW846 8260C BY SIM

Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1
JC51755-1	3A157692.D	175
JC51755-2	3A157693.D	174
JC51755-3	3A157694.D	150
JC51755-4	3A157695.D	136
JC51755-5	3A157696.D	142
JC51755-6	3A157697.D	140
JC51755-7	3A157711.D	118
JC51755-8	3A157712.D	113
JC51755-9	3A157713.D	117
JC51755-10	3A157714.D	118
JC51496-1MS	3A157688.D	116
JC51496-1MSD	3A157689.D	116
JC51789-2MS	3A157724.D	163
JC51789-2MSD	3A157725.D	156
V3A6789-BS	3A157675.D	90
V3A6789-MB	3A157674.D	95
V3A6790-BS	3A157709.D	112
V3A6790-MB	3A157708.D	121

Surrogate Compounds	Recovery Limits
S1 = 1,4-Dioxane-d8	51-175%

5.7.2
5

**ENCLOSURE B – LABORATORY ANALYTICAL REPORT FOR 1227 OLD CAMP
MEADE ROAD RESIDENTIAL WELL SAMPLE (JULY 2017)**



ACCUTEST

New Jersey

08/08/17

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Automated Report

Technical Report for

WSP Environment & Energy

Kop-Flex, Hanover, MD

PROJ#31400389

SGS Accutest Job Number: JC47733

Sampling Date: 07/25/17



Report to:

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ATTN: Eric Johnson

Total number of pages in report: 52



Test results contained within this data package meet the requirements
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Nancy F. Cole

Nancy Cole
Laboratory Director

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Sample Summary

WSP Environment & Energy

Job No: JC47733Kop-Flex, Hanover, MD
Project No: PROJ#31400389

Sample Number	Collected Date	Time By	Matrix Received	Code Type	Client Sample ID
JC47733-1	07/25/17	11:25 CC	07/26/17	AQ	Ground Water
JC47733-2	07/25/17	11:40 CC	07/26/17	AQ	Ground Water
JC47733-3	07/25/17	11:40 CC	07/26/17	AQ	Trip Blank Water
					TRIP BLANK

Summary of Hits

Job Number: JC47733
Account: WSP Environment & Energy
Project: Kop-Flex, Hanover, MD
Collected: 07/25/17

Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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JC47733-1 RW-12270CM-072517

1,1-Dichloroethane ^a	0.15 J	0.50	0.13	ug/l	EPA 524.2 REV 4.1
1,1-Dichloroethylene ^a	6.7	0.50	0.23	ug/l	EPA 524.2 REV 4.1
1,1,1-Trichloroethane ^a	0.33 J	0.50	0.12	ug/l	EPA 524.2 REV 4.1
1,4-Dioxane	3.8	0.40	0.18	ug/l	SW846 8260C BY SIM

JC47733-2 RW-12270CM-072517-F

Bromoform ^a	0.55	0.50	0.40	ug/l	EPA 524.2 REV 4.1
1,1-Dichloroethane ^a	0.19 J	0.50	0.13	ug/l	EPA 524.2 REV 4.1
1,1,1-Trichloroethane ^a	0.42 J	0.50	0.12	ug/l	EPA 524.2 REV 4.1
1,4-Dioxane	3.1	0.40	0.18	ug/l	SW846 8260C BY SIM

JC47733-3 TRIP BLANK

Chloroform ^a	0.87	0.50	0.33	ug/l	EPA 524.2 REV 4.1
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(a) EPA 524.2 is not a certified method for non-potable water samples.

Sample Results

Report of Analysis

Report of Analysis

Page 1 of 3

3

Client Sample ID: RW-12270CM-072517**Lab Sample ID:** JC47733-1**Matrix:** AQ - Ground Water**Method:** EPA 524.2 REV 4.1**Project:** Kop-Flex, Hanover, MD**Date Sampled:** 07/25/17**Date Received:** 07/26/17**Percent Solids:** n/a

Run #1 ^a	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	1B110795.D	1	07/28/17 22:21	BK	n/a	n/a	V1B5278

Purge Volume

Run #1 5.0 ml

Run #2

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND	0.50	0.25	ug/l	
74-97-5	Bromo(chloromethane)	ND	0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform ^b	ND	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND	0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND	0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND	0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	ND	0.50	0.33	ug/l	
74-87-3	Chloromethane	ND	0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND	0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	0.15	0.50	0.13	ug/l	J
75-35-4	1,1-Dichloroethylene	6.7	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND	0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.0	0.25	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.50	0.29	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND	0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND	0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.094	ug/l	
74-95-3	Dibromomethane	ND	0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	0.28	ug/l	

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis**Client Sample ID:** RW-12270CM-072517**Lab Sample ID:** JC47733-1**Matrix:** AQ - Ground Water**Method:** EPA 524.2 REV 4.1**Project:** Kop-Flex, Hanover, MD**Date Sampled:** 07/25/17**Date Received:** 07/26/17**Percent Solids:** n/a**VOA List**

CAS No.	Compound	Result	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND	0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND	0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	0.50	0.080	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
91-20-3	Naphthalene	ND	0.50	0.18	ug/l	
103-65-1	n-Propylbenzene	ND	0.50	0.26	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	0.33	0.50	0.12	ug/l	J
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	104%		70-130%
460-00-4	4-Bromofluorobenzene	84%		70-130%

ND = Not detected

MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

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3

Client Sample ID: RW-12270CM-072517**Lab Sample ID:** JC47733-1**Matrix:** AQ - Ground Water**Method:** EPA 524.2 REV 4.1**Project:** Kop-Flex, Hanover, MD**Date Sampled:** 07/25/17**Date Received:** 07/26/17**Percent Solids:** n/a**VOA List**

CAS No.	Compound	Result	RL	MDL	Units	Q
----------------	-----------------	---------------	-----------	------------	--------------	----------

(a) EPA 524.2 is not a certified method for non-potable water samples.

(b) This compound in BS is outside in house QC limits bias high.

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID: RW-12270CM-072517**Lab Sample ID:** JC47733-1**Matrix:** AQ - Ground Water**Method:** SW846 8260C BY SIM**Project:** Kop-Flex, Hanover, MD**Date Sampled:** 07/25/17**Date Received:** 07/26/17**Percent Solids:** n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3A156859.D	1	07/28/17 13:50	PR	n/a	n/a	V3A6761
Run #2							

Purge Volume

Run #1 5.0 ml

Run #2

CAS No.	Compound	Result	RL	MDL	Units	Q
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123-91-1	1,4-Dioxane	3.8	0.40	0.18	ug/l	
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CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
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17647-74-4	1,4-Dioxane-d8	107%		51-175%
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ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID:	RW-12270CM-072517-F	Date Sampled:	07/25/17
Lab Sample ID:	JC47733-2	Date Received:	07/26/17
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Kop-Flex, Hanover, MD		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	1B110947.D	1	08/04/17 11:29	BK	n/a	n/a	V1B5289
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND	0.50	0.25	ug/l	
74-97-5	Bromochloromethane	ND	0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform	0.55	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND	0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND	0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND	0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	ND	0.50	0.33	ug/l	
74-87-3	Chloromethane	ND	0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND	0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	0.19	0.50	0.13	ug/l	J
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND	0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.0	0.25	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.50	0.29	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND	0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND	0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.094	ug/l	
74-95-3	Dibromomethane	ND	0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	0.28	ug/l	

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RW-12270CM-072517-F	Date Sampled:	07/25/17
Lab Sample ID:	JC47733-2	Date Received:	07/26/17
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Kop-Flex, Hanover, MD		

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND	0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND	0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	0.50	0.080	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
91-20-3	Naphthalene	ND	0.50	0.18	ug/l	
103-65-1	n-Propylbenzene	ND	0.50	0.26	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	0.42	0.50	0.12	ug/l	J
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	95%		70-130%
460-00-4	4-Bromofluorobenzene	90%		70-130%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID:	RW-12270CM-072517-F	Date Sampled:	07/25/17
Lab Sample ID:	JC47733-2	Date Received:	07/26/17
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Kop-Flex, Hanover, MD		

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
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(a) EPA 524.2 is not a certified method for non-potable water samples.

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID: RW-12270CM-072517-F
Lab Sample ID: JC47733-2
Matrix: AQ - Ground Water
Method: SW846 8260C BY SIM
Project: Kop-Flex, Hanover, MD

Date Sampled: 07/25/17
Date Received: 07/26/17
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3A156860.D	1	07/28/17 14:16	PR	n/a	n/a	V3A6761
Run #2							

Purge Volume
Run #1 5.0 ml
Run #2

CAS No.	Compound	Result	RL	MDL	Units	Q
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123-91-1	1,4-Dioxane	3.1	0.40	0.18	ug/l	
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CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
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17647-74-4	1,4-Dioxane-d8	125%		51-175%
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ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID:	TRIP BLANK	Date Sampled:	07/25/17
Lab Sample ID:	JC47733-3	Date Received:	07/26/17
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Kop-Flex, Hanover, MD		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	1B110797.D	1	07/28/17 23:24	BK	n/a	n/a	V1B5278
Run #2							

Purge Volume	
Run #1	5.0 ml
Run #2	

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND	0.50	0.25	ug/l	
74-97-5	Bromochloromethane	ND	0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform ^b	ND	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND	0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND	0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND	0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	0.87	0.50	0.33	ug/l	
74-87-3	Chloromethane	ND	0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND	0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND	0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.0	0.25	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.50	0.29	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND	0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND	0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.094	ug/l	
74-95-3	Dibromomethane	ND	0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	0.28	ug/l	

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TRIP BLANK	Date Sampled:	07/25/17
Lab Sample ID:	JC47733-3	Date Received:	07/26/17
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Kop-Flex, Hanover, MD		

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND	0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND	0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	0.50	0.080	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
91-20-3	Naphthalene	ND	0.50	0.18	ug/l	
103-65-1	n-Propylbenzene	ND	0.50	0.26	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	105%		70-130%
460-00-4	4-Bromofluorobenzene	86%		70-130%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

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3.3

3

Client Sample ID:	TRIP BLANK	Date Sampled:	07/25/17
Lab Sample ID:	JC47733-3	Date Received:	07/26/17
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Kop-Flex, Hanover, MD		

VOA List

CAS No.	Compound	Result	RL	MDL	Units	Q
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- (a) EPA 524.2 is not a certified method for non-potable water samples.
 (b) This compound in BS is outside in house QC limits bias high.

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

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3

Client Sample ID:	TRIP BLANK	Date Sampled:	07/25/17
Lab Sample ID:	JC47733-3	Date Received:	07/26/17
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	SW846 8260C BY SIM		
Project:	Kop-Flex, Hanover, MD		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3A156861.D	1	07/28/17 14:41	PR	n/a	n/a	V3A6761
Run #2							

Purge Volume	
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
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123-91-1	1,4-Dioxane	ND	0.40	0.18	ug/l	
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CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
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17647-74-4	1,4-Dioxane-d8	135%		51-175%
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ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Misc. Forms**Custody Documents and Other Forms**

Includes the following where applicable:

- Chain of Custody



ACCUTEST

GW
WTB

CHAIN OF CUSTODY

SGS Accutest - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

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FED-EX Tracking # 725069314169 | Bottle Order Control #
SGS Accutest Quote # SGS Accutest Job # JC47733

Client / Reporting Information		Project Information		Requested Analysis (see TEST CODE sheet)										Matrix Code						
Company Name <i>WSP</i>	Project Name: <i>Kopflex</i>	Street Address <i>13530 Dulles Technology Dr. Suite 300</i>	Street																	
City <i>Henderson</i>	State <i>VA</i>	Zip <i>20171</i>	City	Billing Information (if different from Report to)																
Project Contact <i>Eric.johnson@wsp.com</i>	E-mail	Project # <i>31400389</i>	Street Address	Company Name																
Phone # <i>703 739 6500</i>	Fax #	Client Purchase Order #	City	State Zip																
Sampler(s) Name(s) <i>Molly Log CNS Cresci</i>	Phone #	Project Manager <i>Eric Johnson</i>	Attention: <i>ACCOUNTS PAYABLE@WSP.COM</i>																	
SGS Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection	Date	Time	Sampled by	Matrix	# of bottles	H2O	NH3	HCO3	H2SO4	NOx	DI Water	MEOH	ENCORE	Number of preserved Bottles	V524	V826051010X	LAB USE CNV
1	RW-12270cm-022517		7/25/17	1125	CC	G3	6	X										XX		
2	RW-12270cm-072517-F			1140	CC	G3	6	X									XX			
3	Trip Blank			1400	CC		4	X									XX			
Turnaround Time (Business days)		Data Deliverable Information										Comments / Special Instructions								
<input checked="" type="checkbox"/> Std. 10 Business Days <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 3 Day RUSH <input type="checkbox"/> 2 Day RUSH <input type="checkbox"/> 1 Day RUSH <input type="checkbox"/> other		Approved By (SGS Accutest PM): / Date: <hr/> <hr/> <hr/> <hr/> <hr/>										<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> FULLT1 (Level 3+4) <input type="checkbox"/> NJ Reduced <input type="checkbox"/> Commercial "C" <input type="checkbox"/> NY Data of Known Quality Protocol Reporting Commercial "A" = Results Only, Commercial "B" = Results + QC Summary NJ Reduced = Results + QC Summary + Partial Raw data								
Emergency & Rush T/A data available VIA Lablink		Data Deliverable Information										Comments / Special Instructions								
Sample Custody must be documented below each time samples change possession, including courier delivery.												Sample Inventory is verified upon receipt in the Laboratory.								
Relinquished by Sampler: <i>Eric.johnson</i>	Date/Time: <i>7/25/17 15:00</i>	Received By: <i>1 Fedex</i>	Relinquished By: <i>2 Fedex</i>	Date/Time: <i>7/26/17 9:40</i>	Received By: <i>2 A</i>															
Relinquished by Sampler: <i>Eric.johnson</i>	Date/Time: <i>7/26/17 9:40</i>	Received By: <i>3</i>	Relinquished By: <i>4</i>	Date/Time: <i>7/26/17 9:40</i>	Received By: <i>4</i>															
Relinquished by: <i>Fedex</i>	Date/Time: <i>7/26/17 9:40</i>	Received By: <i>5</i>	Custody Seal # <i>440</i>	<input checked="" type="checkbox"/> intact <input type="checkbox"/> Not intact	Preserved where applicable <input type="checkbox"/>	Date/Time: <i>7/26/17 9:40</i>	Received By: <i>A</i>	Date/Time: <i>7/26/17 9:40</i>	Received By: <i>1.9c/FP</i>											

4.1

4

INITIAL ASSESSMENT *BB/MT*LABEL VERIFICATION *JS*

*Trip Blank made w/ lab provided
DT Water*

Sample Inventory is verified upon receipt in the Laboratory.

JC47733: Chain of Custody

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SGS Accutest Sample Receipt Summary

Job Number: JC47733 Client: _____ Project: _____
 Date / Time Received: 7/26/2017 9:40:00 AM Delivery Method: _____ Airbill #'s: _____

Cooler Temps (Raw Measured) °C: Cooler 1: (1.9);

Cooler Temps (Corrected) °C: Cooler 1: (3.2);

<u>Cooler Security</u>	<u>Y or N</u>	<u>Y or N</u>	<u>Sample Integrity - Documentation</u>	<u>Y or N</u>
1. Custody Seals Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3. COC Present:	<input checked="" type="checkbox"/>
2. Custody Seals Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4. Smpl Dates/Time OK	<input checked="" type="checkbox"/>
<u>Cooler Temperature</u>	<u>Y or N</u>		<u>Sample Integrity - Condition</u>	<u>Y or N</u>
1. Temp criteria achieved:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1. Sample rcvd within HT:	<input checked="" type="checkbox"/>
2. Cooler temp verification:	IR Gun		2. All containers accounted for:	<input checked="" type="checkbox"/>
3. Cooler media:	Ice (Bag)		3. Condition of sample:	Intact
4. No. Coolers:	1			
<u>Quality Control Preservation</u>	<u>Y or N</u>	<u>N/A</u>	<u>Sample Integrity - Instructions</u>	<u>Y or N</u>
1. Trip Blank present / cooler:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1. Analysis requested is clear:	<input checked="" type="checkbox"/>
2. Trip Blank listed on COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2. Bottles received for unspecified tests	<input type="checkbox"/>
3. Samples preserved properly:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3. Sufficient volume rcvd for analysis:	<input checked="" type="checkbox"/>
4. VOCs headspace free:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4. Compositing instructions clear:	<input type="checkbox"/>
			5. Filtering instructions clear:	<input type="checkbox"/>

Comments

SM089-02
Rev. Date 12/1/16

4.1

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JC47733: Chain of Custody
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GC/MS Volatiles

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Surrogate Recovery Summaries

Method Blank Summary

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Job Number: JC47733

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5278-MB	1B110778.D	1	07/28/17	BK	n/a	n/a	V1B5278

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC47733-1, JC47733-3

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND	0.50	0.25	ug/l	
74-97-5	Bromochloromethane	ND	0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform	ND	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND	0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND	0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND	0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	ND	0.50	0.33	ug/l	
74-87-3	Chloromethane	ND	0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND	0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND	0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.0	0.25	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.50	0.29	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND	0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND	0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.094	ug/l	
74-95-3	Dibromomethane	ND	0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	0.28	ug/l	
95-50-1	o-Dichlorobenzene	ND	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	

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Job Number: JC47733

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5278-MB	1B110778.D	1	07/28/17	BK	n/a	n/a	V1B5278

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC47733-1, JC47733-3

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND	0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND	0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	0.50	0.080	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
91-20-3	Naphthalene	ND	0.50	0.18	ug/l	
103-65-1	n-Propylbenzene	ND	0.50	0.26	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Limits		
2199-69-1	1,2-Dichlorobenzene-d4	103%	70-130%	
460-00-4	4-Bromofluorobenzene	89%	70-130%	

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Job Number: JC47733

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5278-MB	1B110778.D	1	07/28/17	BK	n/a	n/a	V1B5278

The QC reported here applies to the following samples:

Method:

JC47733-1, JC47733-3

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

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Job Number: JC47733

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5289-MB	1B110945.D	1	08/04/17	BK	n/a	n/a	V1B5289

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC47733-2

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND	0.50	0.25	ug/l	
74-97-5	Bromochloromethane	ND	0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform	ND	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND	0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND	0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND	0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	ND	0.50	0.33	ug/l	
74-87-3	Chloromethane	ND	0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND	0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND	0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.0	0.25	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.50	0.29	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND	0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND	0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.094	ug/l	
74-95-3	Dibromomethane	ND	0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	0.28	ug/l	
95-50-1	o-Dichlorobenzene	ND	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	

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Job Number: JC47733

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5289-MB	1B110945.D	1	08/04/17	BK	n/a	n/a	V1B5289

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC47733-2

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND	0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND	0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	0.50	0.080	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
91-20-3	Naphthalene	ND	0.50	0.18	ug/l	
103-65-1	n-Propylbenzene	ND	0.50	0.26	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Limits	
2199-69-1	1,2-Dichlorobenzene-d4	94%	70-130%
460-00-4	4-Bromofluorobenzene	89%	70-130%

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Job Number: JC47733

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5289-MB	1B110945.D	1	08/04/17	BK	n/a	n/a	V1B5289

The QC reported here applies to the following samples:

Method:

JC47733-2

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

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Job Number: JC47733

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3A6761-MB	3A156852.D	1	07/28/17	PR	n/a	n/a	V3A6761

The QC reported here applies to the following samples:

Method: SW846 8260C BY SIM

JC47733-1, JC47733-2, JC47733-3

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	ND	0.40	0.18	ug/l	

CAS No.	Surrogate Recoveries	Limits
17647-74-4	1,4-Dioxane-d8	104% 51-175%

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Job Number: JC47733

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5278-BS	1B110779.D	1	07/28/17	BK	n/a	n/a	V1B5278

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC47733-1, JC47733-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	20	20.1	101	70-130
78-93-3	2-Butanone	20	18.5	93	70-130
71-43-2	Benzene	5	5.0	100	70-130
108-86-1	Bromobenzene	5	5.2	104	70-130
74-97-5	Bromochloromethane	5	5.2	104	70-130
75-27-4	Bromodichloromethane	5	5.7	114	70-130
75-25-2	Bromoform	5	6.7	134* a	70-130
74-83-9	Bromomethane	2	1.9	95	70-130
104-51-8	n-Butylbenzene	5	4.4	88	70-130
135-98-8	sec-Butylbenzene	5	4.5	90	70-130
98-06-6	tert-Butylbenzene	5	4.3	86	70-130
75-15-0	Carbon disulfide	5	5.3	106	70-130
108-90-7	Chlorobenzene	5	5.0	100	70-130
75-00-3	Chloroethane	2	1.8	90	70-130
67-66-3	Chloroform	5	5.4	108	70-130
74-87-3	Chloromethane	2	1.8	90	70-130
95-49-8	o-Chlorotoluene	5	4.8	96	70-130
106-43-4	p-Chlorotoluene	5	4.7	94	70-130
56-23-5	Carbon tetrachloride	5	6.4	128	70-130
75-34-3	1,1-Dichloroethane	5	5.1	102	70-130
75-35-4	1,1-Dichloroethylene	5	5.2	104	70-130
563-58-6	1,1-Dichloropropene	5	4.7	94	70-130
96-12-8	1,2-Dibromo-3-chloropropane	5	5.3	106	70-130
106-93-4	1,2-Dibromoethane	5	5.0	100	70-130
107-06-2	1,2-Dichloroethane	5	5.4	108	70-130
78-87-5	1,2-Dichloropropane	5	5.1	102	70-130
142-28-9	1,3-Dichloropropane	5	5.1	102	70-130
594-20-7	2,2-Dichloropropane	5	5.8	116	70-130
124-48-1	Dibromochloromethane	5	6.1	122	70-130
74-95-3	Dibromomethane	5	5.5	110	70-130
75-71-8	Dichlorodifluoromethane	2	2.2	110	70-130
541-73-1	m-Dichlorobenzene	5	5.4	108	70-130
95-50-1	o-Dichlorobenzene	5	5.3	106	70-130
106-46-7	p-Dichlorobenzene	5	5.0	100	70-130
156-60-5	trans-1,2-Dichloroethylene	5	4.9	98	70-130
156-59-2	cis-1,2-Dichloroethylene	5	4.7	94	70-130

* = Outside of Control Limits.

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Blank Spike Summary

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Job Number: JC47733

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5278-BS	1B110779.D	1	07/28/17	BK	n/a	n/a	V1B5278

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC47733-1, JC47733-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
10061-01-5	cis-1,3-Dichloropropene	5	4.5	90	70-130
10061-02-6	trans-1,3-Dichloropropene	5	5.0	100	70-130
100-41-4	Ethylbenzene	5	4.6	92	70-130
87-68-3	Hexachlorobutadiene	5	5.4	108	70-130
591-78-6	2-Hexanone	20	16.4	82	70-130
98-82-8	Isopropylbenzene	5	4.2	84	70-130
99-87-6	p-Isopropyltoluene	5	4.4	88	70-130
75-09-2	Methylene chloride	5	5.2	104	70-130
1634-04-4	Methyl Tert Butyl Ether	5	4.7	94	70-130
108-10-1	4-Methyl-2-pentanone	20	17.9	90	70-130
91-20-3	Naphthalene	5	4.2	84	70-130
103-65-1	n-Propylbenzene	5	4.6	92	70-130
100-42-5	Styrene	5	4.5	90	70-130
630-20-6	1,1,1,2-Tetrachloroethane	5	5.8	116	70-130
71-55-6	1,1,1-Trichloroethane	5	5.4	108	70-130
79-34-5	1,1,2,2-Tetrachloroethane	5	5.1	102	70-130
79-00-5	1,1,2-Trichloroethane	5	5.1	102	70-130
87-61-6	1,2,3-Trichlorobenzene	5	4.9	98	70-130
96-18-4	1,2,3-Trichloropropane	5	5.4	108	70-130
120-82-1	1,2,4-Trichlorobenzene	5	4.9	98	70-130
95-63-6	1,2,4-Trimethylbenzene	5	4.6	92	70-130
108-67-8	1,3,5-Trimethylbenzene	5	4.6	92	70-130
127-18-4	Tetrachloroethylene	5	5.1	102	70-130
108-88-3	Toluene	5	4.5	90	70-130
79-01-6	Trichloroethylene	5	5.1	102	70-130
75-69-4	Trichlorofluoromethane	2	1.9	95	70-130
75-01-4	Vinyl chloride	2	1.8	90	70-130
	m,p-Xylene	10	9.5	95	70-130
95-47-6	o-Xylene	5	4.6	92	70-130
1330-20-7	Xylenes (total)	15	14.1	94	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
2199-69-1	1,2-Dichlorobenzene-d4	107%	70-130%
460-00-4	4-Bromofluorobenzene	97%	70-130%

* = Outside of Control Limits.

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Blank Spike Summary

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Job Number: JC47733

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5278-BS	1B110779.D	1	07/28/17	BK	n/a	n/a	V1B5278

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC47733-1, JC47733-3

(a) High percent recoveries and no associated positive reported in the QC batch.

* = Outside of Control Limits.

Blank Spike Summary

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Job Number: JC47733

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5289-BS	1B110946.D	1	08/04/17	BK	n/a	n/a	V1B5289

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC47733-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	20	18.3	92	70-130
78-93-3	2-Butanone	20	16.3	82	70-130
71-43-2	Benzene	5	4.3	86	70-130
108-86-1	Bromobenzene	5	4.2	84	70-130
74-97-5	Bromochloromethane	5	4.3	86	70-130
75-27-4	Bromodichloromethane	5	4.3	86	70-130
75-25-2	Bromoform	5	4.2	84	70-130
74-83-9	Bromomethane	2	2.0	100	70-130
104-51-8	n-Butylbenzene	5	4.2	84	70-130
135-98-8	sec-Butylbenzene	5	4.2	84	70-130
98-06-6	tert-Butylbenzene	5	4.1	82	70-130
75-15-0	Carbon disulfide	5	4.5	90	70-130
108-90-7	Chlorobenzene	5	4.3	86	70-130
75-00-3	Chloroethane	2	1.9	95	70-130
67-66-3	Chloroform	5	4.5	90	70-130
74-87-3	Chloromethane	2	1.8	90	70-130
95-49-8	o-Chlorotoluene	5	4.2	84	70-130
106-43-4	p-Chlorotoluene	5	4.2	84	70-130
56-23-5	Carbon tetrachloride	5	4.5	90	70-130
75-34-3	1,1-Dichloroethane	5	4.5	90	70-130
75-35-4	1,1-Dichloroethylene	5	4.5	90	70-130
563-58-6	1,1-Dichloropropene	5	4.2	84	70-130
96-12-8	1,2-Dibromo-3-chloropropane	5	4.3	86	70-130
106-93-4	1,2-Dibromoethane	5	4.0	80	70-130
107-06-2	1,2-Dichloroethane	5	4.5	90	70-130
78-87-5	1,2-Dichloropropane	5	4.3	86	70-130
142-28-9	1,3-Dichloropropane	5	4.2	84	70-130
594-20-7	2,2-Dichloropropane	5	4.8	96	70-130
124-48-1	Dibromochloromethane	5	4.3	86	70-130
74-95-3	Dibromomethane	5	4.3	86	70-130
75-71-8	Dichlorodifluoromethane	2	2.0	100	70-130
541-73-1	m-Dichlorobenzene	5	4.3	86	70-130
95-50-1	o-Dichlorobenzene	5	4.1	82	70-130
106-46-7	p-Dichlorobenzene	5	4.2	84	70-130
156-60-5	trans-1,2-Dichloroethylene	5	4.4	88	70-130
156-59-2	cis-1,2-Dichloroethylene	5	4.4	88	70-130

* = Outside of Control Limits.

Blank Spike Summary

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Job Number: JC47733

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5289-BS	1B110946.D	1	08/04/17	BK	n/a	n/a	V1B5289

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC47733-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
10061-01-5	cis-1,3-Dichloropropene	5	4.1	82	70-130
10061-02-6	trans-1,3-Dichloropropene	5	4.1	82	70-130
100-41-4	Ethylbenzene	5	4.2	84	70-130
87-68-3	Hexachlorobutadiene	5	4.2	84	70-130
591-78-6	2-Hexanone	20	16.3	82	70-130
98-82-8	Isopropylbenzene	5	4.0	80	70-130
99-87-6	p-Isopropyltoluene	5	4.2	84	70-130
75-09-2	Methylene chloride	5	4.5	90	70-130
1634-04-4	Methyl Tert Butyl Ether	5	4.3	86	70-130
108-10-1	4-Methyl-2-pentanone	20	17.0	85	70-130
91-20-3	Naphthalene	5	3.8	76	70-130
103-65-1	n-Propylbenzene	5	4.2	84	70-130
100-42-5	Styrene	5	4.2	84	70-130
630-20-6	1,1,1,2-Tetrachloroethane	5	4.3	86	70-130
71-55-6	1,1,1-Trichloroethane	5	4.5	90	70-130
79-34-5	1,1,2,2-Tetrachloroethane	5	4.2	84	70-130
79-00-5	1,1,2-Trichloroethane	5	4.2	84	70-130
87-61-6	1,2,3-Trichlorobenzene	5	4.0	80	70-130
96-18-4	1,2,3-Trichloropropane	5	4.2	84	70-130
120-82-1	1,2,4-Trichlorobenzene	5	4.0	80	70-130
95-63-6	1,2,4-Trimethylbenzene	5	4.3	86	70-130
108-67-8	1,3,5-Trimethylbenzene	5	4.2	84	70-130
127-18-4	Tetrachloroethylene	5	4.4	88	70-130
108-88-3	Toluene	5	4.1	82	70-130
79-01-6	Trichloroethylene	5	4.3	86	70-130
75-69-4	Trichlorofluoromethane	2	2.0	100	70-130
75-01-4	Vinyl chloride	2	1.9	95	70-130
	m,p-Xylene	10	8.5	85	70-130
95-47-6	o-Xylene	5	4.2	84	70-130
1330-20-7	Xylenes (total)	15	12.8	85	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
2199-69-1	1,2-Dichlorobenzene-d4	102%	70-130%
460-00-4	4-Bromofluorobenzene	98%	70-130%

* = Outside of Control Limits.

5.2.2
5

Blank Spike Summary

Page 1 of 1

Job Number: JC47733

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3A6761-BS	3A156853.D	1	07/28/17	PR	n/a	n/a	V3A6761

The QC reported here applies to the following samples:

Method: SW846 8260C BY SIM

JC47733-1, JC47733-2, JC47733-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
123-91-1	1,4-Dioxane	20	24.2	121	58-138

CAS No.	Surrogate Recoveries	BSP	Limits
17647-74-4	1,4-Dioxane-d8	134%	51-175%

* = Outside of Control Limits.

5.2.3
5

Matrix Spike Summary

Page 1 of 2

Job Number: JC47733

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC48139-1MS	1B110958.D	1	08/04/17	BK	n/a	n/a	V1B5289
JC48139-1	1B110949.D	1	08/04/17	BK	n/a	n/a	V1B5289

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC47733-2

CAS No.	Compound	JC48139-1 ug/l	Spike Q	MS ug/l	MS %	Limits
67-64-1	Acetone	ND	20	15.2	76	41-142
78-93-3	2-Butanone	ND	20	12.2	61	55-129
71-43-2	Benzene	ND	5	3.6	72	53-138
108-86-1	Bromobenzene	ND	5	3.3	66	54-138
74-97-5	Bromochloromethane	ND	5	3.4	68	55-140
75-27-4	Bromodichloromethane	ND	5	3.6	72	57-147
75-25-2	Bromoform	ND	5	3.3	66	47-137
74-83-9	Bromomethane	ND	2	1.7	85	40-162
104-51-8	n-Butylbenzene	ND	5	3.2	64	45-144
135-98-8	sec-Butylbenzene	ND	5	3.3	66	46-145
98-06-6	tert-Butylbenzene	ND	5	3.2	64	48-141
75-15-0	Carbon disulfide	ND	5	3.9	78	35-127
108-90-7	Chlorobenzene	ND	5	3.4	68	54-135
75-00-3	Chloroethane	ND	2	1.7	85	38-153
67-66-3	Chloroform	ND	5	3.9	78	57-151
74-87-3	Chloromethane	ND	2	1.6	80	39-165
95-49-8	o-Chlorotoluene	ND	5	3.3	66	55-142
106-43-4	p-Chlorotoluene	ND	5	3.3	66	55-139
56-23-5	Carbon tetrachloride	ND	5	4.0	80	49-170
75-34-3	1,1-Dichloroethane	ND	5	3.8	76	55-149
75-35-4	1,1-Dichloroethylene	ND	5	3.9	78	42-142
563-58-6	1,1-Dichloropropene	ND	5	3.6	72	46-151
96-12-8	1,2-Dibromo-3-chloropropane	ND	5	3.4	68	48-141
106-93-4	1,2-Dibromoethane	ND	5	3.1	62	57-135
107-06-2	1,2-Dichloroethane	ND	5	3.8	76	59-166
78-87-5	1,2-Dichloropropane	ND	5	3.6	72	53-142
142-28-9	1,3-Dichloropropane	ND	5	3.5	70	58-143
594-20-7	2,2-Dichloropropane	ND	5	4.1	82	38-165
124-48-1	Dibromochloromethane	ND	5	3.5	70	55-138
74-95-3	Dibromomethane	ND	5	3.5	70	61-144
75-71-8	Dichlorodifluoromethane	ND	2	1.8	90	23-172
541-73-1	m-Dichlorobenzene	ND	5	3.5	70	53-138
95-50-1	o-Dichlorobenzene	ND	5	3.3	66	54-140
106-46-7	p-Dichlorobenzene	ND	5	3.3	66	53-137
156-60-5	trans-1,2-Dichloroethylene	ND	5	3.5	70	47-148
156-59-2	cis-1,2-Dichloroethylene	ND	5	3.5	70	51-146

* = Outside of Control Limits.

5.3.1
5

Matrix Spike Summary

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Job Number: JC47733

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC48139-1MS	1B110958.D	1	08/04/17	BK	n/a	n/a	V1B5289
JC48139-1	1B110949.D	1	08/04/17	BK	n/a	n/a	V1B5289

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC47733-2

CAS No.	Compound	JC48139-1		Spike	MS	MS	Limits
		ug/l	Q	ug/l	ug/l	%	
10061-01-5	cis-1,3-Dichloropropene	ND	5	3.2	64	51-136	
10061-02-6	trans-1,3-Dichloropropene	ND	5	3.3	66	54-142	
100-41-4	Ethylbenzene	ND	5	3.3	66	51-138	
87-68-3	Hexachlorobutadiene	ND	5	3.6	72	40-154	
591-78-6	2-Hexanone	ND	20	11.8	59	53-128	
98-82-8	Isopropylbenzene	ND	5	3.1	62	49-139	
99-87-6	p-Isopropyltoluene	ND	5	3.2	64	45-141	
75-09-2	Methylene chloride	ND	5	3.6	72	54-137	
1634-04-4	Methyl Tert Butyl Ether	ND	5	3.1	62	53-143	
108-10-1	4-Methyl-2-pentanone	ND	20	12.3	62	58-127	
91-20-3	Naphthalene	ND	5	2.7	54	44-140	
103-65-1	n-Propylbenzene	ND	5	3.4	68	50-142	
100-42-5	Styrene	ND	5	3.2	64	23-130	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5	3.5	70	57-144	
71-55-6	1,1,1-Trichloroethane	ND	5	4.0	80	52-164	
79-34-5	1,1,2,2-Tetrachloroethane	ND	5	3.3	66	58-138	
79-00-5	1,1,2-Trichloroethane	ND	5	3.4	68	59-139	
87-61-6	1,2,3-Trichlorobenzene	ND	5	3.0	60	47-141	
96-18-4	1,2,3-Trichloropropane	ND	5	3.3	66	56-148	
120-82-1	1,2,4-Trichlorobenzene	ND	5	3.1	62	46-137	
95-63-6	1,2,4-Trimethylbenzene	ND	5	3.4	68	41-138	
108-67-8	1,3,5-Trimethylbenzene	ND	5	3.3	66	45-138	
127-18-4	Tetrachloroethylene	2.8	5	5.9	62	45-145	
108-88-3	Toluene	ND	5	3.3	66	52-134	
79-01-6	Trichloroethylene	0.45	J	4.0	71	54-143	
75-69-4	Trichlorofluoromethane	ND	2	1.8	90	36-167	
75-01-4	Vinyl chloride	ND	2	1.7	85	35-162	
	m,p-Xylene	ND	10	6.7	67	49-135	
95-47-6	o-Xylene	ND	5	3.2	64	49-134	
1330-20-7	Xylenes (total)	ND	15	10	67	50-134	

CAS No.	Surrogate Recoveries	MS	JC48139-1	Limits
2199-69-1	1,2-Dichlorobenzene-d4	104%	95%	70-130%
460-00-4	4-Bromofluorobenzene	96%	90%	70-130%

* = Outside of Control Limits.

5.3.1
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Matrix Spike Summary

Page 1 of 1

Job Number: JC47733

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC47733-1MS	3A156862.D	1	07/28/17	PR	n/a	n/a	V3A6761
JC47733-1	3A156859.D	1	07/28/17	PR	n/a	n/a	V3A6761

The QC reported here applies to the following samples:

Method: SW846 8260C BY SIM

JC47733-1, JC47733-2, JC47733-3

CAS No.	Compound	JC47733-1		Spike	MS	MS	Limits
		ug/l	Q	ug/l	ug/l	%	
123-91-1	1,4-Dioxane	3.8		20	27.1	117	36-166

CAS No.	Surrogate Recoveries	MS	JC47733-1	Limits
17647-74-4	1,4-Dioxane-d8	125%	107%	51-175%

* = Outside of Control Limits.

5.3.2
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Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 3

Job Number: JC47733

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC47710-6MS	1B110782.D	1	07/28/17	BK	n/a	n/a	V1B5278
JC47710-6MSD	1B110783.D	1	07/28/17	BK	n/a	n/a	V1B5278
JC47710-6	1B110780.D	1	07/28/17	BK	n/a	n/a	V1B5278

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC47733-1, JC47733-3

CAS No.	Compound	JC47710-6		Spike	MS	MS	Spike	MSD	MSD	RPD	Limits Rec/RPD
		ug/l	Q	ug/l	ug/l	%	ug/l	ug/l	%		
67-64-1	Acetone	ND	20	17.4	87	20	17.1	86	2	41-142/24	
78-93-3	2-Butanone	ND	20	17.7	89	20	18.0	90	2	55-129/31	
71-43-2	Benzene	ND	5	4.6	92	5	4.2	84	9	53-138/16	
108-86-1	Bromobenzene	ND	5	4.9	98	5	5.0	100	2	54-138/17	
74-97-5	Bromochloromethane	ND	5	4.7	94	5	4.4	88	7	55-140/13	
75-27-4	Bromodichloromethane	ND	5	5.3	106	5	5.2	104	2	57-147/11	
75-25-2	Bromoform	ND	5	7.0	140* a	5	7.0	140* a	0	47-137/13	
74-83-9	Bromomethane	ND	2	1.9	95	2	1.9	95	0	40-162/27	
104-51-8	n-Butylbenzene	ND	5	4.0	80	5	4.1	82	2	45-144/19	
135-98-8	sec-Butylbenzene	ND	5	4.2	84	5	4.2	84	0	46-145/20	
98-06-6	tert-Butylbenzene	ND	5	3.9	78	5	4.0	80	3	48-141/17	
75-15-0	Carbon disulfide	ND	5	5.1	102	5	4.7	94	8	35-127/32	
108-90-7	Chlorobenzene	ND	5	4.6	92	5	4.6	92	0	54-135/15	
75-00-3	Chloroethane	ND	2	1.8	90	2	1.9	95	5	38-153/43	
67-66-3	Chloroform	ND	5	5.0	100	5	4.7	94	6	57-151/13	
74-87-3	Chloromethane	ND	2	1.8	90	2	2.0	100	11	39-165/35	
95-49-8	o-Chlorotoluene	ND	5	4.5	90	5	4.6	92	2	55-142/15	
106-43-4	p-Chlorotoluene	ND	5	4.5	90	5	4.5	90	0	55-139/20	
56-23-5	Carbon tetrachloride	ND	5	6.1	122	5	5.6	112	9	49-170/24	
75-34-3	1,1-Dichloroethane	ND	5	4.8	96	5	4.4	88	9	55-149/13	
75-35-4	1,1-Dichloroethylene	ND	5	5.0	100	5	4.7	94	6	42-142/20	
563-58-6	1,1-Dichloropropene	ND	5	4.5	90	5	4.2	84	7	46-151/21	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5	5.9	118	5	6.1	122	3	48-141/27	
106-93-4	1,2-Dibromoethane	ND	5	4.7	94	5	4.7	94	0	57-135/10	
107-06-2	1,2-Dichloroethane	ND	5	5.0	100	5	4.7	94	6	59-166/15	
78-87-5	1,2-Dichloropropane	ND	5	4.5	90	5	4.4	88	2	53-142/11	
142-28-9	1,3-Dichloropropane	ND	5	4.8	96	5	4.8	96	0	58-143/13	
594-20-7	2,2-Dichloropropane	ND	5	5.5	110	5	5.0	100	10	38-165/19	
124-48-1	Dibromochloromethane	ND	5	5.9	118	5	5.9	118	0	55-138/15	
74-95-3	Dibromomethane	ND	5	4.9	98	5	4.8	96	2	61-144/10	
75-71-8	Dichlorodifluoromethane	ND	2	2.1	105	2	2.2	110	5	23-172/30	
541-73-1	m-Dichlorobenzene	ND	5	5.1	102	5	5.1	102	0	53-138/17	
95-50-1	o-Dichlorobenzene	ND	5	5.2	104	5	5.2	104	0	54-140/11	
106-46-7	p-Dichlorobenzene	ND	5	4.8	96	5	4.9	98	2	53-137/14	
156-60-5	trans-1,2-Dichloroethylene	ND	5	4.6	92	5	4.2	84	9	47-148/22	
156-59-2	cis-1,2-Dichloroethylene	ND	5	4.4	88	5	4.1	82	7	51-146/14	

* = Outside of Control Limits.

5.4.1
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Matrix Spike/Matrix Spike Duplicate Summary

Page 2 of 3

Job Number: JC47733

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC47710-6MS	1B110782.D	1	07/28/17	BK	n/a	n/a	V1B5278
JC47710-6MSD	1B110783.D	1	07/28/17	BK	n/a	n/a	V1B5278
JC47710-6	1B110780.D	1	07/28/17	BK	n/a	n/a	V1B5278

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC47733-1, JC47733-3

CAS No.	Compound	JC47710-6		Spike	MS	MS	Spike	MSD	MSD	RPD	Limits Rec/RPD
		ug/l	Q	ug/l	ug/l	%	ug/l	ug/l	%		
10061-01-5	cis-1,3-Dichloropropene	ND		5	4.1	82	5	4.0	80	2	51-136/11
10061-02-6	trans-1,3-Dichloropropene	ND		5	4.6	92	5	4.7	94	2	54-142/10
100-41-4	Ethylbenzene	ND		5	4.3	86	5	4.1	82	5	51-138/18
87-68-3	Hexachlorobutadiene	ND		5	5.2	104	5	5.1	102	2	40-154/21
591-78-6	2-Hexanone	ND		20	18.2	91	20	19.0	95	4	53-128/29
98-82-8	Isopropylbenzene	ND		5	3.9	78	5	3.9	78	0	49-139/16
99-87-6	p-Isopropyltoluene	ND		5	4.1	82	5	4.1	82	0	45-141/17
75-09-2	Methylene chloride	ND		5	4.7	94	5	4.4	88	7	54-137/14
1634-04-4	Methyl Tert Butyl Ether	ND		5	4.2	84	5	4.0	80	5	53-143/10
108-10-1	4-Methyl-2-pentanone	ND		20	18.7	94	20	19.8	99	6	58-127/32
91-20-3	Naphthalene	ND		5	4.1	82	5	4.5	90	9	44-140/14
103-65-1	n-Propylbenzene	ND		5	4.3	86	5	4.3	86	0	50-142/20
100-42-5	Styrene	ND		5	4.1	82	5	4.1	82	0	23-130/20
630-20-6	1,1,1,2-Tetrachloroethane	ND		5	5.5	110	5	5.5	110	0	57-144/11
71-55-6	1,1,1-Trichloroethane	ND		5	5.1	102	5	4.7	94	8	52-164/13
79-34-5	1,1,2,2-Tetrachloroethane	ND		5	5.7	114	5	5.7	114	0	58-138/10
79-00-5	1,1,2-Trichloroethane	ND		5	4.9	98	5	5.0	100	2	59-139/11
87-61-6	1,2,3-Trichlorobenzene	ND		5	4.6	92	5	4.9	98	6	47-141/17
96-18-4	1,2,3-Trichloropropane	ND		5	5.9	118	5	5.7	114	3	56-148/15
120-82-1	1,2,4-Trichlorobenzene	ND		5	4.5	90	5	4.7	94	4	46-137/17
95-63-6	1,2,4-Trimethylbenzene	ND		5	4.2	84	5	4.3	86	2	41-138/16
108-67-8	1,3,5-Trimethylbenzene	ND		5	4.3	86	5	4.3	86	0	45-138/16
127-18-4	Tetrachloroethylene	ND		5	4.7	94	5	4.4	88	7	45-145/19
108-88-3	Toluene	ND		5	4.2	84	5	4.0	80	5	52-134/19
79-01-6	Trichloroethylene	0.28	J	5	5.0	94	5	4.7	88	6	54-143/15
75-69-4	Trichlorofluoromethane	ND		2	1.9	95	2	1.9	95	0	36-167/28
75-01-4	Vinyl chloride	ND		2	1.9	95	2	2.0	100	5	35-162/30
	m,p-Xylene	ND		10	8.8	88	10	8.6	86	2	49-135/18
95-47-6	o-Xylene	ND		5	4.1	82	5	4.1	82	0	49-134/19
1330-20-7	Xylenes (total)	ND		15	12.9	86	15	12.8	85	1	50-134/18

CAS No.	Surrogate Recoveries	MS	MSD	JC47710-6	Limits
2199-69-1	1,2-Dichlorobenzene-d4	111%	110%	100%	70-130%
460-00-4	4-Bromofluorobenzene	94%	96%	86%	70-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

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Job Number: JC47733

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC47710-6MS	1B110782.D	1	07/28/17	BK	n/a	n/a	V1B5278
JC47710-6MSD	1B110783.D	1	07/28/17	BK	n/a	n/a	V1B5278
JC47710-6	1B110780.D	1	07/28/17	BK	n/a	n/a	V1B5278

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC47733-1, JC47733-3

(a) Outside in house control limits.

* = Outside of Control Limits.

Duplicate Summary

Page 1 of 2

Job Number: JC47733

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC48139-2DUP	1B110959.D	1	08/04/17	BK	n/a	n/a	V1B5289
JC48139-2	1B110950.D	1	08/04/17	BK	n/a	n/a	V1B5289

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC47733-2

CAS No.	Compound	JC48139-2		Q	RPD	Limits
		ug/l	DUP ug/l			
67-64-1	Acetone	ND	ND	nc	10	
78-93-3	2-Butanone	ND	ND	nc	12	
71-43-2	Benzene	ND	ND	nc	10	
108-86-1	Bromobenzene	ND	ND	nc	10	
74-97-5	Bromochloromethane	ND	ND	nc	10	
75-27-4	Bromodichloromethane	ND	ND	nc	10	
75-25-2	Bromoform	ND	ND	nc	10	
74-83-9	Bromomethane	ND	ND	nc	10	
104-51-8	n-Butylbenzene	ND	ND	nc	10	
135-98-8	sec-Butylbenzene	ND	ND	nc	10	
98-06-6	tert-Butylbenzene	ND	ND	nc	10	
75-15-0	Carbon disulfide	ND	ND	nc	19	
108-90-7	Chlorobenzene	ND	ND	nc	10	
75-00-3	Chloroethane	ND	ND	nc	10	
67-66-3	Chloroform	ND	ND	nc	12	
74-87-3	Chloromethane	ND	ND	nc	10	
95-49-8	o-Chlorotoluene	ND	ND	nc	10	
106-43-4	p-Chlorotoluene	ND	ND	nc	10	
56-23-5	Carbon tetrachloride	ND	ND	nc	10	
75-34-3	1,1-Dichloroethane	ND	ND	nc	10	
75-35-4	1,1-Dichloroethylene	ND	ND	nc	10	
563-58-6	1,1-Dichloropropene	ND	ND	nc	10	
96-12-8	1,2-Dibromo-3-chloropropane	ND	ND	nc	10	
106-93-4	1,2-Dibromoethane	ND	ND	nc	10	
107-06-2	1,2-Dichloroethane	ND	ND	nc	10	
78-87-5	1,2-Dichloropropane	ND	ND	nc	10	
142-28-9	1,3-Dichloropropane	ND	ND	nc	10	
594-20-7	2,2-Dichloropropane	ND	ND	nc	10	
124-48-1	Dibromochloromethane	ND	ND	nc	10	
74-95-3	Dibromomethane	ND	ND	nc	10	
75-71-8	Dichlorodifluoromethane	ND	ND	nc	10	
541-73-1	m-Dichlorobenzene	ND	ND	nc	10	
95-50-1	o-Dichlorobenzene	ND	ND	nc	10	
106-46-7	p-Dichlorobenzene	ND	ND	nc	10	
156-60-5	trans-1,2-Dichloroethylene	ND	ND	nc	10	
156-59-2	cis-1,2-Dichloroethylene	ND	ND	nc	10	

* = Outside of Control Limits.

5.5.1
5

Duplicate Summary

Page 2 of 2

Job Number: JC47733

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC48139-2DUP	1B110959.D	1	08/04/17	BK	n/a	n/a	V1B5289
JC48139-2	1B110950.D	1	08/04/17	BK	n/a	n/a	V1B5289

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC47733-2

CAS No.	Compound	JC48139-2		Q	RPD	Limits
		ug/l	DUP ug/l			
10061-01-5	cis-1,3-Dichloropropene	ND	ND	nc	10	
10061-02-6	trans-1,3-Dichloropropene	ND	ND	nc	10	
100-41-4	Ethylbenzene	ND	ND	nc	10	
87-68-3	Hexachlorobutadiene	ND	ND	nc	10	
591-78-6	2-Hexanone	ND	ND	nc	10	
98-82-8	Isopropylbenzene	ND	ND	nc	10	
99-87-6	p-Isopropyltoluene	ND	ND	nc	10	
75-09-2	Methylene chloride	ND	ND	nc	10	
1634-04-4	Methyl Tert Butyl Ether	ND	ND	nc	10	
108-10-1	4-Methyl-2-pentanone	ND	ND	nc	10	
91-20-3	Naphthalene	ND	ND	nc	10	
103-65-1	n-Propylbenzene	ND	ND	nc	10	
100-42-5	Styrene	ND	ND	nc	10	
630-20-6	1,1,1,2-Tetrachloroethane	ND	ND	nc	10	
71-55-6	1,1,1-Trichloroethane	ND	ND	nc	10	
79-34-5	1,1,2,2-Tetrachloroethane	ND	ND	nc	10	
79-00-5	1,1,2-Trichloroethane	ND	ND	nc	10	
87-61-6	1,2,3-Trichlorobenzene	ND	ND	nc	10	
96-18-4	1,2,3-Trichloropropane	ND	ND	nc	10	
120-82-1	1,2,4-Trichlorobenzene	ND	ND	nc	10	
95-63-6	1,2,4-Trimethylbenzene	ND	ND	nc	10	
108-67-8	1,3,5-Trimethylbenzene	ND	ND	nc	10	
127-18-4	Tetrachloroethylene	ND	ND	nc	10	
108-88-3	Toluene	ND	ND	nc	10	
79-01-6	Trichloroethylene	ND	ND	nc	10	
75-69-4	Trichlorofluoromethane	ND	ND	nc	10	
75-01-4	Vinyl chloride	ND	ND	nc	10	
	m,p-Xylene	ND	ND	nc	10	
95-47-6	o-Xylene	ND	ND	nc	10	
1330-20-7	Xylenes (total)	ND	ND	nc	10	

CAS No.	Surrogate Recoveries	DUP	JC48139-2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	97%	97%	70-130%
460-00-4	4-Bromofluorobenzene	88%	89%	70-130%

* = Outside of Control Limits.

5.5.1
5

Duplicate Summary

Job Number: JC47733

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC47733-2DUP	3A156864.D	1	07/28/17	PR	n/a	n/a	V3A6761
JC47733-2	3A156860.D	1	07/28/17	PR	n/a	n/a	V3A6761

The QC reported here applies to the following samples:

Method: SW846 8260C BY SIM

JC47733-1, JC47733-2, JC47733-3

CAS No.	Compound	JC47733-2		DUP		RPD	Limits
		ug/l	Q	ug/l			
123-91-1	1,4-Dioxane	3.1		3.2		3	37
CAS No. Surrogate Recoveries							
17647-74-4	1,4-Dioxane-d8	DUP		JC47733-2		Limits	
		132%		125%		51-175%	

* = Outside of Control Limits.

Instrument Performance Check (BFB)

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Job Number: JC47733

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample: V1B5268-BFB
Lab File ID: 1B110568.D
Instrument ID: GCMS1B

Injection Date: 07/20/17
Injection Time: 21:59

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	14.99 - 40.0% of mass 95	3940	16.5	Pass
75	30.0 - 80.0% of mass 95	10825	45.4	Pass
95	Base peak, 100% relative abundance	23835	100.0	Pass
96	5.0 - 9.0% of mass 95	1703	7.14	Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) ^a Pass
174	50.0 - 120.0% of mass 95	18035	75.7	Pass
175	5.0 - 9.0% of mass 174	1394	5.85	(7.73) ^a Pass
176	95.0 - 101.0% of mass 174	17372	72.9	(96.3) ^a Pass
177	5.0 - 9.0% of mass 176	1169	4.90	(6.73) ^b Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V1B5268-IC5268	1B110569.D	07/20/17	22:36	00:37	Initial cal 0.2
V1B5268-IC5268	1B110570.D	07/20/17	23:07	01:08	Initial cal 0.5
V1B5268-IC5268	1B110571.D	07/20/17	23:39	01:40	Initial cal 1
V1B5268-IC5268	1B110572.D	07/21/17	00:11	02:12	Initial cal 2
V1B5268-IC5268	1B110573.D	07/21/17	00:43	02:44	Initial cal 5
V1B5268-IC5268	1B110574.D	07/21/17	01:14	03:15	Initial cal 10
V1B5268-IC5268	1B110575.D	07/21/17	01:45	03:46	Initial cal 20
V1B5268-IC5268	1B110576.D	07/21/17	02:17	04:18	Initial cal 40
V1B5268-IC5268	1B110577.D	07/21/17	02:49	04:50	Initial cal 80
V1B5268-ICV5268	1B110580.D	07/21/17	04:24	06:25	Initial cal verification 10

Instrument Performance Check (BFB)

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Job Number: JC47733

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample: V1B5272-BFB
Lab File ID: 1B110657.D
Instrument ID: GCMS1B

Injection Date: 07/23/17
Injection Time: 01:03

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	14.99 - 40.0% of mass 95	2348	16.7	Pass
75	30.0 - 80.0% of mass 95	6638	47.2	Pass
95	Base peak, 100% relative abundance	14064	100.0	Pass
96	5.0 - 9.0% of mass 95	1063	7.56	Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) ^a Pass
174	50.0 - 120.0% of mass 95	11302	80.4	Pass
175	5.0 - 9.0% of mass 174	858	6.10	(7.59) ^a Pass
176	95.0 - 101.0% of mass 174	10925	77.7	(96.7) ^a Pass
177	5.0 - 9.0% of mass 176	730	5.19	(6.68) ^b Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V1B5272-IC5268	1B110658.D	07/23/17	01:34	00:31	Initial cal 0.2
V1B5272-IC5268	1B110659.D	07/23/17	02:06	01:03	Initial cal 0.5
V1B5272-IC5268	1B110660.D	07/23/17	02:38	01:35	Initial cal 1
V1B5272-IC5268	1B110661.D	07/23/17	03:10	02:07	Initial cal 2
V1B5272-IC5268	1B110662.D	07/23/17	03:42	02:39	Initial cal 5
V1B5272-IC5268	1B110663.D	07/23/17	04:14	03:11	Initial cal 10
V1B5272-IC5268	1B110664.D	07/23/17	04:44	03:41	Initial cal 20
V1B5272-IC5268	1B110665.D	07/23/17	05:16	04:13	Initial cal 40
V1B5272-IC5268	1B110666.D	07/23/17	05:47	04:44	Initial cal 80
V1B5272-ICV5268	1B110669.D	07/23/17	07:21	06:18	Initial cal verification 10

Instrument Performance Check (BFB)

Page 1 of 1

Job Number: JC47733

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample:	V1B5278-BFB	Injection Date:	07/28/17
Lab File ID:	1B110776.D	Injection Time:	12:33
Instrument ID:	GCMS1B		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	14.99 - 40.0% of mass 95	3388	17.2	Pass
75	30.0 - 80.0% of mass 95	8891	45.1	Pass
95	Base peak, 100% relative abundance	19704	100.0	Pass
96	5.0 - 9.0% of mass 95	1250	6.34	Pass
173	Less than 2.0% of mass 174	153	0.78	(1.00) ^a Pass
174	50.0 - 120.0% of mass 95	15256	77.4	Pass
175	5.0 - 9.0% of mass 174	1139	5.78	(7.47) ^a Pass
176	95.0 - 101.0% of mass 174	15059	76.4	(98.7) ^a Pass
177	5.0 - 9.0% of mass 176	975	4.95	(6.47) ^b Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V1B5278-CC5268	1B110777.D	07/28/17	13:08	00:35	Continuing cal 5
V1B5278-MB	1B110778.D	07/28/17	13:45	01:12	Method Blank
V1B5278-BS	1B110779.D	07/28/17	14:16	01:43	Blank Spike
JC47710-6	1B110780.D	07/28/17	14:56	02:23	(used for QC only; not part of job JC47733)
ZZZZZZ	1B110781.D	07/28/17	15:27	02:54	(unrelated sample)
JC47710-6MS	1B110782.D	07/28/17	15:59	03:26	Matrix Spike
JC47710-6MSD	1B110783.D	07/28/17	16:30	03:57	Matrix Spike Duplicate
ZZZZZZ	1B110784.D	07/28/17	17:04	04:31	(unrelated sample)
ZZZZZZ	1B110785.D	07/28/17	17:36	05:03	(unrelated sample)
ZZZZZZ	1B110786.D	07/28/17	18:08	05:35	(unrelated sample)
ZZZZZZ	1B110788.D	07/28/17	18:40	06:07	(unrelated sample)
ZZZZZZ	1B110789.D	07/28/17	19:11	06:38	(unrelated sample)
ZZZZZZ	1B110790.D	07/28/17	19:42	07:09	(unrelated sample)
ZZZZZZ	1B110791.D	07/28/17	20:14	07:41	(unrelated sample)
ZZZZZZ	1B110792.D	07/28/17	20:46	08:13	(unrelated sample)
ZZZZZZ	1B110793.D	07/28/17	21:18	08:45	(unrelated sample)
ZZZZZZ	1B110794.D	07/28/17	21:49	09:16	(unrelated sample)
JC47733-1	1B110795.D	07/28/17	22:21	09:48	RW-12270CM-072517
JC47733-3	1B110797.D	07/28/17	23:24	10:51	TRIP BLANK

Instrument Performance Check (BFB)

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Job Number: JC47733

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample: V1B5286-BFB
Lab File ID: 1B110912.D
Instrument ID: GCMS1B

Injection Date: 08/03/17
Injection Time: 09:42

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	14.99 - 40.0% of mass 95	2838	19.7	Pass
75	30.0 - 80.0% of mass 95	7234	50.3	Pass
95	Base peak, 100% relative abundance	14377	100.0	Pass
96	5.0 - 9.0% of mass 95	1037	7.21	Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) ^a Pass
174	50.0 - 120.0% of mass 95	11120	77.3	Pass
175	5.0 - 9.0% of mass 174	732	5.09	(6.58) ^a Pass
176	95.0 - 101.0% of mass 174	10621	73.9	(95.5) ^a Pass
177	5.0 - 9.0% of mass 176	801	5.57	(7.54) ^b Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V1B5286-IC5286	1B110913.D	08/03/17	10:15	00:33	Initial cal 0.2
V1B5286-IC5286	1B110914.D	08/03/17	10:46	01:04	Initial cal 0.5
V1B5286-IC5286	1B110915.D	08/03/17	11:18	01:36	Initial cal 1
V1B5286-IC5286	1B110916.D	08/03/17	11:49	02:07	Initial cal 2
V1B5286-IC5286	1B110917.D	08/03/17	12:21	02:39	Initial cal 5
V1B5286-IC5286	1B110918.D	08/03/17	12:52	03:10	Initial cal 10
V1B5286-IC5286	1B110919.D	08/03/17	13:24	03:42	Initial cal 20
V1B5286-IC5286	1B110920.D	08/03/17	13:56	04:14	Initial cal 40
V1B5286-IC5286	1B110921.D	08/03/17	14:27	04:45	Initial cal 80
V1B5286-ICV5286	1B110924.D	08/03/17	16:02	06:20	Initial cal verification 10
V1B5287-MB	1B110926.D	08/03/17	17:18	07:36	Method Blank
ZZZZZZ	1B110927.D	08/03/17	17:50	08:08	(unrelated sample)
ZZZZZZ	1B110928.D	08/03/17	18:21	08:39	(unrelated sample)
ZZZZZZ	1B110929.D	08/03/17	18:53	09:11	(unrelated sample)
V1B5287-BS	1B110930.D	08/03/17	19:24	09:42	Blank Spike

Instrument Performance Check (BFB)

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Job Number: JC47733

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample:	V1B5289-BFB	Injection Date:	08/04/17
Lab File ID:	1B110943.D	Injection Time:	08:52
Instrument ID:	GCMS1B		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	14.99 - 40.0% of mass 95	2612	19.7	Pass
75	30.0 - 80.0% of mass 95	7022	53.0	Pass
95	Base peak, 100% relative abundance	13242	100.0	Pass
96	5.0 - 9.0% of mass 95	849	6.41	Pass
173	Less than 2.0% of mass 174	135	1.02	(1.33) ^a Pass
174	50.0 - 120.0% of mass 95	10163	76.7	Pass
175	5.0 - 9.0% of mass 174	654	4.94	(6.44) ^a Pass
176	95.0 - 101.0% of mass 174	10116	76.4	(99.5) ^a Pass
177	5.0 - 9.0% of mass 176	617	4.66	(6.10) ^b Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V1B5289-CC5286	1B110944.D	08/04/17	09:24	00:32	Continuing cal 5
V1B5289-MB	1B110945.D	08/04/17	10:05	01:13	Method Blank
V1B5289-BS	1B110946.D	08/04/17	10:37	01:45	Blank Spike
JC47733-2	1B110947.D	08/04/17	11:29	02:37	RW-12270CM-072517-F
ZZZZZZ	1B110948.D	08/04/17	12:00	03:08	(unrelated sample)
JC48139-1	1B110949.D	08/04/17	12:32	03:40	(used for QC only; not part of job JC47733)
JC48139-2	1B110950.D	08/04/17	13:04	04:12	(used for QC only; not part of job JC47733)
ZZZZZZ	1B110951.D	08/04/17	13:35	04:43	(unrelated sample)
ZZZZZZ	1B110952.D	08/04/17	14:07	05:15	(unrelated sample)
ZZZZZZ	1B110953.D	08/04/17	14:39	05:47	(unrelated sample)
ZZZZZZ	1B110954.D	08/04/17	15:11	06:19	(unrelated sample)
ZZZZZZ	1B110955.D	08/04/17	15:42	06:50	(unrelated sample)
ZZZZZZ	1B110956.D	08/04/17	16:14	07:22	(unrelated sample)
ZZZZZZ	1B110957.D	08/04/17	16:46	07:54	(unrelated sample)
JC48139-1MS	1B110958.D	08/04/17	17:18	08:26	Matrix Spike
JC48139-2DUP	1B110959.D	08/04/17	17:49	08:57	Duplicate
ZZZZZZ	1B110960.D	08/04/17	18:21	09:29	(unrelated sample)
ZZZZZZ	1B110961.D	08/04/17	18:53	10:01	(unrelated sample)
ZZZZZZ	1B110962.D	08/04/17	19:24	10:32	(unrelated sample)

Instrument Performance Check (BFB)

Job Number: JC47733

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample: V3A6757-BFB
Lab File ID: 3A156777.D
Instrument ID: GCMS3A

Injection Date: 07/25/17
Injection Time: 10:10

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	15.0 - 40.0% of mass 95	2939	16.3	Pass
75	30.0 - 60.0% of mass 95	8499	47.2	Pass
95	Base peak, 100% relative abundance	18024	100.0	Pass
96	5.0 - 9.0% of mass 95	1234	6.85	Pass
173	Less than 2.0% of mass 174	212	1.18	(1.45) ^a Pass
174	50.0 - 120.0% of mass 95	14606	81.0	Pass
175	5.0 - 9.0% of mass 174	1045	5.80	(7.15) ^a Pass
176	95.0 - 101.0% of mass 174	14068	78.1	(96.3) ^a Pass
177	5.0 - 9.0% of mass 176	890	4.94	(6.33) ^b Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V3A6757-IC6757	3A156778.D	07/25/17	10:53	00:43	Initial cal 0.25
V3A6757-IC6757	3A156779.D	07/25/17	11:22	01:12	Initial cal 0.4
V3A6757-IC6757	3A156780.D	07/25/17	11:47	01:37	Initial cal 1
V3A6757-IC6757	3A156781.D	07/25/17	12:13	02:03	Initial cal 2
V3A6757-IC6757	3A156782.D	07/25/17	12:39	02:29	Initial cal 5
V3A6757-ICC6757	3A156783.D	07/25/17	13:04	02:54	Initial cal 20
V3A6757-IC6757	3A156784.D	07/25/17	13:30	03:20	Initial cal 50
V3A6757-IC6757	3A156785.D	07/25/17	13:55	03:45	Initial cal 100
V3A6757-IC6757	3A156786.D	07/25/17	14:21	04:11	Initial cal 200
V3A6757-ICV6757	3A156789.D	07/25/17	15:38	05:28	Initial cal verification 20
V3A6758-MB	3A156791.D	07/25/17	16:29	06:19	Method Blank
V3A6758-BS	3A156792.D	07/25/17	16:55	06:45	Blank Spike
ZZZZZZ	3A156794.D	07/25/17	17:46	07:36	(unrelated sample)
JC47573-4	3A156795.D	07/25/17	18:12	08:02	(used for QC only; not part of job JC47733)
ZZZZZZ	3A156796.D	07/25/17	18:37	08:27	(unrelated sample)
ZZZZZZ	3A156797.D	07/25/17	19:03	08:53	(unrelated sample)
ZZZZZZ	3A156798.D	07/25/17	19:29	09:19	(unrelated sample)
ZZZZZZ	3A156799.D	07/25/17	19:54	09:44	(unrelated sample)
ZZZZZZ	3A156800.D	07/25/17	20:20	10:10	(unrelated sample)
JC47573-4MS	3A156801.D	07/25/17	20:46	10:36	Matrix Spike
JC47573-4MSD	3A156802.D	07/25/17	21:11	11:01	Matrix Spike Duplicate
ZZZZZZ	3A156804.D	07/25/17	22:03	11:53	(unrelated sample)

Instrument Performance Check (BFB)

Page 1 of 1

Job Number: JC47733

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Sample: V3A6761-BFB
Lab File ID: 3A156849.D
Instrument ID: GCMS3A

Injection Date: 07/28/17
Injection Time: 09:26

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	15.0 - 40.0% of mass 95	3638	20.3	Pass
75	30.0 - 60.0% of mass 95	9033	50.4	Pass
95	Base peak, 100% relative abundance	17922	100.0	Pass
96	5.0 - 9.0% of mass 95	1302	7.26	Pass
173	Less than 2.0% of mass 174	173	0.97	(1.23) ^a Pass
174	50.0 - 120.0% of mass 95	14073	78.5	Pass
175	5.0 - 9.0% of mass 174	1129	6.30	(8.02) ^a Pass
176	95.0 - 101.0% of mass 174	13526	75.5	(96.1) ^a Pass
177	5.0 - 9.0% of mass 176	934	5.21	(6.91) ^b Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V3A6761-CC6757	3A156850.D	07/28/17	09:53	00:27	Continuing cal 20
V3A6761-MB	3A156852.D	07/28/17	10:48	01:22	Method Blank
V3A6761-BS	3A156853.D	07/28/17	11:14	01:48	Blank Spike
ZZZZZZ	3A156855.D	07/28/17	12:07	02:41	(unrelated sample)
ZZZZZZ	3A156856.D	07/28/17	12:32	03:06	(unrelated sample)
ZZZZZZ	3A156857.D	07/28/17	12:58	03:32	(unrelated sample)
ZZZZZZ	3A156858.D	07/28/17	13:24	03:58	(unrelated sample)
JC47733-1	3A156859.D	07/28/17	13:50	04:24	RW-12270CM-072517
JC47733-2	3A156860.D	07/28/17	14:16	04:50	RW-12270CM-072517-F
JC47733-3	3A156861.D	07/28/17	14:41	05:15	TRIP BLANK
JC47733-1MS	3A156862.D	07/28/17	15:07	05:41	Matrix Spike
JC47733-2DUP	3A156864.D	07/28/17	15:59	06:33	Duplicate
ZZZZZZ	3A156865.D	07/28/17	16:25	06:59	(unrelated sample)
ZZZZZZ	3A156866.D	07/28/17	16:50	07:24	(unrelated sample)
ZZZZZZ	3A156867.D	07/28/17	17:16	07:50	(unrelated sample)
ZZZZZZ	3A156868.D	07/28/17	17:42	08:16	(unrelated sample)
ZZZZZZ	3A156870.D	07/28/17	18:34	09:08	(unrelated sample)
ZZZZZZ	3A156871.D	07/28/17	18:59	09:33	(unrelated sample)
ZZZZZZ	3A156872.D	07/28/17	19:25	09:59	(unrelated sample)
ZZZZZZ	3A156873.D	07/28/17	19:51	10:25	(unrelated sample)

Volatile Surrogate Recovery Summary

Page 1 of 1

Job Number: JC47733

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Method: EPA 524.2 REV 4.1

Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2
JC47733-1	1B110795.D	104	84
JC47733-2	1B110947.D	95	90
JC47733-3	1B110797.D	105	86
JC47710-6MS	1B110782.D	111	94
JC47710-6MSD	1B110783.D	110	96
JC48139-1MS	1B110958.D	104	96
JC48139-2DUP	1B110959.D	97	88
V1B5278-BS	1B110779.D	107	97
V1B5278-MB	1B110778.D	103	89
V1B5289-BS	1B110946.D	102	98
V1B5289-MB	1B110945.D	94	89

Surrogate Compounds	Recovery Limits
------------------------	--------------------

S1 = 1,2-Dichlorobenzene-d4

70-130%

S2 = 4-Bromofluorobenzene

70-130%

5.7.1
5

Volatile Surrogate Recovery Summary

Page 1 of 1

Job Number: JC47733

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, MD

Method: SW846 8260C BY SIM

Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1
JC47733-1	3A156859.D	107
JC47733-2	3A156860.D	125
JC47733-3	3A156861.D	135
JC47733-1MS	3A156862.D	125
JC47733-2DUP	3A156864.D	132
V3A6761-BS	3A156853.D	134
V3A6761-MB	3A156852.D	104

Surrogate Compounds	Recovery Limits
S1 = 1,4-Dioxane-d8	51-175%

5.7.2
5

**ENCLOSURE C – LABORATORY ANALYTICAL REPORT FOR 1227 OLD CAMP
MEADE ROAD AND 7740 TWIN OAKS ROAD
RESIDENTIAL WELL SAMPLES (SEPTEMBER 2017)**



ACCUTEST

New Jersey

10/10/17

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Automated Report

Technical Report for

WSP Environment & Energy

Kop-Flex, Hanover, VA

31400309

SGS Accutest Job Number: JC51755

Sampling Date: 09/25/17



Report to:

WSP
11190 Sunrise Valley Drive Suite 300
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ATTN: Eric Johnson

Total number of pages in report: 79



Test results contained within this data package meet the requirements
of the National Environmental Laboratory Accreditation Program
and/or state specific certification programs as applicable.

Nancy T. Cole

Nancy Cole
Laboratory Director

Client Service contact: Rocus Peters 732-329-0200

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Sample Summary

WSP Environment & Energy

Job No: JC51755

Kop-Flex, Hanover, VA
Project No: 31400309

Sample Number	Collected Date	Time By	Matrix Received	Code Type	Client Sample ID
JC51755-1	09/25/17	09:45 DW	09/26/17	DW Drinking Water	RW-12270CM-092517
JC51755-2	09/25/17	10:15 DW	09/26/17	DW Drinking Water	RW-1000-092517
JC51755-3	09/25/17	15:00 DW	09/26/17	DW Drinking Water TB	TB-092517
JC51755-4	09/25/17	09:35 DW	09/26/17	DW Drinking Water	RW-12270CM-092517-F
JC51755-5	09/25/17	11:25 DW	09/26/17	DW Drinking Water	RW-1308RB-092517-F
JC51755-6	09/25/17	11:35 DW	09/26/17	DW Drinking Water	RW-1308RB-092517
JC51755-7	09/25/17	13:05 DW	09/26/17	DW Drinking Water	RW-1319LP-092517
JC51755-8	09/25/17	14:00 DW	09/26/17	DW Drinking Water	RW-1317LP-092517-F
JC51755-9	09/25/17	14:05 DW	09/26/17	DW Drinking Water	RW-1317LP-092517
JC51755-10	09/25/17	15:00 DW	09/26/17	DW Drinking Water	RW-7740TO-092517

Summary of Hits

Job Number: JC51755
Account: WSP Environment & Energy
Project: Kop-Flex, Hanover, VA
Collected: 09/25/17

Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC51755-1 RW-12270CM-092517						
1,1-Dichloroethane	0.18 J	0.50	0.13	ug/l	EPA 524.2 REV 4.1	
1,1-Dichloroethylene	7.8	0.50	0.23	ug/l	EPA 524.2 REV 4.1	
1,1,1-Trichloroethane	0.41 J	0.50	0.12	ug/l	EPA 524.2 REV 4.1	
1,4-Dioxane ^a	4.6	0.40	0.29	ug/l	SW846 8260C BY SIM	
JC51755-2 RW-1000-092517						
1,1-Dichloroethane	0.15 J	0.50	0.13	ug/l	EPA 524.2 REV 4.1	
1,1-Dichloroethylene	7.0	0.50	0.23	ug/l	EPA 524.2 REV 4.1	
1,1,1-Trichloroethane	0.40 J	0.50	0.12	ug/l	EPA 524.2 REV 4.1	
1,4-Dioxane ^a	4.4	0.40	0.29	ug/l	SW846 8260C BY SIM	
JC51755-3 TB-092517						
No hits reported in this sample.						
JC51755-4 RW-1227OCM-092517-F						
1,1-Dichloroethane	0.15 J	0.50	0.13	ug/l	EPA 524.2 REV 4.1	
1,1-Dichloroethylene	1.7	0.50	0.23	ug/l	EPA 524.2 REV 4.1	
1,1,1-Trichloroethane	0.37 J	0.50	0.12	ug/l	EPA 524.2 REV 4.1	
1,4-Dioxane ^b	3.5	0.40	0.29	ug/l	SW846 8260C BY SIM	
JC51755-5 RW-1308RB-092517-F						
Chloroform	0.34 J	0.50	0.33	ug/l	EPA 524.2 REV 4.1	
Methyl Tert Butyl Ether	0.43 J	0.50	0.080	ug/l	EPA 524.2 REV 4.1	
1,4-Dioxane ^b	0.55	0.40	0.29	ug/l	SW846 8260C BY SIM	
JC51755-6 RW-1308RB-092517						
Chloroform	0.39 J	0.50	0.33	ug/l	EPA 524.2 REV 4.1	
Methyl Tert Butyl Ether	0.50	0.50	0.080	ug/l	EPA 524.2 REV 4.1	
Naphthalene	0.30 J	0.50	0.18	ug/l	EPA 524.2 REV 4.1	
1,4-Dioxane ^b	0.53	0.40	0.29	ug/l	SW846 8260C BY SIM	
JC51755-7 RW-1319LP-092517						
Chloroform	0.36 J	0.50	0.33	ug/l	EPA 524.2 REV 4.1	
Methyl Tert Butyl Ether	0.50	0.50	0.080	ug/l	EPA 524.2 REV 4.1	

Summary of Hits

Job Number: JC51755
Account: WSP Environment & Energy
Project: Kop-Flex, Hanover, VA
Collected: 09/25/17

Lab Sample ID Analyte	Client Sample ID Qual	Result/ RL	MDL	Units	Method
JC51755-8 RW-1317LP-092517-F					
Chloroform	0.36 J	0.50	0.33	ug/l	EPA 524.2 REV 4.1
Methyl Tert Butyl Ether	0.37 J	0.50	0.080	ug/l	EPA 524.2 REV 4.1
JC51755-9 RW-1317LP-092517					
Chloroform	0.42 J	0.50	0.33	ug/l	EPA 524.2 REV 4.1
Methyl Tert Butyl Ether	0.47 J	0.50	0.080	ug/l	EPA 524.2 REV 4.1
JC51755-10 RW-7740TO-092517					
1,1-Dichloroethane	0.35 J	0.50	0.13	ug/l	EPA 524.2 REV 4.1
1,1-Dichloroethylene	11.3	0.50	0.23	ug/l	EPA 524.2 REV 4.1
1,1,1-Trichloroethane	0.86	0.50	0.12	ug/l	EPA 524.2 REV 4.1
1,4-Dioxane ^b	4.8	0.40	0.29	ug/l	SW846 8260C BY SIM

(a) (pH= 4) Sample is not acid preserved per method/client criteria. Sample analyzed within 7 days holding time.

(b) (pH= 5) Sample is not acid preserved per method/client criteria. Sample analyzed within 7 days holding time.

Sample Results

Report of Analysis

Report of Analysis

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Client Sample ID: RW-12270CM-092517**Lab Sample ID:** JC51755-1**Date Sampled:** 09/25/17**Matrix:** DW - Drinking Water**Date Received:** 09/26/17**Method:** EPA 524.2 REV 4.1**Percent Solids:** n/a**Project:** Kop-Flex, Hanover, VA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1B111863.D	1	09/28/17 10:42	BK	n/a	n/a	V1B5331
Run #2							

Purge Volume

Run #1 5.0 ml

Run #2

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
67-64-1	Acetone	ND		5.0	3.8	ug/l	
78-93-3	2-Butanone	ND		5.0	2.5	ug/l	
71-43-2	Benzene	ND	5.0	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND		0.50	0.25	ug/l	
74-97-5	Bromo(chloromethane)	ND		0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	ND		0.50	0.36	ug/l	
75-25-2	Bromoform ^a	ND		0.50	0.40	ug/l	
74-83-9	Bromomethane	ND		0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND		0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND		0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND		0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND		0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	100	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND		0.50	0.071	ug/l	
67-66-3	Chloroform	ND		0.50	0.33	ug/l	
74-87-3	Chloromethane	ND		0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND		0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND		0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	5.0	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	0.18		0.50	0.13	ug/l	J
75-35-4	1,1-Dichloroethylene	7.8	7.0	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND		0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND		0.20	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND		0.050	0.50	0.29	ug/l
107-06-2	1,2-Dichloroethane	ND		5.0	0.50	0.28	ug/l
78-87-5	1,2-Dichloropropane	ND	5.0	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND		0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND		0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	ND		0.50	0.094	ug/l	
74-95-3	Dibromomethane	ND		0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND		0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND		0.50	0.28	ug/l	

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

MCL = Maximum Contamination Level (40 CFR 141)

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: RW-12270CM-092517
Lab Sample ID: JC51755-1
Matrix: DW - Drinking Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, VA

Date Sampled: 09/25/17
Date Received: 09/26/17
Percent Solids: n/a

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	600	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	75	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	100	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	70	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND		0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND		0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	700	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND		0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND		2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND		0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND		0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	5.0	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND		0.50	0.080	ug/l	
108-10-1	4-Methyl-2-pentanone	ND		2.0	1.5	ug/l	
91-20-3	Naphthalene	ND		0.50	0.18	ug/l	
103-65-1	n-Propylbenzene	ND		0.50	0.26	ug/l	
100-42-5	Styrene	ND	100	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND		0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	0.41	200	0.50	0.12	ug/l	J
79-34-5	1,1,2,2-Tetrachloroethane	ND		0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	5.0	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND		0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND		0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	70	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND		0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND		0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	5.0	0.50	0.12	ug/l	
108-88-3	Toluene	ND	1000	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	5.0	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND		1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	2.0	0.50	0.056	ug/l	
	m,p-Xylene	ND		0.50	0.26	ug/l	
95-47-6	o-Xylene	ND		0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	10000	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	96%		70-130%
460-00-4	4-Bromofluorobenzene	93%		70-130%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

MCL = Maximum Contamination Level (40 CFR 141)

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID: RW-12270CM-092517
Lab Sample ID: JC51755-1
Matrix: DW - Drinking Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, VA

Date Sampled: 09/25/17
Date Received: 09/26/17
Percent Solids: n/a

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
---------	----------	--------	-----	----	-----	-------	---

(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected MDL = Method Detection Limit
MCL = Maximum Contamination Level (40 CFR 141)
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

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3**Client Sample ID:** RW-12270CM-092517**Lab Sample ID:** JC51755-1**Matrix:** DW - Drinking Water**Method:** SW846 8260C BY SIM**Project:** Kop-Flex, Hanover, VA**Date Sampled:** 09/25/17**Date Received:** 09/26/17**Percent Solids:** n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	3A157692.D	1	09/28/17 20:27	PR	n/a	n/a	V3A6789
Run #2							

Purge Volume

Run #1 5.0 ml

Run #2

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
----------------	-----------------	---------------	------------	-----------	------------	--------------	----------

123-91-1	1,4-Dioxane	4.6		0.40	0.29	ug/l	
----------	-------------	-----	--	------	------	------	--

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
----------------	-----------------------------	---------------	---------------	---------------

17647-74-4	1,4-Dioxane-d8	175%		51-175%
------------	----------------	------	--	---------

(a) (pH= 4) Sample is not acid preserved per method/client criteria. Sample analyzed within 7 days holding time.

ND = Not detected MDL = Method Detection Limit
 MCL = Maximum Contamination Level (40 CFR 141)
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 3

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3

Client Sample ID:	RW-1000-092517	Date Sampled:	09/25/17
Lab Sample ID:	JC51755-2	Date Received:	09/26/17
Matrix:	DW - Drinking Water	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Kop-Flex, Hanover, VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1B111864.D	1	09/28/17 11:13	BK	n/a	n/a	V1B5331
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
67-64-1	Acetone	ND		5.0	3.8	ug/l	
78-93-3	2-Butanone	ND		5.0	2.5	ug/l	
71-43-2	Benzene	ND	5.0	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND		0.50	0.25	ug/l	
74-97-5	Bromochloromethane	ND		0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	ND		0.50	0.36	ug/l	
75-25-2	Bromoform ^a	ND		0.50	0.40	ug/l	
74-83-9	Bromomethane	ND		0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND		0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND		0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND		0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND		0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	100	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND		0.50	0.071	ug/l	
67-66-3	Chloroform	ND		0.50	0.33	ug/l	
74-87-3	Chloromethane	ND		0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND		0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND		0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	5.0	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	0.15		0.50	0.13	ug/l	J
75-35-4	1,1-Dichloroethylene	7.0	7.0	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND		0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND		0.20	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND		0.050	0.50	0.29	ug/l
107-06-2	1,2-Dichloroethane	ND		5.0	0.50	0.28	ug/l
78-87-5	1,2-Dichloropropane	ND	5.0	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND		0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND		0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	ND		0.50	0.094	ug/l	
74-95-3	Dibromomethane	ND		0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND		0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND		0.50	0.28	ug/l	

ND = Not detected MDL = Method Detection Limit

MCL = Maximum Contamination Level (40 CFR 141)

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RW-1000-092517	Date Sampled:	09/25/17
Lab Sample ID:	JC51755-2	Date Received:	09/26/17
Matrix:	DW - Drinking Water	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Kop-Flex, Hanover, VA		

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	600	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	75	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	100	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	70	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND		0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND		0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	700	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND		0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND		2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND		0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND		0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	5.0	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND		0.50	0.080	ug/l	
108-10-1	4-Methyl-2-pentanone	ND		2.0	1.5	ug/l	
91-20-3	Naphthalene	ND		0.50	0.18	ug/l	
103-65-1	n-Propylbenzene	ND		0.50	0.26	ug/l	
100-42-5	Styrene	ND	100	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND		0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	0.40	200	0.50	0.12	ug/l	J
79-34-5	1,1,2,2-Tetrachloroethane	ND		0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	5.0	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND		0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND		0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	70	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND		0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND		0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	5.0	0.50	0.12	ug/l	
108-88-3	Toluene	ND	1000	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	5.0	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND		1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	2.0	0.50	0.056	ug/l	
	m,p-Xylene	ND		0.50	0.26	ug/l	
95-47-6	o-Xylene	ND		0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	10000	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	97%		70-130%
460-00-4	4-Bromofluorobenzene	92%		70-130%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

MCL = Maximum Contamination Level (40 CFR 141)

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

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Client Sample ID:	RW-1000-092517	Date Sampled:	09/25/17
Lab Sample ID:	JC51755-2	Date Received:	09/26/17
Matrix:	DW - Drinking Water	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Kop-Flex, Hanover, VA		

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
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(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected MDL = Method Detection Limit
 MCL = Maximum Contamination Level (40 CFR 141)
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	RW-1000-092517	Date Sampled:	09/25/17
Lab Sample ID:	JC51755-2	Date Received:	09/26/17
Matrix:	DW - Drinking Water	Percent Solids:	n/a
Method:	SW846 8260C BY SIM		
Project:	Kop-Flex, Hanover, VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	3A157693.D	1	09/28/17 20:53	PR	n/a	n/a	V3A6789
Run #2							

Purge Volume	
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
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123-91-1	1,4-Dioxane	4.4		0.40	0.29	ug/l	
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CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
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17647-74-4	1,4-Dioxane-d8	174%		51-175%
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(a) (pH= 4) Sample is not acid preserved per method/client criteria. Sample analyzed within 7 days holding time.

ND = Not detected MDL = Method Detection Limit
 MCL = Maximum Contamination Level (40 CFR 141)
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID:	TB-092517	Date Sampled:	09/25/17
Lab Sample ID:	JC51755-3	Date Received:	09/26/17
Matrix:	DW - Drinking Water TB	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Kop-Flex, Hanover, VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1B111875.D	1	09/28/17 17:03	BK	n/a	n/a	V1B5331
Run #2							

Purge Volume	
Run #1	5.0 ml
Run #2	

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
67-64-1	Acetone	ND		5.0	3.8	ug/l	
78-93-3	2-Butanone	ND		5.0	2.5	ug/l	
71-43-2	Benzene	ND	5.0	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND		0.50	0.25	ug/l	
74-97-5	Bromochloromethane	ND		0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	ND		0.50	0.36	ug/l	
75-25-2	Bromoform ^a	ND		0.50	0.40	ug/l	
74-83-9	Bromomethane	ND		0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND		0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND		0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND		0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND		0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	100	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND		0.50	0.071	ug/l	
67-66-3	Chloroform	ND		0.50	0.33	ug/l	
74-87-3	Chloromethane	ND		0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND		0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND		0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	5.0	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND		0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	7.0	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND		0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND		0.20	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND		0.050	0.50	0.29	ug/l
107-06-2	1,2-Dichloroethane	ND		5.0	0.50	0.28	ug/l
78-87-5	1,2-Dichloropropane	ND	5.0	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND		0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND		0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	ND		0.50	0.094	ug/l	
74-95-3	Dibromomethane	ND		0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND		0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND		0.50	0.28	ug/l	

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

MCL = Maximum Contamination Level (40 CFR 141)

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TB-092517	Date Sampled:	09/25/17
Lab Sample ID:	JC51755-3	Date Received:	09/26/17
Matrix:	DW - Drinking Water TB	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Kop-Flex, Hanover, VA		

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	600	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	75	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	100	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	70	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND		0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND		0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	700	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND		0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND		2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND		0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND		0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	5.0	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND		0.50	0.080	ug/l	
108-10-1	4-Methyl-2-pentanone	ND		2.0	1.5	ug/l	
91-20-3	Naphthalene	ND		0.50	0.18	ug/l	
103-65-1	n-Propylbenzene	ND		0.50	0.26	ug/l	
100-42-5	Styrene	ND	100	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND		0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	200	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND		0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	5.0	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND		0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND		0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	70	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND		0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND		0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	5.0	0.50	0.12	ug/l	
108-88-3	Toluene	ND	1000	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	5.0	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND		1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	2.0	0.50	0.056	ug/l	
	m,p-Xylene	ND		0.50	0.26	ug/l	
95-47-6	o-Xylene	ND		0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	10000	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	96%		70-130%
460-00-4	4-Bromofluorobenzene	88%		70-130%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

MCL = Maximum Contamination Level (40 CFR 141)

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID:	TB-092517	Date Sampled:	09/25/17
Lab Sample ID:	JC51755-3	Date Received:	09/26/17
Matrix:	DW - Drinking Water TB	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Kop-Flex, Hanover, VA		

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
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(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected MDL = Method Detection Limit
 MCL = Maximum Contamination Level (40 CFR 141)
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID:	TB-092517	Date Sampled:	09/25/17
Lab Sample ID:	JC51755-3	Date Received:	09/26/17
Matrix:	DW - Drinking Water TB	Percent Solids:	n/a
Method:	SW846 8260C BY SIM		
Project:	Kop-Flex, Hanover, VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	3A157694.D	1	09/28/17 21:18	PR	n/a	n/a	V3A6789
Run #2							

Purge Volume	
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
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123-91-1	1,4-Dioxane	ND		0.40	0.29	ug/l	
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CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
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17647-74-4	1,4-Dioxane-d8	150%		51-175%
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(a) (pH= 5) Sample is not acid preserved per method/client criteria. Sample analyzed within 7 days holding time.

ND = Not detected MCL = Method Detection Limit
 MCL = Maximum Contamination Level (40 CFR 141)
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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3**Client Sample ID:** RW-1227OCM-092517-F**Lab Sample ID:** JC51755-4**Date Sampled:** 09/25/17**Matrix:** DW - Drinking Water**Date Received:** 09/26/17**Method:** EPA 524.2 REV 4.1**Percent Solids:** n/a**Project:** Kop-Flex, Hanover, VA

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1B111876.D	1	09/28/17 17:35	BK	n/a	n/a	V1B5331
Run #2							

Purge Volume

Run #1 5.0 ml

Run #2

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
67-64-1	Acetone	ND		5.0	3.8	ug/l	
78-93-3	2-Butanone	ND		5.0	2.5	ug/l	
71-43-2	Benzene	ND	5.0	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND		0.50	0.25	ug/l	
74-97-5	Bromo(chloromethane)	ND		0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	ND		0.50	0.36	ug/l	
75-25-2	Bromoform ^a	ND		0.50	0.40	ug/l	
74-83-9	Bromomethane	ND		0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND		0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND		0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND		0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND		0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	100	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND		0.50	0.071	ug/l	
67-66-3	Chloroform	ND		0.50	0.33	ug/l	
74-87-3	Chloromethane	ND		0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND		0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND		0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	5.0	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	0.15		0.50	0.13	ug/l	J
75-35-4	1,1-Dichloroethylene	1.7	7.0	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND		0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND		0.20	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND		0.050	0.50	0.29	ug/l
107-06-2	1,2-Dichloroethane	ND		5.0	0.50	0.28	ug/l
78-87-5	1,2-Dichloropropane	ND	5.0	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND		0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND		0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	ND		0.50	0.094	ug/l	
74-95-3	Dibromomethane	ND		0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND		0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND		0.50	0.28	ug/l	

ND = Not detected MDL = Method Detection Limit

MCL = Maximum Contamination Level (40 CFR 141)

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: RW-1227OCM-092517-F
Lab Sample ID: JC51755-4
Matrix: DW - Drinking Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, VA

Date Sampled: 09/25/17
Date Received: 09/26/17
Percent Solids: n/a

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	600	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	75	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	100	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	70	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND		0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND		0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	700	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND		0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND		2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND		0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND		0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	5.0	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND		0.50	0.080	ug/l	
108-10-1	4-Methyl-2-pentanone	ND		2.0	1.5	ug/l	
91-20-3	Naphthalene	ND		0.50	0.18	ug/l	
103-65-1	n-Propylbenzene	ND		0.50	0.26	ug/l	
100-42-5	Styrene	ND	100	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND		0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	0.37	200	0.50	0.12	ug/l	J
79-34-5	1,1,2,2-Tetrachloroethane	ND		0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	5.0	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND		0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND		0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	70	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND		0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND		0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	5.0	0.50	0.12	ug/l	
108-88-3	Toluene	ND	1000	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	5.0	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND		1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	2.0	0.50	0.056	ug/l	
	m,p-Xylene	ND		0.50	0.26	ug/l	
95-47-6	o-Xylene	ND		0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	10000	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	95%		70-130%
460-00-4	4-Bromofluorobenzene	87%		70-130%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

MCL = Maximum Contamination Level (40 CFR 141)

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

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Client Sample ID:	RW-1227OCM-092517-F	Date Sampled:	09/25/17
Lab Sample ID:	JC51755-4	Date Received:	09/26/17
Matrix:	DW - Drinking Water	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Kop-Flex, Hanover, VA		

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
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(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected MDL = Method Detection Limit
 MCL = Maximum Contamination Level (40 CFR 141)
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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3**Client Sample ID:** RW-1227OCM-092517-F**Lab Sample ID:** JC51755-4**Matrix:** DW - Drinking Water**Method:** SW846 8260C BY SIM**Project:** Kop-Flex, Hanover, VA**Date Sampled:** 09/25/17**Date Received:** 09/26/17**Percent Solids:** n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	3A157695.D	1	09/28/17 21:44	PR	n/a	n/a	V3A6789
Run #2							

Purge Volume

Run #1 5.0 ml

Run #2

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
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123-91-1	1,4-Dioxane	3.5		0.40	0.29	ug/l	
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CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
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17647-74-4	1,4-Dioxane-d8	136%		51-175%
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(a) (pH= 5) Sample is not acid preserved per method/client criteria. Sample analyzed within 7 days holding time.

ND = Not detected MDL = Method Detection Limit
 MCL = Maximum Contamination Level (40 CFR 141)
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID: RW-1308RB-092517-F
Lab Sample ID: JC51755-5
Matrix: DW - Drinking Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, VA

Date Sampled: 09/25/17
Date Received: 09/26/17
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1B111877.D	1	09/28/17 18:07	BK	n/a	n/a	V1B5331
Run #2							

Purge Volume	
Run #1	5.0 ml
Run #2	

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
67-64-1	Acetone	ND		5.0	3.8	ug/l	
78-93-3	2-Butanone	ND		5.0	2.5	ug/l	
71-43-2	Benzene	ND	5.0	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND		0.50	0.25	ug/l	
74-97-5	Bromo(chloromethane)	ND		0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	ND		0.50	0.36	ug/l	
75-25-2	Bromoform ^a	ND		0.50	0.40	ug/l	
74-83-9	Bromomethane	ND		0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND		0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND		0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND		0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND		0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	100	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND		0.50	0.071	ug/l	
67-66-3	Chloroform	0.34		0.50	0.33	ug/l	J
74-87-3	Chloromethane	ND		0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND		0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND		0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	5.0	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND		0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	7.0	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND		0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND		0.20	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND		0.050	0.50	0.29	ug/l
107-06-2	1,2-Dichloroethane	ND		5.0	0.50	0.28	ug/l
78-87-5	1,2-Dichloropropane	ND	5.0	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND		0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND		0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	ND		0.50	0.094	ug/l	
74-95-3	Dibromomethane	ND		0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND		0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND		0.50	0.28	ug/l	

ND = Not detected MDL = Method Detection Limit

MCL = Maximum Contamination Level (40 CFR 141)

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	RW-1308RB-092517-F	Date Sampled:	09/25/17
Lab Sample ID:	JC51755-5	Date Received:	09/26/17
Matrix:	DW - Drinking Water	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Kop-Flex, Hanover, VA		

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	600	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	75	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	100	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	70	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND		0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND		0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	700	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND		0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND		2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND		0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND		0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	5.0	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.43		0.50	0.080	ug/l	J
108-10-1	4-Methyl-2-pentanone	ND		2.0	1.5	ug/l	
91-20-3	Naphthalene	ND		0.50	0.18	ug/l	
103-65-1	n-Propylbenzene	ND		0.50	0.26	ug/l	
100-42-5	Styrene	ND	100	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND		0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	200	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND		0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	5.0	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND		0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND		0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	70	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND		0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND		0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	5.0	0.50	0.12	ug/l	
108-88-3	Toluene	ND	1000	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	5.0	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND		1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	2.0	0.50	0.056	ug/l	
	m,p-Xylene	ND		0.50	0.26	ug/l	
95-47-6	o-Xylene	ND		0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	10000	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	94%		70-130%
460-00-4	4-Bromofluorobenzene	87%		70-130%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

MCL = Maximum Contamination Level (40 CFR 141)

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

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Client Sample ID:	RW-1308RB-092517-F	Date Sampled:	09/25/17
Lab Sample ID:	JC51755-5	Date Received:	09/26/17
Matrix:	DW - Drinking Water	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Kop-Flex, Hanover, VA		

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
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(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected MDL = Method Detection Limit
 MCL = Maximum Contamination Level (40 CFR 141)
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Client Sample ID: RW-1308RB-092517-F
Lab Sample ID: JC51755-5
Matrix: DW - Drinking Water
Method: SW846 8260C BY SIM
Project: Kop-Flex, Hanover, VA

Date Sampled: 09/25/17
Date Received: 09/26/17
Percent Solids: n/a

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	3A157696.D	1	09/28/17 22:10	PR	n/a	n/a	V3A6789
Run #2							

Purge Volume
Run #1 5.0 ml
Run #2

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
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123-91-1	1,4-Dioxane	0.55		0.40	0.29	ug/l	
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CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
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17647-74-4	1,4-Dioxane-d8	142%		51-175%
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(a) (pH= 5) Sample is not acid preserved per method/client criteria. Sample analyzed within 7 days holding time.

ND = Not detected MDL = Method Detection Limit
MCL = Maximum Contamination Level (40 CFR 141)
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

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Client Sample ID: RW-1308RB-092517
Lab Sample ID: JC51755-6
Matrix: DW - Drinking Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, VA

Date Sampled: 09/25/17
Date Received: 09/26/17
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1B111878.D	1	09/28/17 18:39	BK	n/a	n/a	V1B5331
Run #2							

Purge Volume	
Run #1	5.0 ml
Run #2	

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
67-64-1	Acetone	ND		5.0	3.8	ug/l	
78-93-3	2-Butanone	ND		5.0	2.5	ug/l	
71-43-2	Benzene	ND	5.0	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND		0.50	0.25	ug/l	
74-97-5	Bromochloromethane	ND		0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	ND		0.50	0.36	ug/l	
75-25-2	Bromoform ^a	ND		0.50	0.40	ug/l	
74-83-9	Bromomethane	ND		0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND		0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND		0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND		0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND		0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	100	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND		0.50	0.071	ug/l	
67-66-3	Chloroform	0.39		0.50	0.33	ug/l	J
74-87-3	Chloromethane	ND		0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND		0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND		0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	5.0	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND		0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	7.0	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND		0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND		0.20	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND		0.050	0.50	0.29	ug/l
107-06-2	1,2-Dichloroethane	ND		5.0	0.50	0.28	ug/l
78-87-5	1,2-Dichloropropane	ND	5.0	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND		0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND		0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	ND		0.50	0.094	ug/l	
74-95-3	Dibromomethane	ND		0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND		0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND		0.50	0.28	ug/l	

ND = Not detected MDL = Method Detection Limit

MCL = Maximum Contamination Level (40 CFR 141)

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: RW-1308RB-092517
Lab Sample ID: JC51755-6
Matrix: DW - Drinking Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, VA

Date Sampled: 09/25/17
Date Received: 09/26/17
Percent Solids: n/a

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	600	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	75	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	100	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	70	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND		0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND		0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	700	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND		0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND		2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND		0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND		0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	5.0	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.50		0.50	0.080	ug/l	
108-10-1	4-Methyl-2-pentanone	ND		2.0	1.5	ug/l	
91-20-3	Naphthalene	0.30		0.50	0.18	ug/l	J
103-65-1	n-Propylbenzene	ND		0.50	0.26	ug/l	
100-42-5	Styrene	ND	100	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND		0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	200	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND		0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	5.0	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND		0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND		0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	70	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND		0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND		0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	5.0	0.50	0.12	ug/l	
108-88-3	Toluene	ND	1000	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	5.0	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND		1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	2.0	0.50	0.056	ug/l	
	m,p-Xylene	ND		0.50	0.26	ug/l	
95-47-6	o-Xylene	ND		0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	10000	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	93%		70-130%
460-00-4	4-Bromofluorobenzene	86%		70-130%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

MCL = Maximum Contamination Level (40 CFR 141)

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

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Client Sample ID: RW-1308RB-092517
Lab Sample ID: JC51755-6
Matrix: DW - Drinking Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, VA

Date Sampled: 09/25/17
Date Received: 09/26/17
Percent Solids: n/a

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
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(a) Associated CCV outside of control limits high, sample was ND.

ND = Not detected MDL = Method Detection Limit
MCL = Maximum Contamination Level (40 CFR 141)
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

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Client Sample ID: RW-1308RB-092517
Lab Sample ID: JC51755-6
Matrix: DW - Drinking Water
Method: SW846 8260C BY SIM
Project: Kop-Flex, Hanover, VA

Date Sampled: 09/25/17
Date Received: 09/26/17
Percent Solids: n/a

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	3A157697.D	1	09/28/17 22:35	PR	n/a	n/a	V3A6789
Run #2							

Purge Volume
Run #1 5.0 ml
Run #2

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
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123-91-1	1,4-Dioxane	0.53		0.40	0.29	ug/l	
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CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
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17647-74-4	1,4-Dioxane-d8	140%		51-175%
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(a) (pH= 5) Sample is not acid preserved per method/client criteria. Sample analyzed within 7 days holding time.

ND = Not detected MDL = Method Detection Limit
MCL = Maximum Contamination Level (40 CFR 141)
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

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Client Sample ID: RW-1319LP-092517
Lab Sample ID: JC51755-7
Matrix: DW - Drinking Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, VA

Date Sampled: 09/25/17
Date Received: 09/26/17
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1B111899.D	1	09/29/17 12:19	BK	n/a	n/a	V1B5333
Run #2							

Purge Volume	
Run #1	5.0 ml
Run #2	

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
67-64-1	Acetone	ND		5.0	3.8	ug/l	
78-93-3	2-Butanone	ND		5.0	2.5	ug/l	
71-43-2	Benzene	ND	5.0	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND		0.50	0.25	ug/l	
74-97-5	Bromo(chloromethane)	ND		0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	ND		0.50	0.36	ug/l	
75-25-2	Bromoform	ND		0.50	0.40	ug/l	
74-83-9	Bromomethane	ND		0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND		0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND		0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND		0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND		0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	100	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND		0.50	0.071	ug/l	
67-66-3	Chloroform	0.36		0.50	0.33	ug/l	J
74-87-3	Chloromethane	ND		0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND		0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND		0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	5.0	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND		0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	7.0	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND		0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND		0.20	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND		0.050	0.50	0.29	ug/l
107-06-2	1,2-Dichloroethane	ND		5.0	0.50	0.28	ug/l
78-87-5	1,2-Dichloropropane	ND	5.0	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND		0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND		0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	ND		0.50	0.094	ug/l	
74-95-3	Dibromomethane	ND		0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND		0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND		0.50	0.28	ug/l	

ND = Not detected MDL = Method Detection Limit

MCL = Maximum Contamination Level (40 CFR 141)

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: RW-1319LP-092517
Lab Sample ID: JC51755-7
Matrix: DW - Drinking Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, VA

Date Sampled: 09/25/17
Date Received: 09/26/17
Percent Solids: n/a

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	600	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	75	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	100	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	70	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND		0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND		0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	700	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND		0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND		2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND		0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND		0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	5.0	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.50		0.50	0.080	ug/l	
108-10-1	4-Methyl-2-pentanone	ND		2.0	1.5	ug/l	
91-20-3	Naphthalene	ND		0.50	0.18	ug/l	
103-65-1	n-Propylbenzene	ND		0.50	0.26	ug/l	
100-42-5	Styrene	ND	100	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND		0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	200	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND		0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	5.0	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND		0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND		0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	70	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND		0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND		0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	5.0	0.50	0.12	ug/l	
108-88-3	Toluene	ND	1000	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	5.0	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND		1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	2.0	0.50	0.056	ug/l	
	m,p-Xylene	ND		0.50	0.26	ug/l	
95-47-6	o-Xylene	ND		0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	10000	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	91%		70-130%
460-00-4	4-Bromofluorobenzene	81%		70-130%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

MCL = Maximum Contamination Level (40 CFR 141)

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

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Client Sample ID: RW-1319LP-092517
Lab Sample ID: JC51755-7
Matrix: DW - Drinking Water
Method: SW846 8260C BY SIM
Project: Kop-Flex, Hanover, VA

Date Sampled: 09/25/17
Date Received: 09/26/17
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	3A157711.D	1	09/29/17 13:50	PR	n/a	n/a	V3A6790
Run #2							

Purge Volume
Run #1 5.0 ml
Run #2

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
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123-91-1	1,4-Dioxane	ND		0.40	0.29	ug/l	
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CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
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17647-74-4	1,4-Dioxane-d8	118%		51-175%
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(a) (pH= 5) Sample is not acid preserved per method/client criteria. Sample analyzed within 7 days holding time.

ND = Not detected MCL = Maximum Contamination Level (40 CFR 141)
MDL = Method Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

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Client Sample ID: RW-1317LP-092517-F
Lab Sample ID: JC51755-8
Matrix: DW - Drinking Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, VA

Date Sampled: 09/25/17
Date Received: 09/26/17
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1B111900.D	1	09/29/17 12:50	BK	n/a	n/a	V1B5333
Run #2							

Purge Volume	
Run #1	5.0 ml
Run #2	

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
67-64-1	Acetone	ND		5.0	3.8	ug/l	
78-93-3	2-Butanone	ND		5.0	2.5	ug/l	
71-43-2	Benzene	ND	5.0	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND		0.50	0.25	ug/l	
74-97-5	Bromochloromethane	ND		0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	ND		0.50	0.36	ug/l	
75-25-2	Bromoform	ND		0.50	0.40	ug/l	
74-83-9	Bromomethane	ND		0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND		0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND		0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND		0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND		0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	100	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND		0.50	0.071	ug/l	
67-66-3	Chloroform	0.36		0.50	0.33	ug/l	J
74-87-3	Chloromethane	ND		0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND		0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND		0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	5.0	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND		0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	7.0	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND		0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND		0.20	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND		0.050	0.50	0.29	ug/l
107-06-2	1,2-Dichloroethane	ND		5.0	0.50	0.28	ug/l
78-87-5	1,2-Dichloropropane	ND	5.0	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND		0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND		0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	ND		0.50	0.094	ug/l	
74-95-3	Dibromomethane	ND		0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND		0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND		0.50	0.28	ug/l	

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

MCL = Maximum Contamination Level (40 CFR 141)

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: RW-1317LP-092517-F
Lab Sample ID: JC51755-8
Matrix: DW - Drinking Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, VA

Date Sampled: 09/25/17
Date Received: 09/26/17
Percent Solids: n/a

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	600	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	75	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	100	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	70	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND		0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND		0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	700	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND		0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND		2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND		0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND		0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	5.0	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.37		0.50	0.080	ug/l	J
108-10-1	4-Methyl-2-pentanone	ND		2.0	1.5	ug/l	
91-20-3	Naphthalene	ND		0.50	0.18	ug/l	
103-65-1	n-Propylbenzene	ND		0.50	0.26	ug/l	
100-42-5	Styrene	ND	100	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND		0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	200	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND		0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	5.0	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND		0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND		0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	70	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND		0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND		0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	5.0	0.50	0.12	ug/l	
108-88-3	Toluene	ND	1000	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	5.0	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND		1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	2.0	0.50	0.056	ug/l	
	m,p-Xylene	ND		0.50	0.26	ug/l	
95-47-6	o-Xylene	ND		0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	10000	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	93%		70-130%
460-00-4	4-Bromofluorobenzene	79%		70-130%

ND = Not detected MCL = Method Detection Limit
MCL = Maximum Contamination Level (40 CFR 141)
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

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Client Sample ID: RW-1317LP-092517-F
Lab Sample ID: JC51755-8
Matrix: DW - Drinking Water
Method: SW846 8260C BY SIM
Project: Kop-Flex, Hanover, VA

Date Sampled: 09/25/17
Date Received: 09/26/17
Percent Solids: n/a

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	3A157712.D	1	09/29/17 14:15	PR	n/a	n/a	V3A6790
Run #2							

Purge Volume
Run #1 5.0 ml
Run #2

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
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123-91-1	1,4-Dioxane	ND		0.40	0.29	ug/l	
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CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
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17647-74-4	1,4-Dioxane-d8	113%		51-175%
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(a) (pH= 5) Sample is not acid preserved per method/client criteria. Sample analyzed within 7 days holding time.

ND = Not detected MCL = Maximum Contamination Level (40 CFR 141)
MCL = Method Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

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Client Sample ID: RW-1317LP-092517
Lab Sample ID: JC51755-9
Matrix: DW - Drinking Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, VA

Date Sampled: 09/25/17
Date Received: 09/26/17
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1B111913.D	1	09/29/17 19:41	BK	n/a	n/a	V1B5333
Run #2							

Purge Volume	
Run #1	5.0 ml
Run #2	

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
67-64-1	Acetone	ND		5.0	3.8	ug/l	
78-93-3	2-Butanone	ND		5.0	2.5	ug/l	
71-43-2	Benzene	ND	5.0	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND		0.50	0.25	ug/l	
74-97-5	Bromochloromethane	ND		0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	ND		0.50	0.36	ug/l	
75-25-2	Bromoform	ND		0.50	0.40	ug/l	
74-83-9	Bromomethane	ND		0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND		0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND		0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND		0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND		0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	100	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND		0.50	0.071	ug/l	
67-66-3	Chloroform	0.42		0.50	0.33	ug/l	J
74-87-3	Chloromethane	ND		0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND		0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND		0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	5.0	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND		0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	7.0	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND		0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND		0.20	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND		0.050	0.50	0.29	ug/l
107-06-2	1,2-Dichloroethane	ND		5.0	0.50	0.28	ug/l
78-87-5	1,2-Dichloropropane	ND	5.0	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND		0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND		0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	ND		0.50	0.094	ug/l	
74-95-3	Dibromomethane	ND		0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND		0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND		0.50	0.28	ug/l	

ND = Not detected MDL = Method Detection Limit

MCL = Maximum Contamination Level (40 CFR 141)

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: RW-1317LP-092517
Lab Sample ID: JC51755-9
Matrix: DW - Drinking Water
Method: EPA 524.2 REV 4.1
Project: Kop-Flex, Hanover, VA

Date Sampled: 09/25/17
Date Received: 09/26/17
Percent Solids: n/a

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	600	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	75	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	100	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	70	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND		0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND		0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	700	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND		0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND		2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND		0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND		0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	5.0	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	0.47		0.50	0.080	ug/l	J
108-10-1	4-Methyl-2-pentanone	ND		2.0	1.5	ug/l	
91-20-3	Naphthalene	ND		0.50	0.18	ug/l	
103-65-1	n-Propylbenzene	ND		0.50	0.26	ug/l	
100-42-5	Styrene	ND	100	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND		0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	200	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND		0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	5.0	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND		0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND		0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	70	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND		0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND		0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	5.0	0.50	0.12	ug/l	
108-88-3	Toluene	ND	1000	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	5.0	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND		1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	2.0	0.50	0.056	ug/l	
	m,p-Xylene	ND		0.50	0.26	ug/l	
95-47-6	o-Xylene	ND		0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	10000	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	92%		70-130%
460-00-4	4-Bromofluorobenzene	78%		70-130%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

MCL = Maximum Contamination Level (40 CFR 141)

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID: RW-1317LP-092517
Lab Sample ID: JC51755-9
Matrix: DW - Drinking Water
Method: SW846 8260C BY SIM
Project: Kop-Flex, Hanover, VA

Date Sampled: 09/25/17
Date Received: 09/26/17
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	3A157713.D	1	09/29/17 14:41	PR	n/a	n/a	V3A6790
Run #2							

Purge Volume
Run #1 5.0 ml
Run #2

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
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123-91-1	1,4-Dioxane	ND		0.40	0.29	ug/l	
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CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
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17647-74-4	1,4-Dioxane-d8	117%		51-175%
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(a) (pH= 5) Sample is not acid preserved per method/client criteria. Sample analyzed within 7 days holding time.

ND = Not detected MCL = Maximum Contamination Level (40 CFR 141)
MDL = Method Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID:	RW-7740TO-092517	Date Sampled:	09/25/17
Lab Sample ID:	JC51755-10	Date Received:	09/26/17
Matrix:	DW - Drinking Water	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Kop-Flex, Hanover, VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1B111914.D	1	09/29/17 20:13	BK	n/a	n/a	V1B5333
Run #2							

Purge Volume	
Run #1	5.0 ml
Run #2	

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
67-64-1	Acetone	ND		5.0	3.8	ug/l	
78-93-3	2-Butanone	ND		5.0	2.5	ug/l	
71-43-2	Benzene	ND	5.0	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND		0.50	0.25	ug/l	
74-97-5	Bromochloromethane	ND		0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	ND		0.50	0.36	ug/l	
75-25-2	Bromoform	ND		0.50	0.40	ug/l	
74-83-9	Bromomethane	ND		0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND		0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND		0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND		0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND		0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	100	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND		0.50	0.071	ug/l	
67-66-3	Chloroform	ND		0.50	0.33	ug/l	
74-87-3	Chloromethane	ND		0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND		0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND		0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	5.0	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	0.35		0.50	0.13	ug/l	J
75-35-4	1,1-Dichloroethylene	11.3	7.0	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND		0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND		0.20	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND		0.050	0.50	0.29	ug/l
107-06-2	1,2-Dichloroethane	ND		5.0	0.50	0.28	ug/l
78-87-5	1,2-Dichloropropane	ND	5.0	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND		0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND		0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	ND		0.50	0.094	ug/l	
74-95-3	Dibromomethane	ND		0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND		0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND		0.50	0.28	ug/l	

ND = Not detected MDL = Method Detection Limit

MCL = Maximum Contamination Level (40 CFR 141)

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID:	RW-7740TO-092517	Date Sampled:	09/25/17
Lab Sample ID:	JC51755-10	Date Received:	09/26/17
Matrix:	DW - Drinking Water	Percent Solids:	n/a
Method:	EPA 524.2 REV 4.1		
Project:	Kop-Flex, Hanover, VA		

VOA List

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
95-50-1	o-Dichlorobenzene	ND	600	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	75	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	100	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	70	0.50	0.26	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND		0.50	0.14	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND		0.50	0.25	ug/l	
100-41-4	Ethylbenzene	ND	700	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND		0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND		2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND		0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND		0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	5.0	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND		0.50	0.080	ug/l	
108-10-1	4-Methyl-2-pentanone	ND		2.0	1.5	ug/l	
91-20-3	Naphthalene	ND		0.50	0.18	ug/l	
103-65-1	n-Propylbenzene	ND		0.50	0.26	ug/l	
100-42-5	Styrene	ND	100	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND		0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	0.86	200	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND		0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	5.0	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND		0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND		0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	70	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND		0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND		0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	5.0	0.50	0.12	ug/l	
108-88-3	Toluene	ND	1000	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	5.0	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND		1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	2.0	0.50	0.056	ug/l	
	m,p-Xylene	ND		0.50	0.26	ug/l	
95-47-6	o-Xylene	ND		0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	10000	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	91%		70-130%
460-00-4	4-Bromofluorobenzene	77%		70-130%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

MCL = Maximum Contamination Level (40 CFR 141)

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

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Client Sample ID:	RW-7740TO-092517	Date Sampled:	09/25/17
Lab Sample ID:	JC51755-10	Date Received:	09/26/17
Matrix:	DW - Drinking Water	Percent Solids:	n/a
Method:	SW846 8260C BY SIM		
Project:	Kop-Flex, Hanover, VA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	3A157714.D	1	09/29/17 15:07	PR	n/a	n/a	V3A6790
Run #2							

Purge Volume	
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	MCL	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	4.8		0.40	0.29	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17647-74-4	1,4-Dioxane-d8	118%		51-175%

(a) (pH= 5) Sample is not acid preserved per method/client criteria. Sample analyzed within 7 days holding time.

ND = Not detected MDL = Method Detection Limit
 MCL = Maximum Contamination Level (40 CFR 141)
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Misc. Forms**Custody Documents and Other Forms**

Includes the following where applicable:

- Chain of Custody



WTB
ACCUTEST

CHAIN OF CUSTODY

SGS Accutest - Dayton
2235 Route 130, Dayton, NJ 08810
TEL: 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

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FED-EX Tracking # 407930910849 Bottle Order Control #
SGS Accutest Quote # SGS Accutest Job # JC51755

Client / Reporting Information		Project Information						Requested Analysis (see TEST CODE sheet)						Matrix Codes	
Company Name WSP	Project Name: Kopflex	Street			Billing Information (if different from Report to)										
Street Address 13530 Dulles Technology Drive St 300		City Herndon VA	State 20171	City 	State 	Company Name 									
City Herndon VA	State 20171	E-mail eric.johnson@wsp.com	Project # 31400309 31400890	Street Address 											
Phone # 703-709-6500	Fax # 	Client Purchase Order # 		City 	State 	Zip 									
Sampler(s) Name(s) Marc Kaplan Chas Cesci	Phone # 	Project Manager Eric Johnson	Attention: 												
SGS Accutest Sample #	Field ID / Point of Collection	MEOH/DI/Vial #	Date	Time	Sampled by	Matrix	# of bottles	Number of preserved Bottles							
						HCl	NaOH	HNO3	H2SO4	None	DIN Water	MEOH	ENCORE		
1	RW-1227OCU-092517	9/25/17	0945	MS4	DW	6	3							X X	
2	RW-1000-092517	9/25/17	1015	MS4	DW	6	3							X X	
3	TB-092617													X X	
4	RW-1227OCU-092517-F	9/25/17	0935	MS4	DW	6	3							X X	
5	RW-1308RB-092517-F	9/25/17	1125	MS4	DW	6	3							X X	
6	RW-1308RB-092517	9/25/17	1135	MS4	DW	6	3							X X	
7	RW-1319LP-092517	9/25/17	1305	MS4	DW	6	3							X X	
8	RW-1317LP-092517-F	9/25/17	1400	MS4	DW	6	3							X X	
9	RW-1317LP-092517	9/25/17	1405	MS4	DW	6	3							X X	
10	RW-7740TO-092517	9/25/17	1500	MS4	DW	6	3							X X	
Turnaround Time (Business days)						Data Deliverable Information						Comments / Special Instructions			
<input checked="" type="checkbox"/> Std. 10 Business Days <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 3 Day RUSH <input type="checkbox"/> 2 Day RUSH <input type="checkbox"/> 1 Day RUSH <input type="checkbox"/> other						<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> FULL1 (Level 3+4) <input type="checkbox"/> NJ Reduced <input type="checkbox"/> Commercial "C" <input type="checkbox"/> NJ Data of Known Quality Protocol Reporting						<input type="checkbox"/> NYASP Category A <input type="checkbox"/> NYASP Category B <input type="checkbox"/> State Forms <input type="checkbox"/> EDD Format <input type="checkbox"/> Other			
INITIAL ASSESSMENT <u>ZAO</u>												VOCs 524 (3) 40mL VOA w/HCl			
LABEL VERIFICATION <u>JS</u>												1,4 Dioxane 6260 SIM (3) 40mL VAA			
												* VOA QC verified on 9/26/17 • up to 9/16/17			
Sample inventory is verified upon receipt in the Laboratory															
Sample Custody must be documented below each time samples change possession, including courier delivery.															
Relinquished by Sampler: <u>1</u>	Date Time: <u>9/25/17 1600</u>	Received By: <u>Fors</u>	Relinquished By: <u>2</u>	Date Time: <u>9/26/17 0915</u>	Received By: <u>Fors</u>										
Relinquished by Sampler: <u>3</u>	Date Time: <u></u>	Received By: <u>3</u>	Relinquished By: <u>4</u>	Date Time: <u></u>	Received By: <u></u>										
Relinquished by: <u>5</u>	Date Time: <u></u>	Received By: <u>5</u>	Custody Seal # <u>08358</u>	<input type="checkbox"/> Intact <input type="checkbox"/> Not Intact	Preserved where applicable <input type="checkbox"/>	On Ice <input type="checkbox"/>	Cooler Temp. <u>21°C IP</u>								

Form:SM088-01CRev.Date 9/13/16

JC51755: Chain of Custody
Page 1 of 2

SGS Accutest Sample Receipt Summary

Job Number: JC51755 Client: _____ Project: _____
 Date / Time Received: 9/26/2017 9:45:00 AM Delivery Method: _____ Airbill #'s: _____

Cooler Temps (Raw Measured) °C: Cooler 1: (2.1);

Cooler Temps (Corrected) °C: Cooler 1: (1.3);

Cooler Security	<u>Y or N</u>	<u>Y or N</u>	Sample Integrity - Documentation	<u>Y or N</u>		
1. Custody Seals Present:	<input checked="" type="checkbox"/> <input type="checkbox"/>	3. COC Present:	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/>		
2. Custody Seals Intact:	<input checked="" type="checkbox"/> <input type="checkbox"/>	4. Smpl Dates/Time OK	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/>		
Cooler Temperature		<u>Y or N</u>	Sample Integrity - Condition			
1. Temp criteria achieved:	<input checked="" type="checkbox"/> <input type="checkbox"/>		1. Sample rcvd within HT:	<input checked="" type="checkbox"/> <input type="checkbox"/>		
2. Cooler temp verification:	IR Gun		2. All containers accounted for:	<input checked="" type="checkbox"/> <input type="checkbox"/>		
3. Cooler media:	Ice (Bag)		3. Condition of sample:	Intact		
4. No. Coolers:	1					
Quality Control Preservation		<u>Y or N</u>	<u>N/A</u>	Sample Integrity - Instructions	<u>Y or N</u>	<u>N/A</u>
1. Trip Blank present / cooler:	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		1. Analysis requested is clear:	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	
2. Trip Blank listed on COC:	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		2. Bottles received for unspecified tests	<input type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
3. Samples preserved properly:	<input checked="" type="checkbox"/> <input type="checkbox"/>		3. Sufficient volume rcvd for analysis:	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	
4. VOCs headspace free:	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		4. Compositing instructions clear:	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/>	
			5. Filtering instructions clear:	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/>	

Comments

SM089-02
Rev. Date 12/1/16

4.1

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JC51755: Chain of Custody
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MS Volatiles

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Surrogate Recovery Summaries

Method Blank Summary

Page 1 of 3

Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5331-MB	1B111861.D	1	09/28/17	BK	n/a	n/a	V1B5331

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC51755-1, JC51755-2, JC51755-3, JC51755-4, JC51755-5, JC51755-6

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND	0.50	0.25	ug/l	
74-97-5	Bromochloromethane	ND	0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform	ND	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND	0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND	0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND	0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	ND	0.50	0.33	ug/l	
74-87-3	Chloromethane	ND	0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND	0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND	0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.0	0.25	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.50	0.29	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND	0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND	0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.094	ug/l	
74-95-3	Dibromomethane	ND	0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	0.28	ug/l	
95-50-1	o-Dichlorobenzene	ND	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	

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Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5331-MB	1B111861.D	1	09/28/17	BK	n/a	n/a	V1B5331

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC51755-1, JC51755-2, JC51755-3, JC51755-4, JC51755-5, JC51755-6

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND	0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND	0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	0.50	0.080	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
91-20-3	Naphthalene	ND	0.50	0.18	ug/l	
103-65-1	n-Propylbenzene	ND	0.50	0.26	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	0.50	0.24	ug/l	

CAS No. Surrogate Recoveries Limits

2199-69-1	1,2-Dichlorobenzene-d4	93%	70-130%
460-00-4	4-Bromofluorobenzene	91%	70-130%

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Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5331-MB	1B111861.D	1	09/28/17	BK	n/a	n/a	V1B5331

The QC reported here applies to the following samples:

Method:

JC51755-1, JC51755-2, JC51755-3, JC51755-4, JC51755-5, JC51755-6

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

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Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5333-MB	1B111896.D	1	09/29/17	BK	n/a	n/a	V1B5333

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC51755-7, JC51755-8, JC51755-9, JC51755-10

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	3.8	ug/l	
78-93-3	2-Butanone	ND	5.0	2.5	ug/l	
71-43-2	Benzene	ND	0.50	0.26	ug/l	
108-86-1	Bromobenzene	ND	0.50	0.25	ug/l	
74-97-5	Bromochloromethane	ND	0.50	0.42	ug/l	
75-27-4	Bromodichloromethane	ND	0.50	0.36	ug/l	
75-25-2	Bromoform	ND	0.50	0.40	ug/l	
74-83-9	Bromomethane	ND	0.50	0.081	ug/l	
104-51-8	n-Butylbenzene	ND	0.50	0.22	ug/l	
135-98-8	sec-Butylbenzene	ND	0.50	0.26	ug/l	
98-06-6	tert-Butylbenzene	ND	0.50	0.25	ug/l	
75-15-0	Carbon disulfide	ND	0.50	0.39	ug/l	
108-90-7	Chlorobenzene	ND	0.50	0.27	ug/l	
75-00-3	Chloroethane	ND	0.50	0.071	ug/l	
67-66-3	Chloroform	ND	0.50	0.33	ug/l	
74-87-3	Chloromethane	ND	0.50	0.39	ug/l	
95-49-8	o-Chlorotoluene	ND	0.50	0.30	ug/l	
106-43-4	p-Chlorotoluene	ND	0.50	0.27	ug/l	
56-23-5	Carbon tetrachloride	ND	0.50	0.13	ug/l	
75-34-3	1,1-Dichloroethane	ND	0.50	0.13	ug/l	
75-35-4	1,1-Dichloroethylene	ND	0.50	0.23	ug/l	
563-58-6	1,1-Dichloropropene	ND	0.50	0.21	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.0	0.25	ug/l	
106-93-4	1,2-Dibromoethane	ND	0.50	0.29	ug/l	
107-06-2	1,2-Dichloroethane	ND	0.50	0.28	ug/l	
78-87-5	1,2-Dichloropropane	ND	0.50	0.29	ug/l	
142-28-9	1,3-Dichloropropane	ND	0.50	0.24	ug/l	
594-20-7	2,2-Dichloropropane	ND	0.50	0.24	ug/l	
124-48-1	Dibromochloromethane	ND	0.50	0.094	ug/l	
74-95-3	Dibromomethane	ND	0.50	0.085	ug/l	
75-71-8	Dichlorodifluoromethane	ND	0.50	0.44	ug/l	
541-73-1	m-Dichlorobenzene	ND	0.50	0.28	ug/l	
95-50-1	o-Dichlorobenzene	ND	0.50	0.26	ug/l	
106-46-7	p-Dichlorobenzene	ND	0.50	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.50	0.098	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.50	0.26	ug/l	

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Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5333-MB	1B111896.D	1	09/29/17	BK	n/a	n/a	V1B5333

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC51755-7, JC51755-8, JC51755-9, JC51755-10

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.25	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.14	ug/l	
100-41-4	Ethylbenzene	ND	0.50	0.26	ug/l	
87-68-3	Hexachlorobutadiene	ND	0.50	0.32	ug/l	
591-78-6	2-Hexanone	ND	2.0	1.3	ug/l	
98-82-8	Isopropylbenzene	ND	0.50	0.25	ug/l	
99-87-6	p-Isopropyltoluene	ND	0.50	0.23	ug/l	
75-09-2	Methylene chloride	ND	0.50	0.37	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	0.50	0.080	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	2.0	1.5	ug/l	
91-20-3	Naphthalene	ND	0.50	0.18	ug/l	
103-65-1	n-Propylbenzene	ND	0.50	0.26	ug/l	
100-42-5	Styrene	ND	0.50	0.21	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.50	0.13	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.12	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.099	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	0.50	0.12	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	0.50	0.11	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	0.50	0.26	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.14	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.24	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.24	ug/l	
127-18-4	Tetrachloroethylene	ND	0.50	0.12	ug/l	
108-88-3	Toluene	ND	0.50	0.13	ug/l	
79-01-6	Trichloroethylene	ND	0.50	0.11	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.48	ug/l	
75-01-4	Vinyl chloride	ND	0.50	0.056	ug/l	
	m,p-Xylene	ND	0.50	0.26	ug/l	
95-47-6	o-Xylene	ND	0.50	0.24	ug/l	
1330-20-7	Xylenes (total)	ND	0.50	0.24	ug/l	

CAS No.	Surrogate Recoveries	Limits	
2199-69-1	1,2-Dichlorobenzene-d4	100%	70-130%
460-00-4	4-Bromofluorobenzene	89%	70-130%

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Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5333-MB	1B111896.D	1	09/29/17	BK	n/a	n/a	V1B5333

The QC reported here applies to the following samples:

Method:

JC51755-7, JC51755-8, JC51755-9, JC51755-10

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

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Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3A6789-MB	3A157674.D	1	09/28/17	PR	n/a	n/a	V3A6789

The QC reported here applies to the following samples:

Method: SW846 8260C BY SIM

JC51755-1, JC51755-2, JC51755-3, JC51755-4, JC51755-5, JC51755-6

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	ND	0.40	0.18	ug/l	

CAS No.	Surrogate Recoveries	Limits
17647-74-4	1,4-Dioxane-d8	95% 51-175%

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Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3A6790-MB	3A157708.D	1	09/29/17	PR	n/a	n/a	V3A6790

The QC reported here applies to the following samples:

Method: SW846 8260C BY SIM

JC51755-7, JC51755-8, JC51755-9, JC51755-10

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	ND	0.40	0.29	ug/l	

CAS No.	Surrogate Recoveries	Limits
17647-74-4	1,4-Dioxane-d8	121% 51-175%

Blank Spike Summary

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Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5331-BS	1B111862.D	1	09/28/17	BK	n/a	n/a	V1B5331

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC51755-1, JC51755-2, JC51755-3, JC51755-4, JC51755-5, JC51755-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	20	20.0	100	70-130
78-93-3	2-Butanone	20	19.3	97	70-130
71-43-2	Benzene	5	4.8	96	70-130
108-86-1	Bromobenzene	5	4.9	98	70-130
74-97-5	Bromochloromethane	5	5.2	104	70-130
75-27-4	Bromodichloromethane	5	5.4	108	70-130
75-25-2	Bromoform	5	5.7	114	70-130
74-83-9	Bromomethane	2	1.4	70	70-130
104-51-8	n-Butylbenzene	5	4.7	94	70-130
135-98-8	sec-Butylbenzene	5	4.7	94	70-130
98-06-6	tert-Butylbenzene	5	4.5	90	70-130
75-15-0	Carbon disulfide	5	4.9	98	70-130
108-90-7	Chlorobenzene	5	4.8	96	70-130
75-00-3	Chloroethane	2	1.4	70	70-130
67-66-3	Chloroform	5	5.0	100	70-130
74-87-3	Chloromethane	2	1.5	75	70-130
95-49-8	o-Chlorotoluene	5	4.7	94	70-130
106-43-4	p-Chlorotoluene	5	4.7	94	70-130
56-23-5	Carbon tetrachloride	5	5.3	106	70-130
75-34-3	1,1-Dichloroethane	5	5.0	100	70-130
75-35-4	1,1-Dichloroethylene	5	4.8	96	70-130
563-58-6	1,1-Dichloropropene	5	4.7	94	70-130
96-12-8	1,2-Dibromo-3-chloropropane	5	5.0	100	70-130
106-93-4	1,2-Dibromoethane	5	4.7	94	70-130
107-06-2	1,2-Dichloroethane	5	4.8	96	70-130
78-87-5	1,2-Dichloropropane	5	4.8	96	70-130
142-28-9	1,3-Dichloropropane	5	4.8	96	70-130
594-20-7	2,2-Dichloropropane	5	5.0	100	70-130
124-48-1	Dibromochloromethane	5	5.5	110	70-130
74-95-3	Dibromomethane	5	5.1	102	70-130
75-71-8	Dichlorodifluoromethane	2	1.5	75	70-130
541-73-1	m-Dichlorobenzene	5	4.9	98	70-130
95-50-1	o-Dichlorobenzene	5	4.9	98	70-130
106-46-7	p-Dichlorobenzene	5	4.8	96	70-130
156-60-5	trans-1,2-Dichloroethylene	5	4.7	94	70-130
156-59-2	cis-1,2-Dichloroethylene	5	4.9	98	70-130

* = Outside of Control Limits.

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Blank Spike Summary

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Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5331-BS	1B111862.D	1	09/28/17	BK	n/a	n/a	V1B5331

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC51755-1, JC51755-2, JC51755-3, JC51755-4, JC51755-5, JC51755-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
10061-01-5	cis-1,3-Dichloropropene	5	4.8	96	70-130
10061-02-6	trans-1,3-Dichloropropene	5	4.9	98	70-130
100-41-4	Ethylbenzene	5	4.7	94	70-130
87-68-3	Hexachlorobutadiene	5	5.0	100	70-130
591-78-6	2-Hexanone	20	18.2	91	70-130
98-82-8	Isopropylbenzene	5	4.5	90	70-130
99-87-6	p-Isopropyltoluene	5	4.7	94	70-130
75-09-2	Methylene chloride	5	4.9	98	70-130
1634-04-4	Methyl Tert Butyl Ether	5	4.6	92	70-130
108-10-1	4-Methyl-2-pentanone	20	18.2	91	70-130
91-20-3	Naphthalene	5	4.5	90	70-130
103-65-1	n-Propylbenzene	5	4.7	94	70-130
100-42-5	Styrene	5	4.6	92	70-130
630-20-6	1,1,1,2-Tetrachloroethane	5	5.0	100	70-130
71-55-6	1,1,1-Trichloroethane	5	5.0	100	70-130
79-34-5	1,1,2,2-Tetrachloroethane	5	4.8	96	70-130
79-00-5	1,1,2-Trichloroethane	5	4.9	98	70-130
87-61-6	1,2,3-Trichlorobenzene	5	4.7	94	70-130
96-18-4	1,2,3-Trichloropropane	5	4.9	98	70-130
120-82-1	1,2,4-Trichlorobenzene	5	4.7	94	70-130
95-63-6	1,2,4-Trimethylbenzene	5	4.7	94	70-130
108-67-8	1,3,5-Trimethylbenzene	5	4.7	94	70-130
127-18-4	Tetrachloroethylene	5	5.0	100	70-130
108-88-3	Toluene	5	4.5	90	70-130
79-01-6	Trichloroethylene	5	4.8	96	70-130
75-69-4	Trichlorofluoromethane	2	1.5	75	70-130
75-01-4	Vinyl chloride	2	1.5	75	70-130
	m,p-Xylene	10	9.4	94	70-130
95-47-6	o-Xylene	5	4.7	94	70-130
1330-20-7	Xylenes (total)	15	14.1	94	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
2199-69-1	1,2-Dichlorobenzene-d4	101%	70-130%
460-00-4	4-Bromofluorobenzene	94%	70-130%

* = Outside of Control Limits.

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Blank Spike Summary

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Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5333-BS	1B111897.D	1	09/29/17	BK	n/a	n/a	V1B5333

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC51755-7, JC51755-8, JC51755-9, JC51755-10

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	20	21.1	106	70-130
78-93-3	2-Butanone	20	18.9	95	70-130
71-43-2	Benzene	5	4.9	98	70-130
108-86-1	Bromobenzene	5	4.8	96	70-130
74-97-5	Bromochloromethane	5	5.4	108	70-130
75-27-4	Bromodichloromethane	5	5.4	108	70-130
75-25-2	Bromoform	5	5.6	112	70-130
74-83-9	Bromomethane	2	1.5	75	70-130
104-51-8	n-Butylbenzene	5	4.4	88	70-130
135-98-8	sec-Butylbenzene	5	4.5	90	70-130
98-06-6	tert-Butylbenzene	5	4.2	84	70-130
75-15-0	Carbon disulfide	5	5.1	102	70-130
108-90-7	Chlorobenzene	5	4.9	98	70-130
75-00-3	Chloroethane	2	1.5	75	70-130
67-66-3	Chloroform	5	5.2	104	70-130
74-87-3	Chloromethane	2	1.6	80	70-130
95-49-8	o-Chlorotoluene	5	4.7	94	70-130
106-43-4	p-Chlorotoluene	5	4.6	92	70-130
56-23-5	Carbon tetrachloride	5	5.5	110	70-130
75-34-3	1,1-Dichloroethane	5	5.2	104	70-130
75-35-4	1,1-Dichloroethylene	5	4.9	98	70-130
563-58-6	1,1-Dichloropropene	5	4.6	92	70-130
96-12-8	1,2-Dibromo-3-chloropropane	5	5.0	100	70-130
106-93-4	1,2-Dibromoethane	5	4.7	94	70-130
107-06-2	1,2-Dichloroethane	5	5.0	100	70-130
78-87-5	1,2-Dichloropropane	5	5.0	100	70-130
142-28-9	1,3-Dichloropropane	5	5.0	100	70-130
594-20-7	2,2-Dichloropropane	5	5.3	106	70-130
124-48-1	Dibromochloromethane	5	5.5	110	70-130
74-95-3	Dibromomethane	5	5.2	104	70-130
75-71-8	Dichlorodifluoromethane	2	1.7	85	70-130
541-73-1	m-Dichlorobenzene	5	5.1	102	70-130
95-50-1	o-Dichlorobenzene	5	4.9	98	70-130
106-46-7	p-Dichlorobenzene	5	4.8	96	70-130
156-60-5	trans-1,2-Dichloroethylene	5	5.0	100	70-130
156-59-2	cis-1,2-Dichloroethylene	5	5.3	106	70-130

* = Outside of Control Limits.

Blank Spike Summary

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Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1B5333-BS	1B111897.D	1	09/29/17	BK	n/a	n/a	V1B5333

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC51755-7, JC51755-8, JC51755-9, JC51755-10

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
10061-01-5	cis-1,3-Dichloropropene	5	4.4	88	70-130
10061-02-6	trans-1,3-Dichloropropene	5	4.7	94	70-130
100-41-4	Ethylbenzene	5	4.5	90	70-130
87-68-3	Hexachlorobutadiene	5	5.1	102	70-130
591-78-6	2-Hexanone	20	17.4	87	70-130
98-82-8	Isopropylbenzene	5	4.2	84	70-130
99-87-6	p-Isopropyltoluene	5	4.4	88	70-130
75-09-2	Methylene chloride	5	5.1	102	70-130
1634-04-4	Methyl Tert Butyl Ether	5	4.5	90	70-130
108-10-1	4-Methyl-2-pentanone	20	18.3	92	70-130
91-20-3	Naphthalene	5	4.1	82	70-130
103-65-1	n-Propylbenzene	5	4.5	90	70-130
100-42-5	Styrene	5	4.4	88	70-130
630-20-6	1,1,1,2-Tetrachloroethane	5	5.2	104	70-130
71-55-6	1,1,1-Trichloroethane	5	5.2	104	70-130
79-34-5	1,1,2,2-Tetrachloroethane	5	5.0	100	70-130
79-00-5	1,1,2-Trichloroethane	5	5.1	102	70-130
87-61-6	1,2,3-Trichlorobenzene	5	4.6	92	70-130
96-18-4	1,2,3-Trichloropropane	5	5.0	100	70-130
120-82-1	1,2,4-Trichlorobenzene	5	4.4	88	70-130
95-63-6	1,2,4-Trimethylbenzene	5	4.6	92	70-130
108-67-8	1,3,5-Trimethylbenzene	5	4.6	92	70-130
127-18-4	Tetrachloroethylene	5	5.1	102	70-130
108-88-3	Toluene	5	4.5	90	70-130
79-01-6	Trichloroethylene	5	4.9	98	70-130
75-69-4	Trichlorofluoromethane	2	1.6	80	70-130
75-01-4	Vinyl chloride	2	1.5	75	70-130
	m,p-Xylene	10	9.0	90	70-130
95-47-6	o-Xylene	5	4.4	88	70-130
1330-20-7	Xylenes (total)	15	13.5	90	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
2199-69-1	1,2-Dichlorobenzene-d4	104%	70-130%
460-00-4	4-Bromofluorobenzene	91%	70-130%

* = Outside of Control Limits.

Blank Spike Summary

Page 1 of 1

Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3A6789-BS	3A157675.D	1	09/28/17	PR	n/a	n/a	V3A6789

The QC reported here applies to the following samples:

Method: SW846 8260C BY SIM

JC51755-1, JC51755-2, JC51755-3, JC51755-4, JC51755-5, JC51755-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
123-91-1	1,4-Dioxane	20	17.4	87	58-138

CAS No.	Surrogate Recoveries	BSP	Limits
17647-74-4	1,4-Dioxane-d8	90%	51-175%

* = Outside of Control Limits.

5.2.3
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Blank Spike Summary

Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3A6790-BS	3A157709.D	1	09/29/17	PR	n/a	n/a	V3A6790

The QC reported here applies to the following samples:

Method: SW846 8260C BY SIM

JC51755-7, JC51755-8, JC51755-9, JC51755-10

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
123-91-1	1,4-Dioxane	20	21.4	107	58-138

CAS No.	Surrogate Recoveries	BSP	Limits
17647-74-4	1,4-Dioxane-d8	112%	51-175%

* = Outside of Control Limits.

Matrix Spike Summary

Page 1 of 2

Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC51755-1MS	1B111872.D	1	09/28/17	BK	n/a	n/a	V1B5331
JC51755-1	1B111863.D	1	09/28/17	BK	n/a	n/a	V1B5331

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC51755-1, JC51755-2, JC51755-3, JC51755-4, JC51755-5, JC51755-6

CAS No.	Compound	JC51755-1 ug/l	Spike Q	MS ug/l	MS %	Limits
67-64-1	Acetone	ND	20	20.5	103	41-142
78-93-3	2-Butanone	ND	20	16.8	84	55-129
71-43-2	Benzene	ND	5	4.5	90	53-138
108-86-1	Bromobenzene	ND	5	4.4	88	54-138
74-97-5	Bromochloromethane	ND	5	4.8	96	55-140
75-27-4	Bromodichloromethane	ND	5	4.8	96	57-147
75-25-2	Bromoform	ND	5	4.7	94	47-137
74-83-9	Bromomethane	ND	2	1.7	85	40-162
104-51-8	n-Butylbenzene	ND	5	4.2	84	45-144
135-98-8	sec-Butylbenzene	ND	5	4.3	86	46-145
98-06-6	tert-Butylbenzene	ND	5	4.1	82	48-141
75-15-0	Carbon disulfide	ND	5	4.6	92	35-127
108-90-7	Chlorobenzene	ND	5	4.4	88	54-135
75-00-3	Chloroethane	ND	2	1.8	90	38-153
67-66-3	Chloroform	ND	5	4.5	90	57-151
74-87-3	Chloromethane	ND	2	1.9	95	39-165
95-49-8	o-Chlorotoluene	ND	5	4.2	84	55-142
106-43-4	p-Chlorotoluene	ND	5	4.2	84	55-139
56-23-5	Carbon tetrachloride	ND	5	5.1	102	49-170
75-34-3	1,1-Dichloroethane	0.18	J	4.9	94	55-149
75-35-4	1,1-Dichloroethylene	7.8	5	11.0	64	42-142
563-58-6	1,1-Dichloropropene	ND	5	4.5	90	46-151
96-12-8	1,2-Dibromo-3-chloropropane	ND	5	4.4	88	48-141
106-93-4	1,2-Dibromoethane	ND	5	4.2	84	57-135
107-06-2	1,2-Dichloroethane	ND	5	4.6	92	59-166
78-87-5	1,2-Dichloropropane	ND	5	4.4	88	53-142
142-28-9	1,3-Dichloropropane	ND	5	4.5	90	58-143
594-20-7	2,2-Dichloropropane	ND	5	4.8	96	38-165
124-48-1	Dibromochloromethane	ND	5	4.8	96	55-138
74-95-3	Dibromomethane	ND	5	4.5	90	61-144
75-71-8	Dichlorodifluoromethane	ND	2	2.0	100	23-172
541-73-1	m-Dichlorobenzene	ND	5	4.5	90	53-138
95-50-1	o-Dichlorobenzene	ND	5	4.4	88	54-140
106-46-7	p-Dichlorobenzene	ND	5	4.4	88	53-137
156-60-5	trans-1,2-Dichloroethylene	ND	5	5.0	100	47-148
156-59-2	cis-1,2-Dichloroethylene	ND	5	4.8	96	51-146

* = Outside of Control Limits.

5.3.1
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Matrix Spike Summary

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Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC51755-1MS	1B111872.D	1	09/28/17	BK	n/a	n/a	V1B5331
JC51755-1	1B111863.D	1	09/28/17	BK	n/a	n/a	V1B5331

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC51755-1, JC51755-2, JC51755-3, JC51755-4, JC51755-5, JC51755-6

CAS No.	Compound	JC51755-1 ug/l	Spike Q	MS ug/l	MS %	Limits
10061-01-5	cis-1,3-Dichloropropene	ND	5	4.0	80	51-136
10061-02-6	trans-1,3-Dichloropropene	ND	5	4.2	84	54-142
100-41-4	Ethylbenzene	ND	5	4.2	84	51-138
87-68-3	Hexachlorobutadiene	ND	5	4.6	92	40-154
591-78-6	2-Hexanone	ND	20	15.7	79	53-128
98-82-8	Isopropylbenzene	ND	5	4.1	82	49-139
99-87-6	p-Isopropyltoluene	ND	5	4.2	84	45-141
75-09-2	Methylene chloride	ND	5	4.7	94	54-137
1634-04-4	Methyl Tert Butyl Ether	ND	5	4.1	82	53-143
108-10-1	4-Methyl-2-pentanone	ND	20	16.1	81	58-127
91-20-3	Naphthalene	ND	5	3.8	76	44-140
103-65-1	n-Propylbenzene	ND	5	4.3	86	50-142
100-42-5	Styrene	ND	5	4.0	80	23-130
630-20-6	1,1,1,2-Tetrachloroethane	ND	5	4.5	90	57-144
71-55-6	1,1,1-Trichloroethane	0.41	J	5.2	96	52-164
79-34-5	1,1,2,2-Tetrachloroethane	ND	5	4.4	88	58-138
79-00-5	1,1,2-Trichloroethane	ND	5	4.5	90	59-139
87-61-6	1,2,3-Trichlorobenzene	ND	5	4.2	84	47-141
96-18-4	1,2,3-Trichloropropane	ND	5	4.5	90	56-148
120-82-1	1,2,4-Trichlorobenzene	ND	5	4.1	82	46-137
95-63-6	1,2,4-Trimethylbenzene	ND	5	4.1	82	41-138
108-67-8	1,3,5-Trimethylbenzene	ND	5	4.2	84	45-138
127-18-4	Tetrachloroethylene	ND	5	4.8	96	45-145
108-88-3	Toluene	ND	5	4.2	84	52-134
79-01-6	Trichloroethylene	ND	5	4.6	92	54-143
75-69-4	Trichlorofluoromethane	ND	2	1.9	95	36-167
75-01-4	Vinyl chloride	ND	2	1.8	90	35-162
	m,p-Xylene	ND	10	8.5	85	49-135
95-47-6	o-Xylene	ND	5	4.2	84	49-134
1330-20-7	Xylenes (total)	ND	15	12.7	85	50-134

CAS No.	Surrogate Recoveries	MS	JC51755-1	Limits
2199-69-1	1,2-Dichlorobenzene-d4	104%	96%	70-130%
460-00-4	4-Bromofluorobenzene	95%	93%	70-130%

* = Outside of Control Limits.

5.3.1
5

Matrix Spike Summary

Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC51755-7MS	1B111905.D	1	09/29/17	BK	n/a	n/a	V1B5333
JC51755-7	1B111899.D	1	09/29/17	BK	n/a	n/a	V1B5333

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC51755-7, JC51755-8, JC51755-9, JC51755-10

CAS No.	Compound	JC51755-7 ug/l	Spike Q	MS ug/l	MS %	Limits
67-64-1	Acetone	ND	20	20.7	104	41-142
78-93-3	2-Butanone	ND	20	17.4	87	55-129
71-43-2	Benzene	ND	5	3.9	78	53-138
108-86-1	Bromobenzene	ND	5	4.1	82	54-138
74-97-5	Bromochloromethane	ND	5	4.4	88	55-140
75-27-4	Bromodichloromethane	ND	5	4.5	90	57-147
75-25-2	Bromoform	ND	5	5.2	104	47-137
74-83-9	Bromomethane	ND	2	1.7	85	40-162
104-51-8	n-Butylbenzene	ND	5	3.4	68	45-144
135-98-8	sec-Butylbenzene	ND	5	3.5	70	46-145
98-06-6	tert-Butylbenzene	ND	5	3.3	66	48-141
75-15-0	Carbon disulfide	ND	5	4.1	82	35-127
108-90-7	Chlorobenzene	ND	5	4.0	80	54-135
75-00-3	Chloroethane	ND	2	1.7	85	38-153
67-66-3	Chloroform	0.36	J	4.4	81	57-151
74-87-3	Chloromethane	ND	2	1.9	95	39-165
95-49-8	o-Chlorotoluene	ND	5	3.8	76	55-142
106-43-4	p-Chlorotoluene	ND	5	3.8	76	55-139
56-23-5	Carbon tetrachloride	ND	5	4.5	90	49-170
75-34-3	1,1-Dichloroethane	ND	5	4.2	84	55-149
75-35-4	1,1-Dichloroethylene	ND	5	4.1	82	42-142
563-58-6	1,1-Dichloropropene	ND	5	3.7	74	46-151
96-12-8	1,2-Dibromo-3-chloropropane	ND	5	5.0	100	48-141
106-93-4	1,2-Dibromoethane	ND	5	4.2	84	57-135
107-06-2	1,2-Dichloroethane	ND	5	4.2	84	59-166
78-87-5	1,2-Dichloropropane	ND	5	4.1	82	53-142
142-28-9	1,3-Dichloropropane	ND	5	4.5	90	58-143
594-20-7	2,2-Dichloropropane	ND	5	4.3	86	38-165
124-48-1	Dibromochloromethane	ND	5	4.9	98	55-138
74-95-3	Dibromomethane	ND	5	4.5	90	61-144
75-71-8	Dichlorodifluoromethane	ND	2	2.0	100	23-172
541-73-1	m-Dichlorobenzene	ND	5	4.3	86	53-138
95-50-1	o-Dichlorobenzene	ND	5	4.3	86	54-140
106-46-7	p-Dichlorobenzene	ND	5	4.1	82	53-137
156-60-5	trans-1,2-Dichloroethylene	ND	5	4.1	82	47-148
156-59-2	cis-1,2-Dichloroethylene	ND	5	3.9	78	51-146

* = Outside of Control Limits.

Matrix Spike Summary

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Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC51755-7MS	1B111905.D	1	09/29/17	BK	n/a	n/a	V1B5333
JC51755-7	1B111899.D	1	09/29/17	BK	n/a	n/a	V1B5333

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC51755-7, JC51755-8, JC51755-9, JC51755-10

CAS No.	Compound	JC51755-7 ug/l	Spike Q	MS ug/l	MS %	Limits
10061-01-5	cis-1,3-Dichloropropene	ND	5	3.5	70	51-136
10061-02-6	trans-1,3-Dichloropropene	ND	5	4.1	82	54-142
100-41-4	Ethylbenzene	ND	5	3.6	72	51-138
87-68-3	Hexachlorobutadiene	ND	5	4.2	84	40-154
591-78-6	2-Hexanone	ND	20	16.6	83	53-128
98-82-8	Isopropylbenzene	ND	5	3.2	64	49-139
99-87-6	p-Isopropyltoluene	ND	5	3.5	70	45-141
75-09-2	Methylene chloride	ND	5	4.0	80	54-137
1634-04-4	Methyl Tert Butyl Ether	0.50	5	4.0	70	53-143
108-10-1	4-Methyl-2-pentanone	ND	20	17.4	87	58-127
91-20-3	Naphthalene	ND	5	3.7	74	44-140
103-65-1	n-Propylbenzene	ND	5	3.7	74	50-142
100-42-5	Styrene	ND	5	3.5	70	23-130
630-20-6	1,1,1,2-Tetrachloroethane	ND	5	4.4	88	57-144
71-55-6	1,1,1-Trichloroethane	ND	5	4.2	84	52-164
79-34-5	1,1,2,2-Tetrachloroethane	ND	5	4.9	98	58-138
79-00-5	1,1,2-Trichloroethane	ND	5	4.5	90	59-139
87-61-6	1,2,3-Trichlorobenzene	ND	5	3.9	78	47-141
96-18-4	1,2,3-Trichloropropane	ND	5	4.9	98	56-148
120-82-1	1,2,4-Trichlorobenzene	ND	5	3.6	72	46-137
95-63-6	1,2,4-Trimethylbenzene	ND	5	3.5	70	41-138
108-67-8	1,3,5-Trimethylbenzene	ND	5	3.6	72	45-138
127-18-4	Tetrachloroethylene	ND	5	4.0	80	45-145
108-88-3	Toluene	ND	5	3.5	70	52-134
79-01-6	Trichloroethylene	ND	5	4.0	80	54-143
75-69-4	Trichlorofluoromethane	ND	2	1.8	90	36-167
75-01-4	Vinyl chloride	ND	2	1.8	90	35-162
	m,p-Xylene	ND	10	7.1	71	49-135
95-47-6	o-Xylene	ND	5	3.5	70	49-134
1330-20-7	Xylenes (total)	ND	15	10.7	71	50-134

CAS No.	Surrogate Recoveries	MS	JC51755-7	Limits
2199-69-1	1,2-Dichlorobenzene-d4	105%	91%	70-130%
460-00-4	4-Bromofluorobenzene	88%	81%	70-130%

* = Outside of Control Limits.

5.3.2
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Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC51496-1MS	3A157688.D	1	09/28/17	PR	n/a	n/a	V3A6789
JC51496-1MSD	3A157689.D	1	09/28/17	PR	n/a	n/a	V3A6789
JC51496-1	3A157680.D	1	09/28/17	PR	n/a	n/a	V3A6789

The QC reported here applies to the following samples:

Method: SW846 8260C BY SIM

JC51755-1, JC51755-2, JC51755-3, JC51755-4, JC51755-5, JC51755-6

CAS No.	Compound	JC51496-1		Spike	MS	MS	Spike	MSD	MSD	RPD	Limits Rec/RPD
		ug/l	Q	ug/l	ug/l	%	ug/l	ug/l	%		
123-91-1	1,4-Dioxane	11.2		20	32.5	107	20	32.9	109	1	36-166/26

CAS No.	Surrogate Recoveries	MS	MSD	JC51496-1	Limits
17647-74-4	1,4-Dioxane-d8	116%	116%	122%	51-175%

* = Outside of Control Limits.

5.4.1
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Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC51789-2MS	3A157724.D	1	09/29/17	PR	n/a	n/a	V3A6790
JC51789-2MSD	3A157725.D	1	09/29/17	PR	n/a	n/a	V3A6790
JC51789-2	3A157715.D	1	09/29/17	PR	n/a	n/a	V3A6790

The QC reported here applies to the following samples:

Method: SW846 8260C BY SIM

JC51755-7, JC51755-8, JC51755-9, JC51755-10

CAS No.	Compound	JC51789-2		Spike	MS	MS	Spike	MSD	MSD	RPD	Limits Rec/RPD
		ug/l	Q	ug/l	ug/l	%	ug/l	ug/l	%		
123-91-1	1,4-Dioxane	5.2		20	38.2	165	20	37.6	162	2	36-166/26

CAS No.	Surrogate Recoveries	MS	MSD	JC51789-2	Limits
17647-74-4	1,4-Dioxane-d8	163%	156%	128%	51-175%

* = Outside of Control Limits.

Duplicate Summary

Page 1 of 3

Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC51755-2DUP	1B111871.D	1	09/28/17	BK	n/a	n/a	V1B5331
JC51755-2	1B111864.D	1	09/28/17	BK	n/a	n/a	V1B5331

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC51755-1, JC51755-2, JC51755-3, JC51755-4, JC51755-5, JC51755-6

CAS No.	Compound	JC51755-2		Q	RPD	Limits	
		ug/l	ug/l				
67-64-1	Acetone	ND	ND	nc	10		
78-93-3	2-Butanone	ND	ND	nc	12		
71-43-2	Benzene	ND	ND	nc	10		
108-86-1	Bromobenzene	ND	ND	nc	10		
74-97-5	Bromochloromethane	ND	ND	nc	10		
75-27-4	Bromodichloromethane	ND	ND	nc	10		
75-25-2	Bromoform	ND	ND	nc	10		
74-83-9	Bromomethane	ND	ND	nc	10		
104-51-8	n-Butylbenzene	ND	ND	nc	10		
135-98-8	sec-Butylbenzene	ND	ND	nc	10		
98-06-6	tert-Butylbenzene	ND	ND	nc	10		
75-15-0	Carbon disulfide	ND	ND	nc	19		
108-90-7	Chlorobenzene	ND	ND	nc	10		
75-00-3	Chloroethane	ND	ND	nc	10		
67-66-3	Chloroform	ND	ND	nc	12		
74-87-3	Chloromethane	ND	ND	nc	10		
95-49-8	o-Chlorotoluene	ND	ND	nc	10		
106-43-4	p-Chlorotoluene	ND	ND	nc	10		
56-23-5	Carbon tetrachloride	ND	ND	nc	10		
75-34-3	1,1-Dichloroethane	0.15	J	0.19	J	24* a	10
75-35-4	1,1-Dichloroethylene	7.0		7.8		11* a	10
563-58-6	1,1-Dichloropropene	ND	ND	nc	10		
96-12-8	1,2-Dibromo-3-chloropropane	ND	ND	nc	10		
106-93-4	1,2-Dibromoethane	ND	ND	nc	10		
107-06-2	1,2-Dichloroethane	ND	ND	nc	10		
78-87-5	1,2-Dichloropropane	ND	ND	nc	10		
142-28-9	1,3-Dichloropropane	ND	ND	nc	10		
594-20-7	2,2-Dichloropropane	ND	ND	nc	10		
124-48-1	Dibromochloromethane	ND	ND	nc	10		
74-95-3	Dibromomethane	ND	ND	nc	10		
75-71-8	Dichlorodifluoromethane	ND	ND	nc	10		
541-73-1	m-Dichlorobenzene	ND	ND	nc	10		
95-50-1	o-Dichlorobenzene	ND	ND	nc	10		
106-46-7	p-Dichlorobenzene	ND	ND	nc	10		
156-60-5	trans-1,2-Dichloroethylene	ND	ND	nc	10		
156-59-2	cis-1,2-Dichloroethylene	ND	ND	nc	10		

* = Outside of Control Limits.

5.5.1
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Duplicate Summary

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Job Number: JC51755
 Account: ESCVAR WSP Environment & Energy
 Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC51755-2DUP	1B111871.D	1	09/28/17	BK	n/a	n/a	V1B5331
JC51755-2	1B111864.D	1	09/28/17	BK	n/a	n/a	V1B5331

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC51755-1, JC51755-2, JC51755-3, JC51755-4, JC51755-5, JC51755-6

CAS No.	Compound	JC51755-2		Q	RPD	Limits	
		ug/l	ug/l				
10061-01-5	cis-1,3-Dichloropropene	ND	ND	nc	10		
10061-02-6	trans-1,3-Dichloropropene	ND	ND	nc	10		
100-41-4	Ethylbenzene	ND	ND	nc	10		
87-68-3	Hexachlorobutadiene	ND	ND	nc	10		
591-78-6	2-Hexanone	ND	ND	nc	10		
98-82-8	Isopropylbenzene	ND	ND	nc	10		
99-87-6	p-Isopropyltoluene	ND	ND	nc	10		
75-09-2	Methylene chloride	ND	ND	nc	10		
1634-04-4	Methyl Tert Butyl Ether	ND	ND	nc	10		
108-10-1	4-Methyl-2-pentanone	ND	ND	nc	10		
91-20-3	Naphthalene	ND	ND	nc	10		
103-65-1	n-Propylbenzene	ND	ND	nc	10		
100-42-5	Styrene	ND	ND	nc	10		
630-20-6	1,1,1,2-Tetrachloroethane	ND	ND	nc	10		
71-55-6	1,1,1-Trichloroethane	0.40	J	0.43	J	7	10
79-34-5	1,1,2,2-Tetrachloroethane	ND	ND	nc	10		
79-00-5	1,1,2-Trichloroethane	ND	ND	nc	10		
87-61-6	1,2,3-Trichlorobenzene	ND	ND	nc	10		
96-18-4	1,2,3-Trichloropropane	ND	ND	nc	10		
120-82-1	1,2,4-Trichlorobenzene	ND	ND	nc	10		
95-63-6	1,2,4-Trimethylbenzene	ND	ND	nc	10		
108-67-8	1,3,5-Trimethylbenzene	ND	ND	nc	10		
127-18-4	Tetrachloroethylene	ND	ND	nc	10		
108-88-3	Toluene	ND	ND	nc	10		
79-01-6	Trichloroethylene	ND	ND	nc	10		
75-69-4	Trichlorofluoromethane	ND	ND	nc	10		
75-01-4	Vinyl chloride	ND	ND	nc	10		
	m,p-Xylene	ND	ND	nc	10		
95-47-6	o-Xylene	ND	ND	nc	10		
1330-20-7	Xylenes (total)	ND	ND	nc	10		

CAS No.	Surrogate Recoveries	DUP	JC51755-2	Limits
2199-69-1	1,2-Dichlorobenzene-d4	95%	97%	70-130%
460-00-4	4-Bromofluorobenzene	90%	92%	70-130%

* = Outside of Control Limits.

5.5.1
5

Duplicate Summary

Page 3 of 3

Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC51755-2DUP	1B111871.D	1	09/28/17	BK	n/a	n/a	V1B5331
JC51755-2	1B111864.D	1	09/28/17	BK	n/a	n/a	V1B5331

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC51755-1, JC51755-2, JC51755-3, JC51755-4, JC51755-5, JC51755-6

(a) Outside in house control limits.

* = Outside of Control Limits.

Duplicate Summary

Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC51755-8DUP	1B111906.D	1	09/29/17	BK	n/a	n/a	V1B5333
JC51755-8	1B111900.D	1	09/29/17	BK	n/a	n/a	V1B5333

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC51755-7, JC51755-8, JC51755-9, JC51755-10

CAS No.	Compound	JC51755-8		Q	RPD	Limits
		ug/l	DUP ug/l			
67-64-1	Acetone	ND	ND	nc	10	
78-93-3	2-Butanone	ND	ND	nc	12	
71-43-2	Benzene	ND	ND	nc	10	
108-86-1	Bromobenzene	ND	ND	nc	10	
74-97-5	Bromochloromethane	ND	ND	nc	10	
75-27-4	Bromodichloromethane	ND	ND	nc	10	
75-25-2	Bromoform	ND	ND	nc	10	
74-83-9	Bromomethane	ND	ND	nc	10	
104-51-8	n-Butylbenzene	ND	ND	nc	10	
135-98-8	sec-Butylbenzene	ND	ND	nc	10	
98-06-6	tert-Butylbenzene	ND	ND	nc	10	
75-15-0	Carbon disulfide	ND	ND	nc	19	
108-90-7	Chlorobenzene	ND	ND	nc	10	
75-00-3	Chloroethane	ND	ND	nc	10	
67-66-3	Chloroform	0.36	J 0.39	J	8	12
74-87-3	Chloromethane	ND	ND	nc	10	
95-49-8	o-Chlorotoluene	ND	ND	nc	10	
106-43-4	p-Chlorotoluene	ND	ND	nc	10	
56-23-5	Carbon tetrachloride	ND	ND	nc	10	
75-34-3	1,1-Dichloroethane	ND	ND	nc	10	
75-35-4	1,1-Dichloroethylene	ND	ND	nc	10	
563-58-6	1,1-Dichloropropene	ND	ND	nc	10	
96-12-8	1,2-Dibromo-3-chloropropane	ND	ND	nc	10	
106-93-4	1,2-Dibromoethane	ND	ND	nc	10	
107-06-2	1,2-Dichloroethane	ND	ND	nc	10	
78-87-5	1,2-Dichloropropane	ND	ND	nc	10	
142-28-9	1,3-Dichloropropane	ND	ND	nc	10	
594-20-7	2,2-Dichloropropane	ND	ND	nc	10	
124-48-1	Dibromochloromethane	ND	ND	nc	10	
74-95-3	Dibromomethane	ND	ND	nc	10	
75-71-8	Dichlorodifluoromethane	ND	ND	nc	10	
541-73-1	m-Dichlorobenzene	ND	ND	nc	10	
95-50-1	o-Dichlorobenzene	ND	ND	nc	10	
106-46-7	p-Dichlorobenzene	ND	ND	nc	10	
156-60-5	trans-1,2-Dichloroethylene	ND	ND	nc	10	
156-59-2	cis-1,2-Dichloroethylene	ND	ND	nc	10	

* = Outside of Control Limits.

Duplicate Summary

Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC51755-8DUP	1B111906.D	1	09/29/17	BK	n/a	n/a	V1B5333
JC51755-8	1B111900.D	1	09/29/17	BK	n/a	n/a	V1B5333

The QC reported here applies to the following samples:

Method: EPA 524.2 REV 4.1

JC51755-7, JC51755-8, JC51755-9, JC51755-10

CAS No.	Compound	JC51755-8		Q	RPD	Limits
		ug/l	ug/l			
10061-01-5	cis-1,3-Dichloropropene	ND	ND	nc	10	
10061-02-6	trans-1,3-Dichloropropene	ND	ND	nc	10	
100-41-4	Ethylbenzene	ND	ND	nc	10	
87-68-3	Hexachlorobutadiene	ND	ND	nc	10	
591-78-6	2-Hexanone	ND	ND	nc	10	
98-82-8	Isopropylbenzene	ND	ND	nc	10	
99-87-6	p-Isopropyltoluene	ND	ND	nc	10	
75-09-2	Methylene chloride	ND	ND	nc	10	
1634-04-4	Methyl Tert Butyl Ether	0.37	J	0.41	J	10
108-10-1	4-Methyl-2-pentanone	ND	ND	nc	10	
91-20-3	Naphthalene	ND	ND	nc	10	
103-65-1	n-Propylbenzene	ND	ND	nc	10	
100-42-5	Styrene	ND	ND	nc	10	
630-20-6	1,1,1,2-Tetrachloroethane	ND	ND	nc	10	
71-55-6	1,1,1-Trichloroethane	ND	ND	nc	10	
79-34-5	1,1,2,2-Tetrachloroethane	ND	ND	nc	10	
79-00-5	1,1,2-Trichloroethane	ND	ND	nc	10	
87-61-6	1,2,3-Trichlorobenzene	ND	ND	nc	10	
96-18-4	1,2,3-Trichloropropane	ND	ND	nc	10	
120-82-1	1,2,4-Trichlorobenzene	ND	ND	nc	10	
95-63-6	1,2,4-Trimethylbenzene	ND	ND	nc	10	
108-67-8	1,3,5-Trimethylbenzene	ND	ND	nc	10	
127-18-4	Tetrachloroethylene	ND	ND	nc	10	
108-88-3	Toluene	ND	ND	nc	10	
79-01-6	Trichloroethylene	ND	ND	nc	10	
75-69-4	Trichlorofluoromethane	ND	ND	nc	10	
75-01-4	Vinyl chloride	ND	ND	nc	10	
	m,p-Xylene	ND	ND	nc	10	
95-47-6	o-Xylene	ND	ND	nc	10	
1330-20-7	Xylenes (total)	ND	ND	nc	10	

CAS No.	Surrogate Recoveries	DUP	JC51755-8	Limits
2199-69-1	1,2-Dichlorobenzene-d4	93%	93%	70-130%
460-00-4	4-Bromofluorobenzene	80%	79%	70-130%

* = Outside of Control Limits.

Instrument Performance Check (BFB)

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Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample: V1B5329-BFB
Lab File ID: 1B111819.D
Instrument ID: GCMS1B

Injection Date: 09/26/17
Injection Time: 10:17

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	14.99 - 40.0% of mass 95	3158	16.7	Pass
75	30.0 - 80.0% of mass 95	9257	48.9	Pass
95	Base peak, 100% relative abundance	18944	100.0	Pass
96	5.0 - 9.0% of mass 95	1411	7.45	Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) ^a Pass
174	50.0 - 120.0% of mass 95	14095	74.4	Pass
175	5.0 - 9.0% of mass 174	1059	5.59	(7.51) ^a Pass
176	95.0 - 101.0% of mass 174	13615	71.9	(96.6) ^a Pass
177	5.0 - 9.0% of mass 176	1047	5.53	(7.69) ^b Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V1B5329-IC5329	1B111820.D	09/26/17	11:02	00:45	Initial cal 0.2
V1B5329-IC5329	1B111821.D	09/26/17	11:34	01:17	Initial cal 0.5
V1B5329-IC5329	1B111822.D	09/26/17	12:05	01:48	Initial cal 1
V1B5329-IC5329	1B111823.D	09/26/17	12:37	02:20	Initial cal 2
V1B5329-IC5329	1B111824.D	09/26/17	13:09	02:52	Initial cal 5
V1B5329-ICC5329	1B111825.D	09/26/17	13:42	03:25	Initial cal 10
V1B5329-IC5329	1B111826.D	09/26/17	14:13	03:56	Initial cal 20
V1B5329-IC5329	1B111827.D	09/26/17	14:44	04:27	Initial cal 40
V1B5329-IC5329	1B111828.D	09/26/17	15:16	04:59	Initial cal 80
V1B5329-ICV5329	1B111831.D	09/26/17	16:50	06:33	Initial cal verification 10

Instrument Performance Check (BFB)

Page 1 of 1

Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample:	V1B5331-BFB	Injection Date:	09/28/17
Lab File ID:	1B111859.D	Injection Time:	08:05
Instrument ID:	GCMS1B		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	14.99 - 40.0% of mass 95	2750	16.9	Pass
75	30.0 - 80.0% of mass 95	7603	46.7	Pass
95	Base peak, 100% relative abundance	16272	100.0	Pass
96	5.0 - 9.0% of mass 95	1168	7.18	Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) ^a Pass
174	50.0 - 120.0% of mass 95	12922	79.4	Pass
175	5.0 - 9.0% of mass 174	974	5.99	(7.54) ^a Pass
176	95.0 - 101.0% of mass 174	12497	76.8	(96.7) ^a Pass
177	5.0 - 9.0% of mass 176	822	5.05	(6.58) ^b Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V1B5331-CC5329	1B111860.D	09/28/17	08:46	00:41	Continuing cal 5
V1B5331-MB	1B111861.D	09/28/17	09:26	01:21	Method Blank
V1B5331-BS	1B111862.D	09/28/17	09:57	01:52	Blank Spike
JC51755-1	1B111863.D	09/28/17	10:42	02:37	RW-12270CM-092517
JC51755-2	1B111864.D	09/28/17	11:13	03:08	RW-1000-092517
ZZZZZZ	1B111865.D	09/28/17	11:46	03:41	(unrelated sample)
ZZZZZZ	1B111866.D	09/28/17	12:17	04:12	(unrelated sample)
ZZZZZZ	1B111867.D	09/28/17	12:50	04:45	(unrelated sample)
ZZZZZZ	1B111868.D	09/28/17	13:21	05:16	(unrelated sample)
ZZZZZZ	1B111869.D	09/28/17	13:53	05:48	(unrelated sample)
ZZZZZZ	1B111870.D	09/28/17	14:25	06:20	(unrelated sample)
JC51755-2DUP	1B111871.D	09/28/17	14:57	06:52	Duplicate
JC51755-1MS	1B111872.D	09/28/17	15:29	07:24	Matrix Spike
ZZZZZZ	1B111873.D	09/28/17	16:00	07:55	(unrelated sample)
ZZZZZZ	1B111874.D	09/28/17	16:32	08:27	(unrelated sample)
JC51755-3	1B111875.D	09/28/17	17:03	08:58	TB-092517
JC51755-4	1B111876.D	09/28/17	17:35	09:30	RW-12270CM-092517-F
JC51755-5	1B111877.D	09/28/17	18:07	10:02	RW-1308RB-092517-F
JC51755-6	1B111878.D	09/28/17	18:39	10:34	RW-1308RB-092517
ZZZZZZ	1B111879.D	09/28/17	19:11	11:06	(unrelated sample)
ZZZZZZ	1B111880.D	09/28/17	19:42	11:37	(unrelated sample)

Instrument Performance Check (BFB)

Page 1 of 1

Job Number: JC51755
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample:	V1B5333-BFB	Injection Date:	09/29/17
Lab File ID:	1B111894.D	Injection Time:	09:11
Instrument ID:	GCMS1B		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	14.99 - 40.0% of mass 95	1930	16.4	Pass
75	30.0 - 80.0% of mass 95	5570	47.2	Pass
95	Base peak, 100% relative abundance	11803	100.0	Pass
96	5.0 - 9.0% of mass 95	826	7.00	Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) ^a Pass
174	50.0 - 120.0% of mass 95	9961	84.4	Pass
175	5.0 - 9.0% of mass 174	756	6.41	(7.59) ^a Pass
176	95.0 - 101.0% of mass 174	9526	80.7	(95.6) ^a Pass
177	5.0 - 9.0% of mass 176	627	5.31	(6.58) ^b Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V1B5333-CC5329	1B111895.D	09/29/17	09:46	00:35	Continuing cal 5
V1B5333-MB	1B111896.D	09/29/17	10:31	01:20	Method Blank
V1B5333-BS	1B111897.D	09/29/17	11:03	01:52	Blank Spike
ZZZZZZ	1B111898.D	09/29/17	11:47	02:36	(unrelated sample)
JC51755-7	1B111899.D	09/29/17	12:19	03:08	RW-1319LP-092517
JC51755-8	1B111900.D	09/29/17	12:50	03:39	RW-1317LP-092517-F
ZZZZZZ	1B111901.D	09/29/17	13:22	04:11	(unrelated sample)
ZZZZZZ	1B111902.D	09/29/17	13:53	04:42	(unrelated sample)
ZZZZZZ	1B111903.D	09/29/17	14:25	05:14	(unrelated sample)
ZZZZZZ	1B111904.D	09/29/17	14:56	05:45	(unrelated sample)
JC51755-7MS	1B111905.D	09/29/17	15:28	06:17	Matrix Spike
JC51755-8DUP	1B111906.D	09/29/17	15:59	06:48	Duplicate
ZZZZZZ	1B111907.D	09/29/17	16:31	07:20	(unrelated sample)
ZZZZZZ	1B111908.D	09/29/17	17:02	07:51	(unrelated sample)
ZZZZZZ	1B111909.D	09/29/17	17:34	08:23	(unrelated sample)
ZZZZZZ	1B111910.D	09/29/17	18:06	08:55	(unrelated sample)
ZZZZZZ	1B111911.D	09/29/17	18:38	09:27	(unrelated sample)
ZZZZZZ	1B111912.D	09/29/17	19:09	09:58	(unrelated sample)
JC51755-9	1B111913.D	09/29/17	19:41	10:30	RW-1317LP-092517
JC51755-10	1B111914.D	09/29/17	20:13	11:02	RW-7740TO-092517

Instrument Performance Check (BFB)

Job Number: JC51755
Account: ESCVAR WSP Environment & Energy
Project: Kop-Flex, Hanover, VA

Sample:	V3A6787-BFB	Injection Date:	09/27/17
Lab File ID:	3A157637.D	Injection Time:	09:47
Instrument ID:	GCMS3A		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	15.0 - 40.0% of mass 95	8122	18.0	Pass
75	30.0 - 60.0% of mass 95	22219	49.3	Pass
95	Base peak, 100% relative abundance	45101	100.0	Pass
96	5.0 - 9.0% of mass 95	2935	6.51	Pass
173	Less than 2.0% of mass 174	240	0.53	(0.74) ^a Pass
174	50.0 - 120.0% of mass 95	32469	72.0	Pass
175	5.0 - 9.0% of mass 174	2483	5.51	(7.65) ^a Pass
176	95.0 - 101.0% of mass 174	30872	68.5	(95.1) ^a Pass
177	5.0 - 9.0% of mass 176	2102	4.66	(6.81) ^b Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V3A6787-IC6787	3A157638.D	09/27/17	10:21	00:34	Initial cal 0.25
V3A6787-IC6787	3A157639.D	09/27/17	10:47	01:00	Initial cal 0.4
V3A6787-IC6787	3A157640.D	09/27/17	11:13	01:26	Initial cal 1
V3A6787-IC6787	3A157641.D	09/27/17	11:39	01:52	Initial cal 2
V3A6787-IC6787	3A157642.D	09/27/17	12:06	02:19	Initial cal 5
V3A6787-ICC6787	3A157643.D	09/27/17	12:32	02:45	Initial cal 20
V3A6787-IC6787	3A157644.D	09/27/17	12:58	03:11	Initial cal 50
V3A6787-IC6787	3A157645.D	09/27/17	13:24	03:37	Initial cal 100
V3A6787-IC6787	3A157646.D	09/27/17	13:49	04:02	Initial cal 200
V3A6787-ICV6787	3A157649.D	09/27/17	15:08	05:21	Initial cal verification 20
V3A6785-MB2	3A157651.D	09/27/17	16:00	06:13	Method Blank
V3A6788-MB	3A157651.D	09/27/17	16:00	06:13	Method Blank
V3A6785-BS2	3A157652.D	09/27/17	16:26	06:39	Blank Spike
V3A6788-BS	3A157652.D	09/27/17	16:26	06:39	Blank Spike
JC51376-1DUP	3A157654.D	09/27/17	17:18	07:31	Duplicate
ZZZZZZ	3A157655.D	09/27/17	17:43	07:56	(unrelated sample)
JC51376-4MS	3A157656.D	09/27/17	18:09	08:22	Matrix Spike
JC51468-2	3A157658.D	09/27/17	19:02	09:15	(used for QC only; not part of job JC51755)
ZZZZZZ	3A157659.D	09/27/17	19:28	09:41	(unrelated sample)
JC51468-5	3A157660.D	09/27/17	19:54	10:07	(used for QC only; not part of job JC51755)
JC51468-5DUP	3A157661.D	09/27/17	20:27	10:40	Duplicate
JC51468-2MS	3A157662.D	09/27/17	20:54	11:07	Matrix Spike

Instrument Performance Check (BFB)

Page 1 of 1

Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample: V3A6789-BFB
Lab File ID: 3A157672.D
Instrument ID: GCMS3A

Injection Date: 09/28/17
Injection Time: 11:23

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	15.0 - 40.0% of mass 95	8398	19.7	Pass
75	30.0 - 60.0% of mass 95	22616	53.0	Pass
95	Base peak, 100% relative abundance	42680	100.0	Pass
96	5.0 - 9.0% of mass 95	3232	7.57	Pass
173	Less than 2.0% of mass 174	277	0.65	(0.92) ^a Pass
174	50.0 - 120.0% of mass 95	30258	70.9	Pass
175	5.0 - 9.0% of mass 174	2366	5.54	(7.82) ^a Pass
176	95.0 - 101.0% of mass 174	29322	68.7	(96.9) ^a Pass
177	5.0 - 9.0% of mass 176	1676	3.93	(5.72) ^b Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V3A6789-CC6787	3A157673.D	09/28/17	12:02	00:39	Continuing cal 20
V3A6789-MB	3A157674.D	09/28/17	12:30	01:07	Method Blank
V3A6789-BS	3A157675.D	09/28/17	12:56	01:33	Blank Spike
ZZZZZZ	3A157677.D	09/28/17	13:59	02:36	(unrelated sample)
ZZZZZZ	3A157679.D	09/28/17	14:50	03:27	(unrelated sample)
JC51496-1	3A157680.D	09/28/17	15:16	03:53	(used for QC only; not part of job JC51755)
ZZZZZZ	3A157681.D	09/28/17	15:42	04:19	(unrelated sample)
ZZZZZZ	3A157682.D	09/28/17	16:08	04:45	(unrelated sample)
ZZZZZZ	3A157683.D	09/28/17	16:34	05:11	(unrelated sample)
ZZZZZZ	3A157684.D	09/28/17	17:00	05:37	(unrelated sample)
ZZZZZZ	3A157685.D	09/28/17	17:26	06:03	(unrelated sample)
ZZZZZZ	3A157686.D	09/28/17	17:52	06:29	(unrelated sample)
ZZZZZZ	3A157687.D	09/28/17	18:17	06:54	(unrelated sample)
JC51496-1MS	3A157688.D	09/28/17	18:43	07:20	Matrix Spike
JC51496-1MSD	3A157689.D	09/28/17	19:09	07:46	Matrix Spike Duplicate
JC51755-1	3A157692.D	09/28/17	20:27	09:04	RW-12270CM-092517
JC51755-2	3A157693.D	09/28/17	20:53	09:30	RW-1000-092517
JC51755-3	3A157694.D	09/28/17	21:18	09:55	TB-092517
JC51755-4	3A157695.D	09/28/17	21:44	10:21	RW-1227OCM-092517-F
JC51755-5	3A157696.D	09/28/17	22:10	10:47	RW-1308RB-092517-F
JC51755-6	3A157697.D	09/28/17	22:35	11:12	RW-1308RB-092517
ZZZZZZ	3A157698.D	09/28/17	23:20	11:57	(unrelated sample)

Instrument Performance Check (BFB)

Page 1 of 1

Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Sample: V3A6790-BFB
Lab File ID: 3A157706.D
Instrument ID: GCMS3A

Injection Date: 09/29/17
Injection Time: 11:29

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance	Pass/Fail
50	15.0 - 40.0% of mass 95	7443	19.8	Pass
75	30.0 - 60.0% of mass 95	20304	53.9	Pass
95	Base peak, 100% relative abundance	37651	100.0	Pass
96	5.0 - 9.0% of mass 95	2472	6.57	Pass
173	Less than 2.0% of mass 174	173	0.46	(0.67) ^a Pass
174	50.0 - 120.0% of mass 95	25939	68.9	Pass
175	5.0 - 9.0% of mass 174	1794	4.76	(6.92) ^a Pass
176	95.0 - 101.0% of mass 174	24939	66.2	(96.1) ^a Pass
177	5.0 - 9.0% of mass 176	1958	5.20	(7.85) ^b Pass

(a) Value is % of mass 174

(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V3A6790-CC6787	3A157707.D	09/29/17	11:57	00:28	Continuing cal 20
V3A6790-MB	3A157708.D	09/29/17	12:30	01:01	Method Blank
V3A6790-BS	3A157709.D	09/29/17	12:56	01:27	Blank Spike
JC51755-7	3A157711.D	09/29/17	13:50	02:21	RW-1319LP-092517
JC51755-8	3A157712.D	09/29/17	14:15	02:46	RW-1317LP-092517-F
JC51755-9	3A157713.D	09/29/17	14:41	03:12	RW-1317LP-092517
JC51755-10	3A157714.D	09/29/17	15:07	03:38	RW-7740TO-092517
JC51789-2	3A157715.D	09/29/17	15:32	04:03	(used for QC only; not part of job JC51755)
ZZZZZZ	3A157716.D	09/29/17	15:58	04:29	(unrelated sample)
ZZZZZZ	3A157717.D	09/29/17	16:24	04:55	(unrelated sample)
ZZZZZZ	3A157719.D	09/29/17	17:16	05:47	(unrelated sample)
ZZZZZZ	3A157720.D	09/29/17	17:42	06:13	(unrelated sample)
ZZZZZZ	3A157721.D	09/29/17	18:07	06:38	(unrelated sample)
ZZZZZZ	3A157722.D	09/29/17	18:33	07:04	(unrelated sample)
ZZZZZZ	3A157723.D	09/29/17	18:59	07:30	(unrelated sample)
JC51789-2MS	3A157724.D	09/29/17	19:25	07:56	Matrix Spike
JC51789-2MSD	3A157725.D	09/29/17	19:50	08:21	Matrix Spike Duplicate
ZZZZZZ	3A157727.D	09/29/17	20:42	09:13	(unrelated sample)
ZZZZZZ	3A157728.D	09/29/17	21:08	09:39	(unrelated sample)

Surrogate Recovery Summary

Page 1 of 1

Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Method: EPA 524.2 REV 4.1

Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2
JC51755-1	1B111863.D	96	93
JC51755-2	1B111864.D	97	92
JC51755-3	1B111875.D	96	88
JC51755-4	1B111876.D	95	87
JC51755-5	1B111877.D	94	87
JC51755-6	1B111878.D	93	86
JC51755-7	1B111899.D	91	81
JC51755-8	1B111900.D	93	79
JC51755-9	1B111913.D	92	78
JC51755-10	1B111914.D	91	77
JC51755-1MS	1B111872.D	104	95
JC51755-2DUP	1B111871.D	95	90
JC51755-7MS	1B111905.D	105	88
JC51755-8DUP	1B111906.D	93	80
V1B5331-BS	1B111862.D	101	94
V1B5331-MB	1B111861.D	93	91
V1B5333-BS	1B111897.D	104	91
V1B5333-MB	1B111896.D	100	89

Surrogate Compounds Recovery Limits

S1 = 1,2-Dichlorobenzene-d4

70-130%

S2 = 4-Bromofluorobenzene

70-130%

5.7.1
5

Surrogate Recovery Summary

Page 1 of 1

Job Number: JC51755

Account: ESCVAR WSP Environment & Energy

Project: Kop-Flex, Hanover, VA

Method: SW846 8260C BY SIM

Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1
JC51755-1	3A157692.D	175
JC51755-2	3A157693.D	174
JC51755-3	3A157694.D	150
JC51755-4	3A157695.D	136
JC51755-5	3A157696.D	142
JC51755-6	3A157697.D	140
JC51755-7	3A157711.D	118
JC51755-8	3A157712.D	113
JC51755-9	3A157713.D	117
JC51755-10	3A157714.D	118
JC51496-1MS	3A157688.D	116
JC51496-1MSD	3A157689.D	116
JC51789-2MS	3A157724.D	163
JC51789-2MSD	3A157725.D	156
V3A6789-BS	3A157675.D	90
V3A6789-MB	3A157674.D	95
V3A6790-BS	3A157709.D	112
V3A6790-MB	3A157708.D	121

Surrogate Compounds	Recovery Limits
S1 = 1,4-Dioxane-d8	51-175%

5.7.2
5

**ENCLOSURE D – LABORATORY ANALYTICAL REPORT FOR OFFSITE
GROUNDWATER MONITORING WELL SAMPLES
(AUGUST 2017)**

September 11, 2017

Eric Johnson
WSP USA
13530 Dulles Technology Drive
Suite 300
Herndon, VA 20171

RE: Project: FORMER KOP-FLEX FACIL 31400389
Pace Project No.: 92353757

Dear Eric Johnson:

Enclosed are the analytical results for sample(s) received by the laboratory on September 01, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Taylor Ezell
taylor.ezell@pacelabs.com
(704)875-9092
Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: FORMER KOP-FLEX FACIL 31400389
Pace Project No.: 92353757

Charlotte Certification IDs

9800 Kincey Ave. Ste 100, Huntersville, NC 28078
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12

South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Virginia/VELAP Certification #: 460221

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SAMPLE SUMMARY

Project: FORMER KOP-FLEX FACIL 31400389
Pace Project No.: 92353757

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92353757001	MW-24D	Water	08/31/17 13:35	09/01/17 10:35
92353757002	MW-35D	Water	08/31/17 14:35	09/01/17 10:35
92353757003	MW-33D-275	Water	08/31/17 15:05	09/01/17 10:35
92353757004	MW-33D-295	Water	08/31/17 15:20	09/01/17 10:35
92353757005	MW-31D	Water	08/31/17 15:40	09/01/17 10:35
92353757006	MW-28	Water	08/31/17 16:50	09/01/17 10:35
92353757007	MW-28D	Water	08/31/17 16:45	09/01/17 10:35
92353757008	MW-25	Water	08/31/17 17:15	09/01/17 10:35
92353757009	MW-25D-190	Water	08/31/17 17:30	09/01/17 10:35
92353757010	MW-2500	Water	08/31/17 09:00	09/01/17 10:35
92353757011	MW-25D-130	Water	08/31/17 17:55	09/01/17 10:35
92353757012	TRIP BLANK	Water	08/31/17 00:00	09/01/17 10:35

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SAMPLE ANALYTE COUNT

Project: FORMER KOP-FLEX FACIL 31400389
Pace Project No.: 92353757

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92353757001	MW-24D	EPA 8260 EPA 8260B Mod.	ZDO DLK	63 3	PASI-C
92353757002	MW-35D	EPA 8260 EPA 8260B Mod.	ZDO DLK	63 3	PASI-C
92353757003	MW-33D-275	EPA 8260 EPA 8260B Mod.	ZDO DLK	63 3	PASI-C
92353757004	MW-33D-295	EPA 8260 EPA 8260B Mod.	ZDO DLK	63 3	PASI-C
92353757005	MW-31D	EPA 8260 EPA 8260B Mod.	ZDO DLK	63 3	PASI-C
92353757006	MW-28	EPA 8260 EPA 8260B Mod.	ZDO DLK	63 3	PASI-C
92353757007	MW-28D	EPA 8260 EPA 8260B Mod.	ZDO DLK	63 3	PASI-C
92353757008	MW-25	EPA 8260 EPA 8260B Mod.	ZDO DLK	63 3	PASI-C
92353757009	MW-25D-190	EPA 8260 EPA 8260B Mod.	ZDO DLK	63 3	PASI-C
92353757010	MW-2500	EPA 8260 EPA 8260B Mod.	ZDO DLK	63 3	PASI-C
92353757011	MW-25D-130	EPA 8260 EPA 8260B Mod.	ZDO DLK	63 3	PASI-C
92353757012	TRIP BLANK	EPA 8260 EPA 8260B Mod.	ZDO DLK	63 3	PASI-C

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: FORMER KOP-FLEX FACIL 31400389

Pace Project No.: 92353757

Sample: MW-24D	Lab ID: 92353757001	Collected: 08/31/17 13:35	Received: 09/01/17 10:35	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
Acetone	ND	ug/L	125	5		09/05/17 19:08	67-64-1	
Benzene	ND	ug/L	5.0	5		09/05/17 19:08	71-43-2	
Bromobenzene	ND	ug/L	5.0	5		09/05/17 19:08	108-86-1	
Bromochloromethane	ND	ug/L	5.0	5		09/05/17 19:08	74-97-5	
Bromodichloromethane	ND	ug/L	5.0	5		09/05/17 19:08	75-27-4	
Bromoform	ND	ug/L	5.0	5		09/05/17 19:08	75-25-2	
Bromomethane	ND	ug/L	10.0	5		09/05/17 19:08	74-83-9	
2-Butanone (MEK)	ND	ug/L	25.0	5		09/05/17 19:08	78-93-3	
Carbon tetrachloride	ND	ug/L	5.0	5		09/05/17 19:08	56-23-5	
Chlorobenzene	ND	ug/L	5.0	5		09/05/17 19:08	108-90-7	
Chloroethane	ND	ug/L	5.0	5		09/05/17 19:08	75-00-3	
Chloroform	ND	ug/L	5.0	5		09/05/17 19:08	67-66-3	
Chloromethane	ND	ug/L	5.0	5		09/05/17 19:08	74-87-3	M1
2-Chlorotoluene	ND	ug/L	5.0	5		09/05/17 19:08	95-49-8	
4-Chlorotoluene	ND	ug/L	5.0	5		09/05/17 19:08	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	10.0	5		09/05/17 19:08	96-12-8	
Dibromochloromethane	ND	ug/L	5.0	5		09/05/17 19:08	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	5.0	5		09/05/17 19:08	106-93-4	
Dibromomethane	ND	ug/L	5.0	5		09/05/17 19:08	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	5.0	5		09/05/17 19:08	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	5.0	5		09/05/17 19:08	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	5.0	5		09/05/17 19:08	106-46-7	
Dichlorodifluoromethane	ND	ug/L	5.0	5		09/05/17 19:08	75-71-8	
1,1-Dichloroethane	38.9	ug/L	5.0	5		09/05/17 19:08	75-34-3	
1,2-Dichloroethane	5.2	ug/L	5.0	5		09/05/17 19:08	107-06-2	
1,1-Dichloroethene	663	ug/L	5.0	5		09/05/17 19:08	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	5.0	5		09/05/17 19:08	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	5		09/05/17 19:08	156-60-5	
1,2-Dichloropropane	ND	ug/L	5.0	5		09/05/17 19:08	78-87-5	
1,3-Dichloropropane	ND	ug/L	5.0	5		09/05/17 19:08	142-28-9	
2,2-Dichloropropane	ND	ug/L	5.0	5		09/05/17 19:08	594-20-7	
1,1-Dichloropropene	ND	ug/L	5.0	5		09/05/17 19:08	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	5.0	5		09/05/17 19:08	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	5.0	5		09/05/17 19:08	10061-02-6	
Diisopropyl ether	ND	ug/L	5.0	5		09/05/17 19:08	108-20-3	
Ethylbenzene	ND	ug/L	5.0	5		09/05/17 19:08	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	5.0	5		09/05/17 19:08	87-68-3	
2-Hexanone	ND	ug/L	25.0	5		09/05/17 19:08	591-78-6	
p-Isopropyltoluene	ND	ug/L	5.0	5		09/05/17 19:08	99-87-6	
Methylene Chloride	ND	ug/L	10.0	5		09/05/17 19:08	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	25.0	5		09/05/17 19:08	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	5.0	5		09/05/17 19:08	1634-04-4	
Naphthalene	ND	ug/L	5.0	5		09/05/17 19:08	91-20-3	
Styrene	ND	ug/L	5.0	5		09/05/17 19:08	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	5.0	5		09/05/17 19:08	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	5.0	5		09/05/17 19:08	79-34-5	
Tetrachloroethene	ND	ug/L	5.0	5		09/05/17 19:08	127-18-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: FORMER KOP-FLEX FACIL 31400389

Pace Project No.: 92353757

Sample: MW-24D	Lab ID: 92353757001	Collected: 08/31/17 13:35	Received: 09/01/17 10:35	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
Toluene	ND	ug/L	5.0	5		09/05/17 19:08	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	5.0	5		09/05/17 19:08	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	5.0	5		09/05/17 19:08	120-82-1	
1,1,1-Trichloroethane	9.5	ug/L	5.0	5		09/05/17 19:08	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	5.0	5		09/05/17 19:08	79-00-5	
Trichloroethene	ND	ug/L	5.0	5		09/05/17 19:08	79-01-6	
Trichlorofluoromethane	ND	ug/L	5.0	5		09/05/17 19:08	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	5.0	5		09/05/17 19:08	96-18-4	
Vinyl acetate	ND	ug/L	10.0	5		09/05/17 19:08	108-05-4	
Vinyl chloride	ND	ug/L	5.0	5		09/05/17 19:08	75-01-4	
Xylene (Total)	ND	ug/L	5.0	5		09/05/17 19:08	1330-20-7	
m&p-Xylene	ND	ug/L	10.0	5		09/05/17 19:08	179601-23-1	
o-Xylene	ND	ug/L	5.0	5		09/05/17 19:08	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	100	%	70-130	5		09/05/17 19:08	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	70-130	5		09/05/17 19:08	17060-07-0	
Toluene-d8 (S)	107	%	70-130	5		09/05/17 19:08	2037-26-5	
8260 MSV SIM	Analytical Method: EPA 8260B Mod.							
1,4-Dioxane (p-Dioxane)	199	ug/L	5.0	2.5		09/07/17 12:35	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	108	%	50-150	2.5		09/07/17 12:35	17060-07-0	
Toluene-d8 (S)	107	%	50-150	2.5		09/07/17 12:35	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: FORMER KOP-FLEX FACIL 31400389

Pace Project No.: 92353757

Sample: MW-35D	Lab ID: 92353757002	Collected: 08/31/17 14:35	Received: 09/01/17 10:35	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
Acetone	ND	ug/L	25.0	1		09/05/17 18:50	67-64-1	
Benzene	ND	ug/L	1.0	1		09/05/17 18:50	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		09/05/17 18:50	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		09/05/17 18:50	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		09/05/17 18:50	75-27-4	
Bromoform	ND	ug/L	1.0	1		09/05/17 18:50	75-25-2	
Bromomethane	ND	ug/L	2.0	1		09/05/17 18:50	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		09/05/17 18:50	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		09/05/17 18:50	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		09/05/17 18:50	108-90-7	
Chloroethane	ND	ug/L	1.0	1		09/05/17 18:50	75-00-3	
Chloroform	ND	ug/L	1.0	1		09/05/17 18:50	67-66-3	
Chloromethane	ND	ug/L	1.0	1		09/05/17 18:50	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		09/05/17 18:50	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		09/05/17 18:50	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		09/05/17 18:50	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		09/05/17 18:50	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		09/05/17 18:50	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		09/05/17 18:50	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		09/05/17 18:50	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		09/05/17 18:50	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		09/05/17 18:50	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		09/05/17 18:50	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		09/05/17 18:50	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		09/05/17 18:50	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		09/05/17 18:50	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		09/05/17 18:50	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		09/05/17 18:50	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		09/05/17 18:50	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		09/05/17 18:50	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		09/05/17 18:50	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		09/05/17 18:50	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		09/05/17 18:50	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		09/05/17 18:50	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		09/05/17 18:50	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		09/05/17 18:50	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		09/05/17 18:50	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		09/05/17 18:50	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		09/05/17 18:50	99-87-6	
Methylene Chloride	ND	ug/L	2.0	1		09/05/17 18:50	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		09/05/17 18:50	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		09/05/17 18:50	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		09/05/17 18:50	91-20-3	
Styrene	ND	ug/L	1.0	1		09/05/17 18:50	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		09/05/17 18:50	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		09/05/17 18:50	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		09/05/17 18:50	127-18-4	

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ANALYTICAL RESULTS

Project: FORMER KOP-FLEX FACIL 31400389
Pace Project No.: 92353757

Sample: MW-35D	Lab ID: 92353757002	Collected: 08/31/17 14:35	Received: 09/01/17 10:35	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
Toluene	ND	ug/L	1.0	1		09/05/17 18:50	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		09/05/17 18:50	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		09/05/17 18:50	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		09/05/17 18:50	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		09/05/17 18:50	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		09/05/17 18:50	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		09/05/17 18:50	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		09/05/17 18:50	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		09/05/17 18:50	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		09/05/17 18:50	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		09/05/17 18:50	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		09/05/17 18:50	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		09/05/17 18:50	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	101	%	70-130	1		09/05/17 18:50	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	70-130	1		09/05/17 18:50	17060-07-0	
Toluene-d8 (S)	108	%	70-130	1		09/05/17 18:50	2037-26-5	
8260 MSV SIM	Analytical Method: EPA 8260B Mod.							
1,4-Dioxane (p-Dioxane)	ND	ug/L	2.0	1		09/07/17 12:54	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	104	%	50-150	1		09/07/17 12:54	17060-07-0	
Toluene-d8 (S)	109	%	50-150	1		09/07/17 12:54	2037-26-5	

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ANALYTICAL RESULTS

Project: FORMER KOP-FLEX FACIL 31400389

Pace Project No.: 92353757

Sample: MW-33D-275	Lab ID: 92353757003	Collected: 08/31/17 15:05	Received: 09/01/17 10:35	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
Acetone	ND	ug/L	25.0	1		09/05/17 18:16	67-64-1	
Benzene	ND	ug/L	1.0	1		09/05/17 18:16	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		09/05/17 18:16	108-86-1	
Bromoform	ND	ug/L	1.0	1		09/05/17 18:16	74-97-5	
Bromochloromethane	ND	ug/L	1.0	1		09/05/17 18:16	75-27-4	
Bromodichloromethane	ND	ug/L	1.0	1		09/05/17 18:16	75-25-2	
Bromomethane	ND	ug/L	2.0	1		09/05/17 18:16	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		09/05/17 18:16	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		09/05/17 18:16	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		09/05/17 18:16	108-90-7	
Chloroethane	ND	ug/L	1.0	1		09/05/17 18:16	75-00-3	
Chloroform	ND	ug/L	1.0	1		09/05/17 18:16	67-66-3	
Chloromethane	ND	ug/L	1.0	1		09/05/17 18:16	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		09/05/17 18:16	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		09/05/17 18:16	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		09/05/17 18:16	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		09/05/17 18:16	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		09/05/17 18:16	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		09/05/17 18:16	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		09/05/17 18:16	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		09/05/17 18:16	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		09/05/17 18:16	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		09/05/17 18:16	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		09/05/17 18:16	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		09/05/17 18:16	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		09/05/17 18:16	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		09/05/17 18:16	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		09/05/17 18:16	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		09/05/17 18:16	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		09/05/17 18:16	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		09/05/17 18:16	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		09/05/17 18:16	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		09/05/17 18:16	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		09/05/17 18:16	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		09/05/17 18:16	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		09/05/17 18:16	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		09/05/17 18:16	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		09/05/17 18:16	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		09/05/17 18:16	99-87-6	
Methylene Chloride	ND	ug/L	2.0	1		09/05/17 18:16	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		09/05/17 18:16	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		09/05/17 18:16	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		09/05/17 18:16	91-20-3	
Styrene	ND	ug/L	1.0	1		09/05/17 18:16	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		09/05/17 18:16	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		09/05/17 18:16	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		09/05/17 18:16	127-18-4	

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ANALYTICAL RESULTS

Project: FORMER KOP-FLEX FACIL 31400389

Pace Project No.: 92353757

Sample: MW-33D-275	Lab ID: 92353757003	Collected: 08/31/17 15:05	Received: 09/01/17 10:35	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
Toluene	ND	ug/L	1.0	1		09/05/17 18:16	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		09/05/17 18:16	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		09/05/17 18:16	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		09/05/17 18:16	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		09/05/17 18:16	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		09/05/17 18:16	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		09/05/17 18:16	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		09/05/17 18:16	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		09/05/17 18:16	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		09/05/17 18:16	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		09/05/17 18:16	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		09/05/17 18:16	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		09/05/17 18:16	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	99	%	70-130	1		09/05/17 18:16	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	70-130	1		09/05/17 18:16	17060-07-0	
Toluene-d8 (S)	108	%	70-130	1		09/05/17 18:16	2037-26-5	
8260 MSV SIM	Analytical Method: EPA 8260B Mod.							
1,4-Dioxane (p-Dioxane)	ND	ug/L	2.0	1		09/07/17 13:13	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	107	%	50-150	1		09/07/17 13:13	17060-07-0	
Toluene-d8 (S)	109	%	50-150	1		09/07/17 13:13	2037-26-5	

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ANALYTICAL RESULTS

Project: FORMER KOP-FLEX FACIL 31400389

Pace Project No.: 92353757

Sample: MW-33D-295	Lab ID: 92353757004	Collected: 08/31/17 15:20	Received: 09/01/17 10:35	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
Acetone	ND	ug/L	25.0	1		09/05/17 18:33	67-64-1	
Benzene	ND	ug/L	1.0	1		09/05/17 18:33	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		09/05/17 18:33	108-86-1	
Bromoform	ND	ug/L	1.0	1		09/05/17 18:33	74-97-5	
Bromochloromethane	ND	ug/L	1.0	1		09/05/17 18:33	75-27-4	
Bromodichloromethane	ND	ug/L	1.0	1		09/05/17 18:33	124-48-1	
Bromomethane	ND	ug/L	2.0	1		09/05/17 18:33	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		09/05/17 18:33	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		09/05/17 18:33	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		09/05/17 18:33	108-90-7	
Chloroethane	ND	ug/L	1.0	1		09/05/17 18:33	75-00-3	
Chloroform	ND	ug/L	1.0	1		09/05/17 18:33	67-66-3	
Chloromethane	ND	ug/L	1.0	1		09/05/17 18:33	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		09/05/17 18:33	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		09/05/17 18:33	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		09/05/17 18:33	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		09/05/17 18:33	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		09/05/17 18:33	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		09/05/17 18:33	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		09/05/17 18:33	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		09/05/17 18:33	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		09/05/17 18:33	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		09/05/17 18:33	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		09/05/17 18:33	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		09/05/17 18:33	107-06-2	
1,1-Dichloroethene	5.6	ug/L	1.0	1		09/05/17 18:33	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		09/05/17 18:33	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		09/05/17 18:33	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		09/05/17 18:33	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		09/05/17 18:33	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		09/05/17 18:33	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		09/05/17 18:33	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		09/05/17 18:33	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		09/05/17 18:33	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		09/05/17 18:33	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		09/05/17 18:33	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		09/05/17 18:33	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		09/05/17 18:33	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		09/05/17 18:33	99-87-6	
Methylene Chloride	ND	ug/L	2.0	1		09/05/17 18:33	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		09/05/17 18:33	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		09/05/17 18:33	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		09/05/17 18:33	91-20-3	
Styrene	ND	ug/L	1.0	1		09/05/17 18:33	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		09/05/17 18:33	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		09/05/17 18:33	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		09/05/17 18:33	127-18-4	

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ANALYTICAL RESULTS

Project: FORMER KOP-FLEX FACIL 31400389

Pace Project No.: 92353757

Sample: MW-33D-295	Lab ID: 92353757004	Collected: 08/31/17 15:20	Received: 09/01/17 10:35	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
Toluene	ND	ug/L	1.0	1		09/05/17 18:33	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		09/05/17 18:33	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		09/05/17 18:33	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		09/05/17 18:33	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		09/05/17 18:33	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		09/05/17 18:33	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		09/05/17 18:33	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		09/05/17 18:33	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		09/05/17 18:33	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		09/05/17 18:33	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		09/05/17 18:33	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		09/05/17 18:33	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		09/05/17 18:33	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	100	%	70-130	1		09/05/17 18:33	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	70-130	1		09/05/17 18:33	17060-07-0	
Toluene-d8 (S)	105	%	70-130	1		09/05/17 18:33	2037-26-5	
8260 MSV SIM	Analytical Method: EPA 8260B Mod.							
1,4-Dioxane (p-Dioxane)	6.3	ug/L	2.0	1		09/07/17 13:32	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	108	%	50-150	1		09/07/17 13:32	17060-07-0	
Toluene-d8 (S)	111	%	50-150	1		09/07/17 13:32	2037-26-5	

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ANALYTICAL RESULTS

Project: FORMER KOP-FLEX FACIL 31400389

Pace Project No.: 92353757

Sample: MW-31D	Lab ID: 92353757005	Collected: 08/31/17 15:40	Received: 09/01/17 10:35	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
Acetone	ND	ug/L	25.0	1		09/05/17 19:25	67-64-1	
Benzene	ND	ug/L	1.0	1		09/05/17 19:25	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		09/05/17 19:25	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		09/05/17 19:25	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		09/05/17 19:25	75-27-4	
Bromoform	ND	ug/L	1.0	1		09/05/17 19:25	75-25-2	
Bromomethane	ND	ug/L	2.0	1		09/05/17 19:25	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		09/05/17 19:25	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		09/05/17 19:25	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		09/05/17 19:25	108-90-7	
Chloroethane	ND	ug/L	1.0	1		09/05/17 19:25	75-00-3	
Chloroform	ND	ug/L	1.0	1		09/05/17 19:25	67-66-3	
Chloromethane	ND	ug/L	1.0	1		09/05/17 19:25	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		09/05/17 19:25	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		09/05/17 19:25	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		09/05/17 19:25	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		09/05/17 19:25	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		09/05/17 19:25	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		09/05/17 19:25	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		09/05/17 19:25	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		09/05/17 19:25	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		09/05/17 19:25	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		09/05/17 19:25	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		09/05/17 19:25	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		09/05/17 19:25	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		09/05/17 19:25	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		09/05/17 19:25	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		09/05/17 19:25	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		09/05/17 19:25	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		09/05/17 19:25	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		09/05/17 19:25	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		09/05/17 19:25	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		09/05/17 19:25	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		09/05/17 19:25	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		09/05/17 19:25	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		09/05/17 19:25	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		09/05/17 19:25	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		09/05/17 19:25	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		09/05/17 19:25	99-87-6	
Methylene Chloride	ND	ug/L	2.0	1		09/05/17 19:25	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		09/05/17 19:25	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		09/05/17 19:25	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		09/05/17 19:25	91-20-3	
Styrene	ND	ug/L	1.0	1		09/05/17 19:25	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		09/05/17 19:25	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		09/05/17 19:25	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		09/05/17 19:25	127-18-4	

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ANALYTICAL RESULTS

Project: FORMER KOP-FLEX FACIL 31400389
Pace Project No.: 92353757

Sample: MW-31D	Lab ID: 92353757005	Collected: 08/31/17 15:40	Received: 09/01/17 10:35	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
Toluene	ND	ug/L	1.0	1		09/05/17 19:25	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		09/05/17 19:25	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		09/05/17 19:25	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		09/05/17 19:25	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		09/05/17 19:25	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		09/05/17 19:25	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		09/05/17 19:25	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		09/05/17 19:25	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		09/05/17 19:25	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		09/05/17 19:25	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		09/05/17 19:25	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		09/05/17 19:25	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		09/05/17 19:25	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	102	%	70-130	1		09/05/17 19:25	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	70-130	1		09/05/17 19:25	17060-07-0	
Toluene-d8 (S)	108	%	70-130	1		09/05/17 19:25	2037-26-5	
8260 MSV SIM	Analytical Method: EPA 8260B Mod.							
1,4-Dioxane (p-Dioxane)	ND	ug/L	2.0	1		09/07/17 13:51	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	106	%	50-150	1		09/07/17 13:51	17060-07-0	
Toluene-d8 (S)	109	%	50-150	1		09/07/17 13:51	2037-26-5	

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ANALYTICAL RESULTS

Project: FORMER KOP-FLEX FACIL 31400389

Pace Project No.: 92353757

Sample: MW-28	Lab ID: 92353757006	Collected: 08/31/17 16:50	Received: 09/01/17 10:35	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 8260						
Acetone	ND	ug/L	25.0	1		09/05/17 17:23	67-64-1	
Benzene	ND	ug/L	1.0	1		09/05/17 17:23	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		09/05/17 17:23	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		09/05/17 17:23	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		09/05/17 17:23	75-27-4	
Bromoform	ND	ug/L	1.0	1		09/05/17 17:23	75-25-2	
Bromomethane	ND	ug/L	2.0	1		09/05/17 17:23	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		09/05/17 17:23	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		09/05/17 17:23	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		09/05/17 17:23	108-90-7	
Chloroethane	ND	ug/L	1.0	1		09/05/17 17:23	75-00-3	
Chloroform	ND	ug/L	1.0	1		09/05/17 17:23	67-66-3	
Chloromethane	ND	ug/L	1.0	1		09/05/17 17:23	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		09/05/17 17:23	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		09/05/17 17:23	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		09/05/17 17:23	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		09/05/17 17:23	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		09/05/17 17:23	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		09/05/17 17:23	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		09/05/17 17:23	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		09/05/17 17:23	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		09/05/17 17:23	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		09/05/17 17:23	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		09/05/17 17:23	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		09/05/17 17:23	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		09/05/17 17:23	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		09/05/17 17:23	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		09/05/17 17:23	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		09/05/17 17:23	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		09/05/17 17:23	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		09/05/17 17:23	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		09/05/17 17:23	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		09/05/17 17:23	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		09/05/17 17:23	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		09/05/17 17:23	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		09/05/17 17:23	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		09/05/17 17:23	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		09/05/17 17:23	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		09/05/17 17:23	99-87-6	
Methylene Chloride	ND	ug/L	2.0	1		09/05/17 17:23	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		09/05/17 17:23	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		09/05/17 17:23	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		09/05/17 17:23	91-20-3	
Styrene	ND	ug/L	1.0	1		09/05/17 17:23	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		09/05/17 17:23	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		09/05/17 17:23	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		09/05/17 17:23	127-18-4	

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ANALYTICAL RESULTS

Project: FORMER KOP-FLEX FACIL 31400389

Pace Project No.: 92353757

Sample: MW-28	Lab ID: 92353757006	Collected: 08/31/17 16:50	Received: 09/01/17 10:35	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
Toluene	ND	ug/L	1.0	1		09/05/17 17:23	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		09/05/17 17:23	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		09/05/17 17:23	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		09/05/17 17:23	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		09/05/17 17:23	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		09/05/17 17:23	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		09/05/17 17:23	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		09/05/17 17:23	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		09/05/17 17:23	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		09/05/17 17:23	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		09/05/17 17:23	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		09/05/17 17:23	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		09/05/17 17:23	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	102	%	70-130	1		09/05/17 17:23	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	70-130	1		09/05/17 17:23	17060-07-0	
Toluene-d8 (S)	107	%	70-130	1		09/05/17 17:23	2037-26-5	
8260 MSV SIM	Analytical Method: EPA 8260B Mod.							
1,4-Dioxane (p-Dioxane)	ND	ug/L	2.0	1		09/07/17 14:26	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	116	%	50-150	1		09/07/17 14:26	17060-07-0	
Toluene-d8 (S)	117	%	50-150	1		09/07/17 14:26	2037-26-5	

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ANALYTICAL RESULTS

Project: FORMER KOP-FLEX FACIL 31400389

Pace Project No.: 92353757

Sample: MW-28D	Lab ID: 92353757007	Collected: 08/31/17 16:45	Received: 09/01/17 10:35	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 8260						
Acetone	ND	ug/L	25.0	1		09/05/17 17:41	67-64-1	
Benzene	1.2	ug/L	1.0	1		09/05/17 17:41	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		09/05/17 17:41	108-86-1	
Bromoform	ND	ug/L	1.0	1		09/05/17 17:41	74-97-5	
Bromochloromethane	ND	ug/L	1.0	1		09/05/17 17:41	75-27-4	
Bromodichloromethane	ND	ug/L	1.0	1		09/05/17 17:41	124-48-1	
Bromomethane	ND	ug/L	2.0	1		09/05/17 17:41	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		09/05/17 17:41	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		09/05/17 17:41	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		09/05/17 17:41	108-90-7	
Chloroethane	ND	ug/L	1.0	1		09/05/17 17:41	75-00-3	
Chloroform	ND	ug/L	1.0	1		09/05/17 17:41	67-66-3	
Chloromethane	ND	ug/L	1.0	1		09/05/17 17:41	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		09/05/17 17:41	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		09/05/17 17:41	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		09/05/17 17:41	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		09/05/17 17:41	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		09/05/17 17:41	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		09/05/17 17:41	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		09/05/17 17:41	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		09/05/17 17:41	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		09/05/17 17:41	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		09/05/17 17:41	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		09/05/17 17:41	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		09/05/17 17:41	107-06-2	
1,1-Dichloroethene	5.0	ug/L	1.0	1		09/05/17 17:41	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		09/05/17 17:41	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		09/05/17 17:41	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		09/05/17 17:41	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		09/05/17 17:41	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		09/05/17 17:41	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		09/05/17 17:41	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		09/05/17 17:41	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		09/05/17 17:41	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		09/05/17 17:41	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		09/05/17 17:41	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		09/05/17 17:41	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		09/05/17 17:41	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		09/05/17 17:41	99-87-6	
Methylene Chloride	ND	ug/L	2.0	1		09/05/17 17:41	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		09/05/17 17:41	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		09/05/17 17:41	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		09/05/17 17:41	91-20-3	
Styrene	ND	ug/L	1.0	1		09/05/17 17:41	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		09/05/17 17:41	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		09/05/17 17:41	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		09/05/17 17:41	127-18-4	

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ANALYTICAL RESULTS

Project: FORMER KOP-FLEX FACIL 31400389

Pace Project No.: 92353757

Sample: MW-28D	Lab ID: 92353757007	Collected: 08/31/17 16:45	Received: 09/01/17 10:35	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
Toluene	ND	ug/L	1.0	1		09/05/17 17:41	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		09/05/17 17:41	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		09/05/17 17:41	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		09/05/17 17:41	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		09/05/17 17:41	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		09/05/17 17:41	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		09/05/17 17:41	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		09/05/17 17:41	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		09/05/17 17:41	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		09/05/17 17:41	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		09/05/17 17:41	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		09/05/17 17:41	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		09/05/17 17:41	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	101	%	70-130	1		09/05/17 17:41	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	70-130	1		09/05/17 17:41	17060-07-0	
Toluene-d8 (S)	109	%	70-130	1		09/05/17 17:41	2037-26-5	
8260 MSV SIM	Analytical Method: EPA 8260B Mod.							
1,4-Dioxane (p-Dioxane)	2.7	ug/L	2.0	1		09/07/17 14:45	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	110	%	50-150	1		09/07/17 14:45	17060-07-0	
Toluene-d8 (S)	113	%	50-150	1		09/07/17 14:45	2037-26-5	

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ANALYTICAL RESULTS

Project: FORMER KOP-FLEX FACIL 31400389

Pace Project No.: 92353757

Sample: MW-25	Lab ID: 92353757008	Collected: 08/31/17 17:15	Received: 09/01/17 10:35	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
Acetone	ND	ug/L	25.0	1		09/05/17 17:58	67-64-1	
Benzene	ND	ug/L	1.0	1		09/05/17 17:58	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		09/05/17 17:58	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		09/05/17 17:58	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		09/05/17 17:58	75-27-4	
Bromoform	ND	ug/L	1.0	1		09/05/17 17:58	75-25-2	
Bromomethane	ND	ug/L	2.0	1		09/05/17 17:58	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		09/05/17 17:58	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		09/05/17 17:58	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		09/05/17 17:58	108-90-7	
Chloroethane	ND	ug/L	1.0	1		09/05/17 17:58	75-00-3	
Chloroform	ND	ug/L	1.0	1		09/05/17 17:58	67-66-3	
Chloromethane	ND	ug/L	1.0	1		09/05/17 17:58	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		09/05/17 17:58	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		09/05/17 17:58	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		09/05/17 17:58	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		09/05/17 17:58	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		09/05/17 17:58	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		09/05/17 17:58	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		09/05/17 17:58	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		09/05/17 17:58	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		09/05/17 17:58	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		09/05/17 17:58	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		09/05/17 17:58	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		09/05/17 17:58	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		09/05/17 17:58	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		09/05/17 17:58	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		09/05/17 17:58	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		09/05/17 17:58	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		09/05/17 17:58	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		09/05/17 17:58	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		09/05/17 17:58	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		09/05/17 17:58	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		09/05/17 17:58	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		09/05/17 17:58	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		09/05/17 17:58	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		09/05/17 17:58	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		09/05/17 17:58	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		09/05/17 17:58	99-87-6	
Methylene Chloride	ND	ug/L	2.0	1		09/05/17 17:58	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		09/05/17 17:58	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		09/05/17 17:58	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		09/05/17 17:58	91-20-3	
Styrene	ND	ug/L	1.0	1		09/05/17 17:58	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		09/05/17 17:58	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		09/05/17 17:58	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		09/05/17 17:58	127-18-4	

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ANALYTICAL RESULTS

Project: FORMER KOP-FLEX FACIL 31400389

Pace Project No.: 92353757

Sample: MW-25	Lab ID: 92353757008	Collected: 08/31/17 17:15	Received: 09/01/17 10:35	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
Toluene	ND	ug/L	1.0	1		09/05/17 17:58	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		09/05/17 17:58	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		09/05/17 17:58	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		09/05/17 17:58	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		09/05/17 17:58	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		09/05/17 17:58	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		09/05/17 17:58	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		09/05/17 17:58	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		09/05/17 17:58	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		09/05/17 17:58	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		09/05/17 17:58	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		09/05/17 17:58	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		09/05/17 17:58	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	100	%	70-130	1		09/05/17 17:58	460-00-4	
1,2-Dichloroethane-d4 (S)	106	%	70-130	1		09/05/17 17:58	17060-07-0	
Toluene-d8 (S)	107	%	70-130	1		09/05/17 17:58	2037-26-5	
8260 MSV SIM	Analytical Method: EPA 8260B Mod.							
1,4-Dioxane (p-Dioxane)	ND	ug/L	2.0	1		09/07/17 15:04	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	107	%	50-150	1		09/07/17 15:04	17060-07-0	
Toluene-d8 (S)	111	%	50-150	1		09/07/17 15:04	2037-26-5	

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ANALYTICAL RESULTS

Project: FORMER KOP-FLEX FACIL 31400389

Pace Project No.: 92353757

Sample: MW-25D-190	Lab ID: 92353757009	Collected: 08/31/17 17:30	Received: 09/01/17 10:35	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
Acetone	ND	ug/L	25.0	1		09/05/17 17:06	67-64-1	
Benzene	ND	ug/L	1.0	1		09/05/17 17:06	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		09/05/17 17:06	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		09/05/17 17:06	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		09/05/17 17:06	75-27-4	
Bromoform	ND	ug/L	1.0	1		09/05/17 17:06	75-25-2	
Bromomethane	ND	ug/L	2.0	1		09/05/17 17:06	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		09/05/17 17:06	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		09/05/17 17:06	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		09/05/17 17:06	108-90-7	
Chloroethane	ND	ug/L	1.0	1		09/05/17 17:06	75-00-3	
Chloroform	ND	ug/L	1.0	1		09/05/17 17:06	67-66-3	
Chloromethane	ND	ug/L	1.0	1		09/05/17 17:06	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		09/05/17 17:06	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		09/05/17 17:06	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		09/05/17 17:06	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		09/05/17 17:06	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		09/05/17 17:06	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		09/05/17 17:06	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		09/05/17 17:06	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		09/05/17 17:06	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		09/05/17 17:06	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		09/05/17 17:06	75-71-8	
1,1-Dichloroethane	15.7	ug/L	1.0	1		09/05/17 17:06	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		09/05/17 17:06	107-06-2	
1,1-Dichloroethene	62.5	ug/L	1.0	1		09/05/17 17:06	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		09/05/17 17:06	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		09/05/17 17:06	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		09/05/17 17:06	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		09/05/17 17:06	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		09/05/17 17:06	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		09/05/17 17:06	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		09/05/17 17:06	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		09/05/17 17:06	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		09/05/17 17:06	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		09/05/17 17:06	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		09/05/17 17:06	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		09/05/17 17:06	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		09/05/17 17:06	99-87-6	
Methylene Chloride	ND	ug/L	2.0	1		09/05/17 17:06	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		09/05/17 17:06	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		09/05/17 17:06	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		09/05/17 17:06	91-20-3	
Styrene	ND	ug/L	1.0	1		09/05/17 17:06	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		09/05/17 17:06	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		09/05/17 17:06	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		09/05/17 17:06	127-18-4	

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ANALYTICAL RESULTS

Project: FORMER KOP-FLEX FACIL 31400389

Pace Project No.: 92353757

Sample: MW-25D-190	Lab ID: 92353757009	Collected: 08/31/17 17:30	Received: 09/01/17 10:35	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
Toluene	ND	ug/L	1.0	1		09/05/17 17:06	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		09/05/17 17:06	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		09/05/17 17:06	120-82-1	
1,1,1-Trichloroethane	13.1	ug/L	1.0	1		09/05/17 17:06	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		09/05/17 17:06	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		09/05/17 17:06	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		09/05/17 17:06	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		09/05/17 17:06	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		09/05/17 17:06	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		09/05/17 17:06	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		09/05/17 17:06	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		09/05/17 17:06	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		09/05/17 17:06	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	101	%	70-130	1		09/05/17 17:06	460-00-4	
1,2-Dichloroethane-d4 (S)	106	%	70-130	1		09/05/17 17:06	17060-07-0	
Toluene-d8 (S)	105	%	70-130	1		09/05/17 17:06	2037-26-5	
8260 MSV SIM	Analytical Method: EPA 8260B Mod.							
1,4-Dioxane (p-Dioxane)	44.3	ug/L	2.0	1		09/07/17 15:23	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	106	%	50-150	1		09/07/17 15:23	17060-07-0	
Toluene-d8 (S)	113	%	50-150	1		09/07/17 15:23	2037-26-5	

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ANALYTICAL RESULTS

Project: FORMER KOP-FLEX FACIL 31400389

Pace Project No.: 92353757

Sample: MW-2500	Lab ID: 92353757010	Collected: 08/31/17 09:00	Received: 09/01/17 10:35	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
Acetone	ND	ug/L	25.0	1		09/07/17 14:48	67-64-1	
Benzene	ND	ug/L	1.0	1		09/07/17 14:48	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		09/07/17 14:48	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		09/07/17 14:48	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		09/07/17 14:48	75-27-4	
Bromoform	ND	ug/L	1.0	1		09/07/17 14:48	75-25-2	
Bromomethane	ND	ug/L	2.0	1		09/07/17 14:48	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		09/07/17 14:48	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		09/07/17 14:48	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		09/07/17 14:48	108-90-7	
Chloroethane	ND	ug/L	1.0	1		09/07/17 14:48	75-00-3	
Chloroform	ND	ug/L	1.0	1		09/07/17 14:48	67-66-3	
Chloromethane	ND	ug/L	1.0	1		09/07/17 14:48	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		09/07/17 14:48	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		09/07/17 14:48	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		09/07/17 14:48	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		09/07/17 14:48	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		09/07/17 14:48	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		09/07/17 14:48	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		09/07/17 14:48	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		09/07/17 14:48	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		09/07/17 14:48	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		09/07/17 14:48	75-71-8	
1,1-Dichloroethane	16.4	ug/L	1.0	1		09/07/17 14:48	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		09/07/17 14:48	107-06-2	
1,1-Dichloroethene	68.4	ug/L	1.0	1		09/07/17 14:48	75-35-4	M1
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		09/07/17 14:48	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		09/07/17 14:48	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		09/07/17 14:48	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		09/07/17 14:48	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		09/07/17 14:48	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		09/07/17 14:48	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		09/07/17 14:48	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		09/07/17 14:48	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		09/07/17 14:48	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		09/07/17 14:48	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		09/07/17 14:48	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		09/07/17 14:48	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		09/07/17 14:48	99-87-6	
Methylene Chloride	ND	ug/L	2.0	1		09/07/17 14:48	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		09/07/17 14:48	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		09/07/17 14:48	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		09/07/17 14:48	91-20-3	
Styrene	ND	ug/L	1.0	1		09/07/17 14:48	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		09/07/17 14:48	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		09/07/17 14:48	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		09/07/17 14:48	127-18-4	

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ANALYTICAL RESULTS

Project: FORMER KOP-FLEX FACIL 31400389

Pace Project No.: 92353757

Sample: MW-2500	Lab ID: 92353757010	Collected: 08/31/17 09:00	Received: 09/01/17 10:35	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
Toluene	ND	ug/L	1.0	1		09/07/17 14:48	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		09/07/17 14:48	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		09/07/17 14:48	120-82-1	
1,1,1-Trichloroethane	13.1	ug/L	1.0	1		09/07/17 14:48	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		09/07/17 14:48	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		09/07/17 14:48	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		09/07/17 14:48	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		09/07/17 14:48	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		09/07/17 14:48	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		09/07/17 14:48	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		09/07/17 14:48	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		09/07/17 14:48	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		09/07/17 14:48	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	100	%	70-130	1		09/07/17 14:48	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	70-130	1		09/07/17 14:48	17060-07-0	
Toluene-d8 (S)	109	%	70-130	1		09/07/17 14:48	2037-26-5	
8260 MSV SIM	Analytical Method: EPA 8260B Mod.							
1,4-Dioxane (p-Dioxane)	48.2	ug/L	2.0	1		09/07/17 15:42	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	114	%	50-150	1		09/07/17 15:42	17060-07-0	
Toluene-d8 (S)	114	%	50-150	1		09/07/17 15:42	2037-26-5	

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ANALYTICAL RESULTS

Project: FORMER KOP-FLEX FACIL 31400389

Pace Project No.: 92353757

Sample: MW-25D-130	Lab ID: 92353757011	Collected: 08/31/17 17:55	Received: 09/01/17 10:35	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
Acetone	ND	ug/L	25.0	1		09/07/17 15:05	67-64-1	
Benzene	ND	ug/L	1.0	1		09/07/17 15:05	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		09/07/17 15:05	108-86-1	
Bromoform	ND	ug/L	1.0	1		09/07/17 15:05	74-97-5	
Bromochloromethane	ND	ug/L	1.0	1		09/07/17 15:05	75-27-4	
Bromodichloromethane	ND	ug/L	1.0	1		09/07/17 15:05	75-25-2	
Bromomethane	ND	ug/L	2.0	1		09/07/17 15:05	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		09/07/17 15:05	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		09/07/17 15:05	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		09/07/17 15:05	108-90-7	
Chloroethane	ND	ug/L	1.0	1		09/07/17 15:05	75-00-3	
Chloroform	ND	ug/L	1.0	1		09/07/17 15:05	67-66-3	
Chloromethane	ND	ug/L	1.0	1		09/07/17 15:05	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		09/07/17 15:05	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		09/07/17 15:05	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		09/07/17 15:05	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		09/07/17 15:05	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		09/07/17 15:05	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		09/07/17 15:05	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		09/07/17 15:05	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		09/07/17 15:05	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		09/07/17 15:05	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		09/07/17 15:05	75-71-8	
1,1-Dichloroethane	7.4	ug/L	1.0	1		09/07/17 15:05	75-34-3	
1,2-Dichloroethane	1.7	ug/L	1.0	1		09/07/17 15:05	107-06-2	
1,1-Dichloroethene	193	ug/L	1.0	1		09/07/17 15:05	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		09/07/17 15:05	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		09/07/17 15:05	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		09/07/17 15:05	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		09/07/17 15:05	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		09/07/17 15:05	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		09/07/17 15:05	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		09/07/17 15:05	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		09/07/17 15:05	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		09/07/17 15:05	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		09/07/17 15:05	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		09/07/17 15:05	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		09/07/17 15:05	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		09/07/17 15:05	99-87-6	
Methylene Chloride	ND	ug/L	2.0	1		09/07/17 15:05	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		09/07/17 15:05	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		09/07/17 15:05	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		09/07/17 15:05	91-20-3	
Styrene	ND	ug/L	1.0	1		09/07/17 15:05	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		09/07/17 15:05	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		09/07/17 15:05	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		09/07/17 15:05	127-18-4	

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ANALYTICAL RESULTS

Project: FORMER KOP-FLEX FACIL 31400389

Pace Project No.: 92353757

Sample: MW-25D-130	Lab ID: 92353757011	Collected: 08/31/17 17:55	Received: 09/01/17 10:35	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
Toluene	ND	ug/L	1.0	1		09/07/17 15:05	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		09/07/17 15:05	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		09/07/17 15:05	120-82-1	
1,1,1-Trichloroethane	6.9	ug/L	1.0	1		09/07/17 15:05	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		09/07/17 15:05	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		09/07/17 15:05	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		09/07/17 15:05	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		09/07/17 15:05	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		09/07/17 15:05	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		09/07/17 15:05	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		09/07/17 15:05	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		09/07/17 15:05	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		09/07/17 15:05	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	101	%	70-130	1		09/07/17 15:05	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	70-130	1		09/07/17 15:05	17060-07-0	
Toluene-d8 (S)	108	%	70-130	1		09/07/17 15:05	2037-26-5	
8260 MSV SIM	Analytical Method: EPA 8260B Mod.							
1,4-Dioxane (p-Dioxane)	57.9	ug/L	2.0	1		09/08/17 11:57	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	104	%	50-150	1		09/08/17 11:57	17060-07-0	
Toluene-d8 (S)	111	%	50-150	1		09/08/17 11:57	2037-26-5	

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ANALYTICAL RESULTS

Project: FORMER KOP-FLEX FACIL 31400389

Pace Project No.: 92353757

Sample: TRIP BLANK	Lab ID: 92353757012	Collected: 08/31/17 00:00	Received: 09/01/17 10:35	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
Acetone	ND	ug/L	25.0	1		09/06/17 01:47	67-64-1	
Benzene	ND	ug/L	1.0	1		09/06/17 01:47	71-43-2	
Bromobenzene	ND	ug/L	1.0	1		09/06/17 01:47	108-86-1	
Bromochloromethane	ND	ug/L	1.0	1		09/06/17 01:47	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	1		09/06/17 01:47	75-27-4	
Bromoform	ND	ug/L	1.0	1		09/06/17 01:47	75-25-2	
Bromomethane	ND	ug/L	2.0	1		09/06/17 01:47	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	1		09/06/17 01:47	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	1		09/06/17 01:47	56-23-5	
Chlorobenzene	ND	ug/L	1.0	1		09/06/17 01:47	108-90-7	
Chloroethane	ND	ug/L	1.0	1		09/06/17 01:47	75-00-3	
Chloroform	ND	ug/L	1.0	1		09/06/17 01:47	67-66-3	
Chloromethane	ND	ug/L	1.0	1		09/06/17 01:47	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	1		09/06/17 01:47	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	1		09/06/17 01:47	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	1		09/06/17 01:47	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	1		09/06/17 01:47	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		09/06/17 01:47	106-93-4	
Dibromomethane	ND	ug/L	1.0	1		09/06/17 01:47	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	1		09/06/17 01:47	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1		09/06/17 01:47	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1		09/06/17 01:47	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	1		09/06/17 01:47	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	1		09/06/17 01:47	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	1		09/06/17 01:47	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	1		09/06/17 01:47	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		09/06/17 01:47	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	1		09/06/17 01:47	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	1		09/06/17 01:47	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	1		09/06/17 01:47	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	1		09/06/17 01:47	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	1		09/06/17 01:47	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	1		09/06/17 01:47	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	1		09/06/17 01:47	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	1		09/06/17 01:47	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		09/06/17 01:47	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1		09/06/17 01:47	87-68-3	
2-Hexanone	ND	ug/L	5.0	1		09/06/17 01:47	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	1		09/06/17 01:47	99-87-6	
Methylene Chloride	ND	ug/L	2.0	1		09/06/17 01:47	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	1		09/06/17 01:47	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		09/06/17 01:47	1634-04-4	
Naphthalene	ND	ug/L	1.0	1		09/06/17 01:47	91-20-3	
Styrene	ND	ug/L	1.0	1		09/06/17 01:47	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	1		09/06/17 01:47	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	1		09/06/17 01:47	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	1		09/06/17 01:47	127-18-4	

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ANALYTICAL RESULTS

Project: FORMER KOP-FLEX FACIL 31400389

Pace Project No.: 92353757

Sample: TRIP BLANK	Lab ID: 92353757012	Collected: 08/31/17 00:00	Received: 09/01/17 10:35	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 8260							
Toluene	ND	ug/L	1.0	1		09/06/17 01:47	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	1		09/06/17 01:47	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1		09/06/17 01:47	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	1		09/06/17 01:47	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	1		09/06/17 01:47	79-00-5	
Trichloroethene	ND	ug/L	1.0	1		09/06/17 01:47	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	1		09/06/17 01:47	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	1		09/06/17 01:47	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1		09/06/17 01:47	108-05-4	
Vinyl chloride	ND	ug/L	1.0	1		09/06/17 01:47	75-01-4	
Xylene (Total)	ND	ug/L	1.0	1		09/06/17 01:47	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		09/06/17 01:47	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		09/06/17 01:47	95-47-6	
Surrogates								
4-Bromofluorobenzene (S)	100	%	70-130	1		09/06/17 01:47	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	70-130	1		09/06/17 01:47	17060-07-0	
Toluene-d8 (S)	105	%	70-130	1		09/06/17 01:47	2037-26-5	
8260 MSV SIM	Analytical Method: EPA 8260B Mod.							
1,4-Dioxane (p-Dioxane)	ND	ug/L	2.0	1		09/07/17 16:20	123-91-1	
Surrogates								
1,2-Dichloroethane-d4 (S)	115	%	50-150	1		09/07/17 16:20	17060-07-0	
Toluene-d8 (S)	116	%	50-150	1		09/07/17 16:20	2037-26-5	

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QUALITY CONTROL DATA

Project: FORMER KOP-FLEX FACIL 31400389

Pace Project No.: 92353757

QC Batch: 376298 Analysis Method: EPA 8260

QC Batch Method: EPA 8260 Analysis Description: 8260 MSV Low Level

Associated Lab Samples: 92353757001, 92353757002, 92353757003, 92353757004, 92353757005, 92353757006, 92353757007,
92353757008, 92353757009

METHOD BLANK: 2084599 Matrix: Water

Associated Lab Samples: 92353757001, 92353757002, 92353757003, 92353757004, 92353757005, 92353757006, 92353757007,
92353757008, 92353757009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	09/05/17 13:04	
1,1,1-Trichloroethane	ug/L	ND	1.0	09/05/17 13:04	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	09/05/17 13:04	
1,1,2-Trichloroethane	ug/L	ND	1.0	09/05/17 13:04	
1,1-Dichloroethane	ug/L	ND	1.0	09/05/17 13:04	
1,1-Dichloroethene	ug/L	ND	1.0	09/05/17 13:04	
1,1-Dichloropropene	ug/L	ND	1.0	09/05/17 13:04	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	09/05/17 13:04	
1,2,3-Trichloropropane	ug/L	ND	1.0	09/05/17 13:04	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	09/05/17 13:04	
1,2-Dibromo-3-chloropropane	ug/L	ND	2.0	09/05/17 13:04	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	09/05/17 13:04	
1,2-Dichlorobenzene	ug/L	ND	1.0	09/05/17 13:04	
1,2-Dichloroethane	ug/L	ND	1.0	09/05/17 13:04	
1,2-Dichloropropane	ug/L	ND	1.0	09/05/17 13:04	
1,3-Dichlorobenzene	ug/L	ND	1.0	09/05/17 13:04	
1,3-Dichloropropane	ug/L	ND	1.0	09/05/17 13:04	
1,4-Dichlorobenzene	ug/L	ND	1.0	09/05/17 13:04	
2,2-Dichloropropane	ug/L	ND	1.0	09/05/17 13:04	
2-Butanone (MEK)	ug/L	ND	5.0	09/05/17 13:04	
2-Chlorotoluene	ug/L	ND	1.0	09/05/17 13:04	
2-Hexanone	ug/L	ND	5.0	09/05/17 13:04	
4-Chlorotoluene	ug/L	ND	1.0	09/05/17 13:04	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	09/05/17 13:04	
Acetone	ug/L	ND	25.0	09/05/17 13:04	
Benzene	ug/L	ND	1.0	09/05/17 13:04	
Bromobenzene	ug/L	ND	1.0	09/05/17 13:04	
Bromochloromethane	ug/L	ND	1.0	09/05/17 13:04	
Bromodichloromethane	ug/L	ND	1.0	09/05/17 13:04	
Bromoform	ug/L	ND	1.0	09/05/17 13:04	
Bromomethane	ug/L	ND	2.0	09/05/17 13:04	
Carbon tetrachloride	ug/L	ND	1.0	09/05/17 13:04	
Chlorobenzene	ug/L	ND	1.0	09/05/17 13:04	
Chloroethane	ug/L	ND	1.0	09/05/17 13:04	
Chloroform	ug/L	ND	1.0	09/05/17 13:04	
Chloromethane	ug/L	ND	1.0	09/05/17 13:04	
cis-1,2-Dichloroethene	ug/L	ND	1.0	09/05/17 13:04	
cis-1,3-Dichloropropene	ug/L	ND	1.0	09/05/17 13:04	
Dibromochloromethane	ug/L	ND	1.0	09/05/17 13:04	
Dibromomethane	ug/L	ND	1.0	09/05/17 13:04	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: FORMER KOP-FLEX FACIL 31400389

Pace Project No.: 92353757

METHOD BLANK: 2084599

Matrix: Water

Associated Lab Samples: 92353757001, 92353757002, 92353757003, 92353757004, 92353757005, 92353757006, 92353757007,
92353757008, 92353757009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dichlorodifluoromethane	ug/L	ND	1.0	09/05/17 13:04	
Diisopropyl ether	ug/L	ND	1.0	09/05/17 13:04	
Ethylbenzene	ug/L	ND	1.0	09/05/17 13:04	
Hexachloro-1,3-butadiene	ug/L	ND	1.0	09/05/17 13:04	
m&p-Xylene	ug/L	ND	2.0	09/05/17 13:04	
Methyl-tert-butyl ether	ug/L	ND	1.0	09/05/17 13:04	
Methylene Chloride	ug/L	ND	2.0	09/05/17 13:04	
Naphthalene	ug/L	ND	1.0	09/05/17 13:04	
o-Xylene	ug/L	ND	1.0	09/05/17 13:04	
p-Isopropyltoluene	ug/L	ND	1.0	09/05/17 13:04	
Styrene	ug/L	ND	1.0	09/05/17 13:04	
Tetrachloroethene	ug/L	ND	1.0	09/05/17 13:04	
Toluene	ug/L	ND	1.0	09/05/17 13:04	
trans-1,2-Dichloroethene	ug/L	ND	1.0	09/05/17 13:04	
trans-1,3-Dichloropropene	ug/L	ND	1.0	09/05/17 13:04	
Trichloroethene	ug/L	ND	1.0	09/05/17 13:04	
Trichlorofluoromethane	ug/L	ND	1.0	09/05/17 13:04	
Vinyl acetate	ug/L	ND	2.0	09/05/17 13:04	
Vinyl chloride	ug/L	ND	1.0	09/05/17 13:04	
Xylene (Total)	ug/L	ND	1.0	09/05/17 13:04	
1,2-Dichloroethane-d4 (S)	%	101	70-130	09/05/17 13:04	
4-Bromofluorobenzene (S)	%	100	70-130	09/05/17 13:04	
Toluene-d8 (S)	%	107	70-130	09/05/17 13:04	

LABORATORY CONTROL SAMPLE: 2084600

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	48.2	96	70-130	
1,1,1-Trichloroethane	ug/L	50	49.9	100	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	49.1	98	70-130	
1,1,2-Trichloroethane	ug/L	50	49.1	98	70-130	
1,1-Dichloroethane	ug/L	50	47.5	95	70-130	
1,1-Dichloroethene	ug/L	50	45.2	90	70-132	
1,1-Dichloropropene	ug/L	50	52.9	106	70-130	
1,2,3-Trichlorobenzene	ug/L	50	54.5	109	70-135	
1,2,3-Trichloropropane	ug/L	50	48.6	97	70-130	
1,2,4-Trichlorobenzene	ug/L	50	53.7	107	70-134	
1,2-Dibromo-3-chloropropane	ug/L	50	52.6	105	70-130	
1,2-Dibromoethane (EDB)	ug/L	50	53.5	107	70-130	
1,2-Dichlorobenzene	ug/L	50	51.1	102	70-130	
1,2-Dichloroethane	ug/L	50	44.0	88	70-130	
1,2-Dichloropropane	ug/L	50	52.2	104	70-130	
1,3-Dichlorobenzene	ug/L	50	51.9	104	70-130	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: FORMER KOP-FLEX FACIL 31400389

Pace Project No.: 92353757

LABORATORY CONTROL SAMPLE: 2084600

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,3-Dichloropropane	ug/L	50	52.9	106	70-130	
1,4-Dichlorobenzene	ug/L	50	51.9	104	70-130	
2,2-Dichloropropane	ug/L	50	53.5	107	58-145	
2-Butanone (MEK)	ug/L	100	102	102	70-145	
2-Chlorotoluene	ug/L	50	49.6	99	70-130	
2-Hexanone	ug/L	100	104	104	70-144	
4-Chlorotoluene	ug/L	50	51.0	102	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	100	97.7	98	70-140	
Acetone	ug/L	100	110	110	50-175	
Benzene	ug/L	50	49.9	100	70-130	
Bromobenzene	ug/L	50	51.3	103	70-130	
Bromochloromethane	ug/L	50	50.5	101	70-130	
Bromodichloromethane	ug/L	50	47.9	96	70-130	
Bromoform	ug/L	50	46.7	93	70-130	
Bromomethane	ug/L	50	52.4	105	54-130	
Carbon tetrachloride	ug/L	50	51.4	103	70-132	
Chlorobenzene	ug/L	50	50.7	101	70-130	
Chloroethane	ug/L	50	46.5	93	64-134	
Chloroform	ug/L	50	46.3	93	70-130	
Chloromethane	ug/L	50	55.2	110	64-130	
cis-1,2-Dichloroethene	ug/L	50	47.8	96	70-131	
cis-1,3-Dichloropropene	ug/L	50	54.4	109	70-130	
Dibromochloromethane	ug/L	50	49.4	99	70-130	
Dibromomethane	ug/L	50	49.2	98	70-131	
Dichlorodifluoromethane	ug/L	50	48.1	96	56-130	
Diisopropyl ether	ug/L	50	54.3	109	70-130	
Ethylbenzene	ug/L	50	50.7	101	70-130	
Hexachloro-1,3-butadiene	ug/L	50	51.5	103	70-130	
m&p-Xylene	ug/L	100	99.6	100	70-130	
Methyl-tert-butyl ether	ug/L	50	52.8	106	70-130	
Methylene Chloride	ug/L	50	49.6	99	63-130	
Naphthalene	ug/L	50	54.2	108	70-138	
o-Xylene	ug/L	50	49.7	99	70-130	
p-Isopropyltoluene	ug/L	50	53.2	106	70-130	
Styrene	ug/L	50	51.3	103	70-130	
Tetrachloroethene	ug/L	50	52.8	106	70-130	
Toluene	ug/L	50	48.9	98	70-130	
trans-1,2-Dichloroethene	ug/L	50	48.1	96	70-130	
trans-1,3-Dichloropropene	ug/L	50	48.1	96	70-132	
Trichloroethene	ug/L	50	52.8	106	70-130	
Trichlorofluoromethane	ug/L	50	49.6	99	62-133	
Vinyl acetate	ug/L	100	108	108	66-157	
Vinyl chloride	ug/L	50	50.3	101	50-150	
Xylene (Total)	ug/L	150	149	100	70-130	
1,2-Dichloroethane-d4 (S)	%			86	70-130	
4-Bromofluorobenzene (S)	%			98	70-130	
Toluene-d8 (S)	%			96	70-130	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: FORMER KOP-FLEX FACIL 31400389

Pace Project No.: 92353757

Parameter	Units	92353757001		MS		MSD		2084602						
		Result	Conc.	Spike	Conc.	MS	MSD	MS	MSD	% Rec	Max	RPD	RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	ND	100	100	99.8	99.9	100	100	100	70-130	0	30		
1,1,1-Trichloroethane	ug/L	9.5	100	100	131	124	121	114	70-130	5	30			
1,1,2,2-Tetrachloroethane	ug/L	ND	100	100	99.2	105	99	105	70-130	6	30			
1,1,2-Trichloroethane	ug/L	ND	100	100	104	103	104	103	70-130	1	30			
1,1-Dichloroethane	ug/L	38.9	100	100	152	143	113	104	70-130	6	30			
1,1-Dichloroethene	ug/L	663	100	100	780	754	116	91	70-166	3	30			
1,1-Dichloropropene	ug/L	ND	100	100	122	119	122	119	70-130	3	30			
1,2,3-Trichlorobenzene	ug/L	ND	100	100	102	109	102	109	70-130	7	30			
1,2,3-Trichloropropane	ug/L	ND	100	100	100	102	100	102	70-130	2	30			
1,2,4-Trichlorobenzene	ug/L	ND	100	100	105	105	105	105	70-130	0	30			
1,2-Dibromo-3-chloropropane	ug/L	ND	100	100	91.2	98.6	91	99	70-130	8	30			
1,2-Dibromoethane (EDB)	ug/L	ND	100	100	107	110	107	110	70-130	3	30			
1,2-Dichlorobenzene	ug/L	ND	100	100	106	107	106	107	70-130	0	30			
1,2-Dichloroethane	ug/L	5.2	100	100	110	109	105	104	70-130	1	30			
1,2-Dichloropropane	ug/L	ND	100	100	117	116	117	116	70-130	1	30			
1,3-Dichlorobenzene	ug/L	ND	100	100	109	108	109	108	70-130	0	30			
1,3-Dichloropropane	ug/L	ND	100	100	108	111	108	111	70-130	3	30			
1,4-Dichlorobenzene	ug/L	ND	100	100	109	106	109	106	70-130	3	30			
2,2-Dichloropropane	ug/L	ND	100	100	105	108	105	108	70-130	3	30			
2-Butanone (MEK)	ug/L	ND	200	200	189	210	95	105	70-130	10	30			
2-Chlorotoluene	ug/L	ND	100	100	108	107	108	107	70-130	1	30			
2-Hexanone	ug/L	ND	200	200	185	206	92	103	70-130	11	30			
4-Chlorotoluene	ug/L	ND	100	100	110	110	110	110	70-130	0	30			
4-Methyl-2-pentanone (MIBK)	ug/L	ND	200	200	196	205	98	102	70-130	4	30			
Acetone	ug/L	ND	200	200	184	195	92	98	70-130	6	30			
Benzene	ug/L	ND	100	100	115	111	115	111	70-148	3	30			
Bromobenzene	ug/L	ND	100	100	111	110	111	110	70-130	1	30			
Bromochloromethane	ug/L	ND	100	100	120	116	120	116	70-130	4	30			
Bromodichloromethane	ug/L	ND	100	100	105	104	105	104	70-130	0	30			
Bromoform	ug/L	ND	100	100	90.6	93.2	91	93	70-130	3	30			
Bromomethane	ug/L	ND	100	100	102	110	102	110	70-130	8	30			
Carbon tetrachloride	ug/L	ND	100	100	113	112	113	112	70-130	1	30			
Chlorobenzene	ug/L	ND	100	100	112	114	112	114	70-146	2	30			
Chloroethane	ug/L	ND	100	100	116	115	116	115	70-130	1	30			
Chloroform	ug/L	ND	100	100	114	113	113	112	70-130	0	30			
Chloromethane	ug/L	ND	100	100	131	129	131	129	70-130	2	30	M1		
cis-1,2-Dichloroethene	ug/L	ND	100	100	115	115	112	111	70-130	1	30			
cis-1,3-Dichloropropene	ug/L	ND	100	100	106	108	106	108	70-130	2	30			
Dibromochloromethane	ug/L	ND	100	100	98.4	100	98	100	70-130	2	30			
Dibromomethane	ug/L	ND	100	100	106	106	106	106	70-130	0	30			
Dichlorodifluoromethane	ug/L	ND	100	100	112	109	112	109	70-130	2	30			
Diisopropyl ether	ug/L	ND	100	100	114	111	114	111	70-130	3	30			
Ethylbenzene	ug/L	ND	100	100	114	113	114	113	70-130	1	30			
Hexachloro-1,3-butadiene	ug/L	ND	100	100	103	107	103	107	70-130	4	30			

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QUALITY CONTROL DATA

Project: FORMER KOP-FLEX FACIL 31400389

Pace Project No.: 92353757

Parameter	Units	92353757001		MS		MSD		2084602				
		Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD RPD	Max	Qual
m&p-Xylene	ug/L	ND	200	200	225	226	112	113	70-130	0	30	
Methyl-tert-butyl ether	ug/L	ND	100	100	110	110	110	110	70-130	0	30	
Methylene Chloride	ug/L	ND	100	100	117	114	117	114	70-130	3	30	
Naphthalene	ug/L	ND	100	100	106	106	106	106	70-130	1	30	
o-Xylene	ug/L	ND	100	100	114	108	114	108	70-130	5	30	
p-Isopropyltoluene	ug/L	ND	100	100	112	108	112	108	70-130	4	30	
Styrene	ug/L	ND	100	100	111	112	111	112	70-130	1	30	
Tetrachloroethene	ug/L	ND	100	100	111	112	111	112	70-130	0	30	
Toluene	ug/L	ND	100	100	114	114	114	114	70-155	0	30	
trans-1,2-Dichloroethene	ug/L	ND	100	100	118	114	118	114	70-130	3	30	
trans-1,3-Dichloropropene	ug/L	ND	100	100	91.9	92.5	92	92	70-130	1	30	
Trichloroethene	ug/L	ND	100	100	123	125	118	120	69-151	2	30	
Trichlorofluoromethane	ug/L	ND	100	100	122	113	122	113	70-130	7	30	
Vinyl acetate	ug/L	ND	200	200	208	210	104	105	70-130	1	30	
Vinyl chloride	ug/L	ND	100	100	122	116	122	116	70-130	5	30	
1,2-Dichloroethane-d4 (S)	%						96	99	70-130			
4-Bromofluorobenzene (S)	%						100	101	70-130			
Toluene-d8 (S)	%						98	97	70-130			

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QUALITY CONTROL DATA

Project: FORMER KOP-FLEX FACIL 31400389

Pace Project No.: 92353757

QC Batch:	376382	Analysis Method:	EPA 8260
QC Batch Method:	EPA 8260	Analysis Description:	8260 MSV Low Level
Associated Lab Samples: 92353757012			

METHOD BLANK: 2085197 Matrix: Water

Associated Lab Samples: 92353757012

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	09/06/17 00:55	
1,1,1-Trichloroethane	ug/L	ND	1.0	09/06/17 00:55	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	09/06/17 00:55	
1,1,2-Trichloroethane	ug/L	ND	1.0	09/06/17 00:55	
1,1-Dichloroethane	ug/L	ND	1.0	09/06/17 00:55	
1,1-Dichloroethene	ug/L	ND	1.0	09/06/17 00:55	
1,1-Dichloropropene	ug/L	ND	1.0	09/06/17 00:55	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	09/06/17 00:55	
1,2,3-Trichloropropane	ug/L	ND	1.0	09/06/17 00:55	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	09/06/17 00:55	
1,2-Dibromo-3-chloropropane	ug/L	ND	2.0	09/06/17 00:55	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	09/06/17 00:55	
1,2-Dichlorobenzene	ug/L	ND	1.0	09/06/17 00:55	
1,2-Dichloroethane	ug/L	ND	1.0	09/06/17 00:55	
1,2-Dichloropropane	ug/L	ND	1.0	09/06/17 00:55	
1,3-Dichlorobenzene	ug/L	ND	1.0	09/06/17 00:55	
1,3-Dichloropropane	ug/L	ND	1.0	09/06/17 00:55	
1,4-Dichlorobenzene	ug/L	ND	1.0	09/06/17 00:55	
2,2-Dichloropropane	ug/L	ND	1.0	09/06/17 00:55	
2-Butanone (MEK)	ug/L	ND	5.0	09/06/17 00:55	
2-Chlorotoluene	ug/L	ND	1.0	09/06/17 00:55	
2-Hexanone	ug/L	ND	5.0	09/06/17 00:55	
4-Chlorotoluene	ug/L	ND	1.0	09/06/17 00:55	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	09/06/17 00:55	
Acetone	ug/L	ND	25.0	09/06/17 00:55	
Benzene	ug/L	ND	1.0	09/06/17 00:55	
Bromobenzene	ug/L	ND	1.0	09/06/17 00:55	
Bromochloromethane	ug/L	ND	1.0	09/06/17 00:55	
Bromodichloromethane	ug/L	ND	1.0	09/06/17 00:55	
Bromoform	ug/L	ND	1.0	09/06/17 00:55	
Bromomethane	ug/L	ND	2.0	09/06/17 00:55	
Carbon tetrachloride	ug/L	ND	1.0	09/06/17 00:55	
Chlorobenzene	ug/L	ND	1.0	09/06/17 00:55	
Chloroethane	ug/L	ND	1.0	09/06/17 00:55	
Chloroform	ug/L	ND	1.0	09/06/17 00:55	
Chloromethane	ug/L	ND	1.0	09/06/17 00:55	
cis-1,2-Dichloroethene	ug/L	ND	1.0	09/06/17 00:55	
cis-1,3-Dichloropropene	ug/L	ND	1.0	09/06/17 00:55	
Dibromochloromethane	ug/L	ND	1.0	09/06/17 00:55	
Dibromomethane	ug/L	ND	1.0	09/06/17 00:55	
Dichlorodifluoromethane	ug/L	ND	1.0	09/06/17 00:55	

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QUALITY CONTROL DATA

Project: FORMER KOP-FLEX FACIL 31400389

Pace Project No.: 92353757

METHOD BLANK: 2085197

Matrix: Water

Associated Lab Samples: 92353757012

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diisopropyl ether	ug/L	ND	1.0	09/06/17 00:55	
Ethylbenzene	ug/L	ND	1.0	09/06/17 00:55	
Hexachloro-1,3-butadiene	ug/L	ND	1.0	09/06/17 00:55	
m&p-Xylene	ug/L	ND	2.0	09/06/17 00:55	
Methyl-tert-butyl ether	ug/L	ND	1.0	09/06/17 00:55	
Methylene Chloride	ug/L	ND	2.0	09/06/17 00:55	
Naphthalene	ug/L	ND	1.0	09/06/17 00:55	
o-Xylene	ug/L	ND	1.0	09/06/17 00:55	
p-Isopropyltoluene	ug/L	ND	1.0	09/06/17 00:55	
Styrene	ug/L	ND	1.0	09/06/17 00:55	
Tetrachloroethene	ug/L	ND	1.0	09/06/17 00:55	
Toluene	ug/L	ND	1.0	09/06/17 00:55	
trans-1,2-Dichloroethene	ug/L	ND	1.0	09/06/17 00:55	
trans-1,3-Dichloropropene	ug/L	ND	1.0	09/06/17 00:55	
Trichloroethene	ug/L	ND	1.0	09/06/17 00:55	
Trichlorofluoromethane	ug/L	ND	1.0	09/06/17 00:55	
Vinyl acetate	ug/L	ND	2.0	09/06/17 00:55	
Vinyl chloride	ug/L	ND	1.0	09/06/17 00:55	
Xylene (Total)	ug/L	ND	1.0	09/06/17 00:55	
1,2-Dichloroethane-d4 (S)	%	96	70-130	09/06/17 00:55	
4-Bromofluorobenzene (S)	%	101	70-130	09/06/17 00:55	
Toluene-d8 (S)	%	107	70-130	09/06/17 00:55	

LABORATORY CONTROL SAMPLE: 2085198

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	45.5	91	70-130	
1,1,1-Trichloroethane	ug/L	50	46.2	92	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	47.7	95	70-130	
1,1,2-Trichloroethane	ug/L	50	49.1	98	70-130	
1,1-Dichloroethane	ug/L	50	44.9	90	70-130	
1,1-Dichloroethene	ug/L	50	44.4	89	70-132	
1,1-Dichloropropene	ug/L	50	49.0	98	70-130	
1,2,3-Trichlorobenzene	ug/L	50	51.4	103	70-135	
1,2,3-Trichloropropane	ug/L	50	46.4	93	70-130	
1,2,4-Trichlorobenzene	ug/L	50	49.7	99	70-134	
1,2-Dibromo-3-chloropropane	ug/L	50	46.9	94	70-130	
1,2-Dibromoethane (EDB)	ug/L	50	52.3	105	70-130	
1,2-Dichlorobenzene	ug/L	50	49.0	98	70-130	
1,2-Dichloroethane	ug/L	50	44.1	88	70-130	
1,2-Dichloropropene	ug/L	50	49.9	100	70-130	
1,3-Dichlorobenzene	ug/L	50	48.9	98	70-130	
1,3-Dichloropropane	ug/L	50	50.8	102	70-130	
1,4-Dichlorobenzene	ug/L	50	49.4	99	70-130	

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QUALITY CONTROL DATA

Project: FORMER KOP-FLEX FACIL 31400389

Pace Project No.: 92353757

LABORATORY CONTROL SAMPLE: 2085198

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2,2-Dichloropropane	ug/L	50	41.2	82	58-145	
2-Butanone (MEK)	ug/L	100	90.8	91	70-145	
2-Chlorotoluene	ug/L	50	47.6	95	70-130	
2-Hexanone	ug/L	100	94.9	95	70-144	
4-Chlorotoluene	ug/L	50	48.2	96	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	100	95.6	96	70-140	
Acetone	ug/L	100	89.9	90	50-175	
Benzene	ug/L	50	48.0	96	70-130	
Bromobenzene	ug/L	50	50.5	101	70-130	
Bromochloromethane	ug/L	50	48.0	96	70-130	
Bromodichloromethane	ug/L	50	46.7	93	70-130	
Bromoform	ug/L	50	42.2	84	70-130	
Bromomethane	ug/L	50	53.7	107	54-130	
Carbon tetrachloride	ug/L	50	48.1	96	70-132	
Chlorobenzene	ug/L	50	48.0	96	70-130	
Chloroethane	ug/L	50	43.3	87	64-134	
Chloroform	ug/L	50	44.7	89	70-130	
Chloromethane	ug/L	50	49.3	99	64-130	
cis-1,2-Dichloroethene	ug/L	50	45.2	90	70-131	
cis-1,3-Dichloropropene	ug/L	50	51.8	104	70-130	
Dibromochloromethane	ug/L	50	46.3	93	70-130	
Dibromomethane	ug/L	50	47.8	96	70-131	
Dichlorodifluoromethane	ug/L	50	43.7	87	56-130	
Diisopropyl ether	ug/L	50	51.1	102	70-130	
Ethylbenzene	ug/L	50	47.7	95	70-130	
Hexachloro-1,3-butadiene	ug/L	50	46.6	93	70-130	
m&p-Xylene	ug/L	100	93.6	94	70-130	
Methyl-tert-butyl ether	ug/L	50	52.1	104	70-130	
Methylene Chloride	ug/L	50	46.7	93	63-130	
Naphthalene	ug/L	50	51.6	103	70-138	
o-Xylene	ug/L	50	46.9	94	70-130	
p-Isopropyltoluene	ug/L	50	49.1	98	70-130	
Styrene	ug/L	50	48.1	96	70-130	
Tetrachloroethene	ug/L	50	47.4	95	70-130	
Toluene	ug/L	50	47.5	95	70-130	
trans-1,2-Dichloroethene	ug/L	50	44.9	90	70-130	
trans-1,3-Dichloropropene	ug/L	50	45.7	91	70-132	
Trichloroethene	ug/L	50	51.0	102	70-130	
Trichlorofluoromethane	ug/L	50	45.6	91	62-133	
Vinyl acetate	ug/L	100	101	101	66-157	
Vinyl chloride	ug/L	50	44.9	90	50-150	
Xylene (Total)	ug/L	150	140	94	70-130	
1,2-Dichloroethane-d4 (S)	%			90	70-130	
4-Bromofluorobenzene (S)	%			98	70-130	
Toluene-d8 (S)	%			96	70-130	

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QUALITY CONTROL DATA

Project: FORMER KOP-FLEX FACIL 31400389

Pace Project No.: 92353757

MATRIX SPIKE SAMPLE:	2085199						
Parameter	Units	92353767001	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	20	19.8	99	70-130	
1,1,1-Trichloroethane	ug/L	ND	20	23.1	115	70-130	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20.1	100	70-130	
1,1,2-Trichloroethane	ug/L	ND	20	20.2	101	70-130	
1,1-Dichloroethane	ug/L	ND	20	22.9	114	70-130	
1,1-Dichloroethene	ug/L	ND	20	23.4	117	70-166	
1,1-Dichloropropene	ug/L	ND	20	23.7	118	70-130	
1,2,3-Trichlorobenzene	ug/L	ND	20	21.8	109	70-130	
1,2,3-Trichloropropane	ug/L	ND	20	20.1	101	70-130	
1,2,4-Trichlorobenzene	ug/L	ND	20	21.3	106	70-130	
1,2-Dibromo-3-chloropropane	ug/L	ND	20	19.6	98	70-130	
1,2-Dibromoethane (EDB)	ug/L	ND	20	21.7	108	70-130	
1,2-Dichlorobenzene	ug/L	ND	20	21.1	106	70-130	
1,2-Dichloroethane	ug/L	ND	20	21.5	107	70-130	
1,2-Dichloropropane	ug/L	ND	20	23.6	118	70-130	
1,3-Dichlorobenzene	ug/L	ND	20	20.8	104	70-130	
1,3-Dichloropropane	ug/L	ND	20	21.7	108	70-130	
1,4-Dichlorobenzene	ug/L	ND	20	21.1	105	70-130	
2,2-Dichloropropane	ug/L	ND	20	18.5	93	70-130	
2-Butanone (MEK)	ug/L	ND	40	38.8	97	70-130	
2-Chlorotoluene	ug/L	ND	20	20.8	104	70-130	
2-Hexanone	ug/L	ND	40	38.5	96	70-130	
4-Chlorotoluene	ug/L	ND	20	21.3	106	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	40	40.5	101	70-130	
Acetone	ug/L	ND	40	49.3	123	70-130	
Benzene	ug/L	ND	20	22.8	114	70-148	
Bromobenzene	ug/L	ND	20	21.5	108	70-130	
Bromochloromethane	ug/L	ND	20	23.4	117	70-130	
Bromodichloromethane	ug/L	ND	20	21.3	107	70-130	
Bromoform	ug/L	ND	20	19.2	96	70-130	
Bromomethane	ug/L	ND	20	24.0	120	70-130	
Carbon tetrachloride	ug/L	ND	20	23.5	117	70-130	
Chlorobenzene	ug/L	ND	20	21.9	109	70-146	
Chloroethane	ug/L	ND	20	23.6	118	70-130	
Chloroform	ug/L	ND	20	23.0	115	70-130	
Chloromethane	ug/L	ND	20	27.2	136	70-130 M1	
cis-1,2-Dichloroethene	ug/L	ND	20	22.3	111	70-130	
cis-1,3-Dichloropropene	ug/L	ND	20	21.8	109	70-130	
Dibromochloromethane	ug/L	ND	20	20.3	101	70-130	
Dibromomethane	ug/L	ND	20	21.6	108	70-130	
Dichlorodifluoromethane	ug/L	ND	20	22.4	112	70-130	
Diisopropyl ether	ug/L	ND	20	22.3	112	70-130	
Ethylbenzene	ug/L	ND	20	22.2	111	70-130	
Hexachloro-1,3-butadiene	ug/L	ND	20	21.2	106	70-130	
m&p-Xylene	ug/L	ND	40	43.3	108	70-130	
Methyl-tert-butyl ether	ug/L	ND	20	20.9	104	70-130	
Methylene Chloride	ug/L	ND	20	20.7	104	70-130	

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QUALITY CONTROL DATA

Project: FORMER KOP-FLEX FACIL 31400389

Pace Project No.: 92353757

MATRIX SPIKE SAMPLE: 2085199

Parameter	Units	92353767001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Naphthalene	ug/L	ND	20	21.2	106	70-130	
o-Xylene	ug/L	ND	20	21.2	106	70-130	
p-Isopropyltoluene	ug/L	ND	20	21.5	107	70-130	
Styrene	ug/L	ND	20	21.8	109	70-130	
Tetrachloroethene	ug/L	ND	20	21.3	107	70-130	
Toluene	ug/L	ND	20	22.4	112	70-155	
trans-1,2-Dichloroethene	ug/L	ND	20	22.8	114	70-130	
trans-1,3-Dichloropropene	ug/L	ND	20	19.1	96	70-130	
Trichloroethene	ug/L	ND	20	23.5	117	69-151	
Trichlorofluoromethane	ug/L	ND	20	24.1	121	70-130	
Vinyl acetate	ug/L	ND	40	27.4	69	70-130	M1
Vinyl chloride	ug/L	ND	20	24.1	120	70-130	
1,2-Dichloroethane-d4 (S)	%				99	70-130	
4-Bromofluorobenzene (S)	%				101	70-130	
Toluene-d8 (S)	%				101	70-130	

SAMPLE DUPLICATE: 2085200

Parameter	Units	92353767002 Result	Dup Result	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	ND	30	
1,1,1-Trichloroethane	ug/L	ND	ND	30	
1,1,2,2-Tetrachloroethane	ug/L	ND	ND	30	
1,1,2-Trichloroethane	ug/L	ND	ND	30	
1,1-Dichloroethane	ug/L	ND	ND	30	
1,1-Dichloroethene	ug/L	ND	ND	30	
1,1-Dichloropropene	ug/L	ND	ND	30	
1,2,3-Trichlorobenzene	ug/L	ND	ND	30	
1,2,3-Trichloropropane	ug/L	ND	ND	30	
1,2,4-Trichlorobenzene	ug/L	ND	ND	30	
1,2-Dibromo-3-chloropropane	ug/L	ND	ND	30	
1,2-Dibromoethane (EDB)	ug/L	ND	ND	30	
1,2-Dichlorobenzene	ug/L	ND	ND	30	
1,2-Dichloroethane	ug/L	ND	ND	30	
1,2-Dichloropropene	ug/L	ND	ND	30	
1,3-Dichlorobenzene	ug/L	ND	ND	30	
1,3-Dichloropropane	ug/L	ND	ND	30	
1,4-Dichlorobenzene	ug/L	ND	ND	30	
2,2-Dichloropropane	ug/L	ND	ND	30	
2-Butanone (MEK)	ug/L	ND	ND	30	
2-Chlorotoluene	ug/L	ND	ND	30	
2-Hexanone	ug/L	ND	ND	30	
4-Chlorotoluene	ug/L	ND	ND	30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	ND	30	
Acetone	ug/L	ND	ND	30	
Benzene	ug/L	1.4	1.5	10	30

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QUALITY CONTROL DATA

Project: FORMER KOP-FLEX FACIL 31400389

Pace Project No.: 92353757

SAMPLE DUPLICATE: 2085200

Parameter	Units	92353767002 Result	Dup Result	RPD	Max RPD	Qualifiers
Bromobenzene	ug/L	ND	ND		30	
Bromoform	ug/L	ND	ND		30	
Bromochloromethane	ug/L	ND	ND		30	
Bromodichloromethane	ug/L	ND	ND		30	
Bromomethane	ug/L	ND	ND		30	
Carbon tetrachloride	ug/L	ND	ND		30	
Chlorobenzene	ug/L	ND	ND		30	
Chloroethane	ug/L	ND	ND		30	
Chloroform	ug/L	ND	ND		30	
Chloromethane	ug/L	ND	ND		30	
cis-1,2-Dichloroethene	ug/L	ND	ND		30	
cis-1,3-Dichloropropene	ug/L	ND	ND		30	
Dibromochloromethane	ug/L	ND	ND		30	
Dibromomethane	ug/L	ND	ND		30	
Dichlorodifluoromethane	ug/L	ND	ND		30	
Diisopropyl ether	ug/L	ND	ND		30	
Ethylbenzene	ug/L	2.2	2.4	9	30	
Hexachloro-1,3-butadiene	ug/L	ND	ND		30	
m&p-Xylene	ug/L	5.0	7.0	33	30 D6	
Methyl-tert-butyl ether	ug/L	ND	ND		30	
Methylene Chloride	ug/L	ND	ND		30	
Naphthalene	ug/L	ND	.44J		30	
o-Xylene	ug/L	6.1	6.4	5	30	
p-Isopropyltoluene	ug/L	ND	ND		30	
Styrene	ug/L	ND	ND		30	
Tetrachloroethene	ug/L	ND	ND		30	
Toluene	ug/L	12.3	14.9	20	30	
trans-1,2-Dichloroethene	ug/L	ND	ND		30	
trans-1,3-Dichloropropene	ug/L	ND	ND		30	
Trichloroethene	ug/L	ND	ND		30	
Trichlorofluoromethane	ug/L	ND	ND		30	
Vinyl acetate	ug/L	ND	ND		30	
Vinyl chloride	ug/L	ND	ND		30	
Xylene (Total)	ug/L	11.1	13.4	19	30	
1,2-Dichloroethane-d4 (S)	%	101	98	3		
4-Bromofluorobenzene (S)	%	101	102	0		
Toluene-d8 (S)	%	105	105	0		

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QUALITY CONTROL DATA

Project: FORMER KOP-FLEX FACIL 31400389

Pace Project No.: 92353757

QC Batch:	376699	Analysis Method:	EPA 8260
QC Batch Method:	EPA 8260	Analysis Description:	8260 MSV Low Level
Associated Lab Samples:	92353757010, 92353757011		

METHOD BLANK: 2087105 Matrix: Water

Associated Lab Samples: 92353757010, 92353757011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	09/07/17 14:13	
1,1,1-Trichloroethane	ug/L	ND	1.0	09/07/17 14:13	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	09/07/17 14:13	
1,1,2-Trichloroethane	ug/L	ND	1.0	09/07/17 14:13	
1,1-Dichloroethane	ug/L	ND	1.0	09/07/17 14:13	
1,1-Dichloroethene	ug/L	ND	1.0	09/07/17 14:13	
1,1-Dichloropropene	ug/L	ND	1.0	09/07/17 14:13	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	09/07/17 14:13	
1,2,3-Trichloropropane	ug/L	ND	1.0	09/07/17 14:13	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	09/07/17 14:13	
1,2-Dibromo-3-chloropropane	ug/L	ND	2.0	09/07/17 14:13	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	09/07/17 14:13	
1,2-Dichlorobenzene	ug/L	ND	1.0	09/07/17 14:13	
1,2-Dichloroethane	ug/L	ND	1.0	09/07/17 14:13	
1,2-Dichloropropane	ug/L	ND	1.0	09/07/17 14:13	
1,3-Dichlorobenzene	ug/L	ND	1.0	09/07/17 14:13	
1,3-Dichloropropane	ug/L	ND	1.0	09/07/17 14:13	
1,4-Dichlorobenzene	ug/L	ND	1.0	09/07/17 14:13	
2,2-Dichloropropane	ug/L	ND	1.0	09/07/17 14:13	
2-Butanone (MEK)	ug/L	ND	5.0	09/07/17 14:13	
2-Chlorotoluene	ug/L	ND	1.0	09/07/17 14:13	
2-Hexanone	ug/L	ND	5.0	09/07/17 14:13	
4-Chlorotoluene	ug/L	ND	1.0	09/07/17 14:13	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	09/07/17 14:13	
Acetone	ug/L	ND	25.0	09/07/17 14:13	
Benzene	ug/L	ND	1.0	09/07/17 14:13	
Bromobenzene	ug/L	ND	1.0	09/07/17 14:13	
Bromochloromethane	ug/L	ND	1.0	09/07/17 14:13	
Bromodichloromethane	ug/L	ND	1.0	09/07/17 14:13	
Bromoform	ug/L	ND	1.0	09/07/17 14:13	
Bromomethane	ug/L	ND	2.0	09/07/17 14:13	
Carbon tetrachloride	ug/L	ND	1.0	09/07/17 14:13	
Chlorobenzene	ug/L	ND	1.0	09/07/17 14:13	
Chloroethane	ug/L	ND	1.0	09/07/17 14:13	
Chloroform	ug/L	ND	1.0	09/07/17 14:13	
Chloromethane	ug/L	ND	1.0	09/07/17 14:13	
cis-1,2-Dichloroethene	ug/L	ND	1.0	09/07/17 14:13	
cis-1,3-Dichloropropene	ug/L	ND	1.0	09/07/17 14:13	
Dibromochloromethane	ug/L	ND	1.0	09/07/17 14:13	
Dibromomethane	ug/L	ND	1.0	09/07/17 14:13	
Dichlorodifluoromethane	ug/L	ND	1.0	09/07/17 14:13	

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QUALITY CONTROL DATA

Project: FORMER KOP-FLEX FACIL 31400389

Pace Project No.: 92353757

METHOD BLANK: 2087105

Matrix: Water

Associated Lab Samples: 92353757010, 92353757011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diisopropyl ether	ug/L	ND	1.0	09/07/17 14:13	
Ethylbenzene	ug/L	ND	1.0	09/07/17 14:13	
Hexachloro-1,3-butadiene	ug/L	ND	1.0	09/07/17 14:13	
m&p-Xylene	ug/L	ND	2.0	09/07/17 14:13	
Methyl-tert-butyl ether	ug/L	ND	1.0	09/07/17 14:13	
Methylene Chloride	ug/L	ND	2.0	09/07/17 14:13	
Naphthalene	ug/L	ND	1.0	09/07/17 14:13	
o-Xylene	ug/L	ND	1.0	09/07/17 14:13	
p-Isopropyltoluene	ug/L	ND	1.0	09/07/17 14:13	
Styrene	ug/L	ND	1.0	09/07/17 14:13	
Tetrachloroethene	ug/L	ND	1.0	09/07/17 14:13	
Toluene	ug/L	ND	1.0	09/07/17 14:13	
trans-1,2-Dichloroethene	ug/L	ND	1.0	09/07/17 14:13	
trans-1,3-Dichloropropene	ug/L	ND	1.0	09/07/17 14:13	
Trichloroethene	ug/L	ND	1.0	09/07/17 14:13	
Trichlorofluoromethane	ug/L	ND	1.0	09/07/17 14:13	
Vinyl acetate	ug/L	ND	2.0	09/07/17 14:13	
Vinyl chloride	ug/L	ND	1.0	09/07/17 14:13	
Xylene (Total)	ug/L	ND	1.0	09/07/17 14:13	
1,2-Dichloroethane-d4 (S)	%	102	70-130	09/07/17 14:13	
4-Bromofluorobenzene (S)	%	102	70-130	09/07/17 14:13	
Toluene-d8 (S)	%	106	70-130	09/07/17 14:13	

LABORATORY CONTROL SAMPLE: 2087106

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	45.5	91	70-130	
1,1,1-Trichloroethane	ug/L	50	48.8	98	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	48.0	96	70-130	
1,1,2-Trichloroethane	ug/L	50	49.5	99	70-130	
1,1-Dichloroethane	ug/L	50	46.9	94	70-130	
1,1-Dichloroethene	ug/L	50	43.9	88	70-132	
1,1-Dichloropropene	ug/L	50	51.6	103	70-130	
1,2,3-Trichlorobenzene	ug/L	50	51.7	103	70-135	
1,2,3-Trichloropropane	ug/L	50	48.1	96	70-130	
1,2,4-Trichlorobenzene	ug/L	50	50.7	101	70-134	
1,2-Dibromo-3-chloropropane	ug/L	50	46.8	94	70-130	
1,2-Dibromoethane (EDB)	ug/L	50	50.9	102	70-130	
1,2-Dichlorobenzene	ug/L	50	49.5	99	70-130	
1,2-Dichloroethane	ug/L	50	46.9	94	70-130	
1,2-Dichloropropene	ug/L	50	51.3	103	70-130	
1,3-Dichlorobenzene	ug/L	50	48.9	98	70-130	
1,3-Dichloropropane	ug/L	50	51.4	103	70-130	
1,4-Dichlorobenzene	ug/L	50	49.1	98	70-130	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: FORMER KOP-FLEX FACIL 31400389

Pace Project No.: 92353757

LABORATORY CONTROL SAMPLE: 2087106

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2,2-Dichloropropane	ug/L	50	50.1	100	58-145	
2-Butanone (MEK)	ug/L	100	103	103	70-145	
2-Chlorotoluene	ug/L	50	46.8	94	70-130	
2-Hexanone	ug/L	100	101	101	70-144	
4-Chlorotoluene	ug/L	50	48.5	97	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	100	99.5	99	70-140	
Acetone	ug/L	100	107	107	50-175	
Benzene	ug/L	50	50.4	101	70-130	
Bromobenzene	ug/L	50	49.3	99	70-130	
Bromochloromethane	ug/L	50	49.1	98	70-130	
Bromodichloromethane	ug/L	50	48.3	97	70-130	
Bromoform	ug/L	50	42.7	85	70-130	
Bromomethane	ug/L	50	53.7	107	54-130	
Carbon tetrachloride	ug/L	50	50.0	100	70-132	
Chlorobenzene	ug/L	50	48.0	96	70-130	
Chloroethane	ug/L	50	46.2	92	64-134	
Chloroform	ug/L	50	46.7	93	70-130	
Chloromethane	ug/L	50	53.0	106	64-130	
cis-1,2-Dichloroethene	ug/L	50	47.4	95	70-131	
cis-1,3-Dichloropropene	ug/L	50	53.0	106	70-130	
Dibromochloromethane	ug/L	50	46.5	93	70-130	
Dibromomethane	ug/L	50	49.0	98	70-131	
Dichlorodifluoromethane	ug/L	50	44.5	89	56-130	
Diisopropyl ether	ug/L	50	52.6	105	70-130	
Ethylbenzene	ug/L	50	48.3	97	70-130	
Hexachloro-1,3-butadiene	ug/L	50	48.6	97	70-130	
m&p-Xylene	ug/L	100	94.7	95	70-130	
Methyl-tert-butyl ether	ug/L	50	53.2	106	70-130	
Methylene Chloride	ug/L	50	48.3	97	63-130	
Naphthalene	ug/L	50	50.9	102	70-138	
o-Xylene	ug/L	50	47.4	95	70-130	
p-Isopropyltoluene	ug/L	50	49.8	100	70-130	
Styrene	ug/L	50	49.9	100	70-130	
Tetrachloroethene	ug/L	50	48.0	96	70-130	
Toluene	ug/L	50	48.5	97	70-130	
trans-1,2-Dichloroethene	ug/L	50	47.2	94	70-130	
trans-1,3-Dichloropropene	ug/L	50	47.9	96	70-132	
Trichloroethene	ug/L	50	51.8	104	70-130	
Trichlorofluoromethane	ug/L	50	48.5	97	62-133	
Vinyl acetate	ug/L	100	106	106	66-157	
Vinyl chloride	ug/L	50	46.6	93	50-150	
Xylene (Total)	ug/L	150	142	95	70-130	
1,2-Dichloroethane-d4 (S)	%			94	70-130	
4-Bromofluorobenzene (S)	%			97	70-130	
Toluene-d8 (S)	%			98	70-130	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: FORMER KOP-FLEX FACIL 31400389
Pace Project No.: 92353757

MATRIX SPIKE SAMPLE:	2088067						
Parameter	Units	92353757010	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	20	16.8	84	70-130	
1,1,1-Trichloroethane	ug/L	13.1	20	35.0	109	70-130	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	16.9	85	70-130	
1,1,2-Trichloroethane	ug/L	ND	20	18.3	91	70-130	
1,1-Dichloroethane	ug/L	16.4	20	35.4	95	70-130	
1,1-Dichloroethene	ug/L	68.4	20	81.0	63	70-166 M1	
1,1-Dichloropropene	ug/L	ND	20	20.9	105	70-130	
1,2,3-Trichlorobenzene	ug/L	ND	20	17.7	88	70-130	
1,2,3-Trichloropropane	ug/L	ND	20	17.2	86	70-130	
1,2,4-Trichlorobenzene	ug/L	ND	20	17.4	87	70-130	
1,2-Dibromo-3-chloropropane	ug/L	ND	20	16.7	84	70-130	
1,2-Dibromoethane (EDB)	ug/L	ND	20	18.4	92	70-130	
1,2-Dichlorobenzene	ug/L	ND	20	17.5	88	70-130	
1,2-Dichloroethane	ug/L	ND	20	19.7	94	70-130	
1,2-Dichloropropane	ug/L	ND	20	20.0	100	70-130	
1,3-Dichlorobenzene	ug/L	ND	20	17.9	89	70-130	
1,3-Dichloropropane	ug/L	ND	20	18.6	93	70-130	
1,4-Dichlorobenzene	ug/L	ND	20	18.0	90	70-130	
2,2-Dichloropropane	ug/L	ND	20	20.8	104	70-130	
2-Butanone (MEK)	ug/L	ND	40	35.4	89	70-130	
2-Chlorotoluene	ug/L	ND	20	17.9	89	70-130	
2-Hexanone	ug/L	ND	40	34.4	86	70-130	
4-Chlorotoluene	ug/L	ND	20	18.0	90	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	40	33.9	85	70-130	
Acetone	ug/L	ND	40	33.7	84	70-130	
Benzene	ug/L	ND	20	20.3	98	70-148	
Bromobenzene	ug/L	ND	20	18.7	93	70-130	
Bromochloromethane	ug/L	ND	20	19.4	97	70-130	
Bromodichloromethane	ug/L	ND	20	18.9	94	70-130	
Bromoform	ug/L	ND	20	16.0	80	70-130	
Bromomethane	ug/L	ND	20	25.0	125	70-130	
Carbon tetrachloride	ug/L	ND	20	19.7	98	70-130	
Chlorobenzene	ug/L	ND	20	18.6	93	70-146	
Chloroethane	ug/L	ND	20	20.8	104	70-130	
Chloroform	ug/L	ND	20	19.9	100	70-130	
Chloromethane	ug/L	ND	20	23.7	119	70-130	
cis-1,2-Dichloroethene	ug/L	ND	20	19.8	99	70-130	
cis-1,3-Dichloropropene	ug/L	ND	20	18.6	93	70-130	
Dibromochloromethane	ug/L	ND	20	16.9	85	70-130	
Dibromomethane	ug/L	ND	20	18.8	94	70-130	
Dichlorodifluoromethane	ug/L	ND	20	18.5	92	70-130	
Diisopropyl ether	ug/L	ND	20	19.6	98	70-130	
Ethylbenzene	ug/L	ND	20	18.4	92	70-130	
Hexachloro-1,3-butadiene	ug/L	ND	20	18.3	91	70-130	
m&p-Xylene	ug/L	ND	40	36.6	92	70-130	
Methyl-tert-butyl ether	ug/L	ND	20	19.5	94	70-130	
Methylene Chloride	ug/L	ND	20	18.5	93	70-130	

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QUALITY CONTROL DATA

Project: FORMER KOP-FLEX FACIL 31400389

Pace Project No.: 92353757

MATRIX SPIKE SAMPLE: 2088067

Parameter	Units	92353757010 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Naphthalene	ug/L	ND	20	17.3	87	70-130	
o-Xylene	ug/L	ND	20	17.6	88	70-130	
p-Isopropyltoluene	ug/L	ND	20	18.3	92	70-130	
Styrene	ug/L	ND	20	18.0	90	70-130	
Tetrachloroethene	ug/L	ND	20	18.3	92	70-130	
Toluene	ug/L	ND	20	19.2	96	70-155	
trans-1,2-Dichloroethene	ug/L	ND	20	19.9	99	70-130	
trans-1,3-Dichloropropene	ug/L	ND	20	17.0	85	70-130	
Trichloroethene	ug/L	ND	20	21.0	105	69-151	
Trichlorofluoromethane	ug/L	ND	20	21.0	105	70-130	
Vinyl acetate	ug/L	ND	40	38.0	95	70-130	
Vinyl chloride	ug/L	ND	20	20.1	101	70-130	
1,2-Dichloroethane-d4 (S)	%				100	70-130	
4-Bromofluorobenzene (S)	%				100	70-130	
Toluene-d8 (S)	%				99	70-130	

SAMPLE DUPLICATE: 2088068

Parameter	Units	92353725020 Result	Dup Result	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	ND	30	
1,1,1-Trichloroethane	ug/L	ND	ND	30	
1,1,2,2-Tetrachloroethane	ug/L	ND	ND	30	
1,1,2-Trichloroethane	ug/L	ND	ND	30	
1,1-Dichloroethane	ug/L	ND	ND	30	
1,1-Dichloroethene	ug/L	ND	ND	30	
1,1-Dichloropropene	ug/L	ND	ND	30	
1,2,3-Trichlorobenzene	ug/L	ND	ND	30	
1,2,3-Trichloropropane	ug/L	ND	ND	30	
1,2,4-Trichlorobenzene	ug/L	ND	ND	30	
1,2-Dibromo-3-chloropropane	ug/L	ND	ND	30	
1,2-Dibromoethane (EDB)	ug/L	ND	ND	30	
1,2-Dichlorobenzene	ug/L	ND	ND	30	
1,2-Dichloroethane	ug/L	ND	ND	30	
1,2-Dichloropropene	ug/L	ND	ND	30	
1,3-Dichlorobenzene	ug/L	ND	ND	30	
1,3-Dichloropropane	ug/L	ND	ND	30	
1,4-Dichlorobenzene	ug/L	ND	ND	30	
2,2-Dichloropropane	ug/L	ND	ND	30	
2-Butanone (MEK)	ug/L	ND	ND	30	
2-Chlorotoluene	ug/L	ND	ND	30	
2-Hexanone	ug/L	ND	ND	30	
4-Chlorotoluene	ug/L	ND	ND	30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	ND	30	
Acetone	ug/L	ND	15J	30	
Benzene	ug/L	ND	ND	30	

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QUALITY CONTROL DATA

Project: FORMER KOP-FLEX FACIL 31400389

Pace Project No.: 92353757

SAMPLE DUPLICATE: 2088068

Parameter	Units	92353725020 Result	Dup Result	RPD	Max RPD	Qualifiers
Bromobenzene	ug/L	ND	ND		30	
Bromoform	ug/L	ND	ND		30	
Bromochloromethane	ug/L	ND	ND		30	
Bromodichloromethane	ug/L	ND	ND		30	
Bromomethane	ug/L	ND	ND		30	
Carbon tetrachloride	ug/L	ND	ND		30	
Chlorobenzene	ug/L	ND	ND		30	
Chloroethane	ug/L	ND	ND		30	
Chloroform	ug/L	ND	ND		30	
Chloromethane	ug/L	ND	.68J		30	
cis-1,2-Dichloroethene	ug/L	ND	ND		30	
cis-1,3-Dichloropropene	ug/L	ND	ND		30	
Dibromochloromethane	ug/L	ND	ND		30	
Dibromomethane	ug/L	ND	ND		30	
Dichlorodifluoromethane	ug/L	ND	ND		30	
Diisopropyl ether	ug/L	ND	ND		30	
Ethylbenzene	ug/L	ND	ND		30	
Hexachloro-1,3-butadiene	ug/L	ND	ND		30	
m&p-Xylene	ug/L	ND	ND		30	
Methyl-tert-butyl ether	ug/L	ND	ND		30	
Methylene Chloride	ug/L	ND	ND		30	
Naphthalene	ug/L	ND	ND		30	
o-Xylene	ug/L	ND	ND		30	
p-Isopropyltoluene	ug/L	ND	ND		30	
Styrene	ug/L	ND	ND		30	
Tetrachloroethene	ug/L	ND	ND		30	
Toluene	ug/L	ND	ND		30	
trans-1,2-Dichloroethene	ug/L	ND	ND		30	
trans-1,3-Dichloropropene	ug/L	ND	ND		30	
Trichloroethene	ug/L	3.9	4.0	1	30	
Trichlorofluoromethane	ug/L	ND	ND		30	
Vinyl acetate	ug/L	ND	ND		30	
Vinyl chloride	ug/L	ND	ND		30	
Xylene (Total)	ug/L	ND	ND		30	
1,2-Dichloroethane-d4 (S)	%	102	102	0		
4-Bromofluorobenzene (S)	%	101	100	2		
Toluene-d8 (S)	%	106	108	2		

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QUALITY CONTROL DATA

Project: FORMER KOP-FLEX FACIL 31400389

Pace Project No.: 92353757

QC Batch: 376646 Analysis Method: EPA 8260B Mod.

QC Batch Method: EPA 8260B Mod. Analysis Description: 8260 MSV SIM

Associated Lab Samples: 92353757001, 92353757002, 92353757003, 92353757004, 92353757005, 92353757006, 92353757007,
92353757008, 92353757009, 92353757010, 92353757012

METHOD BLANK: 2086712 Matrix: Water

Associated Lab Samples: 92353757001, 92353757002, 92353757003, 92353757004, 92353757005, 92353757006, 92353757007,
92353757008, 92353757009, 92353757010, 92353757012

Parameter	Units	Blank	Reporting	Analyzed	Qualifiers
		Result	Limit		
1,4-Dioxane (p-Dioxane)	ug/L	ND	2.0	09/07/17 12:16	
1,2-Dichloroethane-d4 (S)	%	105	50-150	09/07/17 12:16	
Toluene-d8 (S)	%	104	50-150	09/07/17 12:16	

LABORATORY CONTROL SAMPLE: 2086713

Parameter	Units	Spike	LCS	LCS	% Rec	Qualifiers
		Conc.	Result	% Rec	Limits	
1,4-Dioxane (p-Dioxane)	ug/L	20	17.6	88	71-125	
1,2-Dichloroethane-d4 (S)	%			104	50-150	
Toluene-d8 (S)	%			104	50-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2086714 2086715

Parameter	Units	MS	MSD	MS	MSD	MS	MSD	% Rec	% Rec	RPD	RPD	Max
		92353809005	Spike									
1,4-Dioxane (p-Dioxane)	ug/L	149	50	50	169	187	39	77	50-150	11	30	M1
1,2-Dichloroethane-d4 (S)	%						114	111	50-150		150	
Toluene-d8 (S)	%						114	114	50-150		150	

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QUALITY CONTROL DATA

Project: FORMER KOP-FLEX FACIL 31400389

Pace Project No.: 92353757

QC Batch: 376755 Analysis Method: EPA 8260B Mod.

QC Batch Method: EPA 8260B Mod. Analysis Description: 8260 MSV SIM

Associated Lab Samples: 92353757011

METHOD BLANK: 2087354 Matrix: Water

Associated Lab Samples: 92353757011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	ND	2.0	09/08/17 11:00	
1,2-Dichloroethane-d4 (S)	%	92	50-150	09/08/17 11:00	
Toluene-d8 (S)	%	109	50-150	09/08/17 11:00	

LABORATORY CONTROL SAMPLE: 2087355

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	20	17.1	86	71-125	
1,2-Dichloroethane-d4 (S)	%			106	50-150	
Toluene-d8 (S)	%			111	50-150	

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QUALIFIERS

Project: FORMER KOP-FLEX FACIL 31400389
Pace Project No.: 92353757

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-C Pace Analytical Services - Charlotte

ANALYTE QUALIFIERS

D6 The precision between the sample and sample duplicate exceeded laboratory control limits.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: FORMER KOP-FLEX FACIL 31400389

Pace Project No.: 92353757

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92353757001	MW-24D	EPA 8260	376298		
92353757002	MW-35D	EPA 8260	376298		
92353757003	MW-33D-275	EPA 8260	376298		
92353757004	MW-33D-295	EPA 8260	376298		
92353757005	MW-31D	EPA 8260	376298		
92353757006	MW-28	EPA 8260	376298		
92353757007	MW-28D	EPA 8260	376298		
92353757008	MW-25	EPA 8260	376298		
92353757009	MW-25D-190	EPA 8260	376298		
92353757010	MW-2500	EPA 8260	376699		
92353757011	MW-25D-130	EPA 8260	376699		
92353757012	TRIP BLANK	EPA 8260	376382		
92353757001	MW-24D	EPA 8260B Mod.	376646		
92353757002	MW-35D	EPA 8260B Mod.	376646		
92353757003	MW-33D-275	EPA 8260B Mod.	376646		
92353757004	MW-33D-295	EPA 8260B Mod.	376646		
92353757005	MW-31D	EPA 8260B Mod.	376646		
92353757006	MW-28	EPA 8260B Mod.	376646		
92353757007	MW-28D	EPA 8260B Mod.	376646		
92353757008	MW-25	EPA 8260B Mod.	376646		
92353757009	MW-25D-190	EPA 8260B Mod.	376646		
92353757010	MW-2500	EPA 8260B Mod.	376646		
92353757011	MW-25D-130	EPA 8260B Mod.	376755		
92353757012	TRIP BLANK	EPA 8260B Mod.	376646		

REPORT OF LABORATORY ANALYSIS

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Document Name: Sample Condition Upon Receipt(SCUR)	Document Revised: August 4, 2017 Page 1 of 2
Document No.: F-CAR-CS-033-Rev.04	Issuing Authority: Pace Quality Office

Laboratory receiving samples:

Asheville Eden Greenwood Huntersville Raleigh Mechanicsville

WO# : 92353757

Sample Condition
Upon Receipt

Client Name:

WSP Environment & Energy

Project #:



92353757

Courier:
 Fed Ex UPS USPS Client
 Commercial Pace Other: _____Custody Seal Present? Yes No Seals Intact? Yes No

Date/Initials Person Examining Contents: 1D 9.1.17

Packing Material: Bubble Wrap Bubble Bags None Other Biological Tissue Frozen?Thermometer: IR Gun ID: TI701 Type of Ice: Wet Blue NoneCorrection Factor: Cooler Temp Corrected (°C): 5.7 Temp should be above freezing to 6°C
 Samples out of temp criteria. Samples on ice, cooling process has begunUSDA Regulated Soil (- N/A, water sample)Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)?
 Yes No Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

Comments/Discrepancy:			
Chain of Custody Present?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Short Hold Time Analysis (<72 hr.)?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
Sufficient Volume?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Correct Containers Used? -Pace Containers Used?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Containers Intact?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Dissolved analysis: Samples Field Filtered?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
-Includes Date/Time/ID/Analysis Matrix:	WT		
Headspace in VOA Vials (>5-6mm)?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
Trip Blank Present?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? Yes No

Person Contacted: _____

Date/Time: _____

Comments/Sample Discrepancy: _____

Lot ID of split containers: _____

Project Manager SCURF Review:

Date: 9/1

Project Manager SRF Review:

Date: 9/1

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e.
Out of hold, incorrect preservative, out of temp, incorrect containers)



Document Name: Sample Condition Upon Receipt(SCUR)	Document Revised: August 4, 2017 Page 2 of 2
Document No.: F-CAR-CS-033-Rev.04	Issuing Authority:

WO# : 92353757

*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

**Bottom half of box is to list number of bottles

Project #

PM: PTE Due Date: 09/11/17
CLIENT: 92-WSP

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFLU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-5035 kit (N/A)	V/GK (3 vials per kit)-VP/H/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A - lab)	SP2T-250 mL Sterile Plastic (N/A - lab)	BP3A-250 mL Plastic (NH4)2SO4 (9.3-9.7)	Cubitainer	VSGU-20 mL Scintillation vials (N/A)	GN
1	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/			
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12																											

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Ergo Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

ment completed accurately.

Section A		Section B		Section C	
Required Client Information:		Required Project Information:		Invoice Information:	
Company Address:	WSP Environment and Energy/ 13530 Dulles Technology Drive	Report To:	Johnson, Eric	Attention:	
Suite 300 Email	Hendon, VA 20171	Copy To:		Company Name:	
Phone	Fax	Purchase Order #:		Address:	
Requested Due Date:		Project Name:	Former Kop-Flex Facility	Pace Quote:	Regulatory Agency
		Project #:	3150509	Pace Project Manager:	kevin.gotwim@pacelabs.com.
				Pace Profile #:	4362-1
					State / Location
					MD
				Requested Analysis Filtered (Y/N)	